Vertical Cable Systems

DesignRail®

Important Note: *These instructions are for a standardized frame system. Bay infills may vary depending on your distance between posts. Infill rails should be cut so the space between pickets, cables and posts should all appear to be consistent. For systems with 150 or 450 Cap Rail, see detail pages at the end of these instructions.*

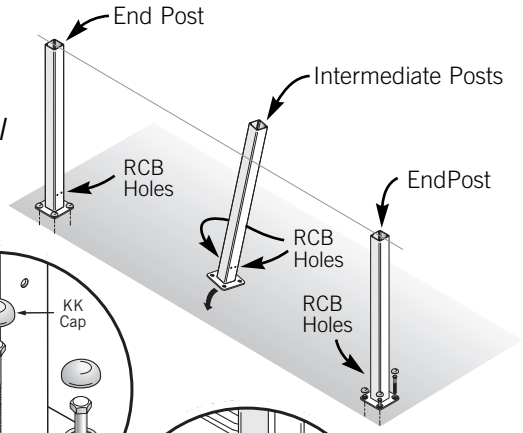
1) Check Contents Of Packages: Verify that all parts have arrived and that they match the packing list.

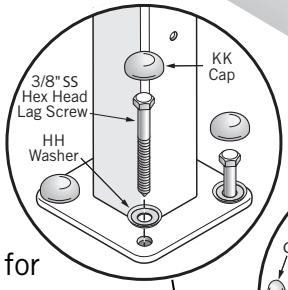
2) Gather and Identify All Posts: Use the rail connecting bracket (RCB) holes on each post to identify the post type:

- End posts – RCB holes on one side only.
- Intermediate posts – RCB holes on opposite sides.
- Single corner posts – RCB holes on adjacent sides.

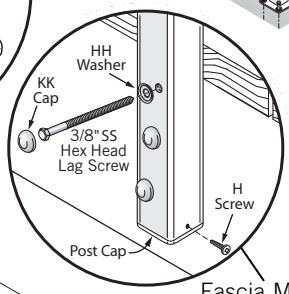
2) Anchor Posts: Position all main posts. The proper penetration for your lag bolts is critical and will vary depending on your installation. See drawing at the end of this document for details on lag bolt lengths for your project.

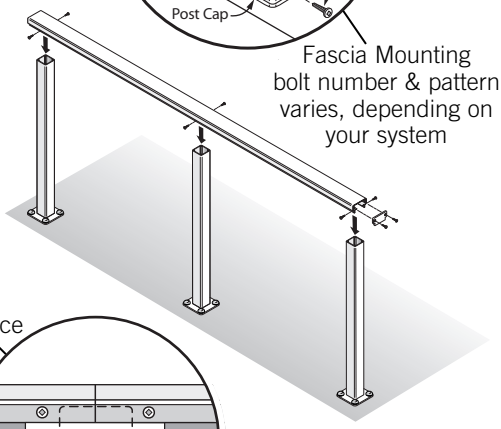
- Base mounting: anchor each post using provided hardware (see detailed sheet included in your order) with retaining washers and large plastic caps.
- Fascia mounting: anchor each post using provided hardware with retaining washers and large plastic caps. Cover bottom of each post with an post cap; pre-drill post & screw an H screw through the side of the post to secure the post cap.
- If you are mounting posts using the stanchion mount or fascia bracket mount methods, please call for additional installation details.





Base Mounting

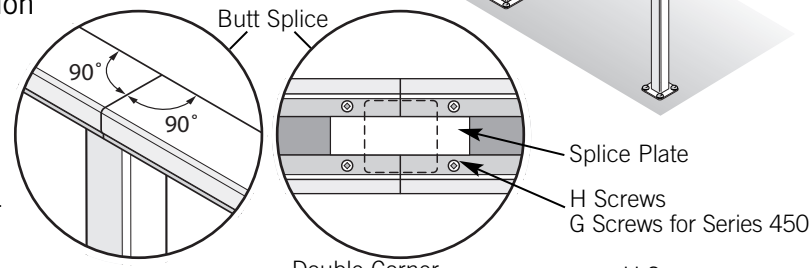


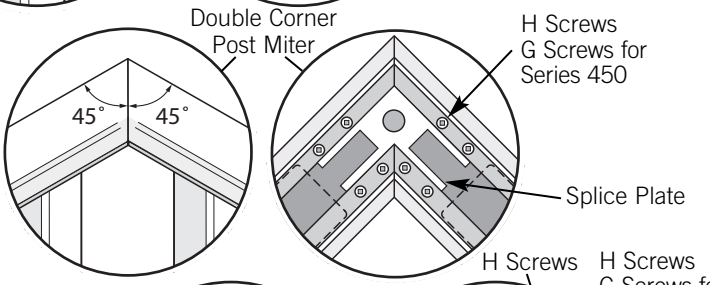


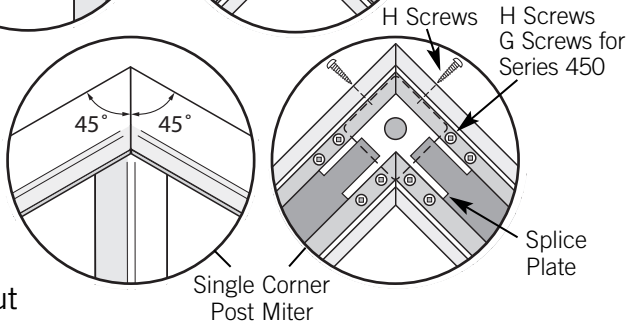
Fascia Mounting bolt number & pattern varies, depending on your system

3) Cut & Snap Top Rails: Cut the top rail to length and then snap it into position on top of the posts or see detail drawing if using 150 Series. Be sure to attach decorative end plates to any ends that butt-up against a wall face or that have limited access.

- Butt splices: always cut the top rail at 90 degrees and center the joint over a post. Use a rectangular splice plate with four H screws* to secure this joint.
- Mitered joints with double corner posts: the top rail will extend past each of the corner posts and the actual miter joint will be unsupported. Remember to cut each top rail miter at 1/2 the total corner angle (i.e. if the corner angle is 90 degrees, cut each miter at 45 degrees). Add one splice plate to connect and stabilize the miter joint. Insert the plate before setting the two rail sections down on top of the posts; use eight (8) H screws* to secure the splice plate to the rails.
- Mitered joints with single corner posts: cut each top rail miter at 1/2 the total corner angle (i.e. if the corner angle is 90 degrees, cut each miter at 45 degrees) Center the joint over the corner post.



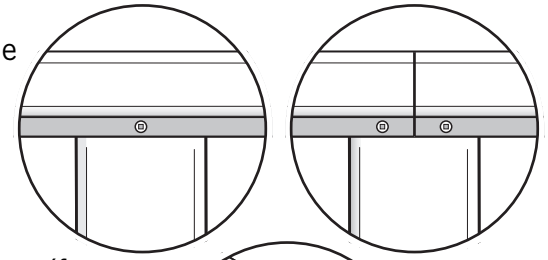




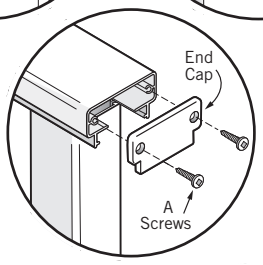
*Use shorter G screws when installing the Series 450 top rail

continued on next page

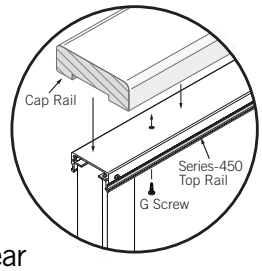
Add one splice plate to connect and stabilize the miter joint. Insert the plate before setting the two rail sections down on top of the post; use eight H screws* to secure the splice plate to the rails. Also, on each side of the miter cut, screw an H screw through the cap rail flange and into the post face.



4) Fasten Top Rails: Secure the top rail to each post using two H screws (four screws for butt splices); screws should run through the cap rail flange and into the center of the post face. Attach screws to both the front and back of each post.

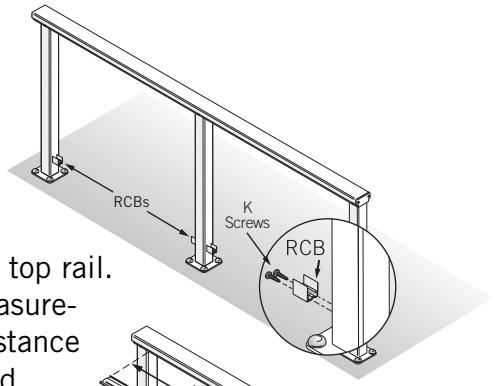


5) Attach Decorative End Caps: Attach the decorative end caps to all of the exposed top rail ends using two A screws. This applies to 200, 300, 350, and 450 Top Rail options.

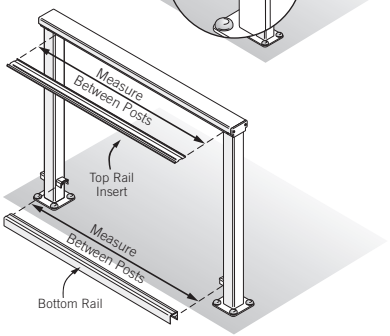


5A) Cut & Attach Wood/Composite Cap Rails (for Series-450 Top Rails only): A wood or composite cap rail may be used with the Low-Profile Top Rail (Series-450). Cut the wood or composite cap rails to fit the top rails (cap rails supplied by customer). Pre-drill holes through the top rail and use G Pan Head Screws from underneath. Alternatively the wood can be attached with construction adhesive that has a minimum shear strength of 30 psi.

6) Attach RCBs: For the bottom rail, locate the rail connecting bracket (RCB) holes on each post (these are pre-drilled) except on stair rail posts where all the holes must be drilled in the field). Attach the RCBs to the posts using two K screws. The RCBs should be mounted wings up for frames using vertical cable systems.

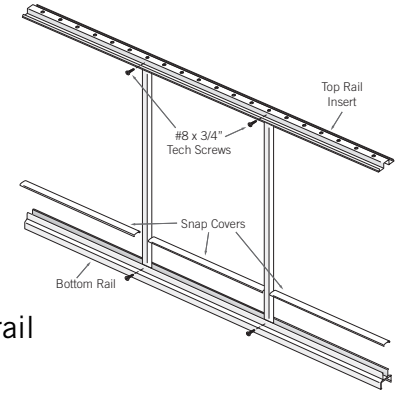


7) Cut Top Rail Inserts: Measure between each set of posts just below the top rail. Cut the top rail insert for each section to $-1/16$" of your corresponding measurement. Do not attach the top rail inserts to the top rail at this time. The distance between post and cable holes should be between 1-1/2" and 3" inches and equal on both ends. Standard configurations have 6 cables between posts and pickets. Number of cables and pickets may vary due to panel size. Consult your layout sheet.



8) Cut Bottom Rails: Measure between each set of posts just above the RCBs. Cut the bottom rail for each section to $-1/16$" of your corresponding measurement. Make sure the holes in the bottom rail are in similar placement to the top rail insert so the cables run plumb vertically. Do not attach the bottom rails to the frame at this time.

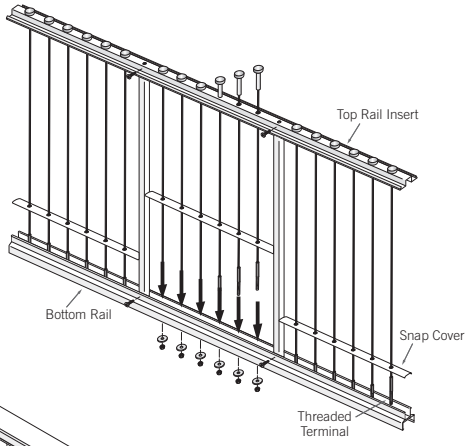
9) Cut Snap Covers: Measure distance between posts and pickets, cut snap covers to –1/16" length. Standard infill bays will have 20 1/4" length of snap cover to use between the two installed pickets. End snap cover sections will vary depending on size of bay.



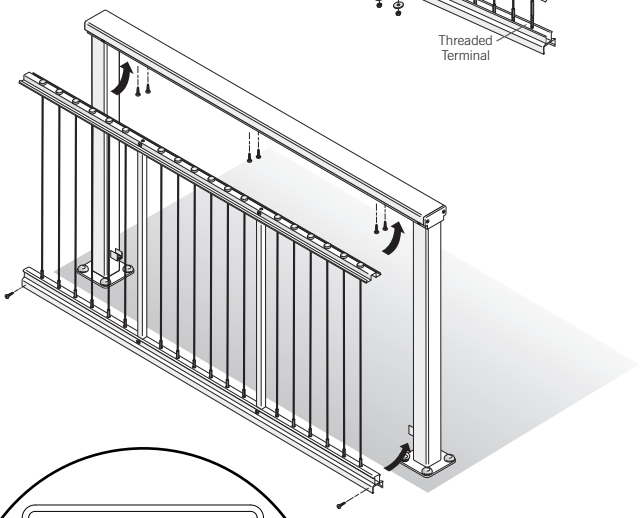
10) Cut & Install Pickets: Pickets should come cut to length for level railing installations, if not, call for measurements for your particular installation (residential or commercial). Pickets slip in slots in top rail insert and bottom rail and are secured with H screws through side of inserts (see illustration).

continued on next page

11) Assemble Panels: Thread center cables through center holes on the top rail insert. The threaded terminal of the cable feeds through first, to eventually lace through the bottom rail insert. Position the 20-1/4" section of snap cover over the bottom rail in between the two pickets. Thread the cable through the snap cover and continue through the holes in the bottom rail. Hold snap cover up at this time. Attach washers and nuts on the protruding threaded terminals. Drop the remaining cable assemblies through the remaining holes in the top rail insert and thread through snap covers and bottom rail. Attach remaining washers and nuts.

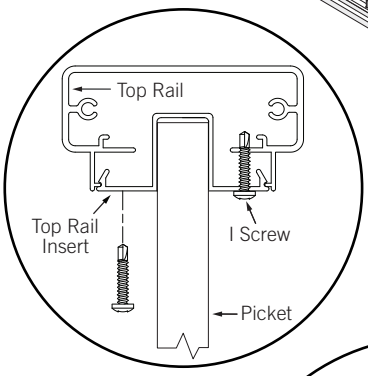


12) Install Panels: Place the assembled panel between posts and lift up into opening of the underside of the top rail. Make sure the RCBs fit into the upper channel of the bottom rail below the snap cover. Snap the top rail insert into the top rail once the infill is aligned.

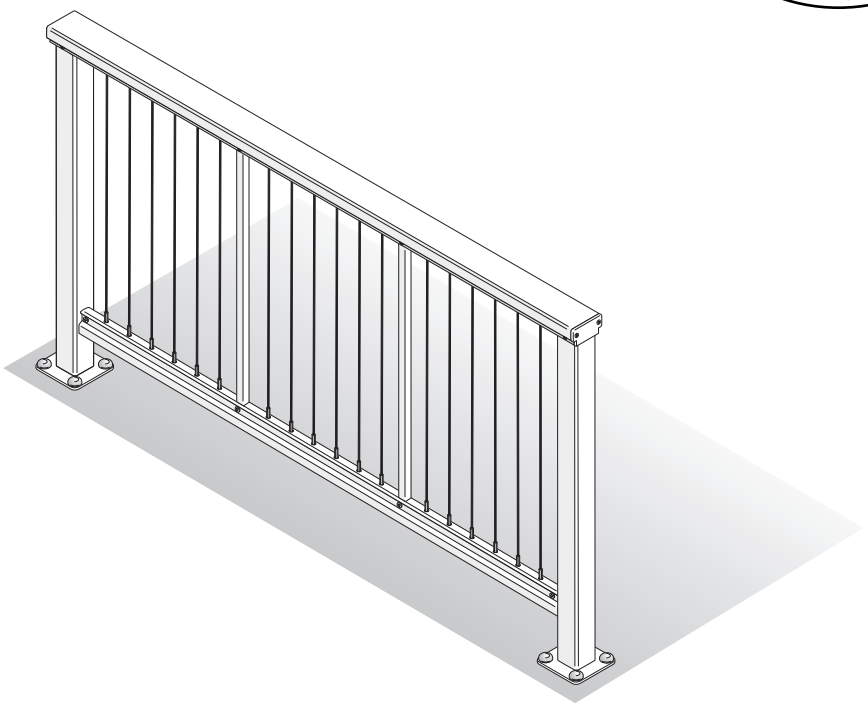


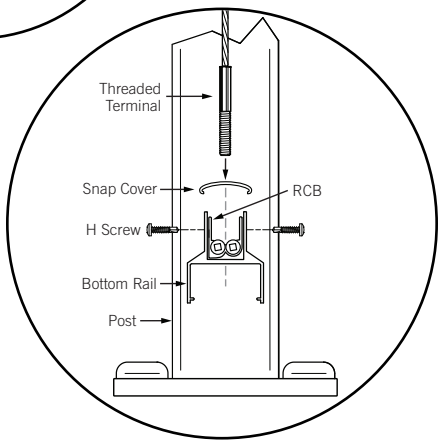
13) Secure Panels: Screw the top rail insert into the top rail from underneath with six "I" screws per panel, two on each end, two in center. Install bottom rails to RCBs with H screws.

14) Tension Cables: Tension cables by spinning nuts concealed under bottom rail. Hold the threaded terminal above the bottom rail with vise-grip pliers while tightening the nut with a socket below. Tension evenly until taught.



15) Fasten Snap Covers: Fasten snap covers to top of bottom rail after tensioning cables. Push down and snap into place.

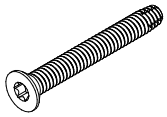




FLAT HEAD SCREWS

A. 7294: #8 x 1" SS SCREW, FLAT HEAD, SQUARE DRIVE

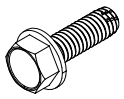
B. 7643: #10 x 1" SS SCREW, FLAT HEAD, SQUARE DRIVE



C. 7265: #14 x 2" STEEL MAGNA-COAT SCREW, TYPE F, FLAT HEAD, TORX DRIVE

HEX HEAD SCREWS

D. 7017: #14 x 1" SS SELF-TAPPING SCREW, HEX WASHER HEAD



E. 8024: 5/16" x 1" SS THREAD-CUTTING SCREW, HEX WASHER HEAD

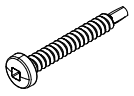
PAN HEAD SCREWS

F. 7272: #10 x 3/4" SS SCREW, PAN HEAD, SQUARE DRIVE

G. 7226: #8 x 1/2" SS SELF-TAPPING SCREW, PAN HEAD, SQUARE DRIVE

H. 7270: #8 x 3/4" SS SELF-TAPPING SCREW, PAN HEAD, SQUARE DRIVE

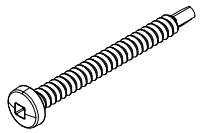
I. 7285: #8 x 1" SS SELF-TAPPING SCREW, PAN HEAD, SQUARE DRIVE



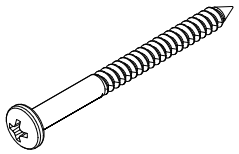
J. 7271: #10 x 1-1/2" SS SELF-TAPPING SCREW, PAN HEAD, SQUARE DRIVE

K. 7267: #10 x 1-3/4" SS SELF-TAPPING SCREW, PAN HEAD, SQUARE DRIVE

L. 7355: #10 x 2" SS SELF-TAPPING SCREW, PAN HEAD, SQUARE DRIVE



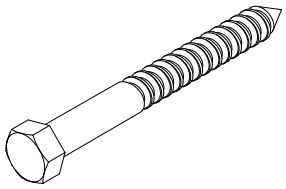
M. 7802: #12 x 2" SS SELF-TAPPING SCREW, PAN HEAD, SQUARE DRIVE



N. 7282: #14 x 3" SS SCREW, PAN HEAD, #3 PHILLIPS DRIVE

O. 7966: #14 x 4" SS SCREW, PAN HEAD, #3 PHILLIPS DRIVE

LAG SCREWS



P. 7277: 3/8" x 3-1/2" LAG SCREW, HEX HEAD

Q. 6565: 3/8" x 4-1/2" LAG SCREW, HEX HEAD

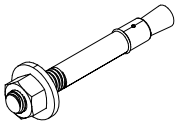
R. 7280: 3/8" x 5" LAG SCREW, HEX HEAD

S. 7278: 3/8" x 6" LAG SCREW, HEX HEAD

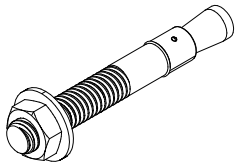
T. 7209: 3/8" x 6-1/2" LAG SCREW, HEX HEAD

U. 7248: 3/8" x 7" LAG SCREW, HEX HEAD

EXPANSION ANCHORS



Y. 7276: 1/4" x 2-1/4" EXPANSION ANCHOR



Z. 8015: 3/8" x 3" EXPANSION ANCHOR

AA. 7356: 3/8" x 3-3/4" EXPANSION ANCHOR

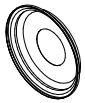
BB. 7288: 3/8" x 5" EXPANSION ANCHOR

CC. 7284: 3/8" x 6-1/2" EXPANSION ANCHOR

WASHERS

FF. 7070: 1/4" ID WASHER, FOR SMALL VINYL CAPS

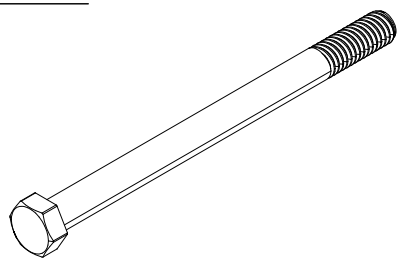
GG. 7062: 1/4" ID WASHER, FOR LARGE VINYL CAPS



HH. 7063: 3/8" ID WASHER, FOR LARGE VINYL CAPS

II. 7064: 9/16" ID WASHER, FOR LARGE VINYL CAPS

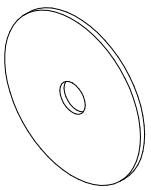
BOLTS



V. 8017: 3/8"-16 x 5" CAP SCREW, HEX HEAD (3-7/8" SHANK, 1" THREAD)

W. 8016: 3/8"-16 x 6" CAP SCREW, HEX HEAD (4-7/8" SHANK, 1" THREAD)

X. 8004: 3/8"-16 x 7" CAP SCREW, HEX HEAD (5-9/16" SHANK, 1-3/8" THREAD)

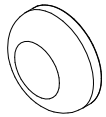


DD. 7224: 3/8" ID, 2" OD FENDER WASHER

EE. 7225: 3/8"-16, NYLON INSERT LOCKNUT, HEX HEAD

CAPS

JJ. PART # VARIES: VINYL CAP (SMALL)



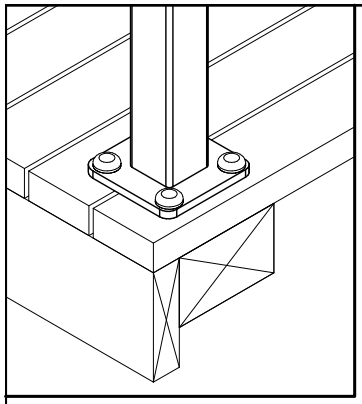
KK. PART # VARIES: VINYL CAP (LARGE)

DesignRail® Reference Drawing:

STANDARD ASSEMBLY HARDWARE

DATE:	09/12/17
PAGE:	
REV:	B - 10/29/10
BY:	BWA
CHK:	

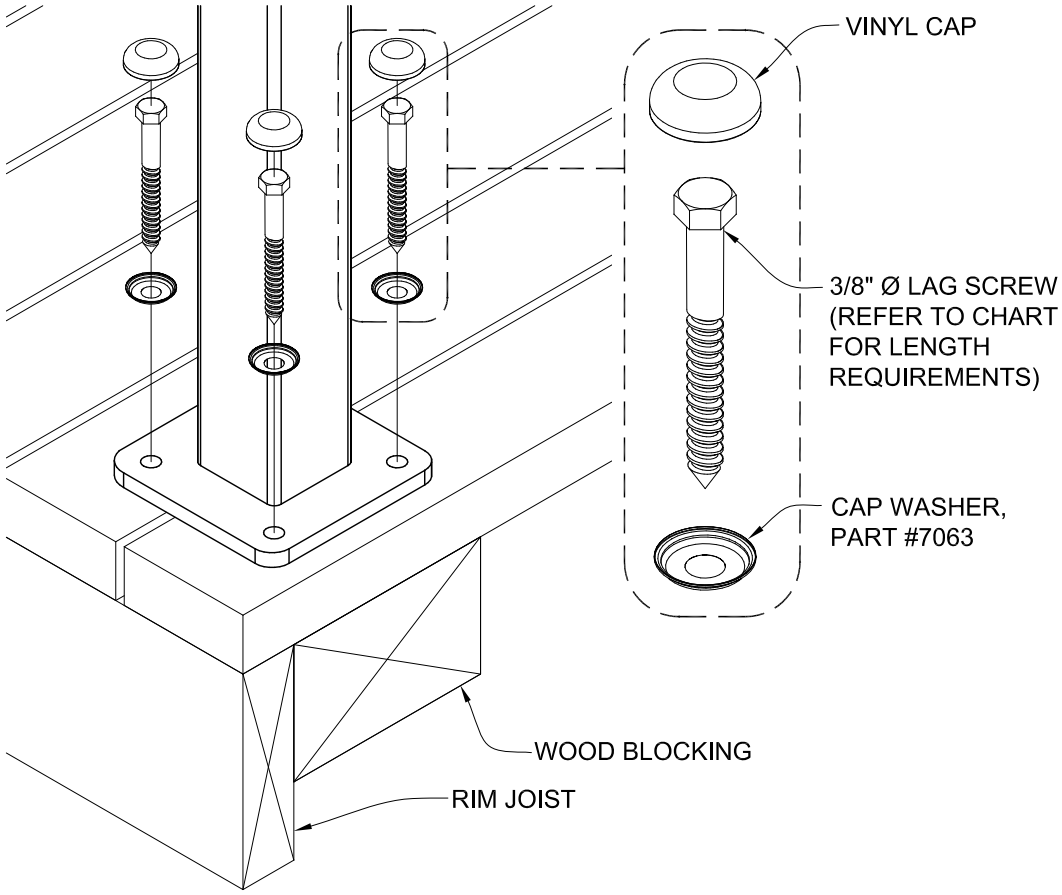
feeney
2603 Union St., Oakland, CA 94607
P: 800-888-2418 F: 510-893-9484
www.feeneyinc.com

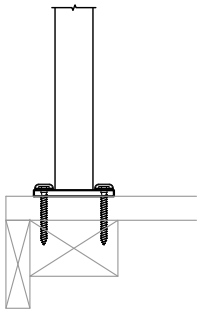
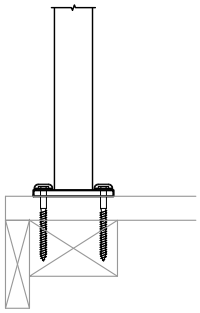
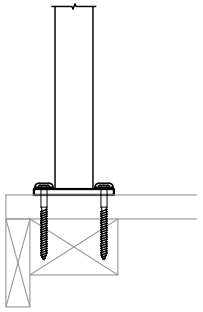
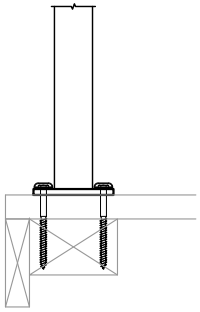
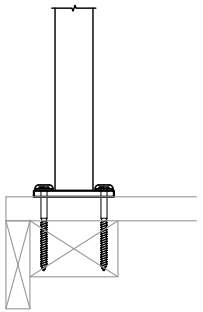
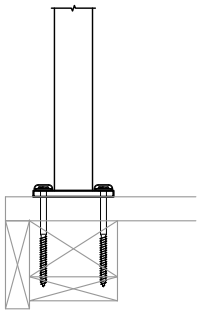


NOTES:
MINIMUM LAG PENETRATION DIMENSION, REFER TO REQUIREMENTS FOR LAG SCREW PENETRATION INTO SOLID LUMBER. LUMBER ASSUMED TO HAVE A MINIMUM 0.43 SPECIFIC GRAVITY (ie: HEM-FIR).

WOOD DECK BOARDS MUST BE PROPERLY ATTACHED TO STRUCTURE TO ACCOUNT FOR A PORTION OF THE LAG SCREW PENETRATION REQUIREMENT.

IF USING COMPOSITE MATERIAL AS DECKING, DECK BOARDS WILL NOT CONTRIBUTE TO PENETRATION REQUIREMENT. LAG SCREW LENGTH AND BLOCKING MUST BE ADJUSTED TO ACCOUNT FOR ADDITIONAL LENGTH, AS NECESSARY.



		INTERIOR	EXTERIOR
RESIDENTIAL (MAX 6' OC)	36"	 3" MIN. LAG PENETRATION 3-1/2" LAG SCREWS, PART #7277	 4" MIN. LAG PENETRATION 4-1/2" LAG SCREWS, PART #6565
	38"-42"	 3-1/2" MIN. LAG PENETRATION 4-1/2" LAG SCREWS, PART #6565	 4-1/2" MIN. LAG PENETRATION 5" LAG SCREWS, PART #7280
COMMERCIAL (MAX 5' OC)	42"	 4-1/2" MIN. LAG PENETRATION 5" LAG SCREWS, PART #7280	 5-5/8" MIN. LAG PENETRATION 6" LAG SCREWS, PART #7278

DesignRail® Reference Drawing:

Base Mount with Lag Screws

DATE:	06/10/15
PAGE:	1 OF 1
REV:	
BY:	BWA
CHK:	

feeney
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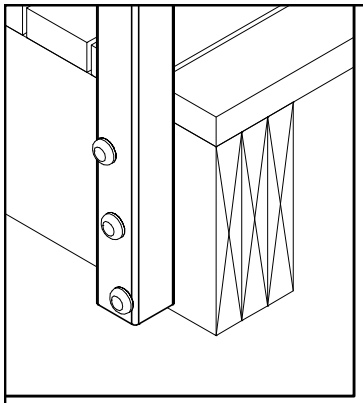
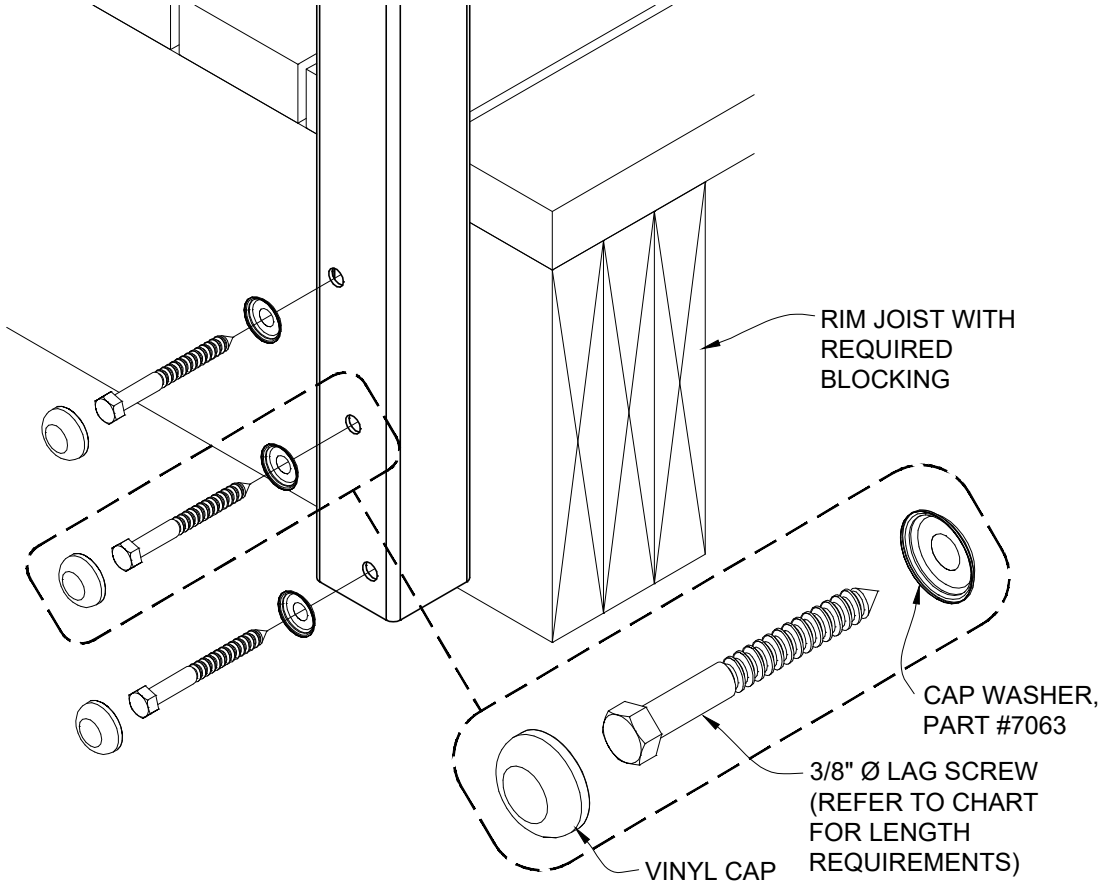


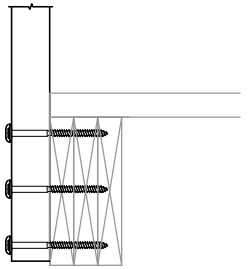
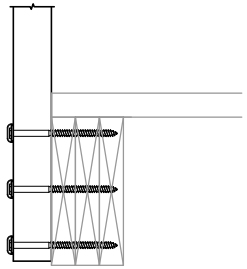
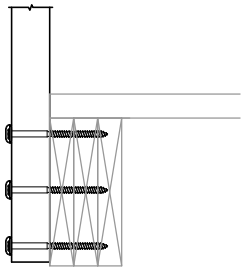
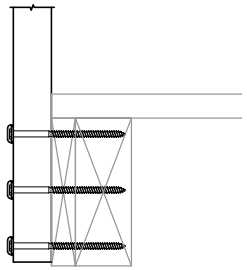
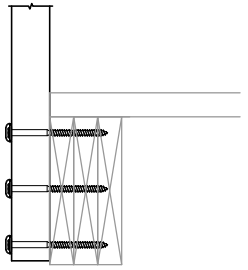
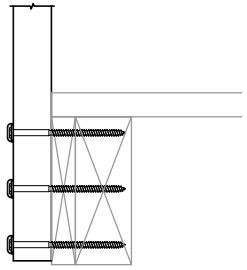
NOTES:
MINIMUM LAG PENETRATION DIMENSION, REFER TO REQUIREMENTS FOR LAG SCREW PENETRATION INTO SOLID LUMBER. LUMBER ASSUMED TO HAVE A MINIMUM 0.43 SPECIFIC GRAVITY (ie: HEM-FIR).

RIM JOIST AND BLOCKING MUST BE PROPERLY ATTACHED TO STRUCTURE TO RESIST TRANSFERRED LOADS FROM POSTS.

IF USING COMPOSITE MATERIAL AS FASCIA BOARD, FASCIA THICKNESS WILL NOT CONTRIBUTE TO PENETRATION REQUIREMENT. LAG SCREW LENGTH AND BLOCKING MUST BE ADJUSTED TO ACCOUNT FOR ADDITIONAL LENGTH, AS NECESSARY.

BOLT PATTERN MAY VARY DEPENDING ON JOIST HEIGHT AND PROJECT TYPE.



		INTERIOR	EXTERIOR
RESIDENTIAL (MAX 6' OC)	36"	 2-3/4" MIN. LAG PENETRATION 6" LAG SCREWS, PART #7278	 3-5/8" MIN. LAG PENETRATION 6-1/2" LAG SCREWS, PART #7209
	38"-42"	 3" MIN. LAG PENETRATION 6" LAG SCREWS, PART #7278	 4" MIN. LAG PENETRATION 7" LAG SCREWS, PART #7248
COMMERCIAL (MAX 4' OC)	42"	 3" MIN. LAG PENETRATION 6" LAG SCREWS, PART #7278	 4" MIN. LAG PENETRATION 7" LAG SCREWS, PART #7248

DesignRail® Detail Drawing:

Fasica Mount with Lag Screws

DATE:	06/10/15
PAGE:	1 OF 1
REV:	
BY:	BWA
CHK:	

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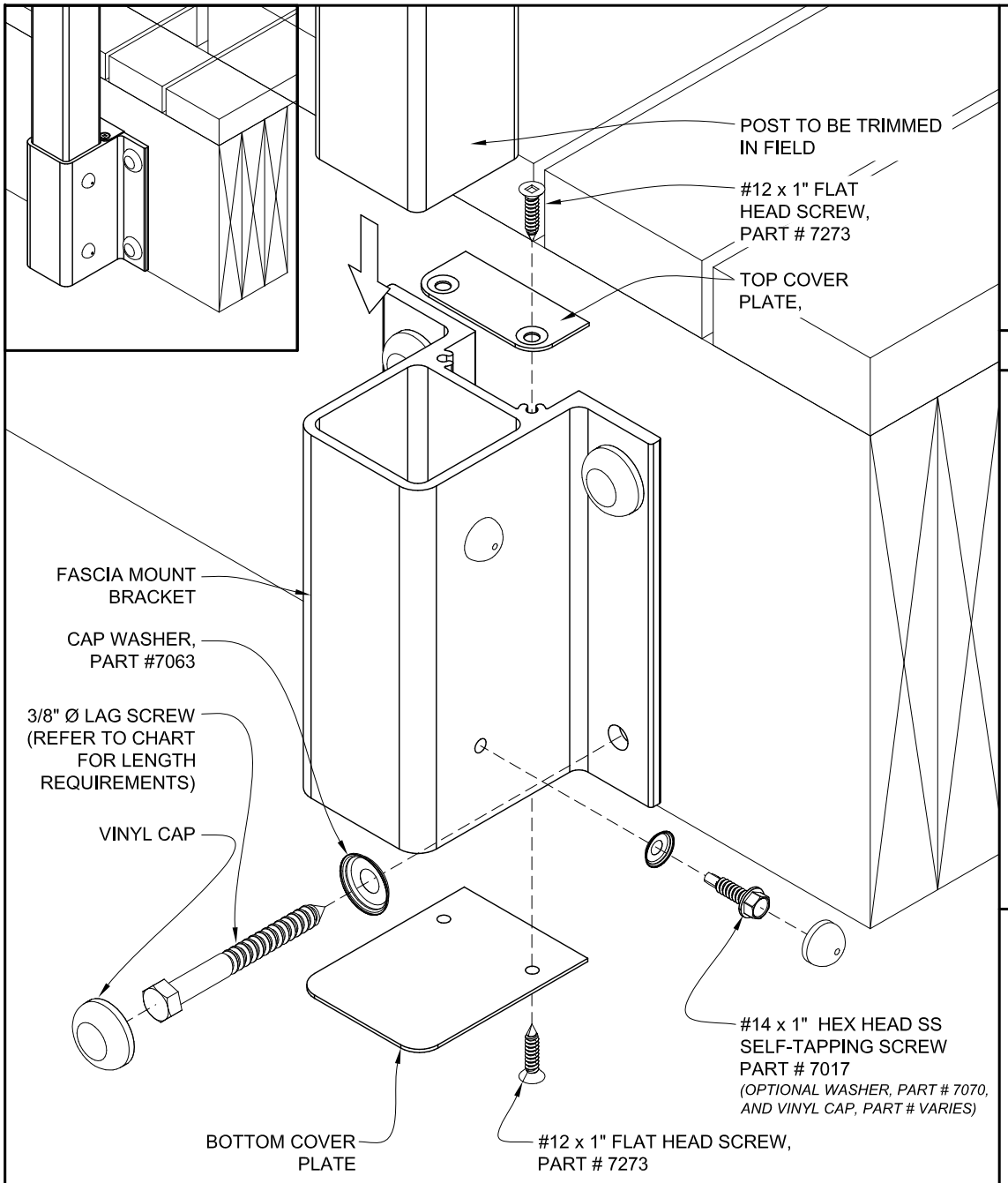

NOTES:

MINIMUM LAG PENETRATION DIMENSION, REFER TO REQUIREMENTS FOR LAG SCREW PENETRATION INTO SOLID LUMBER. LUMBER ASSUMED TO HAVE A MINIMUM 0.43 SPECIFIC GRAVITY (ie: HEM-FIR).

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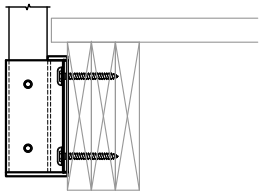
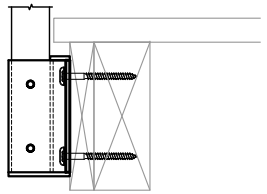
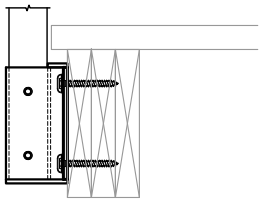
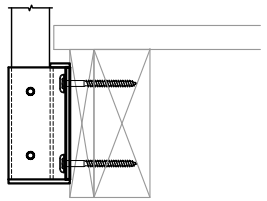
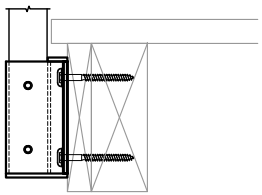
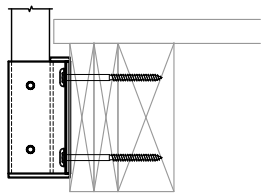
BOLT PATTERN MAY VARY DEPENDING ON JOIST HEIGHT AND PROJECT TYPE.

		INTERIOR	EXTERIOR
RESIDENTIAL (MAX 6' OC)	36"	 3" MIN. LAG PENETRATION 3-1/2" LAG SCREWS, PART #7277	 3-3/4" MIN. LAG PENETRATION 4-1/2" LAG SCREWS, PART #6565
	39"-42"	 3-1/4" MIN. LAG PENETRATION 3-1/2" LAG SCREWS, PART #7277	 4-1/4" MIN. LAG PENETRATION 4-1/2" LAG SCREWS, PART #6565
COMMERCIAL (MAX 5' OC)	42"	 4" MIN. LAG PENETRATION 4-1/2" LAG SCREWS, PART #6565	 5" MIN. LAG PENETRATION 6" LAG SCREWS, PART #7278

DesignRail® Detail Drawing:

FASCIA BRACKET MOUNT WITH LAG SCREWS

DATE:	11/21/17
PAGE:	1 OF 1
REV:	09/09/21 - JTC
BY:	JTC
CHK:	BWA

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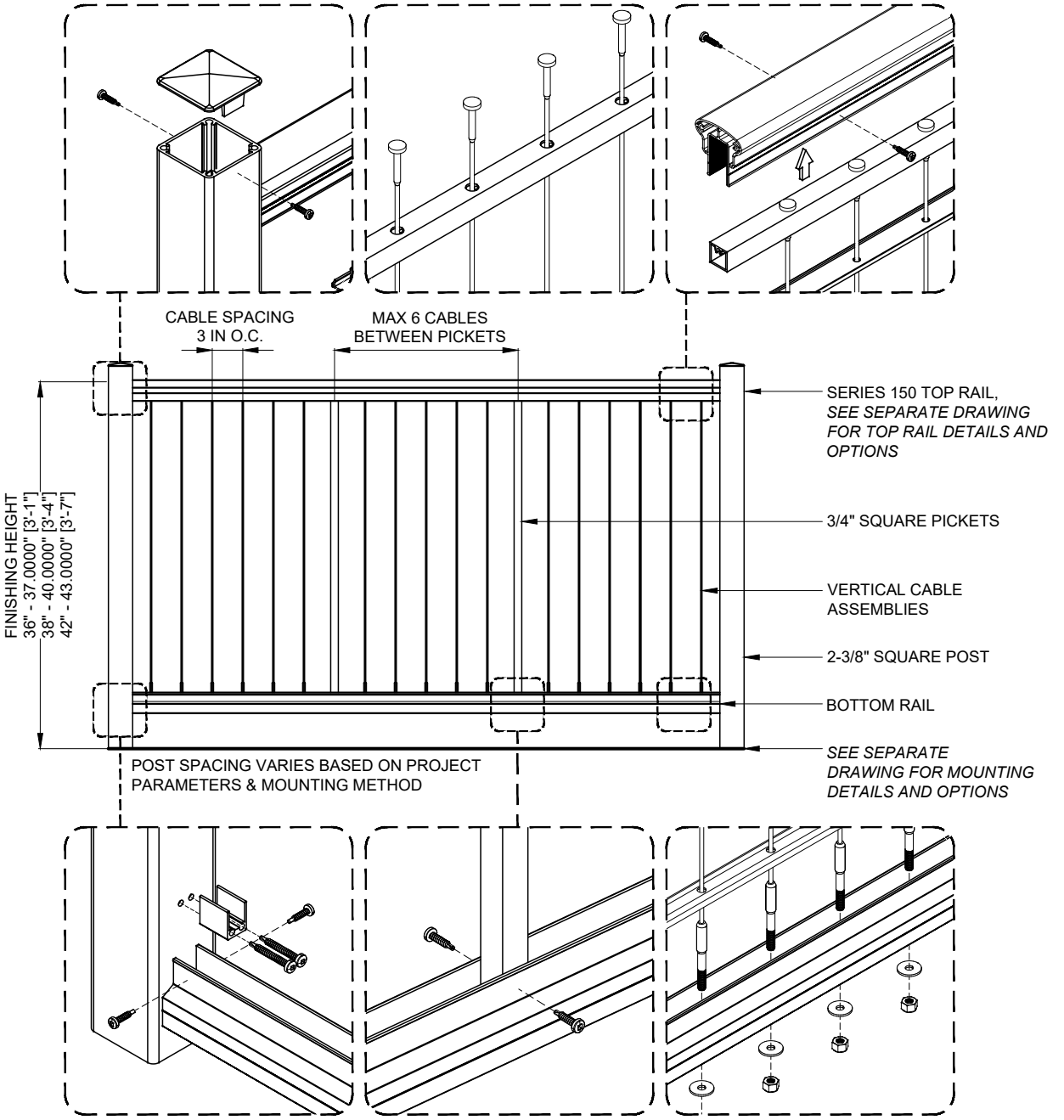

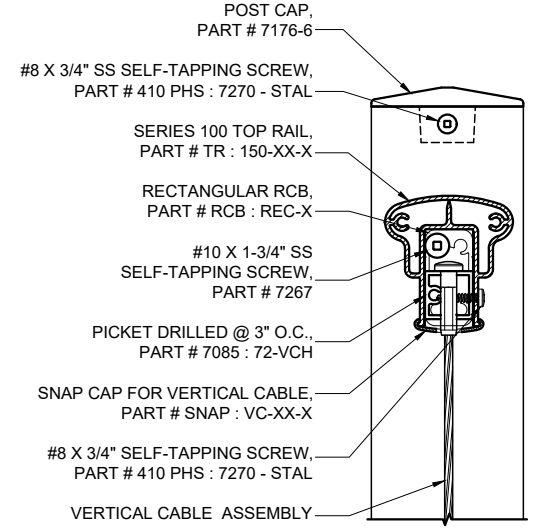

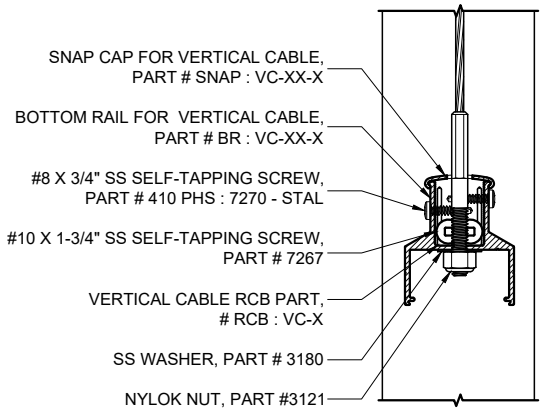

	PICKETS	CABLES
36"	7085 : 36-VC450	6036-VC
39"	7085 : 39-VC450	6039-VC
42"	7085 : 42-VC450	6042-VC

DesignRail® Detail Drawing:

VERTICAL CABLERAIL INFILL FOR SERIES 150

DATE:	12/08/2018
PAGE:	1 OF 1
REV:	05/23/2022 - BWA
BY:	JTC
CHK:	BWA

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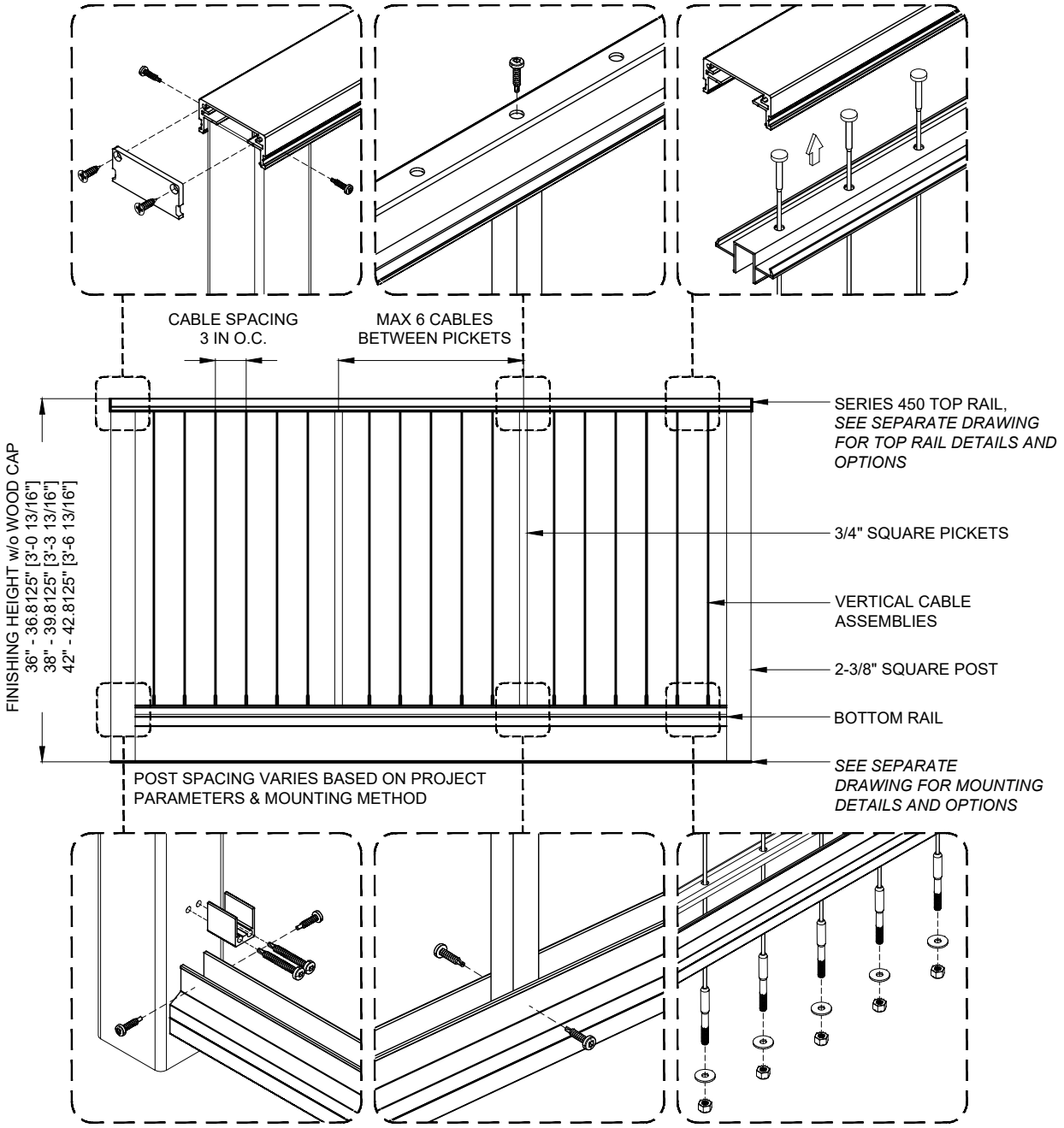

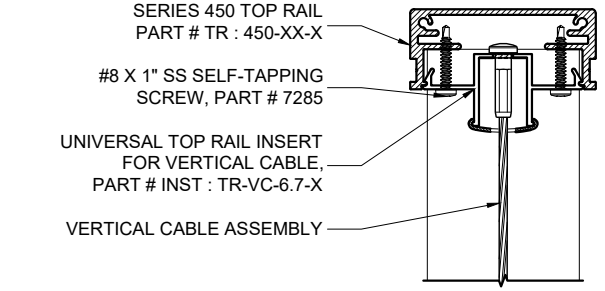

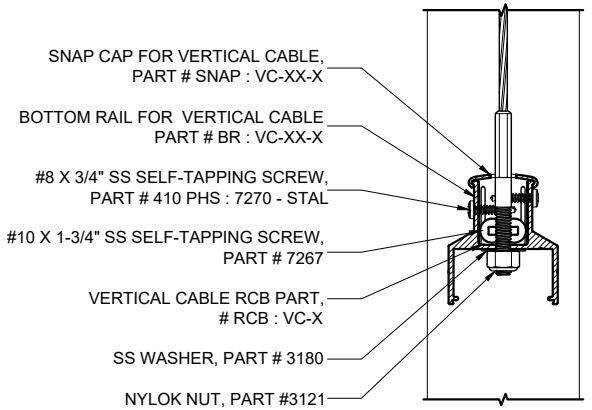

	PICKETS	CABLES
36"	7085 : 36-VC450	6436-VC
39"	7085 : 39-VC450	6439-VC
42"	7085 : 42-VC450	6442-VC

DesignRail® Detail Drawing:

VERTICAL CABLERAIL INFILL FOR 450 SERIES

DATE:	12/08/2017
PAGE:	1 OF 1
REV:	08/31/2021 - NAS
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