PEAK® RailBlazers®
ALUMINUM RAILING

Report of:

Anchoring to wood and concrete

- 2019 Alberta Building Code - Part 9
- 2018 British Columbia Building Code - Part 9
- 2020 National Building Code of Canada - Part 9
- 2012 Ontario Building Code - Part 9

WARNING No representation or warranty is given that your particular application of these products complies with relevant building codes or that the fasteners provided or used are appropriate for your application. Therefore consult with professionals and local building officials before beginning work: (i) to ensure compliance with relevant building codes for your application and for your proposed use of fasteners; (ii) to ensure the integrity of the structural components in connection with which these products are to be used; (iii) to identify appropriate safety gear that is to be used during installation such as a safety harness when working above ground; (iv) to ensure that the work area is free from utilities, services and hazards; and, (v) to clarify any instructions or warnings that may not be clear. Work in a safe manner wearing protective gear such as gloves, eyewear, headwear, footwear and clothing. When using tools always comply with operation manuals and instructions. Metal and glass may have sharp edges and could fragment or splinter during or as a result of handling or cutting. Do not use these products in connection with any substance that is or may be harmful or corrosive to the products. Inspect and maintain these products and the structural components that they are used in connection with on a regular basis using professionals when appropriate. These instructions have been prepared for certain standard residential applications. Obtain professional advice for any non-standard or non-residential application.

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Peak Products Manufacturing Inc.
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Peak® RailBlazers® Aluminum Railing
Anchorage of Railing Components to Structures

Engineering Review for Compliance with
Division B Part 9 – Housing and Small Buildings
(1 and 2 Dwelling Units, except where noted)
of the Following Codes

2019 Alberta Building Code
2018 British Columbia Building Code
2020 National Building Code of Canada
2012 (with Amendments to 2022) Ontario Building Code

Apr 25, 2023

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Purpose and Scope

Peak Products Manufacturing Inc. (Peak) manufactures the Peak® RailBlazers® Aluminum Railing system and components for use at edges of decks, stairs and landings.

This report by L.H. Schwindt & Company Inc. (LHS) confirms the adequacy of attachment to structures, of railing components listed in the following table when attached using the specified fasteners.

Item	Component	Structure	Specified Fasteners
A	Post Base	Wood	Self-Drilling Wood Screw Selection
B	Post Base	Concrete	Concrete Anchor Selection
C	Fascia Bracket	Wood	Lag Screw
D	Wall Bracket (at deck rail perpendicular termination)	Wood Concrete	Screw selection for wood structure; Anchor selection for concrete structure
E	Handrail Bracket	Concrete	Concrete Anchor Selection

Limitations

1. The findings of this evaluation are applicable only for use with specified components of Peak® RailBlazers® Aluminum Railing and Peak® RailBlazers® Continuous Handrail.
2. Adequacy of railing component designs has been established by Peak, independently of this evaluation.
3. Railing configuration and other non-structural matters must be established by others, to be in accordance with local building regulations.
4. Materials and construction for decks, stairs and landings are subject to design, permitting, and inspection in accordance with local codes and regulations, and are not within Peak's or LHS's responsibility.
5. Any structures supporting railings must be part of an assembly with sufficient overall strength and stability to resist all applied loads, including forces from railings.
6. Local authorities may require proposed installations to be evaluated by a locally licensed engineer.
7. This review was based on independent testing of two different types of self-drilling wood screws, on engineering assessment of concrete anchor manufacturers' data, and on assumed good construction practice. Product and assembly testing were not in the scope of this review.
8. Specified fasteners are to be used only in accordance with manufacturer's instructions.
9. Any variances from the assumptions stated herein may affect adequacy of anchorage, and are not evaluated within the scope of this report.

Applicable Codes

This review was conducted with respect to the requirements of Division B Part 9 – Housing and Small Buildings (1- and 2-dwelling units for Items A, B, C, & D; 1-dwelling unit for Item E only), in the following codes.

- 2019 Alberta Building Code
- 2018 British Columbia Building Code
- 2020 National Building Code of Canada
- 2012 (with Amendments to 2022) Ontario Building Code

In the 2020 National Building Code of Canada, sentence 9.8.8.1. 1) requires guards at edges of areas "…including but not limited to *flights* of steps and *ramps*, exterior landings, porches, balconies, *mezzanines*, galleries and raised *walkways*", and the other applicable codes have similar wording. Where this report refers to decks, stairs, or landings, the findings may be considered applicable to the other structure types listed in the codes.

Components and Assembly – General Description

The Peak® RailBlazers® Aluminum Railing post is manufactured from aluminum extrusion and is equipped with an aluminum Post Base with 4 holes for anchorage. The reader is referred to appended Peak drawings for the post mounting template.

Post Bases are to be anchored to the horizontal top surface of a deck, stair or landing structure, using fasteners suited to the structure material and subject to the following descriptions and the appended drawings.

Fascia Brackets are designed to support the posts in an out-board location. Fascia Brackets are to be mounted to vertical faces of wood decks, stairs and landings.

Wall Brackets are designed to secure the ends of Peak® RailBlazers® Aluminum Railing top and bottom rails to vertical mounting surfaces (typically walls, posts or columns), where rails will be oriented perpendicular to the mounting surfaces.

Wood-framed structures for all anchorage situations were assumed to be No. 1 or 2 or "select" Spruce-Pine-Fir, graded according to the guidelines of the National Lumber Grades Authority (NLGA). Lumber is presumed "seasoned" (moisture content not over 19%). Pressure treated materials in these categories are included. Anchorage to wood structures of any lumber with Specific Gravity less than 0.42, or manufactured or synthetic materials, or where extreme wetting or high temperatures, or sustained loading can occur, may require alternative details including increased screw thread embedment.

Peak® Railblazers® Continuous Handrail are supplied with brackets for single anchors to walls of concrete as described on the appended drawings.

Analysis

○ General Information

Guard height directly affects the magnitude of base moment transferred via the Post Bases to the structure, and of tension force applied to the fasteners. Guard height prescribed in the Applicable Codes is 1070mm (3'-6") above deck surface, corresponding to the standard guard height of Peak® RailBlazers® Aluminum Railing.

A horizontal point load of 1.0kN (225LB), applied perpendicular to a post at the prescribed guard height, causes the maximum base moment for anchorage of Post Bases or Fascia Brackets. The horizontal load may be inward or outward. Code-specified horizontal uniform and point loads applied between posts or on guard panel elements do not govern Post Base anchorage for Peak® RailBlazers® Aluminum Railing.

Post Base anchorage design was established as follows:
1. Considered applied live load; calculated resulting moment at the post base/deck surface interface;
2. Calculated pull-out force on each of two fasteners in tension;
3. Compared with available pull-out strength in N/mm (LB per inch) for the self-drilling wood screws in wood to determine screw selection and thread engagement length, or the concrete anchor capacity based on embedment depth;
4. Reviewed fastener embedment with respect to grain orientation, or anchor embedment with respect to edge distance and spacing.

For Fascia Brackets, the increased height to bracket mount was considered, the pull-out force calculated on each of three fasteners in tension at the fascia bracket/ structure interface, and the resulting tension compared to lag screw capacity.

For anchorage of Wall Brackets to wood or masonry structures, the maximum horizontal load affecting fasteners is a 1.0kN (225LB) point load applied perpendicular to the top or bottom rail of a guard assembly adjacent to a wall termination.

The maximum vertical-downward load on top rail (from 1.5kN per metre continuous load, not concurrent with horizontal load), is 2.74kN (617LB) applied via a post to a Fascia Bracket, or 1.37kN (308LB) at a Wall-Mount. Fasteners were checked for direct shear.

A Post Base - Anchorage to Wood Structure using Self-Drilling Wood Screws

Post Bases are to be secured to the top surface of a wood-framed deck (or landing or similar structure) or a stair tread using four self-drilling wood screws selected from the table in the appended drawings, installed in accordance with manufacturer's instructions and as follows.

This method was evaluated for load compliance with the Applicable Codes, on a wood-framed assembly with blocking local to the post bases, where the railing is installed parallel or perpendicular to the deck joists, at a corner, or on a stair.

The full contact area of each Post Base is to bear directly on the surfaces of deck boards or stair treads, which must be of firm sound material such as sawn lumber. If any spacer or shim is used, it must be firm, solid, support the full contact area of the post base, and be prevented from shifting out of place.

The post base installation details require sawn wood blocking assembled to deck or stair framing. Blocking lumber must be the same species group and grade as deck framing, sawn square for correct fit-up, and fastened to the deck or stair framing as required by local codes. The installer should consider location of the blocking screws with respect to the post screws, to avoid internal screw interference.

Post Base screws are to be installed vertically, perpendicular to the grain of lumber in the deck joists and blocking, and must have thread engagement with the joists or stair stringers and blocking. The calculated unfactored (service load) screw tension of 5.52kN (1,240LB) was used to determine minimum embedded thread lengths as listed in the table in the appended drawings. On stair stringers where vertical screws will penetrate at an angle to the grain, thread embedment perpendicular to grain must meet or exceed the listed value.

Self-drilling wood screws were tested for pull-out from wood and found acceptable, as identified in the appended drawings. The screws are marketed as lag screw replacements, not requiring pilot holes. They have smaller shank diameters and deeper threads than standard wood screws of the same nominal diameter, and have a flanged head with hexalobular (star-shaped) internal socket for driving. All screws at any post base should be the same selection.

Screw length selections are such that the portion of screw within non-structural deck boards or stair treads of typical thicknesses will be un-threaded.

B Post Base - Concrete Anchor Selection

Post bases are to be anchored directly to the level top surface of a concrete deck, stair, or landing, using products selected from the table in the appended drawings, installed in accordance with manufacturer's instructions. All anchors at any post base should normally be the same product.

Concrete is understood to have 28-day compressive strength at least 20MPa (3,000psi), with materials, mix design, admixtures, batching, placement, and inspection according to local codes and best practices. Cracked concrete (as defined in CSA standard A23.3) was assumed for analysis.

The Post Base is to bear directly on the concrete surface; if any spacer or shim is used, it must be firm, solid, cover the full contact area of the post base, and be prevented from shifting out of place.

The calculated unfactored (service load) screw tension of 5.22kN (1,170LB) was used to determine minimum embedment depths applicable to certain anchors, as listed in the table in the appended drawings.

C Fascia Bracket - Lag Screw Selection (wood structure only)

The Peak® RailBlazers® Aluminum Railing Fascia-Mount Bracket kits are to be secured by hex-head lag screws 3/8in dia. x 4in long, with minimum threaded length approx. 2 ¾in (6 screws for each Mid/End/Stair Fascia Mount Bracket, 4 screws for each Corner Bracket). Screw selection is based on the entire threaded length fully embedded into the wood deck structure, with only the un-threaded shank of any lag screw passing through the Fascia Bracket and any non-structural deck elements.

Fascia surfaces are to be vertical, firm solid material such as sawn lumber, and the bracket mounting area will extend from 50mm (2in) to 162mm (6 ½ in) below the deck or stair walking surface.

The Mid/End/Stair and Corner Fascia Mount Bracket installation details for wood decks require sawn wood blocking assembled to deck framing with structural fasteners. It is understood blocking will be the same material grade as deck framing and that blocking will be sawn square and accurately fitted.

Lag screws for Mid/End/Stair Fascia Mount Brackets are to penetrate into side-grain of joists and blocking. Blocking must be sufficiently thick that screws do not protrude through assemblies. Penetrations into end-grain were not considered and must not be used unless validated by a responsible engineer.

Lag screws at Corner Brackets were considered in shear, and penetration into end-grain of blocking components is permissible. Corner brackets are suitable for exterior 90º deck corners, with fasteners installed into two faces of the deck structure.

The installer must establish suitable "pilot hole" (lead-hole) diameters and depths. Lag screws will require two-stage pilot holes, one to suit the unthreaded shank and a smaller hole to ensure proper thread engagement.

The calculated unfactored (service load) screw tension of 4.56kN (1,025LB) was used to determine the required thread embedment depth for lag screws listed in the table in the appended drawings.

D Wall Bracket - Screw Selection

The Peak® RailBlazers® Aluminum Railing Wall Bracket Attachment includes stainless steel hex-head wood screws 1/4" dia. x 2" long with EPDM washers (2 screws for each rail mount). The supplied screws are suitable, subject to the following.

Mounting surfaces are to be vertical, firm sound material such as sawn lumber (structure or blocking), with wood grain oriented vertically. The installer must establish suitable "pilot hole" (lead-hole) diameter and depth. The specified attachment detail is not suitable for use over any non-structural siding such as insulation-backed wall finishes, or vinyl, metal, or wood cladding.

For mounting to concrete or masonry walls, alternate fasteners must be used as noted on the drawings.

The 1.0kN horizontal force to the railing results in a shear force of 0.5kN (113LB) per screw; the 1.37kN vertical force applies 0.69kN (154LB) per screw.

E Handrail Bracket Concrete Attachment (single dwelling unit only)

Peak RailBlazers® Continuous Handrails may be mounted directly to vertical surfaces of cast-in-place concrete structures in situations that are represented on the appended installation detail drawing.

Handrail anchor load is determined using the horizontal load of 0.9kN in any direction at the top of rail, including a cantilevered end-of-handrail. Combined moment and shear are applied to the handrail mounting base, at which overturning is resisted using the anchor in tension up to 5.96kN (1,340LB) in conjunction with the leverage of the mounting base, and shear is resisted directly by the anchor.

Concrete is understood to have 28-day compressive strength at least 20MPa (3,000psi), with materials, mix design, admixtures, batching, placement, and inspection according to local codes and good commercial practice. Anchor selections based on uncracked concrete and factor of safety (ultimate load/applied load) >= 1.5 are presented in the drawing appended.

Handrail Bracket mounting holes may require over-drilling to larger diameter to accommodate the recommended anchors.

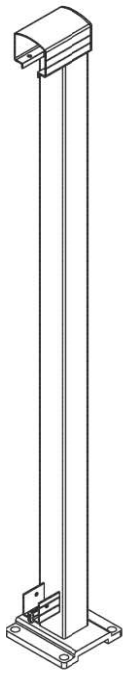
Conclusion

We found the fasteners specified in this report and appended drawings to be adequate for code compliance, in the applicable buildings and subject to the assumptions and limitations described in this report. If site-specific conditions vary from the descriptions or the appended drawings, the installer must confirm fastener selection with assistance of a professional engineer.

Regards,

L. H. SCHWINDT & COMPANY INC.

J. David Howard, P.Eng.



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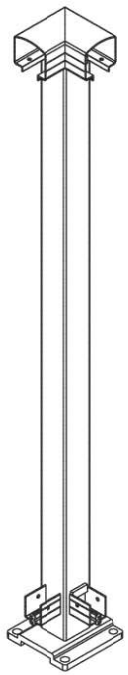

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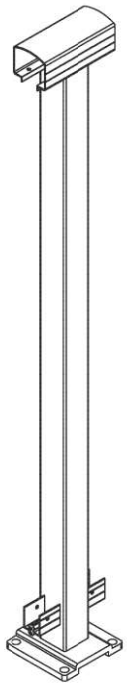

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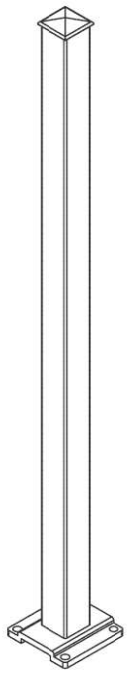

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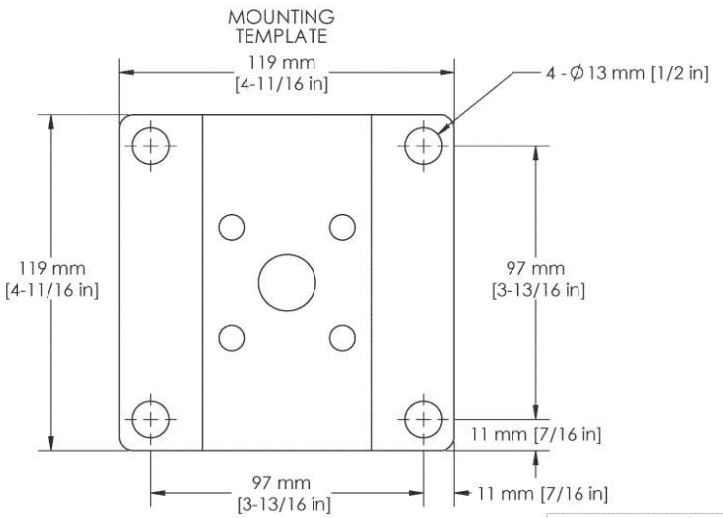
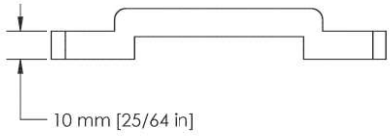




DESCRIPTION	SKU
END POST	91000, 91001
MID POST	91010, 91011
CORNER POST	91020, 91021
STAIR POST	91050, 91051

PEAK

TITLE
Peak® RailBlazers® Posts

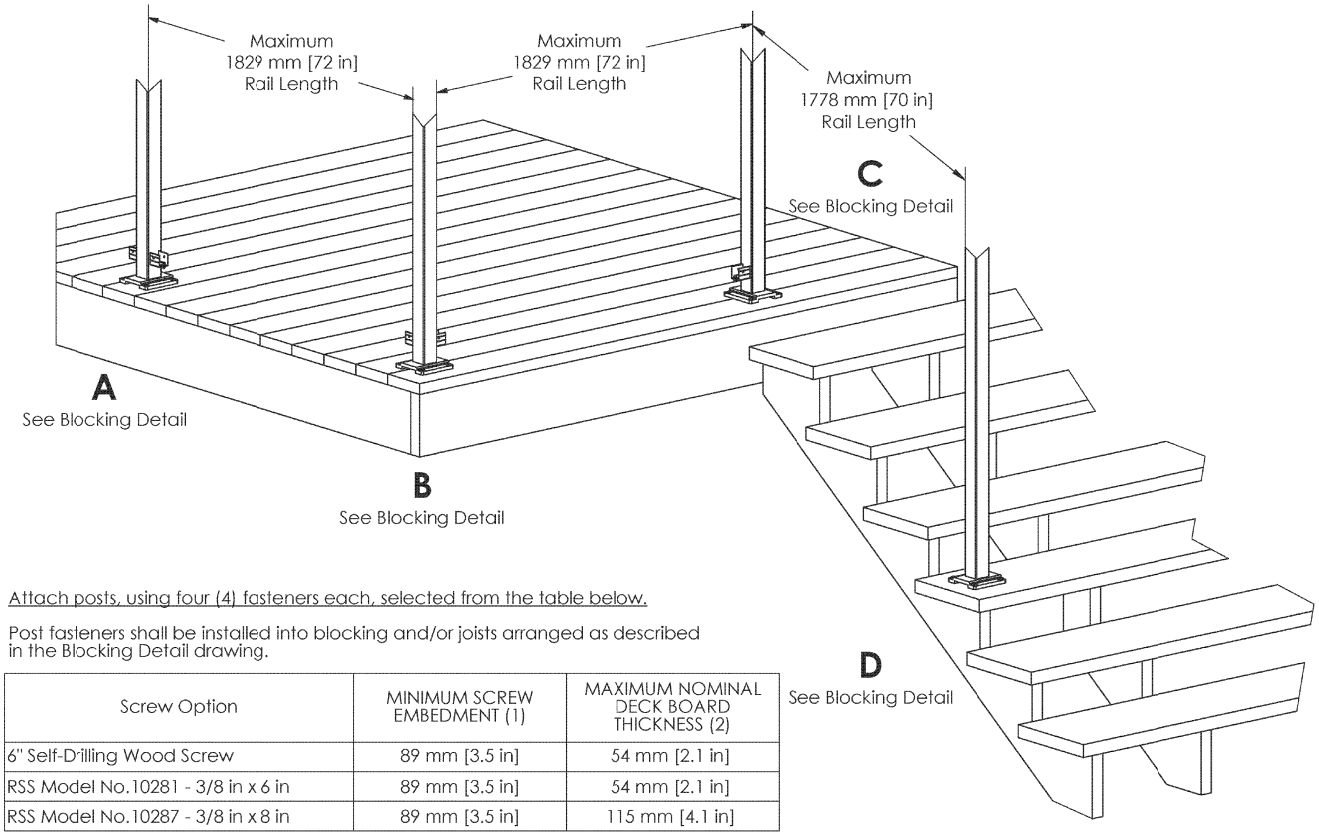
PART FILE
post-Base_10mm

DWG REV
B

DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

SIZE B | DWG. NO. Peak® Railblazers® - Part9 Attachment

SCALE: 1:8 | SHT REV. 2017-05-16 | Sheet 1 of 12



Attach posts, using four (4) fasteners each, selected from the table below.

Post fasteners shall be installed into blocking and/or joists arranged as described in the Blocking Detail drawing.

Screw Option	MINIMUM SCREW EMBEDMENT (1)	MAXIMUM NOMINAL DECK BOARD THICKNESS (2)
6" Self-Drilling Wood Screw	89 mm [3.5 in]	54 mm [2.1 in]
RSS Model No.10281 - 3/8 in x 6 in	89 mm [3.5 in]	54 mm [2.1 in]
RSS Model No.10287 - 3/8 in x 8 in	89 mm [3.5 in]	115 mm [4.1 in]

(1) Into sound deck material as described in this report
(2) Based on post base thickness of 10mm (0.39 in.)

PEAK

TITLE: Peak® RailBlazers® Part 9 Wood Deck Attachment

PART FILE: post-Base_10mm

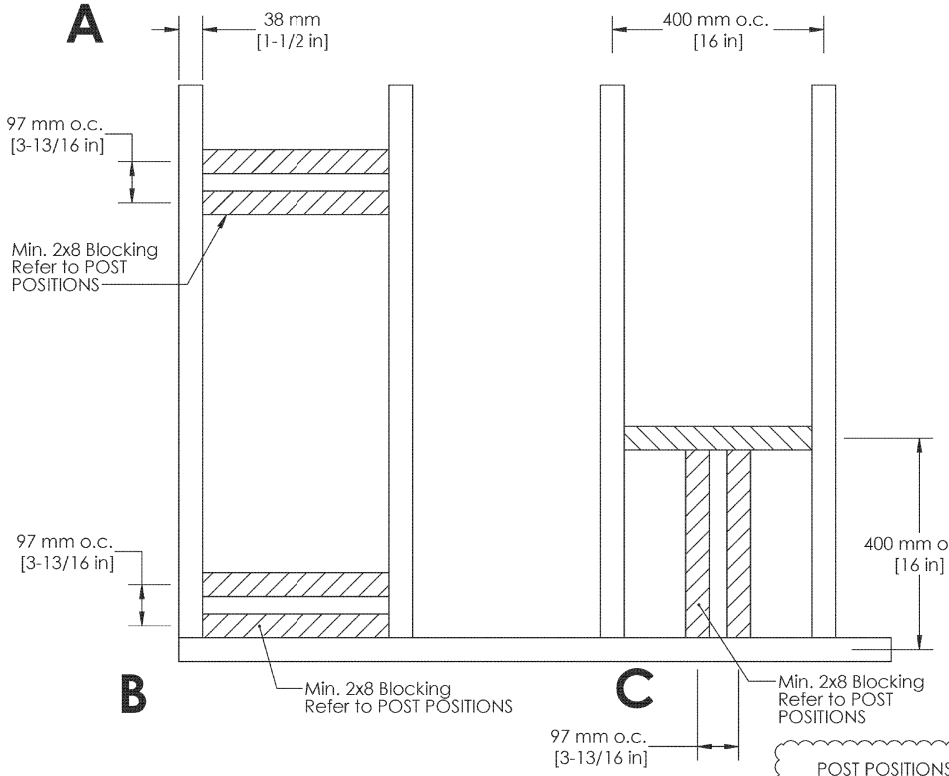
DWG REV: E

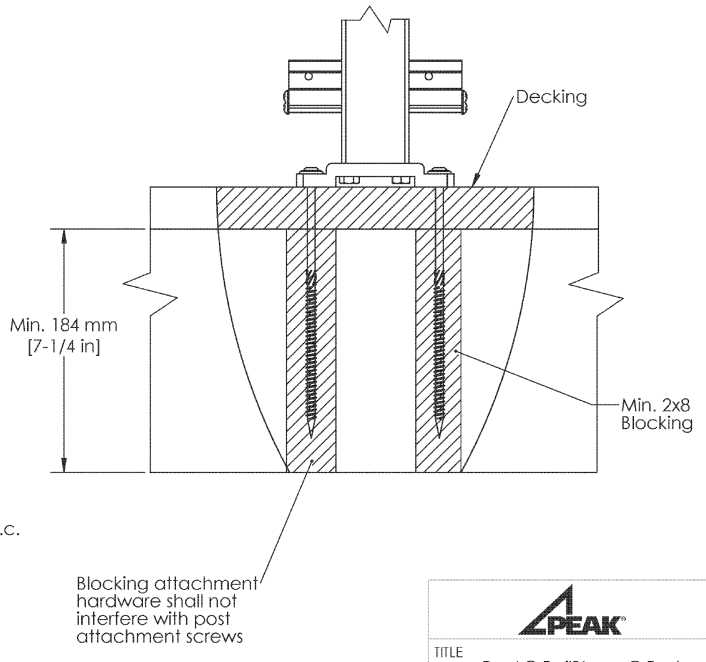
DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

SIZE: B | DWG. NO.: Peak® Railblazers® - Part9 Attachment

SCALE: 1:8 | SHT REV: 2017-05-16 | Sheet 2 of 12

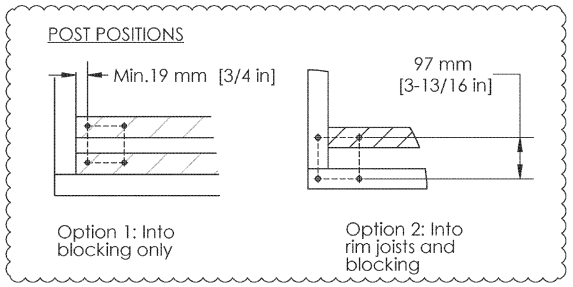
BLOCKING DETAIL





NOTES:

- Blocking and joists shall be minimum 2x8 and depth under post attachment screws shall be at least 25.4 mm [1 in] deeper than actual screw penetration
- Nails, screws, and other fasteners shall not cause splitting of wood elements
- Nails, screws, and other fasteners shall be resistant to corrosion
- Ensure deck construction fasteners do not interfere with post attachment screws
- Post attachment screws shall be driven into the middle third of the thickness of the blocking or rim joists over which they are positioned



PEAK

TITLE
Peak® RailBlazers® Posts
Part 9 Wood Deck Attachment

PART FILE
post-Base_10mm

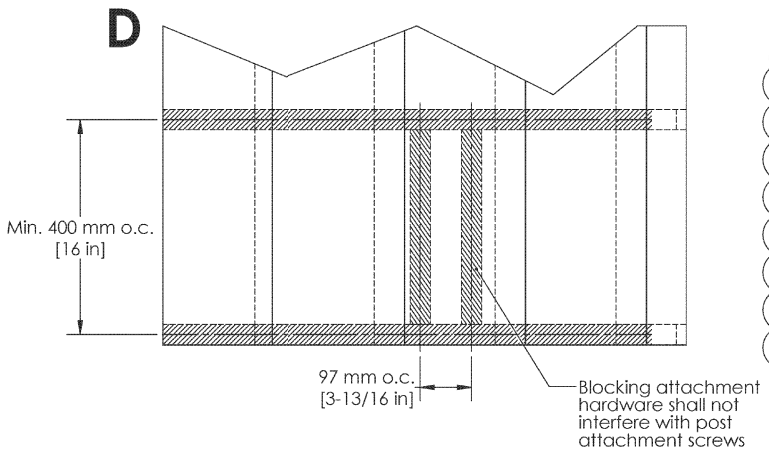
DWG REV C

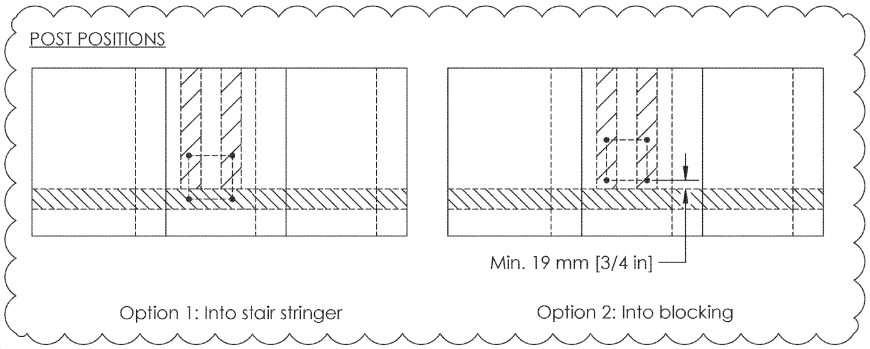
DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

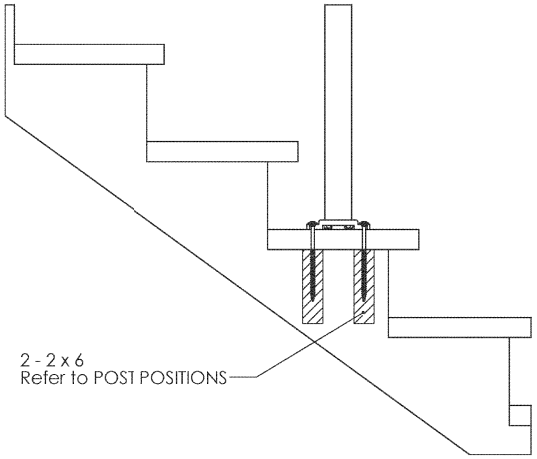
SIZE B | DWG. NO. Peak® Railblazers® - Part9 Attachment

SCALE: 1:12 | SHT REV. 2017-05-16 | Sheet 3 of 12

STAIR POST ATTACHMENT BLOCKING DETAIL







NOTES:

- Blocking shall be minimum 2x6 and stair stringer depth under post attachment screws shall be at least 25.4 mm (1 in.) deeper than actual screw penetration
- Nails, screws, and other fasteners shall not cause splitting of wood elements
- Nails, screws, and other fasteners shall be resistant to corrosion
- Ensure deck construction fasteners do not interfere with post attachment screws
- Post attachment screws shall be driven into the middle third of the thickness of the blocking or rim joists over which they are positioned

PEAK

TITLE
Peak® RailBlazers® Posts
Part 9 Wood Deck Attachment

PART FILE
StairAsm- ExtPost

DWG REV
C

DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

SIZE B
DWG. NO.
Peak® Railblazers® - Part9 Attachment

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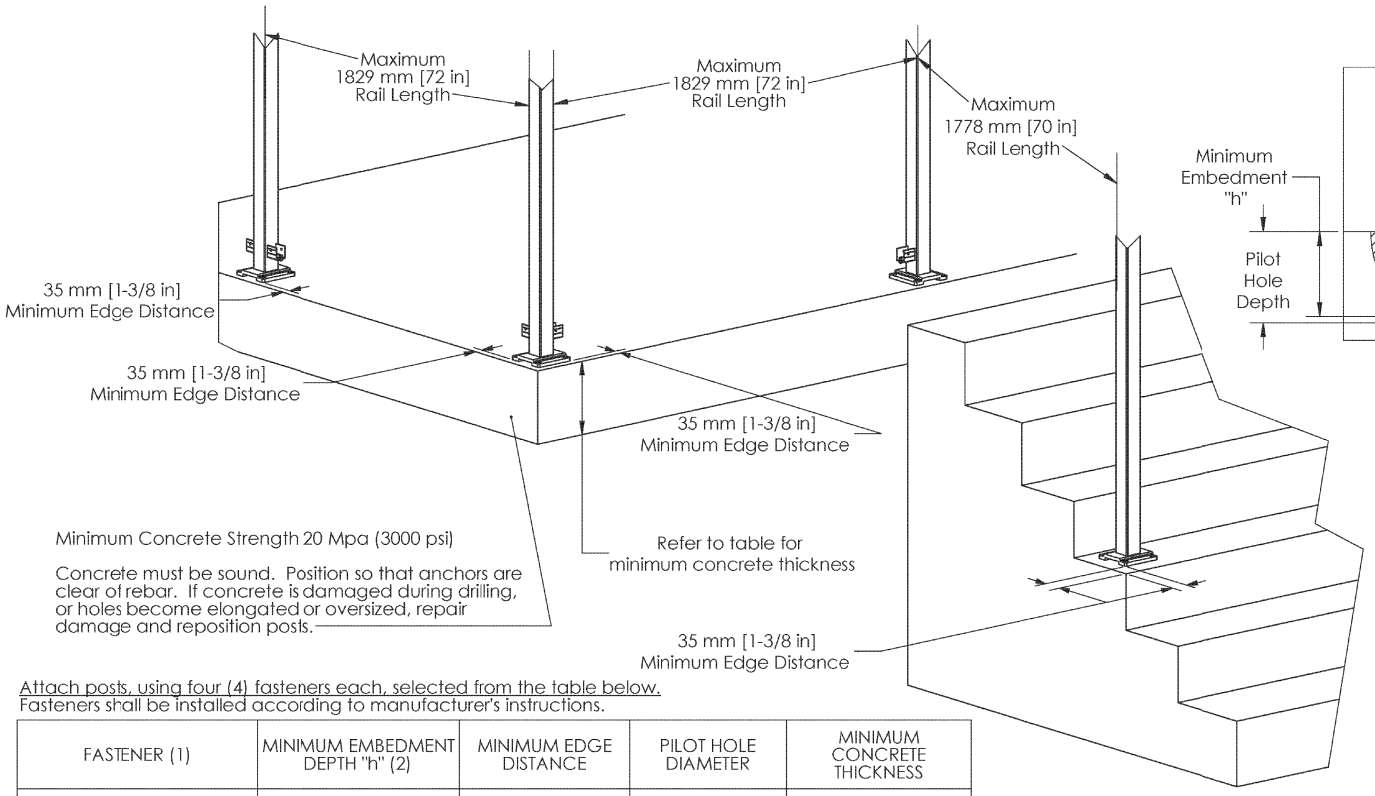
SHT REV
2017-05-16
Sheet 4 of 12



Attach posts, using four (4) fasteners each, selected from the table below.
Fasteners shall be installed according to manufacturer's instructions.

FASTENER (1)	MINIMUM EMBEDMENT DEPTH "h" (2)	MINIMUM EDGE DISTANCE	PILOT HOLE DIAMETER	MINIMUM CONCRETE THICKNESS
3/8" x 3" Buildex Tapcon+ (3)	64 mm [2-1/2 in]	35 mm [1-3/8 in]	3/8 in	98 mm [3-7/8 in]
3/8" x 4" Buildex Tapcon+ (3)	64 mm [2-1/2 in]	35 mm [1-3/8 in]	3/8 in	124 mm [4-7/8 in]
3/8" x 3-3/4" Hilti Kwik Bolt 3	70 mm [2-3/4 in]	35 mm [1-3/8 in]	3/8 in	102 mm [4 in]

(1) Equivalent stainless steel or hot-dipped galvanized anchors are recommended for exterior applications
(2) Into concrete
(3) These anchors must be branded Tapcon+ (read as "Tapcon plus")

PEAK

TITLE
Peak® RailBlazers® Posts
Part 9 Concrete Attachment

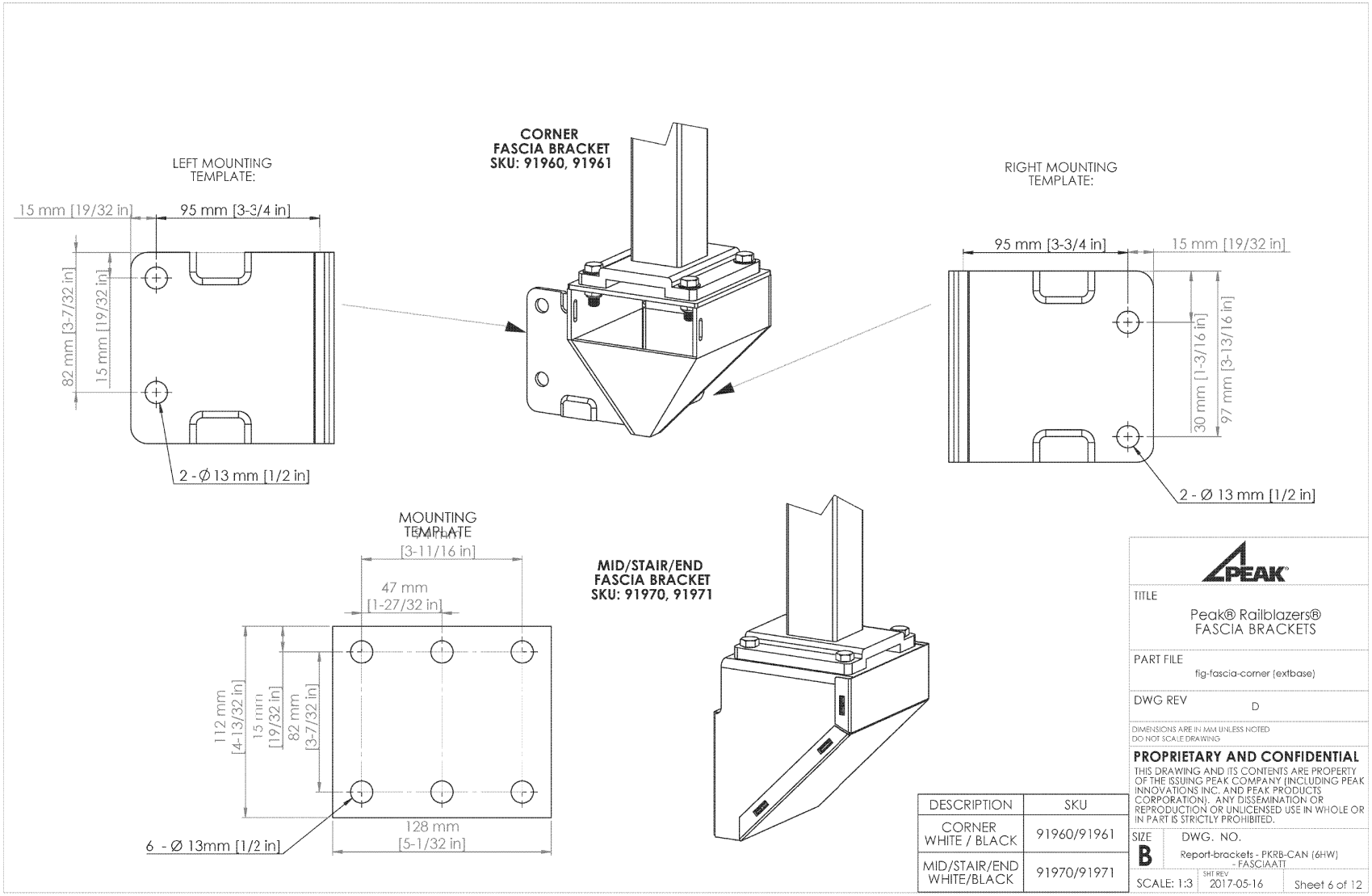
PART FILE
post-Base_10mm

DWG REV D

DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

SIZE B | DWG. NO. Peak® Railblazers® - Part9 Attachment

SCALE: 1:8 | SHT REV 2017-05-16 | Sheet 5 of 12



DESCRIPTION	SKU
CORNER WHITE / BLACK	91960/91961
MID/STAIR/END WHITE/BLACK	91970/91971

PEAK

TITLE
Peak® Railblazers®
FASCIA BRACKETS

PART FILE
fig-fascia-corner (extbase)

DWG REV D

DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

SIZE B
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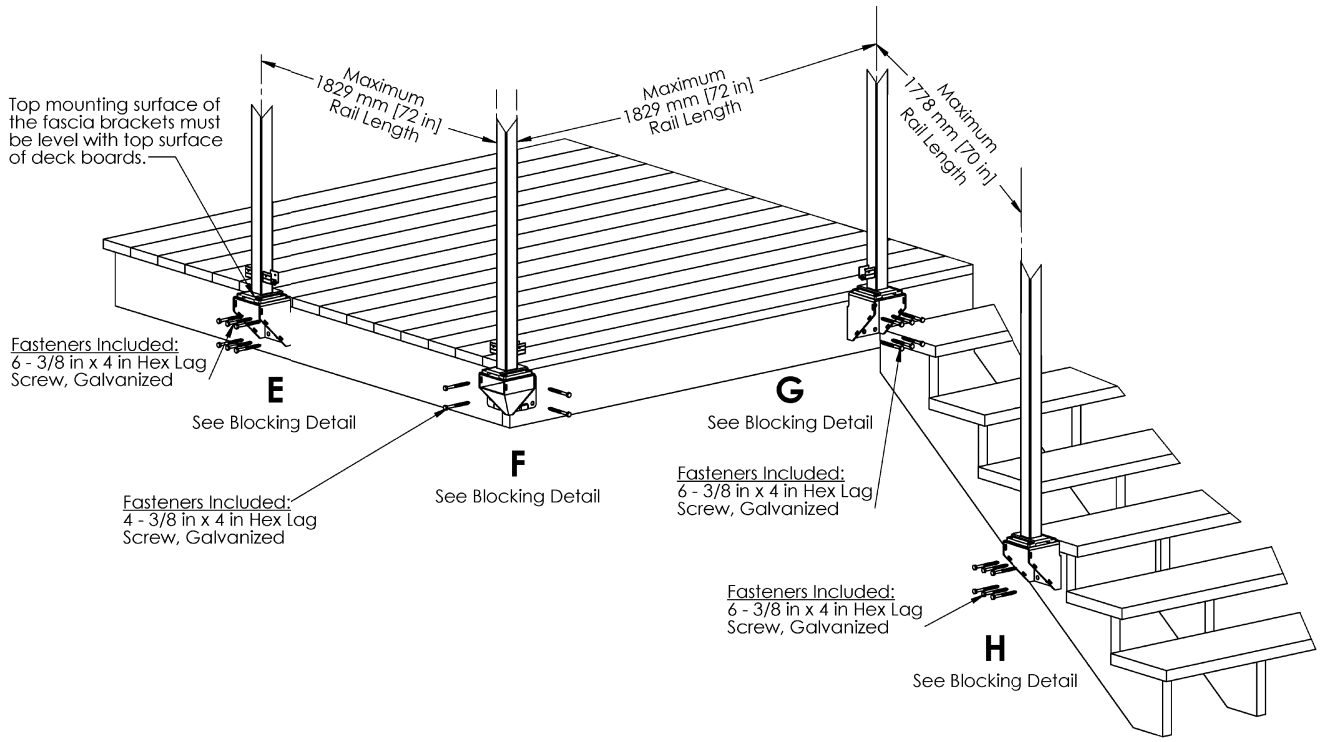
SCALE: 1:3
SHT REV 2017-05-16
Sheet 6 of 12



Attach fascia brackets, using fasteners selected from the table below.

	FASTENER	MINIMUM EMBEDMENT (1)	MINIMUM END DISTANCE	PILOT HOLE (2)
MID/END/STAIR BRACKET	6 x 3/8 in x 4 in Lag Bolt	76 mm [3 in]	25 mm [1 in]	6.4 mm [1/4 in]
CORNER BRACKET	4 x 3/8 in x 4 in Lag Bolt	76 mm [3 in]	25 mm [1 in]	6.4 mm [1/4 in]

(1) Depth of the threaded portion of the screw into the supporting structure
(2) A 9.5 mm [3/8 in] lead hole is required for the depth of shank penetraton to prevent splitting

PEAK

TITLE
Peak® RailBlazers®
Fascia Bracket - Wood Deck Attachment

PART FILE
post-Base_10mm

DWG REV
B

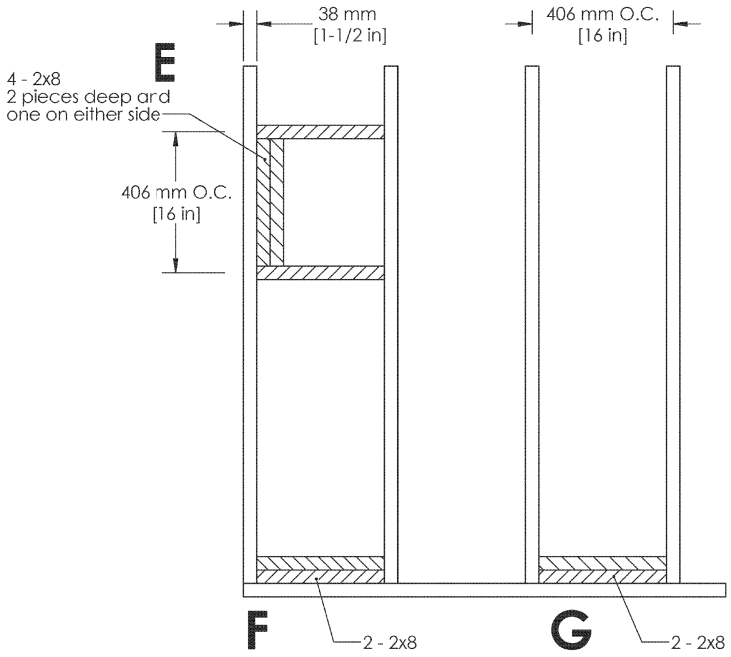
DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

SIZE B | DWG. NO. Peak® Railblazers® - Part9 Attachment

SCALE: 1:12 | SHT REV. 2017-05-16 | Sheet 7 of 12

LHS

FASCIA BRACKET BLOCKING DETAIL



NOTES:
- Blocking and joists shall be minimum 2x8 lumber
- Nails, screws, and other fasteners shall not cause splitting of wood elements
- Fasteners shall be resistant to corrosion
- All other connections shall be minimum #8 x 3 in screws or 3 in common spiral nails
- Ensure fasteners do not interfere with Fascia Bracket connection fasteners

PEAK

TITLE
Peak® RailBlazers®
Fascia Bracket - Wood
Deck Attachment

PART FILE
post-Base_10mm

DWG REV
B

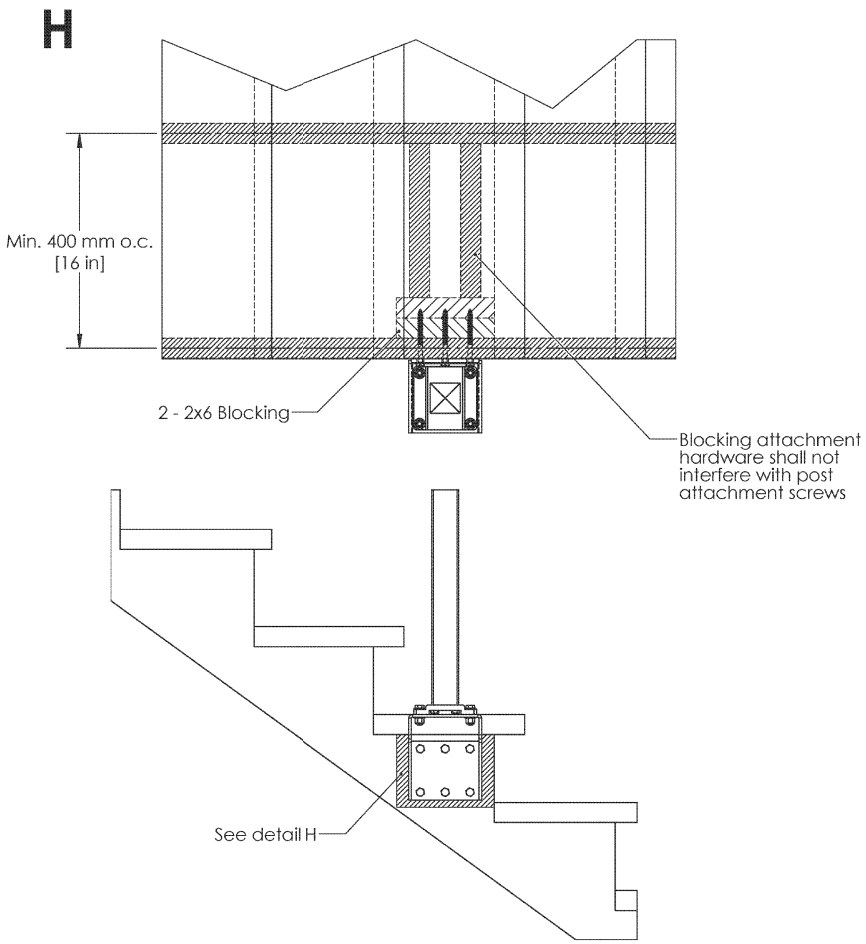
DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

SIZE B | DWG. NO. Peak® Railblazers® - Part9 Attachment

SCALE: 1:12 | SHT REV. 2017-05-16 | Sheet 8 of 12

LHS

STAIR POST FASCIA ATTACHMENT BLOCKING DETAIL



NOTES:

- Blocking shall be minimum 2x6 and stair stringer depth under post attachment screws shall be at least 25.4 mm (1 in.) deeper than actual screw penetration
- Nails, screws, and other fasteners shall not cause splitting of wood elements
- Nails, screws, and other fasteners shall be resistant to corrosion
- Ensure deck construction fasteners do not interfere with post attachment screws
- Post attachment screws shall be driven into the middle third of the thickness of the blocking or rim joists over which they are positioned

PEAK

TITLE
Peak® RailBlazers® Posts
Part 9 Stair Fascia Attachment

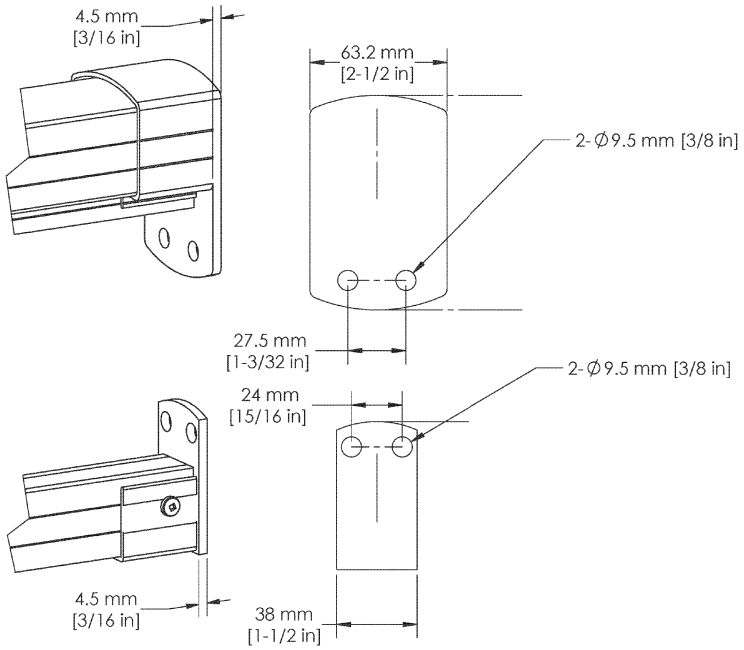
PART FILE
StairAsm- ExtPost

DWG REV
B

DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

SIZE	DWG. NO.	
B	Peak® Railblazers® - Part9 Attachment	
SCALE: 1:20	SHT REV. 2017-05-16	Sheet 9 of 12

WALL BRACKET



WALL MOUNT BRACKETS
SKU: 90920, 90921, 91920, 91921

PEAK

TITLE
Peak® RailBlazers®
Aluminum Railing - Wall Brackets

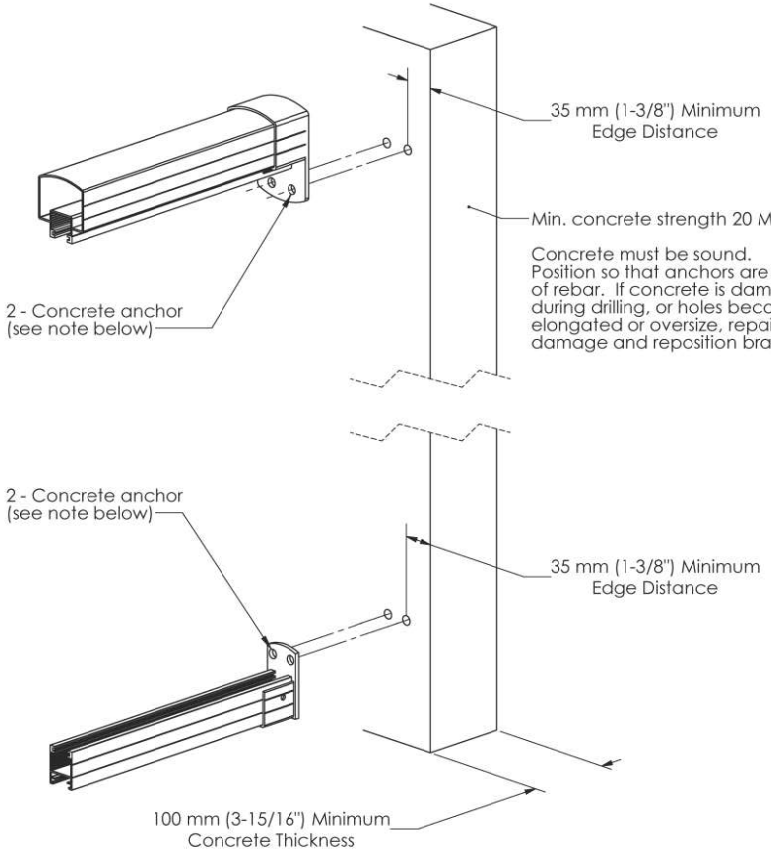
PART FILE
post-Base_10mm

DWG REV
B

DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

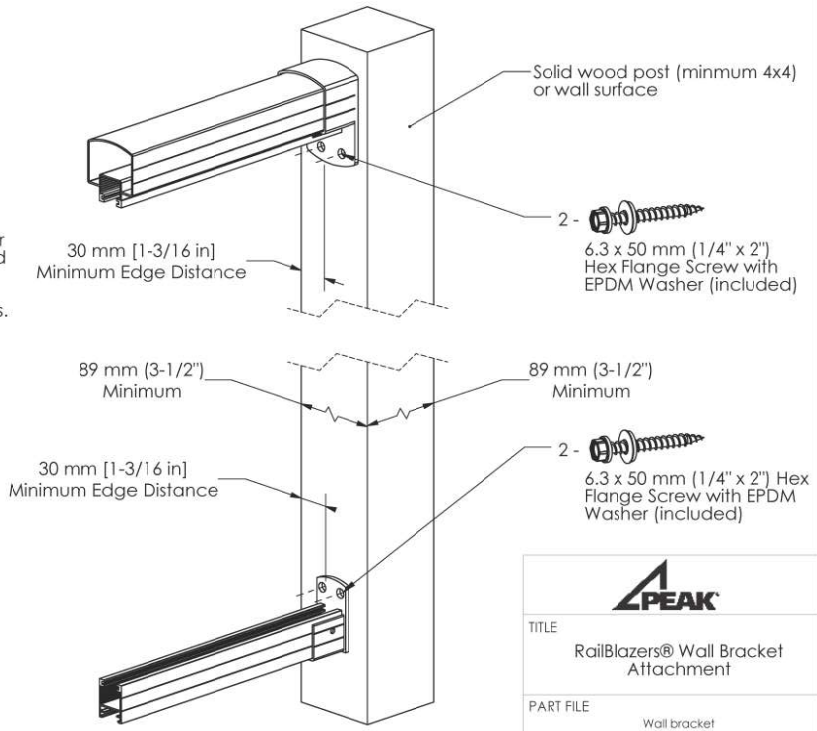
SIZE	DWG. NO.	
B	Peak® Railblazers® - Part9 Attachment	
SCALE: 1:2	SHT REV. 2017-05-16	Sheet 10 of 12

CONCRETE ATTACHMENT



Concrete Fasteners (not included)
Option 1: 4 x Hilti KWIK Bolt 3, 1/4" diameter x 2" minimum embedment
Fasteners shall be carbon steel with plated finish, or stainless steel.
Option 2: 4 x Tapcon® Hex Concrete Screw Anchor, 1/4" x 2-1/4"

WOOD ATTACHMENT



For walls with non-structural cladding over wood, mount wall brackets only to sound wood or secure blocking. Screws to penetrate wood frame in accordance with local codes.

Refer to RailBlazers Part 4 and Part 9 Compliance reports on railblazers.ca/compliance for span limitations and other information

PEAK

TITLE
RailBlazers® Wall Bracket Attachment

PART FILE
Wall bracket

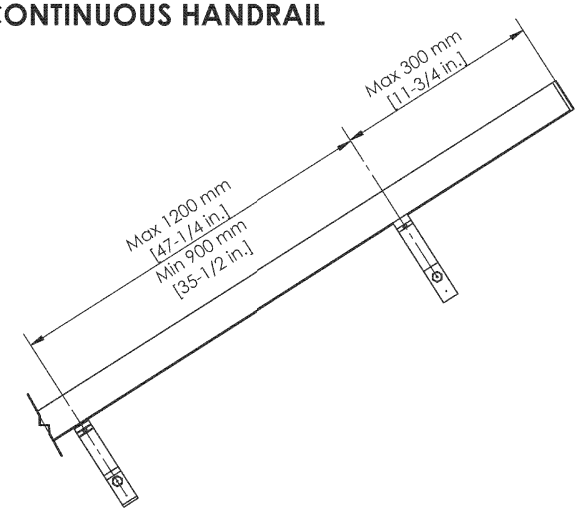
DWG REV
C

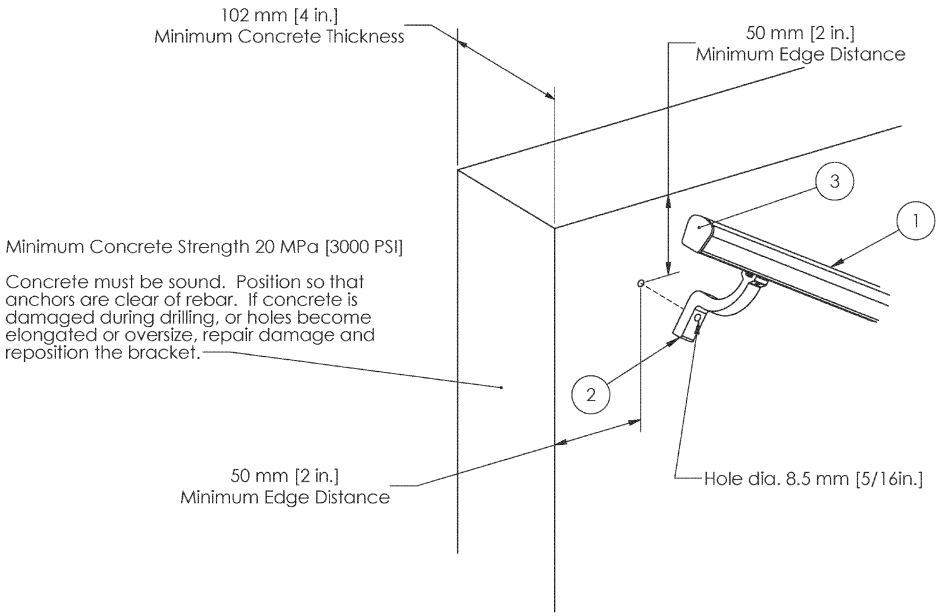
DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

SIZE B | DWG. NO. Wall Mount Brackets - CAN P9

SCALE: 1:10 | SHT REV 2016-06-01-A | Sheet 11 of 12

CONTINUOUS HANDRAIL





Attach brackets, using one (1) fastener each, selected from the table below.
Fasteners shall be installed according to manufacturer's instructions.

FASTENER (1)	MINIMUM EMBEDMENT DEPTH "h" (2)	MINIMUM EDGE DISTANCE	MINIMUM CONCRETE THICKNESS
3/8" x 4" Buildex Tapcon+ (3)(4)	76 mm [3 in.]	50 mm [2 in.]	102 mm [4 in.]
3/8" x 3-3/4" Powers Power-Stud+ SD1 (5)	64 mm [2-1/2 in.]	50 mm [2 in.]	102 mm [4 in.]
3/8" x 3-3/4" Hilti Kwik Bolt 3 (5)	64 mm [2-1/2 in.]	50 mm [2 in.]	102 mm [4 in.]

(1) Equivalent stainless steel or hot-dipped galvanized anchors are recommended for exterior applications.
(2) Into concrete.
(3) Tapcon+ pronounced as "Tapcon Plus".
(4) Mounting hole requires drilling to 13 mm [1/2 in.]
(5) Mounting hole requires drilling to 11 mm [7/16 in.]

ITEM NO.	DESCRIPTION	SKU
1	CONTINUOUS HANDRAIL	10170, 10171 90170, 90171 91170, 91171
2	BRACKET	10170, 10171, 10990, 10991 90170, 90171, 90990, 90991 91170, 91171, 91990, 91991
3	END CAP	10170, 10171, 10990, 10991 90170, 90171, 90990, 90991 91710, 91171, 91990, 91991

PEAK

TITLE
Peak® Railblazers® Continuous Handrail Bracket Concrete Attachment (single dwelling unit only)

PART FILE
post-Base_10mm

DWG REV
B

DIMENSIONS ARE IN MM UNLESS NOTED
DO NOT SCALE DRAWING

SIZE B | DWG. NO. Peak® Railblazers® - Part9 Attachment

SCALE: 1:3 | SHT REV 2017-05-16 | Sheet 12 of 12