

# **Report of:**

## **RailBlazers® Aluminum Railing System Post Anchorage with GRK Screws**

- **2014 Alberta Building Code - Part 9**
- **2012 British Columbia Building Code - Part 9**
- **2015 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.**  
[www.peakproducts.com](http://www.peakproducts.com)

**RailBlazers<sup>®</sup> Aluminum Railing System -  
Post Anchorage with GRK Screws**  
**Engineering Review for Compliance with  
Canadian Building Codes - Part 9**

**May 26, 2017**



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## **Purpose and Limitations**

Peak Products Manufacturing Inc. (Peak) manufactures the RailBlazers® Aluminum Railing System to protect occupants at edges of decks, stairs and landings. This report by L.H. Schwindt & Company Inc. evaluates structural compliance of the post attachment using GRK RSS self-drilling screws, on a wood-framed deck assembly with local blocking, where the guard is installed parallel or perpendicular to the deck joists or at a corner, for compliance with Part 9 of the following Canadian Building Codes:

- 2014 Alberta Building Code
- 2012 British Columbia Building Code
- 2015 National Building Code of Canada
- 2012 Ontario Building Code

Actual wood deck conditions and strength are subject to design and construction, beyond Peak's control. Any variances from our assumptions stated herein are not evaluated within the scope of this report.

This review and report were based on the screw manufacturer's data; product testing was not in the scope of this review.

## **Related Reports**

The above-deck posts of the RailBlazers® Aluminum Railing System were included in an engineering review by Read Jones Christoffersen Ltd. [RJC# VAN.106169.0001 "RailBlazers® Aluminum Railing System Engineering Review for Compliance with Canadian Building Codes Part 9 (1 and 2 Dwelling Units)"].

L.H. Schwindt & Company Inc. does not warrant the applicability, method, or conclusions of reports by others.

## **Components**

The Railblazers® post is manufactured from aluminum extrusion, and has an integral aluminum base with 4 holes for anchorage.

The post bases are to be anchored to the top surface of a conventional, level, wood-framed deck assembly with local blocking, by GRK RSS self-drilling screws. 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 hex-socket for driving.

The post base installation details include sawn wood blocking assembled to deck framing with fasteners in accordance with local code. It is understood blocking will be the same material grade as deck framing (typically S-P-F No 1 or 2, or "select") and that blocking will be sawn square for correct fit-up. Post screws are to be installed vertically; the installer should consider location of the blocking screws with respect to the post screws, to avoid interference.

The reader is referred to appended drawings as prepared by Peak, for the post installation details. L.H. Schwindt & Company Inc. does not warrant the accuracy or applicability of Peak's drawings.

### Analysis

Guard height established in the Codes is commonly 1070mm (3'-6"). This review addresses only applications with design loads applied to a guard 1070mm high. The applicable design load is a 1.0kN horizontal live load.

The methodology of our review was as follows:

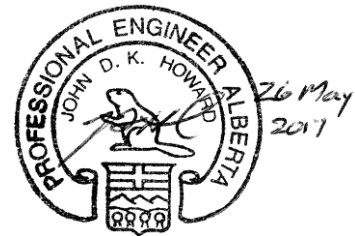
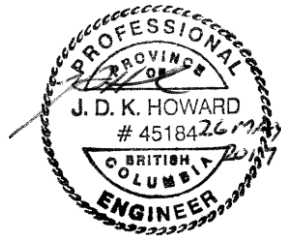
1. Consider factored live load, calculate resulting factored moment at the post base/deck surface interface;
2. Calculate unfactored uplift on two screws at tension side of base;
3. Compare with available pull-out strength (LB per inch) for the GRK screws

GRK provides design data for screws of certain diameters, in lumber of specific gravity 0.55 (i.e. Southern Yellow Pine). In case lower-density lumber is used, we adjusted the pull-out strength to account for specific gravity 0.42. We determined for 3/8" nominal diameter GRK screws, minimum embedded thread length of 3" (76mm) is required.

### Conclusion

We conclude the GRK RSS self-drilling screws will be adequate for code compliance in the application described, subject to all assumed conditions being present.

Regards,

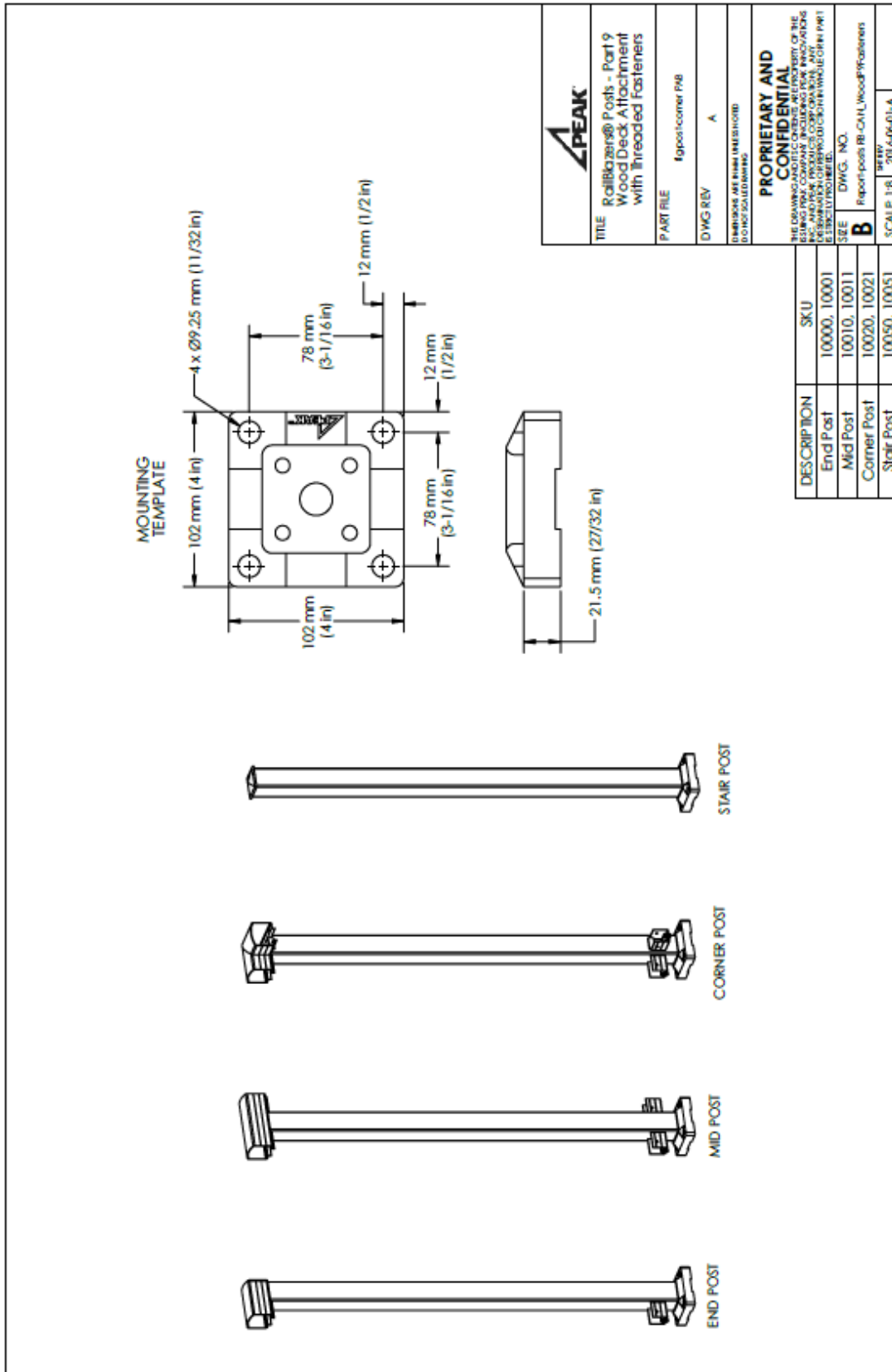


L. H. SCHWINDT & COMPANY INC.  
J. David Howard, P. Eng.

**L. H. SCHWINDT & COMPANY INC.**

Peak Products Manufacturing Inc.  
 RailBlazers® Post – Anchorage with GRK Screws

LHS Ref 4262  
 May 26, 2017



<b>PEAK</b>	
TITLE Railblazers® Posts - Part 9 Wood Deck Attachment with Threaded Fasteners	
PART FILE	lgs-postcorner P9B
DWG REV	A
DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED	
<b>PROPRIETARY AND CONFIDENTIAL</b>	
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SEE	DWG. NO.
<b>B</b>	Report post-RI-CANL_WoodPostFasteners
SCALE 1:8	DATE 2016-06-01-A

DESCRIPTION	SKU
End Post	10000, 10001
Mid Post	10010, 10011
Corner Post	10020, 10021
Stair Post	10050, 10051



