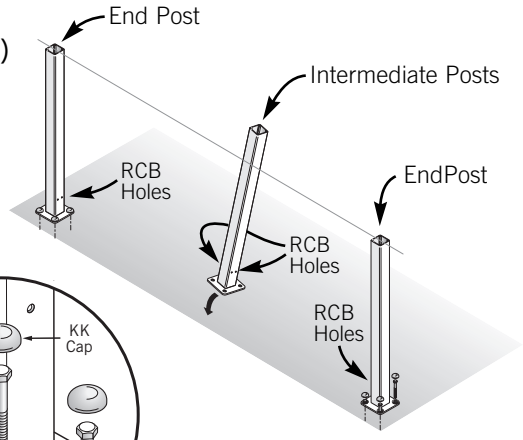
Picket Systems

DesignRail®

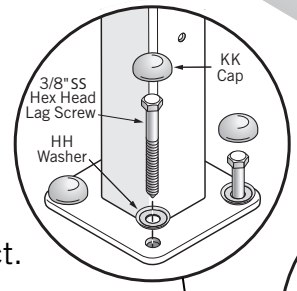
1) Check Contents Of Packages: Verify that all parts have arrived and that they match the packing list.

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

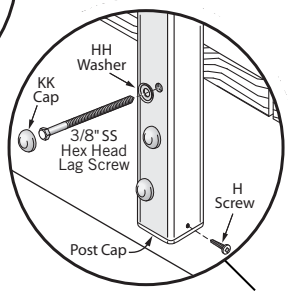
- End posts – RCB holes on one side only.
- Intermediate posts – RCB holes on opposite sides.
- Single corner posts – RCB holes on adjacent sides.



3) Anchor Posts: Position and fasten all posts. The sides of the posts with RCB holes should be facing the adjacent post(s). Be sure that the posts are plumb, in-line with one another, and spaced a **maximum** of five feet apart. 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. Expansion anchors can be supplied for concrete base.



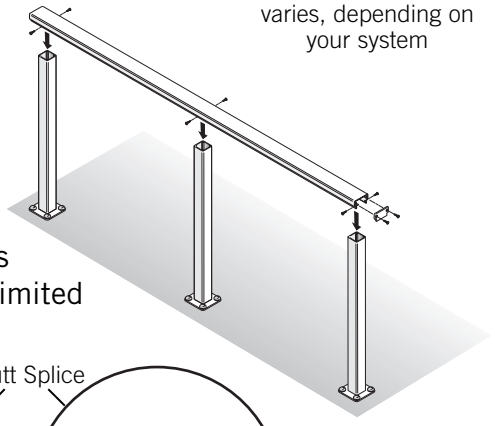
Base Mounting



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

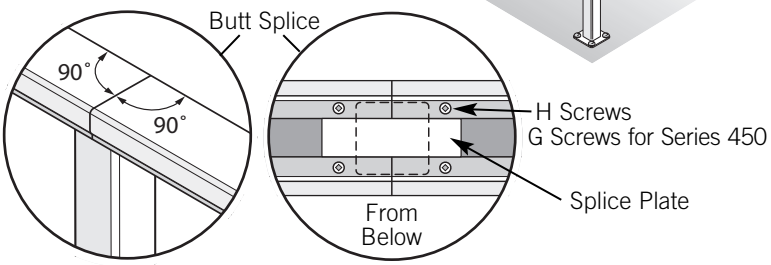
- Base mounting: anchor each post using provided hardware (see detailed sheet included in your order) with retaining washers and large plastic caps.
- Fascia mounting: anchor each post using provided hardware with retaining washers and large plastic caps. Cover bottom of each post with an post cap; pre-drill post & screw an H screw through the side of the post to secure the post cap.

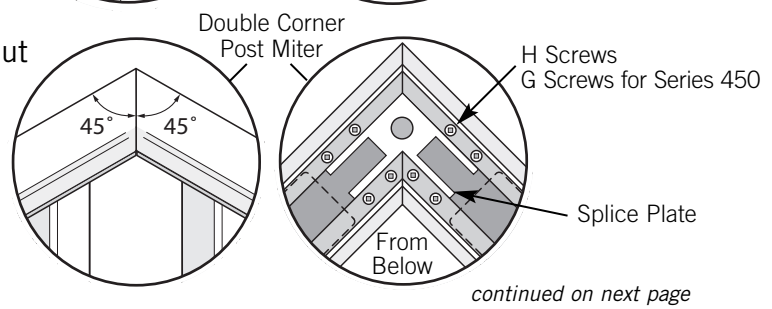
If you are mounting posts using the stanchion mount or fascia bracket mount methods, please call for additional installation details.



4) Cut & Attach Top Rails: Cut the top rail to length and then snap it into position on top of the posts. Be sure to attach decorative end caps (see step 6) to any ends that terminate 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 the joint.
- Mitered corner 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 H screws* to secure the splice plate to the rails.

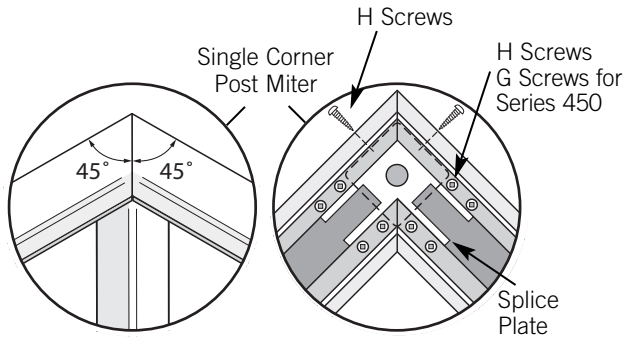




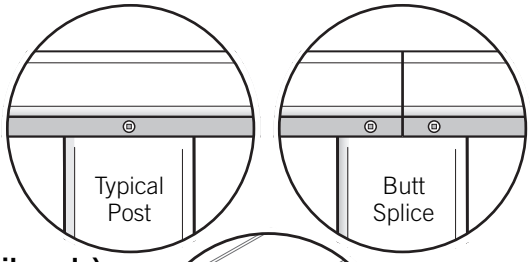
*Use shorter G screws when installing the Series 450 top rail

continued on next page

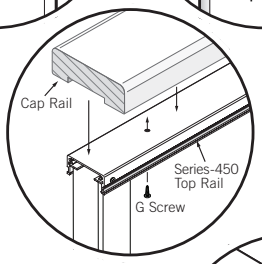
- Mitered corner joints with single corner post: cut each top rail miter at 1/2 the total corner angle (i.e. if the corner angle is 90 degrees, cut each miter at 45 degrees) Center the joint over the corner post. Add one splice plate to connect and stabilize the miter joint. Insert the plate before setting the two rail sections down of 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 top rail flange and into the post face.



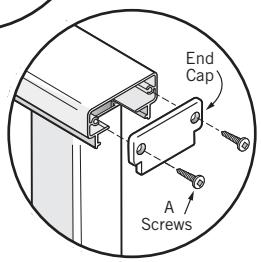
5) Fasten Top Rails: Secure the top rail to each post using two H screws (one each side); Butt splices require four screws (two each side). Screws should run through the top rail flange and into the post face.



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.

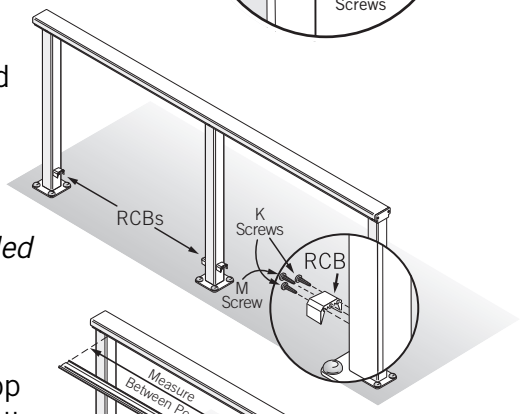


6) Attach Decorative End Caps: Attach the decorative end caps to all of the exposed top rail ends using two A screws. This applies to 200, 300, 350, and 450 Top Rail options.

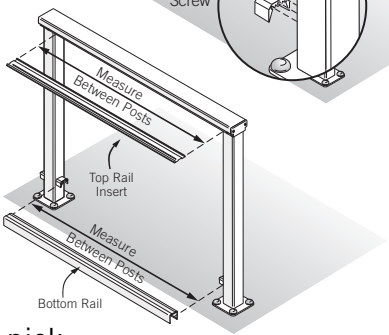


7) Attach RCBs: Locate the rail connecting bracket (RCB) holes on each post (these are pre-drilled except on stair rail posts where all the holes must be drilled in the field). Attach the RCBs to the posts using two K screws (outside holes) and one M screw (center position). The RCBs should be mounted wings down.

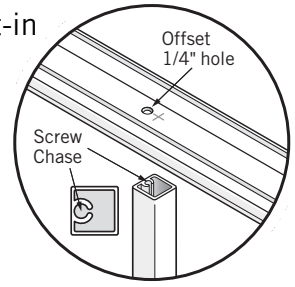
Most installations now come with the picket panel infill already assembled, which can be trimmed to fit between the posts. The following steps cover assembly of the components if you are not receiving the pre-assembled picket infill panels.



8) Measure Bottom Rails & Top Rail Insert: Measure between each set of posts just above the RCBs for the bottom rail length and just below the top rail for top infill channel length. Record these measurements for each infill section.



9) Cut Bottom Rails & Top Rail Insert: For aluminum picket systems the bottom rails and top infill channels come with picket screw holes pre-drilled. Note that it is neccesary to cut both the bottom rails and top rail insert so that when they are installed their **holes line up vertically** and the final array of pickets is **centered evenly between posts**. Additionally note that each picket has a built-in screw chase hole which is located on the inside edge of each picket, **not the center** of the picket (see diagram). Therefore, when installed, the pickets will not be centered over each hole but instead will be offset to one side by 1/4". Be sure to allow for this offset when planning your bottom rail and top rail insert cuts. Remembering the above notes, cut the top rail insert for each section no more than 1/16" shorter than your corresponding measurements from step 8.



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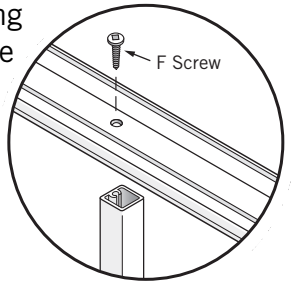
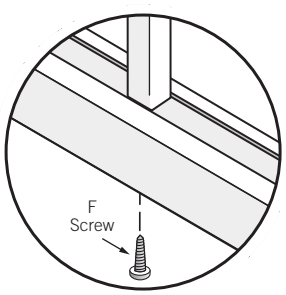
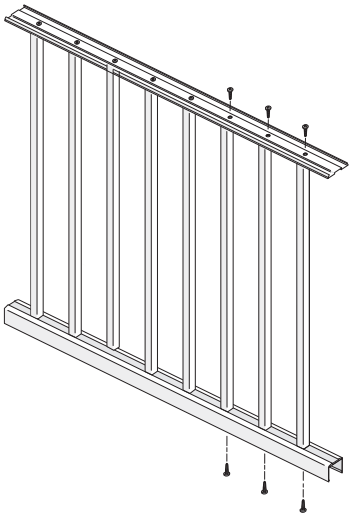
10) Assemble Picket Panels: Using the F screws, attach pickets to the top rail insert and then to the bottom rail to make up a Picket Panel for each infill section.



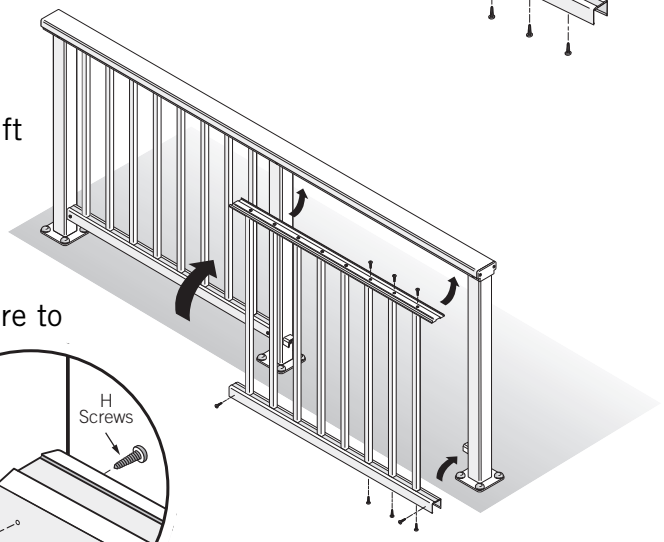
TOP RAIL INSERT ATTACHMENT

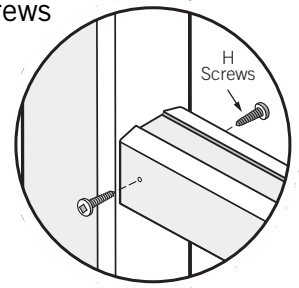


BOTTOM RAIL ATTACHMENT



11) Install Assembled Picket Panels: Lift the completed picket panels (assembled top rail insert, bottom rail & pickets) into position on the frame by first tilting-in the bottom rail on top of the RCBs and then rotating the top of the picket panel inward. The top of the panel should just clear the bottom of the top rail. At this point you should be able to lift the entire panel up by the top rail insert and snap it into place inside the top rail. Use two H screws to fasten the bottom rail to each RCB. Pre-drill these holes with a 9/64" drill bit before attaching screws, as the wings of the RCBs tend to flex when pushed by the H screw. Also, be sure to slightly offset opposing screw holes so that the screws do not hit one another inside the RCB.



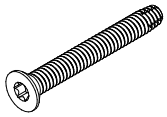


This will complete a Picket System assembly.

FLAT HEAD SCREWS

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

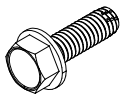
B. 7643: #10 x 1" SS SCREW, FLAT HEAD, SQUARE DRIVE



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

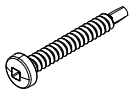
PAN HEAD SCREWS

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

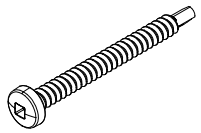
I. 7285: #8 x 1" SS SELF-TAPPING SCREW, PAN HEAD, SQUARE DRIVE



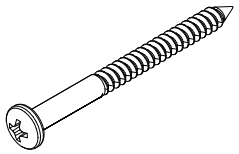
J. 7271: #10 x 1-1/2" SS SELF-TAPPING SCREW, PAN HEAD, SQUARE DRIVE

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



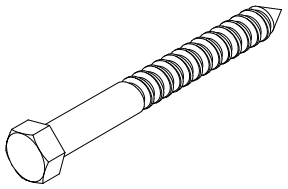
M. 7802: #12 x 2" SS SELF-TAPPING SCREW, PAN HEAD, SQUARE DRIVE



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

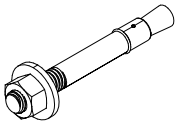
R. 7280: 3/8" x 5" LAG SCREW, HEX HEAD

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

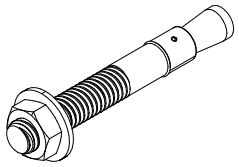
T. 7209: 3/8" x 6-1/2" LAG SCREW, HEX HEAD

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

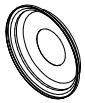
BB. 7288: 3/8" x 5" EXPANSION ANCHOR

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

WASHERS

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

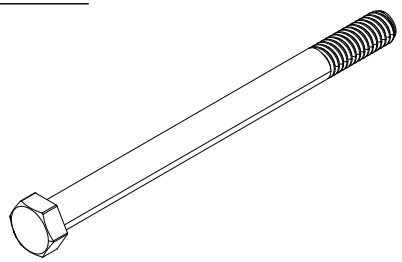
GG. 7062: 1/4" ID WASHER, FOR LARGE VINYL CAPS



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

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

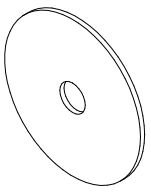
BOLTS



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)

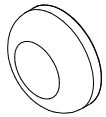


DD. 7224: 3/8" ID, 2" OD FENDER WASHER

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

CAPS

JJ. PART # VARIES: VINYL CAP (SMALL)



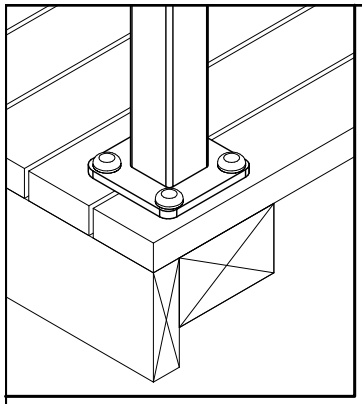
KK. PART # VARIES: VINYL CAP (LARGE)

DesignRail® Reference Drawing:

STANDARD ASSEMBLY HARDWARE

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

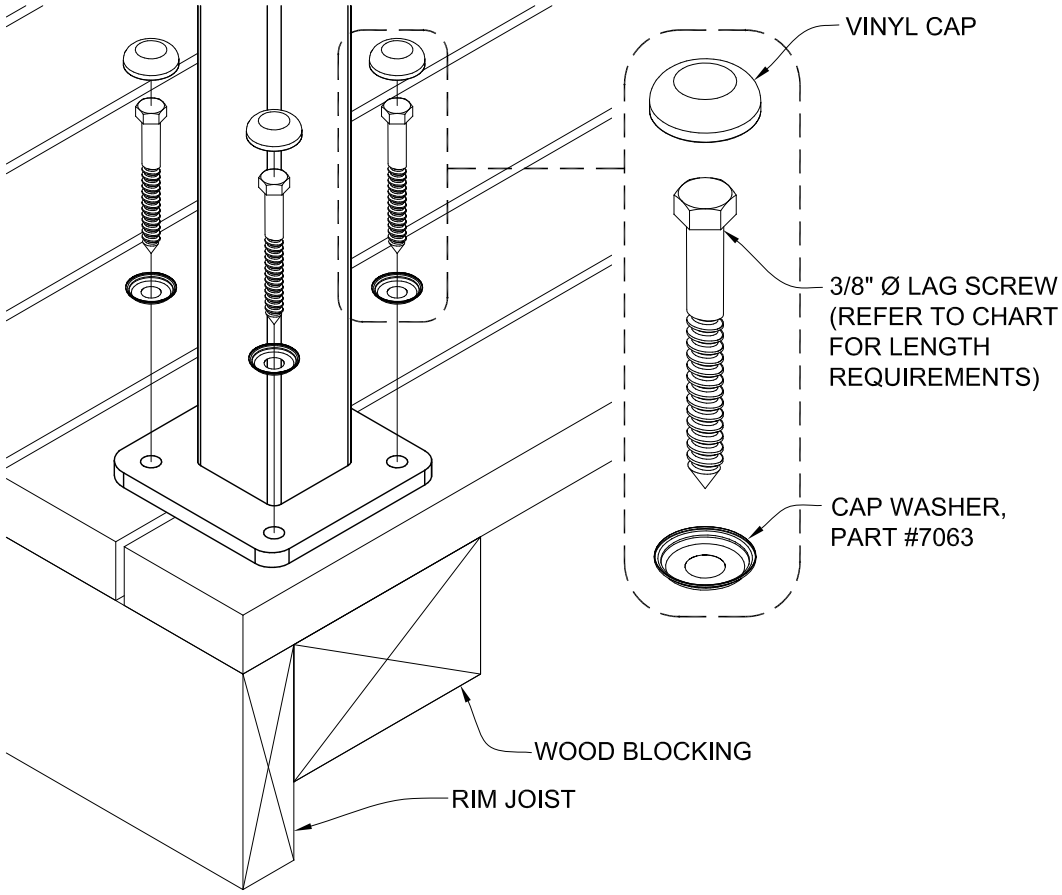
feeney
2603 Union St., Oakland, CA 94607
P: 800-888-2418 F: 510-893-9484
www.feeneyinc.com

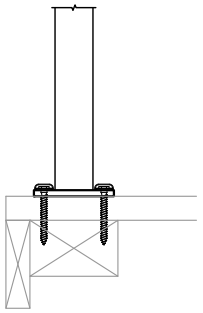
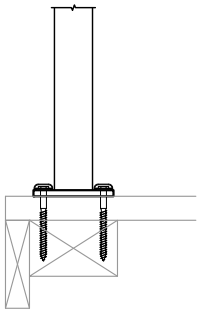
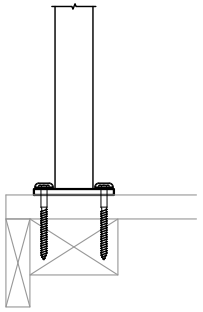
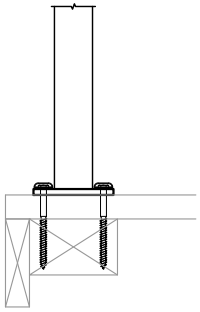
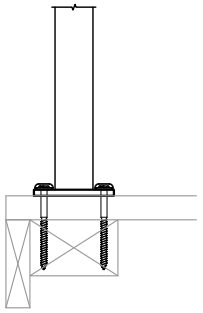
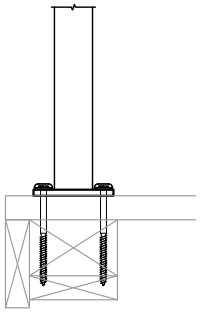


NOTES:
MINIMUM LAG PENETRATION DIMENSION, REFER TO REQUIREMENTS FOR LAG SCREW PENETRATION INTO SOLID LUMBER. LUMBER ASSUMED TO HAVE A MINIMUM 0.43 SPECIFIC GRAVITY (ie: HEM-FIR).

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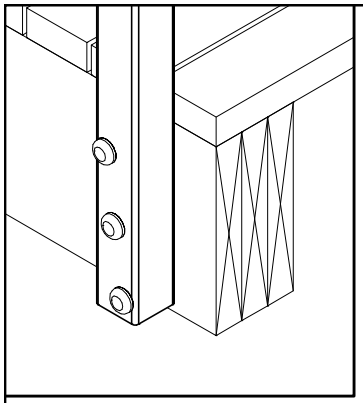
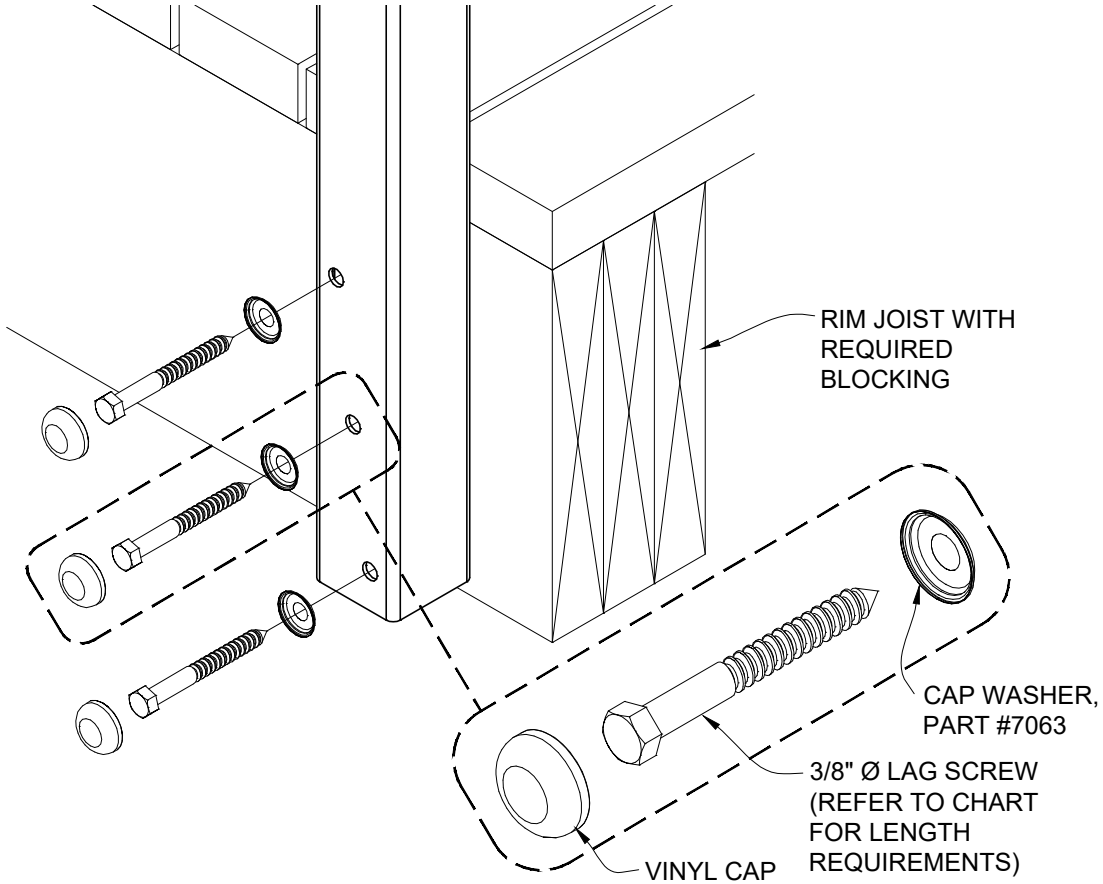


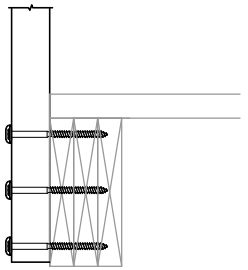
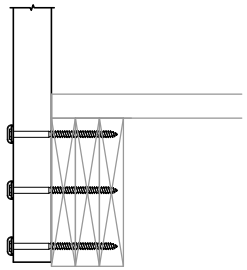
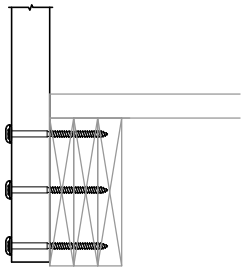
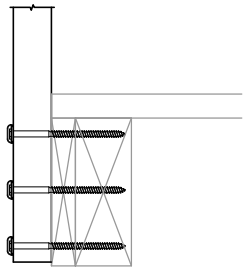
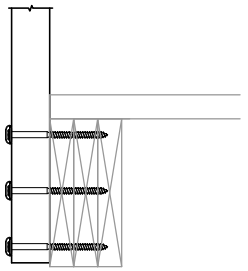
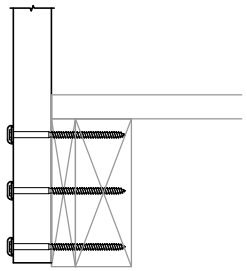
NOTES:
MINIMUM LAG PENETRATION DIMENSION, REFER TO REQUIREMENTS FOR LAG SCREW PENETRATION INTO SOLID LUMBER. LUMBER ASSUMED TO HAVE A MINIMUM 0.43 SPECIFIC GRAVITY (ie: HEM-FIR).

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

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REV:	
BY:	BWA
CHK:	

feeney
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P: 800-888-2418 F: 510-788-6041
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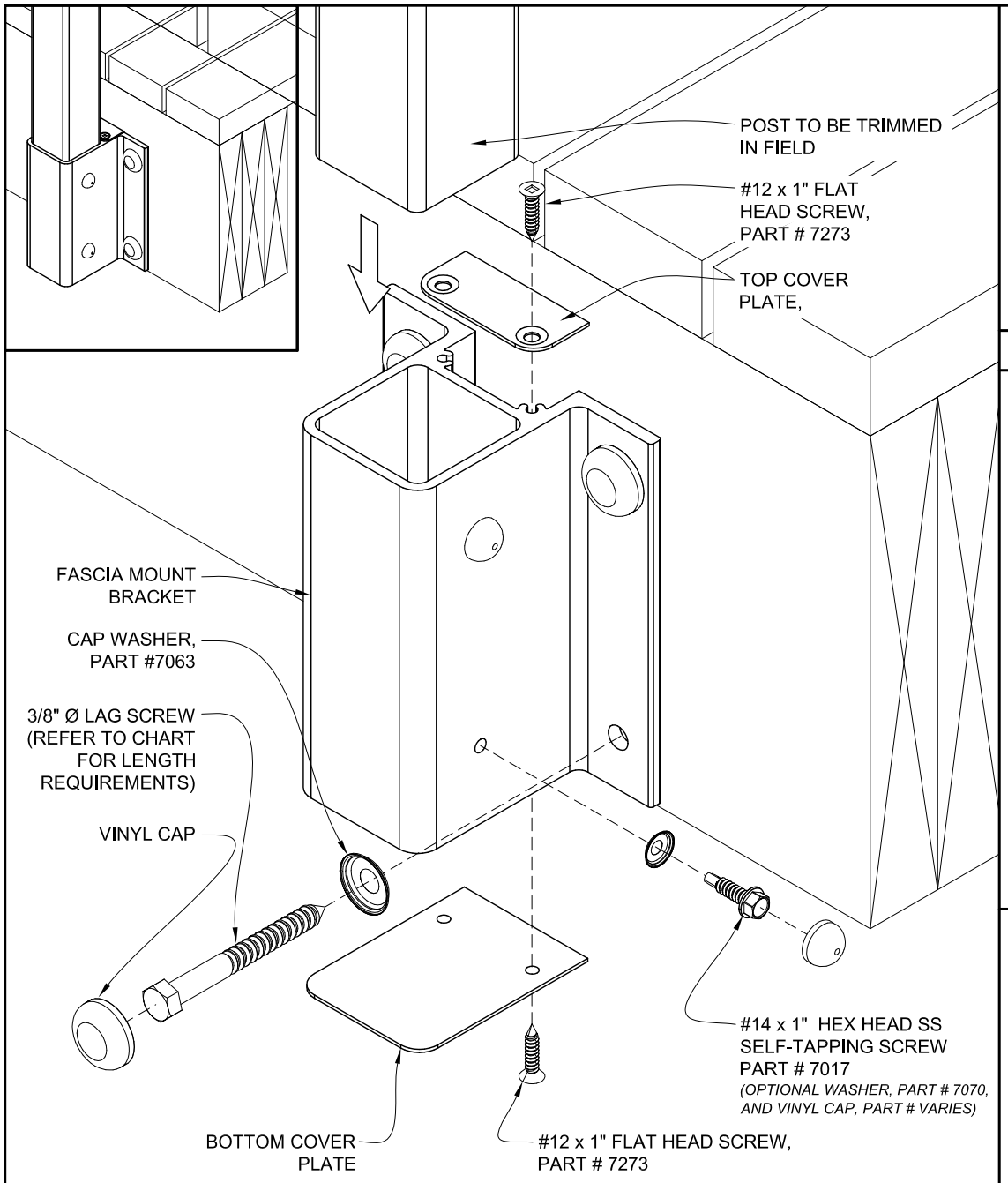

NOTES:

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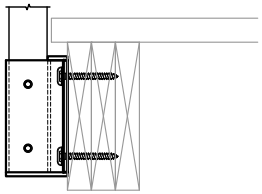
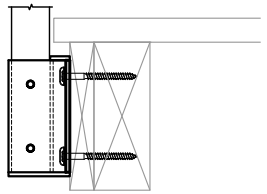
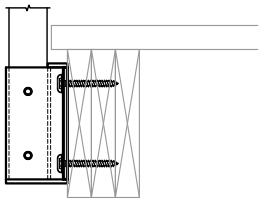
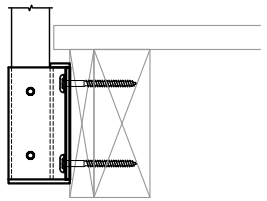
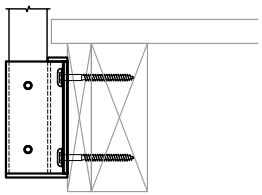
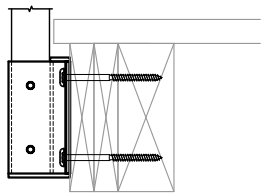
BOLT PATTERN MAY VARY DEPENDING ON JOIST HEIGHT AND PROJECT TYPE.

		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
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feeney
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P: 800-888-2418 F: 510-788-6041
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