



style &
simplicity

USA RECOMMENDED MOUNTING AND FASTENING GUIDE

Vista Railing Systems Inc

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ANCHORAGE:

Proper anchorage of guardrail posts and rails to a sound and structurally adequate supporting structure is essential for a guardrail system. These elements must be as secure and rigid as possible. A structurally adequate supporting structure is as important as the anchorage elements themselves. One without the other compromises the load carrying capacity and performance of the guardrail system. Building designers and general contractors must be made aware of their responsibility to provide for proper support conditions since this is beyond the normal scope and control of the guardrail system designer and installer.

The anchorage and supporting structure for each post must be designed to carry the applied loads and their associated overturning moments at the post base. These loads comprise of shear, tension and compression forces which must be resisted. Figure 3 indicates some common and approved post base connections.

The anchorage and supporting structure of each top (and bottom) rail to base building components (wall, column, etc) connection must be designed to carry the applied loads transferred from the top and bottom rail. The connection is assumed to provide pivot support with no flexural resistance. Shear loads and, depending upon the system configuration, pullout loads must be resisted. Figure 3 indicates some common and approved top and bottom rail to base building component connections.

IMPORTANT:

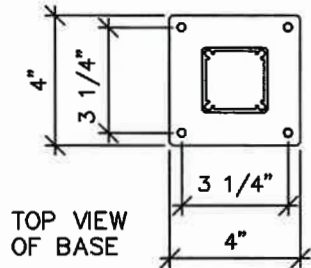
Proper layout, design and installation of a deck railing are critical to the performance and strength of the deck railing. Failure to comply with proper layout, design and installation of a deck railing could result in serious injury or loss of life. This document is intended as a guide for designers, architects, engineers, and professional installers. If additional clarification is required, please consult a professional engineer to evaluate your specific circumstances, prior to starting your residential single-family deck railing project.



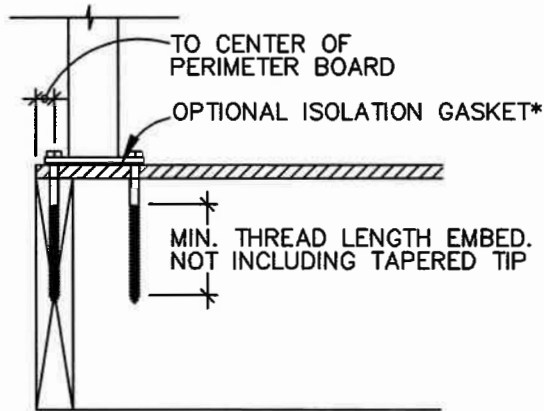
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RECOMMENDED MOUNTING AND FASTENING TO WOOD

NO.1/NO.2 OR BETTER WOOD BLOCKING ANCHORAGE TO MAIN STRUCTURE AND MAIN STRUCTURE LOAD CAPACITY RESPONSIBILITY OF OTHERS



*OPTIONAL CLOSED CELL ISOLATION GASKET BETWEEN DISSIMILAR OR INCOMPATIBLE MATERIALS.
 (NOT INTENDED AS A WATER PROOFING ITEM)



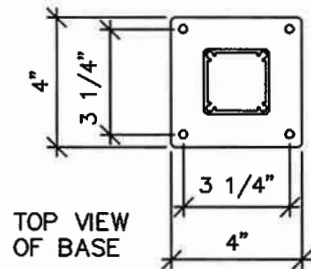
POST SIZE	LAG SCREW DIAMETER	WOOD BLOCKING SPECIES	MIN THREAD LENGTH EMBEDMENT
2"	5/16"	DOUGLAS FIR	3"
		SPRUCE-PINE-FIR	3 1/2"
	3/8"	DOUGLAS FIR	2 1/2"
		SPRUCE-PINE-FIR	3"
2 1/2"	5/16"	DOUGLAS FIR	4"
		SPRUCE-PINE-FIR	4 1/2"
	3/8"	DOUGLAS FIR	3 1/2"
		SPRUCE-PINE-FIR	4"

ALL LAGS SCREWS TO BE SET IN No.1/No.2 OR BETTER WOOD BLOCKING



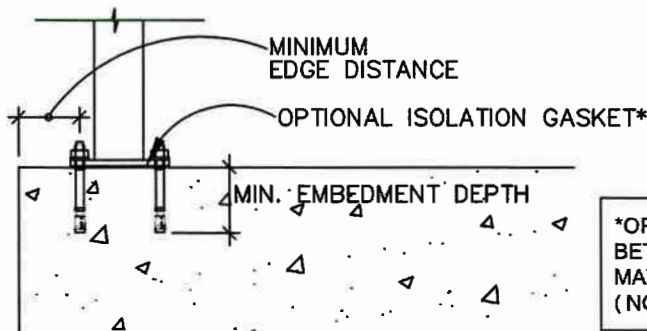
RECOMMENDED MOUNTING AND FASTENING TO CONCRETE

MAIN STRUCTURE LOAD CAPACITY RESPONSIBILITY OF OTHERS



POST SIZE	MIN. CONCRETE COMPRESSIVE STRENGTH	FASTENER TYPE	MIN. EDGE DISTANCE	MIN. EMBEDMENT DEPTH
2"	4000 psi (27.6 MPa)	3/8"Ø HILTI KWIK BOLT 3 EXPANSION ANCHOR	2 1/2"	2 1/2"
2 1/2"	4000 psi (27.6 MPa)	3/8"Ø HILTI KWIK BOLT 3 EXPANSION ANCHOR	3 3/4"	3 1/2"

CONCRETE ANCHORS WITH EQUIVALENT OR BETTER ALLOWABLE TENSION AND SHEAR LOADS CAN BE SUBSTITUTED.



*OPTIONAL CLOSED CELL ISOLATION GASKET BETWEEN DISSIMILAR OR INCOMPATIBLE MATERIALS.
 (NOT INTENDED AS A WATER PROOFING ITEM)

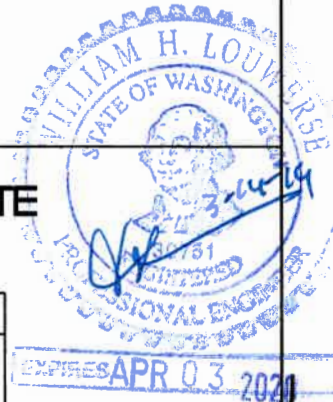


FIGURE 3: ACCEPTABLE GUARDRAIL MOUNTING CONFIGURATIONS

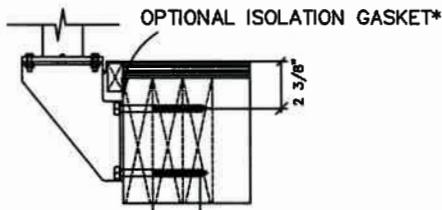
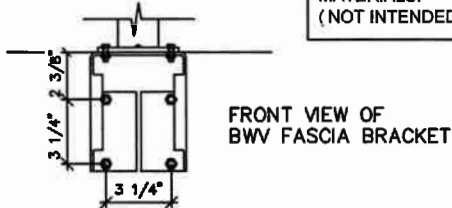


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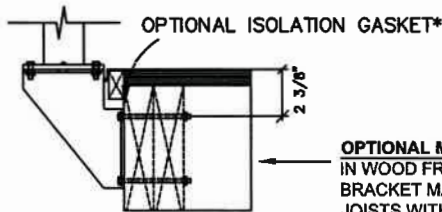
FASCIA (SIDE) MOUNTING DETAILS RECOMMENDED MOUNTING AND FASTENING TO WOOD

NO.1/NO.2 OR BETTER WOOD BLOCKING ANCHORAGE TO MAIN STRUCTURE AND MAIN STRUCTURE LOAD CAPACITY RESPONSIBILITY OF OTHERS

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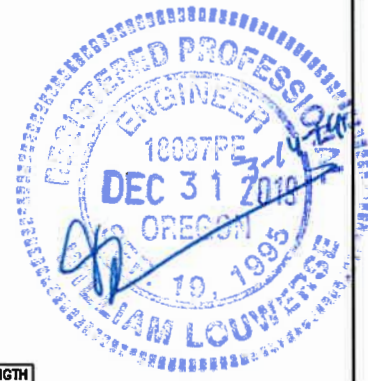
MIN. THREAD LENGTH EMBEDMENT NOT INCLUDING TAPERED TIP



OPTIONAL MOUNTING METHOD:
 IN WOOD FRAMING APPLICATIONS ALSO FASCIA BRACKET MAY ALSO BE ATTACHED TO THE RIM JOISTS WITH THRU BOLTS AS INDICATED.

POST SIZE	LAG SCREW DIAMETER	WOOD BLOCKING SPECIES	MIN THREAD LENGTH EMBEDMENT
2"	5/16"	DOUGLAS FIR	3"
		SPRUCE-PINE-FIR	3 1/2"
	3/8"	DOUGLAS FIR	2 1/2"
		SPRUCE-PINE-FIR	3"
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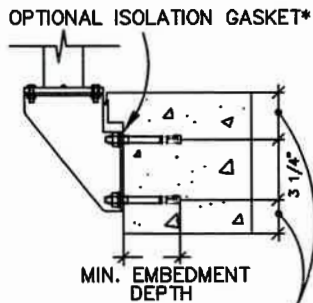
ALL LAGS SCREWS TO BE SET IN NO.1/NO.2 OR BETTER WOOD BLOCKING



FASCIA (SIDE) MOUNTING DETAILS RECOMMENDED MOUNTING AND FASTENING TO CONCRETE

MAIN STRUCTURE LOAD CAPACITY RESPONSIBILITY OF OTHERS

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2 1/2"	4000 psi (27.6 MPa)	3/8" # HILTI KWIK BOLT 3 EXPANSION ANCHOR	3 3/4"	3 1/2"

CONCRETE ANCHORS WITH EQUIVALENT OR BETTER ALLOWABLE TENSION AND SHEAR LOADS CAN BE SUBSTITUTED.



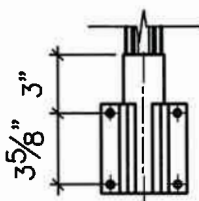
FIGURE 3: ACCEPTABLE GUARDRAIL MOUNTING CONFIGURATIONS



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FASCIA (SIDE) MOUNTING DETAILS RECOMMENDED MOUNTING AND FASTENING TO WOOD

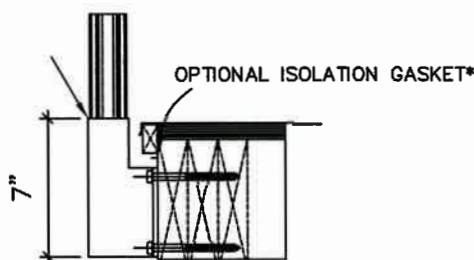
NO.1/NO.2 OR BETTER WOOD BLOCKING ANCHORAGE TO MAIN STRUCTURE AND MAIN STRUCTURE LOAD CAPACITY RESPONSIBILITY OF OTHERS



FRONT VIEW OF BWC SLIM LINE FASCIA BRACKET

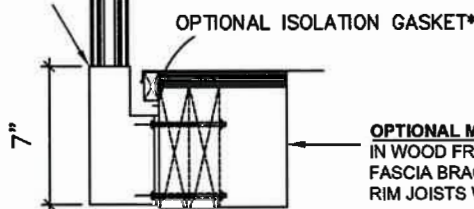
*OPTIONAL CLOSED CELL ISOLATION GASKET BETWEEN DISSIMILAR OR INCOMPATIBLE MATERIALS. (NOT INTENDED AS A WATER PROOFING ITEM)

MOUNTING METHOD:
Ensure the top of the Slim Line Fascia Bracket is 1/4" above the top of the deck surface so that railing height is maintained.



MIN. THREAD LENGTH EMBEDMENT NOT INCLUDING TAPERED TIP

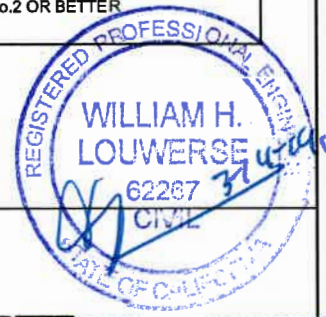
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Ensure the top of the Slim Line Fascia Bracket is 1/4" above the top of the deck surface so that railing height is maintained.



OPTIONAL MOUNTING METHOD: IN WOOD FRAMING APPLICATIONS BWC SLIM LINE FASCIA BRACKET MAY ALSO BE ATTACHED TO THE RIM JOISTS WITH THRU BOLTS AS INDICATED.

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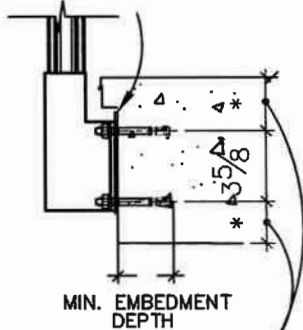


FASCIA (SIDE) MOUNTING DETAILS RECOMMENDED MOUNTING AND FASTENING TO CONCRETE

MAIN STRUCTURE LOAD CAPACITY RESPONSIBILITY OF OTHERS



OPTIONAL ISOLATION GASKET*



MIN. EMBEDMENT DEPTH

MIN. EDGE DISTANCE

POST SIZE	MIN. CONCRETE COMPRESSIVE STRENGTH	FASTENER TYPE	MIN. EDGE DISTANCE	MIN. EMBEDMENT DEPTH
2"	4000 psi (27.6 MPa)	3/8" HILTI KWIK BOLT 3 EXPANSION ANCHOR	2 1/2"	3 1/2"
2 1/2"	4000 psi (27.6 MPa)	3/8" HILTI KWIK BOLT 3 EXPANSION ANCHOR	3 3/4"	3 1/2"

CONCRETE ANCHORS WITH EQUIVALENT OR BETTER ALLOWABLE TENSION AND SHEAR LOADS CAN BE SUBSTITUTED.

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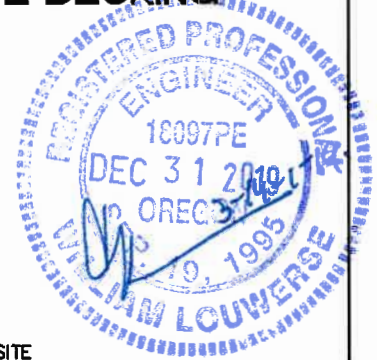
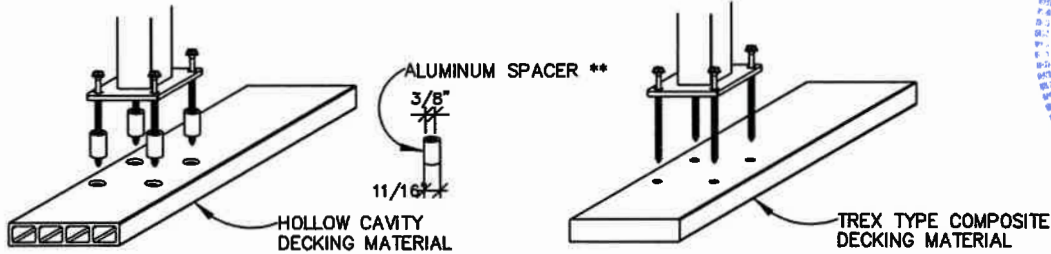


FIGURE 3: ACCEPTABLE GUARDRAIL MOUNTING CONFIGURATIONS

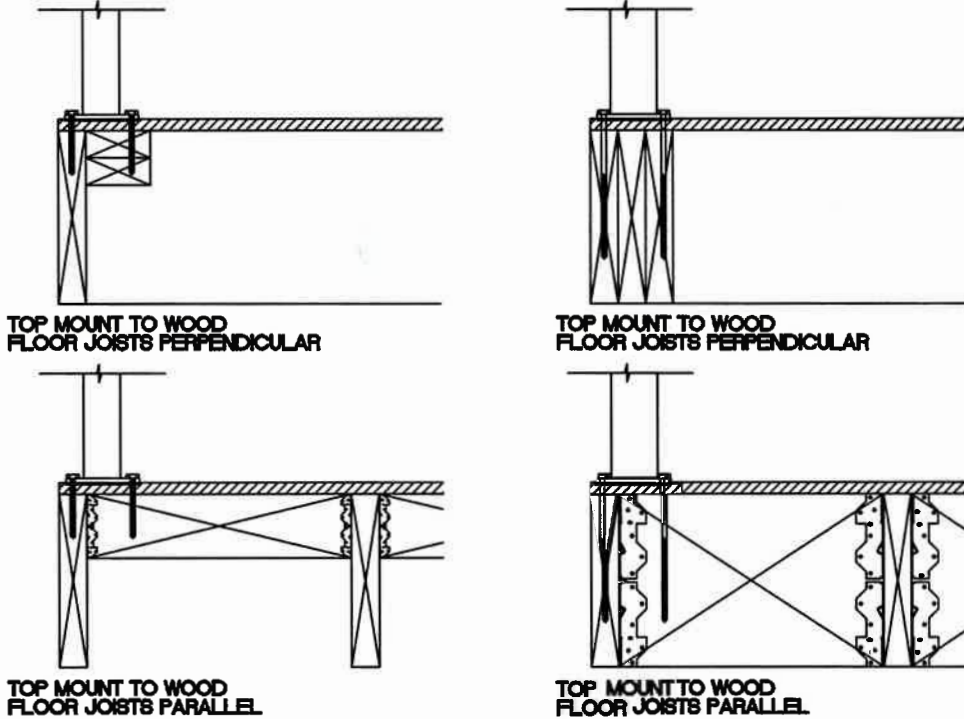


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RECOMMENDED MOUNTING THROUGH COMPOSITE DECKING



RECOMMENDED WOOD BLOCKING DETAILS

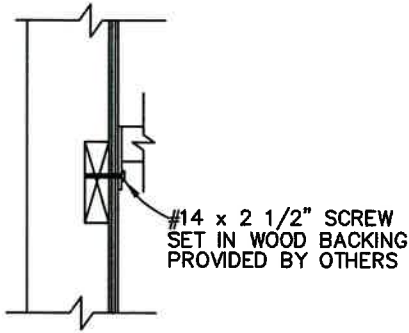


NO.1/NO.2 OR BETTER WOOD BLOCKING ANCHORAGE TO MAIN STRUCTURE AND MAIN STRUCTURE LOAD CAPACITY RESPONSIBILITY OF OTHERS

FIGURE 3continued: ACCEPTABLE GUARDRAIL MOUNTING CONFIGURATIONS



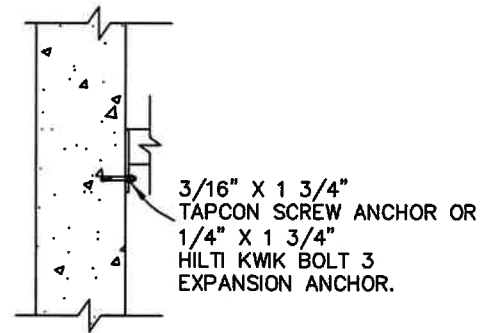
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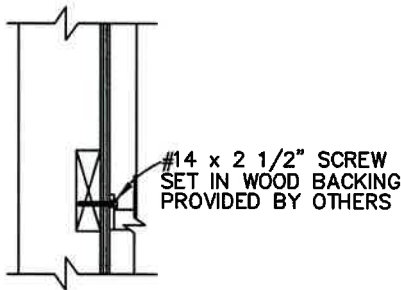
**TOP RAIL
 MOUNT TO WOOD**



**TOP RAIL
 END CLIP**



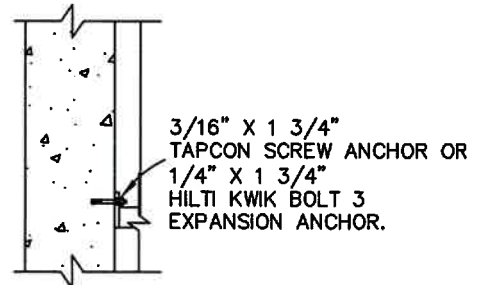
**TOP RAIL
 MOUNT TO CONCRETE**



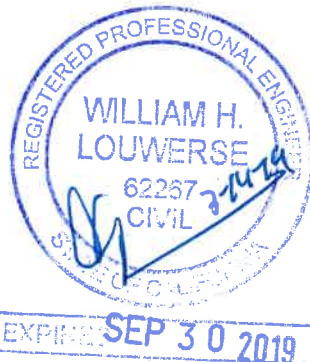
**BOTTOM RAIL
 MOUNT TO WOOD**



**BOTTOM RAIL
 END CLIP**



**BOTTOM RAIL
 MOUNT TO CONCRETE**



NO.1/NO.2 OR BETTER WOOD BLOCKING ANCHORAGE TO MAIN STRUCTURE
 AND MAIN STRUCTURE LOAD CAPACITY RESPONSIBILITY OF OTHERS

FIGURE 3continued: ACCEPTABLE GUARDRAIL MOUNTING CONFIGURATIONS

POST LEGEND	
■	2" POST
⊠	2 1/2" POST
▨	TOP RAIL END CLIP TO STRUCTURE

TYPE 1 – FREE-STANDING

TYPE 1A – END CONDITIONS – 2" POST EACH END
 INTERMEDIATE CONDITIONS – 2" POSTS EVENLY SPACED

TYPE 1B – END CONDITIONS – 2 1/2" POST EACH END
 INTERMEDIATE CONDITIONS – 2" POSTS EVENLY SPACED

TYPE 1C – END CONDITIONS – 2 1/2" POST EACH END
 INTERMEDIATE CONDITIONS – 2 1/2" POSTS EVENLY SPACED

TYPE 2 – PARTIAL FIXED ONE END

TYPE 2 – END CONDITIONS – 45° CORNER w/ MIN 2-2" POSTS & 2" POST OPPOSITE END
 INTERMEDIATE CONDITIONS – 2" POSTS EVENLY SPACED

TYPE 3 – FIXED ONE END

TYPE 3A – END CONDITIONS – TOP RAIL END CLIP TO STRUCTURE OR 90° CORNER w/ MIN 2-2" POSTS & 2" POST OPPOSITE END
 INTERMEDIATE CONDITIONS – 2" POSTS EVENLY SPACED

TYPE 3B – END CONDITIONS – TOP RAIL END CLIP TO STRUCTURE OR 90° CORNER w/ MIN 2-2" POSTS & 2 1/2" POST OPPOSITE END
 INTERMEDIATE CONDITIONS – 2" POSTS EVENLY SPACED

TYPE 4 – PARTIAL FIXED BOTH ENDS

TYPE 4 – END CONDITIONS – 45° CORNERS w/ MIN 2-2" POSTS
 INTERMEDIATE CONDITIONS – 2" POSTS EVENLY SPACED

TYPE 5 – FIXED & PARTIAL FIXED ENDS

TYPE 5 – END CONDITIONS – TOP RAIL END CLIP TO STRUCTURE OR 90° CORNERS w/ MIN 2-2" POSTS & 45° CORNER w/ MIN 2-2" POSTS
 INTERMEDIATE CONDITIONS – 2" POSTS EVENLY SPACED

TYPE 6 – FIXED BOTH ENDS

TYPE 6 – END CONDITIONS – TOP RAIL END CLIPS TO STRUCTURE OR 90° CORNERS w/ MIN 2-2" POSTS
 INTERMEDIATE CONDITIONS – 2" POSTS EVENLY SPACED



FIGURE 4: GUARDRAIL MOUNTING CONFIGURATIONS