



Structural Calculations: Planchek

Project: **RSA-17-05**

Date: 03/9/18

Project: New Stairs:

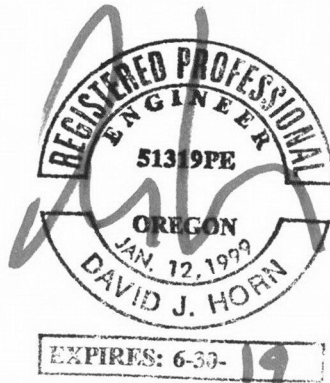
2859 NE Rodney Ave Portland, OR 97212

Subject

Sheet #'s

Supplemental Guardrail

GR-1



The following calculations are for lateral wind and seismic engineering and gravity loading of the beams and columns. The design is based on information provided by the client who is solely responsible for its accuracy. The engineering represents the finished product. Discrepancies from information provided by the client invalidate this design. Horn Consulting Engineers shall have no liability (expressed, or implied), with respect to the means and methods of construction workmanship or the actual materials used in construction.

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17-17217-REV-01-20

GUARDRAILS

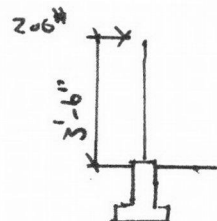
@ BOT of STAIRS $P = 200 \#$

$$M = 200 (3.5) = 700 \text{ ft-Lbs}$$

Simpson MPB44Z

$$S_{reqd} = \frac{0.7 (12)}{0.9 (1.6)} = 5.8 \text{ in}^3$$

4x4 POST

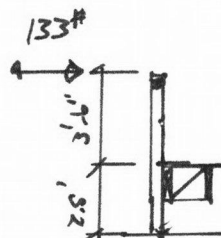


@ STAIRS

CONN @ 32" O.C $P = 200 \# / 4 \left(\frac{32}{12} \right) = 133 \#$

$$M = 133 (3.5) = 466 \text{ ft-Lbs}$$

$$S_{reqd} = \frac{0.47 (12)}{0.9 (1.6)} = 3.9 \text{ in}^3$$



2x4 STUD OK

CONN FORCE:

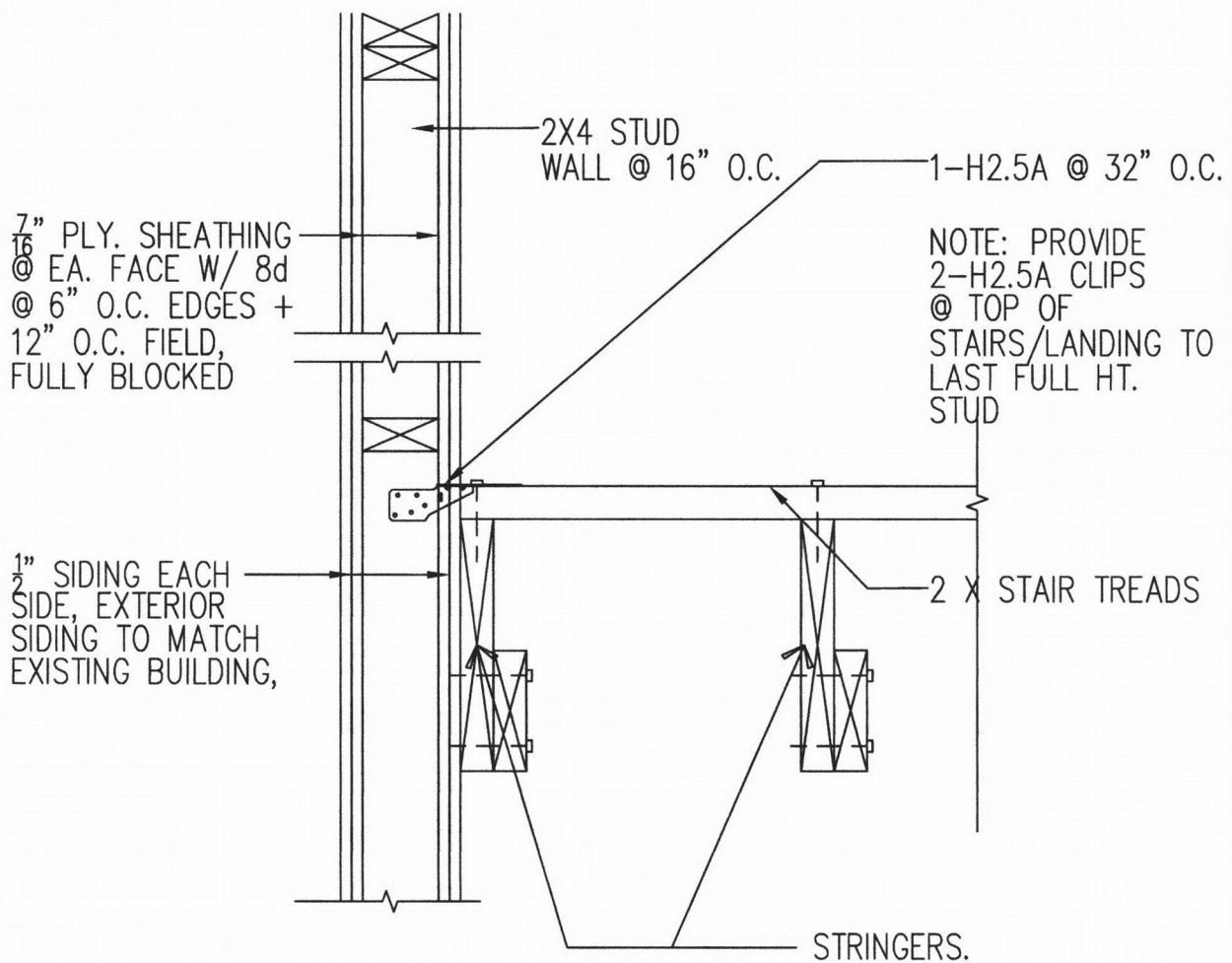
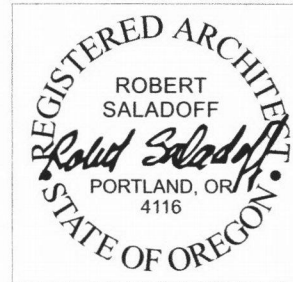
$$0.133 (6) / 2.5 = 0.319 \text{ K}$$

H2SA CLIP

2x4 STUDS @ 16" O.C
W/ H2SA CLIP @ 32" O.C

@ LANDINGS GUARDRAIL CAN SPAN
HORIZ. FROM CORNER TO BLDG WALL CONN

@ OUTSIDE FACE PROVIDE 2- H2SA CLIPS
@ FIRST FULL HT STUD



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STAIR/SIDE WALL CONNECTION

SCALE: 1 1/2" = 1'-0"

REVISED: 03.09.18