#### **GENERAL NOTES:**

- 1. DESIGN OF THE GUARD IS IN ACCORDANCE WITH SECTION 9.8.8.2 OF THE 2012 OBC AND 2010 NBCC, AND SB-7 OF THE ONTARIO BUILDING CODE.
- 2. GLASS PANELS CAN CARRY A 225 LB (1.0 kN) HORIZONTAL CONCENTRATED LOAD AT ANY POINT.
- 3. A UNIFORM VERTICAL LOAD OF OF 100 PLF (1.5 kN/m) HAS BEEN APPLIED TO THE TOP OF THE GUARD.
- 4. THE FOLLOWING HORIZONTAL LOADS HAVE BEEN APPLIED TO THE THE GUARD:
  - (ii) 0.5 kN/m (34 lb/ft) UNIFORM LOAD ALONG THE TOP
  - (ii) 1.0 kN (225 lb) CONCENTRATED LOAD AT ANY POINT. WHICHEVER GOVERNS.
- 5. THESE DETAILS ARE FOR USE IN HOUSES AND SMALL BUILDINGS CONFORMING TO THE REQUIREMENTS OF PART 9 OF THE 2012 ONTARIO BUILDING CODE AND THE 2010 NATIONAL BUILDING CODE. THESE DETAILS ARE FOR GUARDS NOT SERVING NOT MORE THAN TWO DWELLING UNITS AND PROVIDE AN ALTERNATIVE TO THE DETAILS GIVEN IN SB-7 OF THE ONTARIO BUILDING CODE.
- 6. DESIGN IS VALID UNTIL DECEMBER 31, 2016.

#### **COMPONENTS**

- (1) LIV BUILDING PRODUCTS INVISIRAL TOP CLIPS OR INVISIRAIL LITE 10 CLIPS.
- (2) 4x4 POST ANCHORED TO FLOOR STRUCTURE IN ACCORDANCE WITH DETAIL EB-5 TO EB-6 OF SB-7 OF THE ONTARIO BUILDING CODE. POSTS SHALL BE NO.2 OR BETTER SPF PRESSURE TREATED WITH A WATER-BORNE PRESERVATIVE. UNTREATED NO.2 OR BETTER CEDAR, OR CLEAR STRAIGHT-GRAINED DARK RED MERANTI.
- (3) 10mm INVISIRAIL TEMPERED GLASS IN ACCORDANCE WITH CAN/CGSB-12.1-M WITH NOTCH FOR BOTTOM CLIP BY LIV BUILDING PRODUCTS. ALL GLASS TO BE HEAT SOAKED IN ACCORDANCE WITH SB-13 OF THE ONTARIO BUILDING CODE.
- (4) LIV BUILDING PRODUCTS INVISIRAIL BOTTOM CLIPS OR INVISIRAIL LITE 10 CLIPS.
- (5) 6x6 NO.1 OR BETTER CEDAR POST ANCHORED TO FLOOR STRUCTURE AS PER DWG S10.
- 3/8" THICK GRADE 304 STAINLESS STEEL INVISIRAIL POST
- 7 HOT-DIPPED GALVANIZED DECKLOK BRACKET IN ACCORDANCE WITH ICC-ES REPORT ESR-2114.

FOR PRODUCT INQUIRIES CONTACT LIV BUILDING PRODUCTS AT 905-852-3733

SCALE: NTS DATE:

DRAWN CHECKED SJB SJB

**APRIL** 2014

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ENGINEER'S SEAL PROJECT:

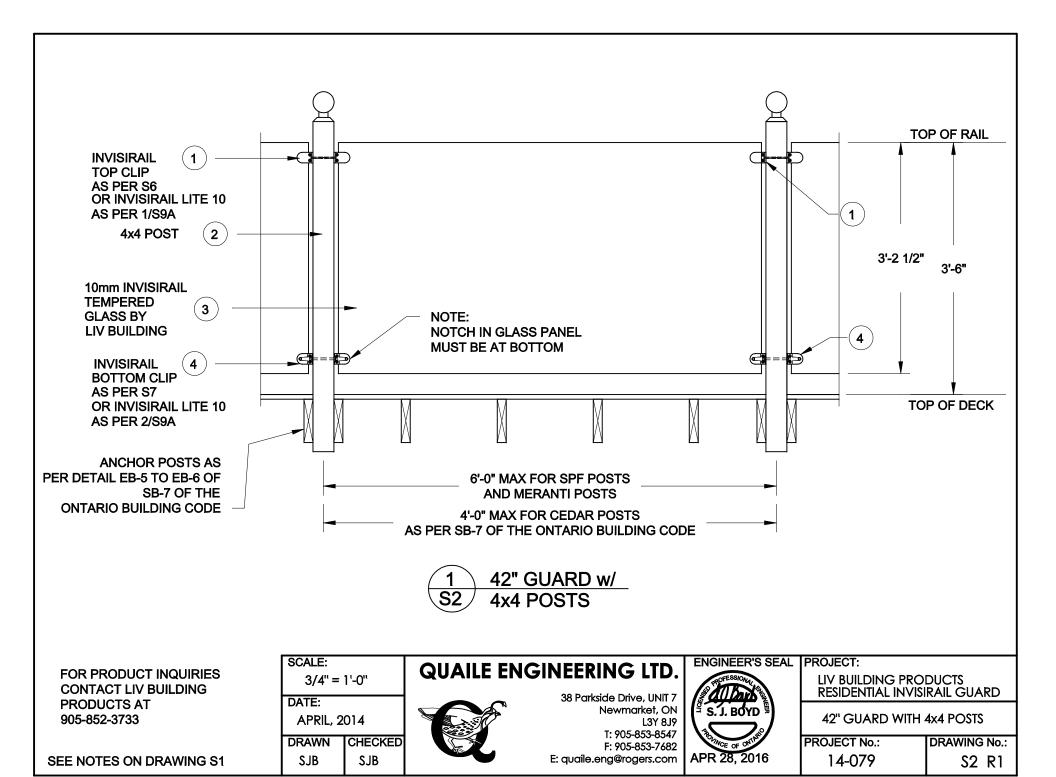
APR 28, 2016

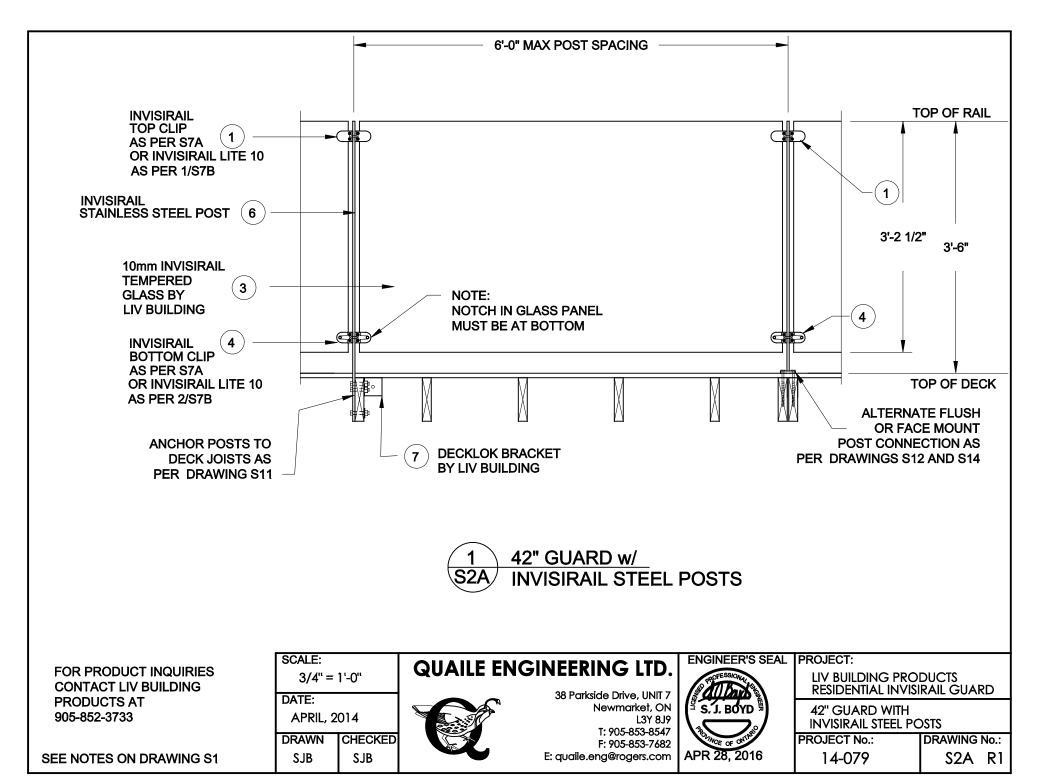
LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

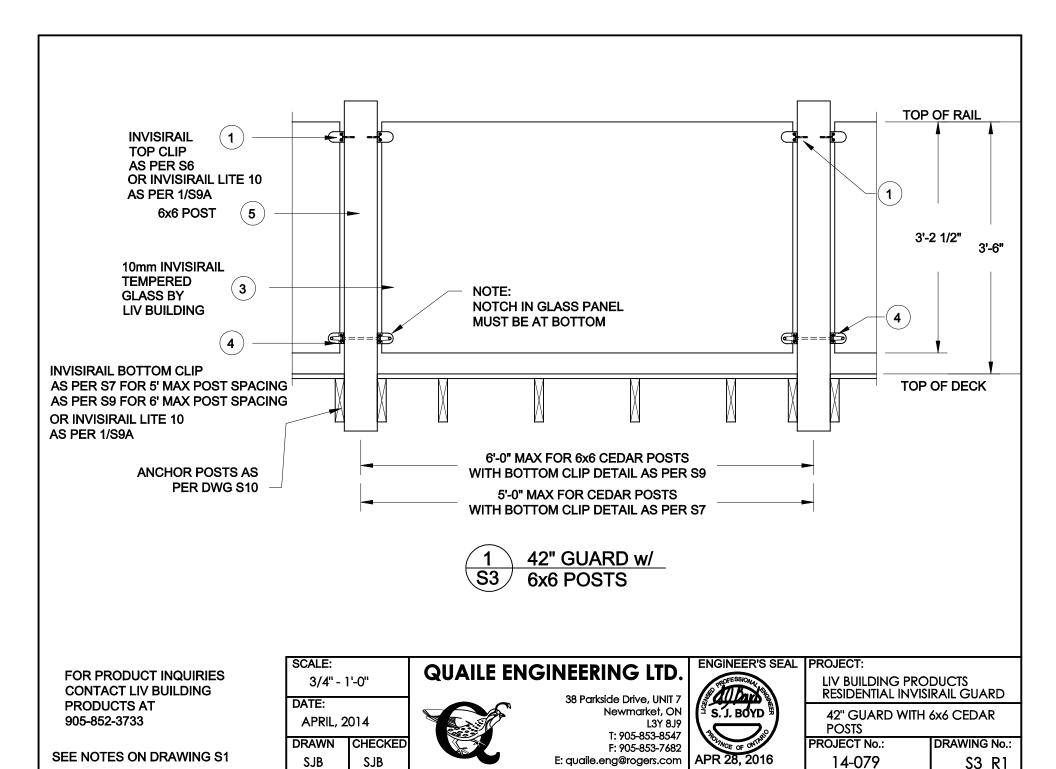
**GENERAL NOTES** 

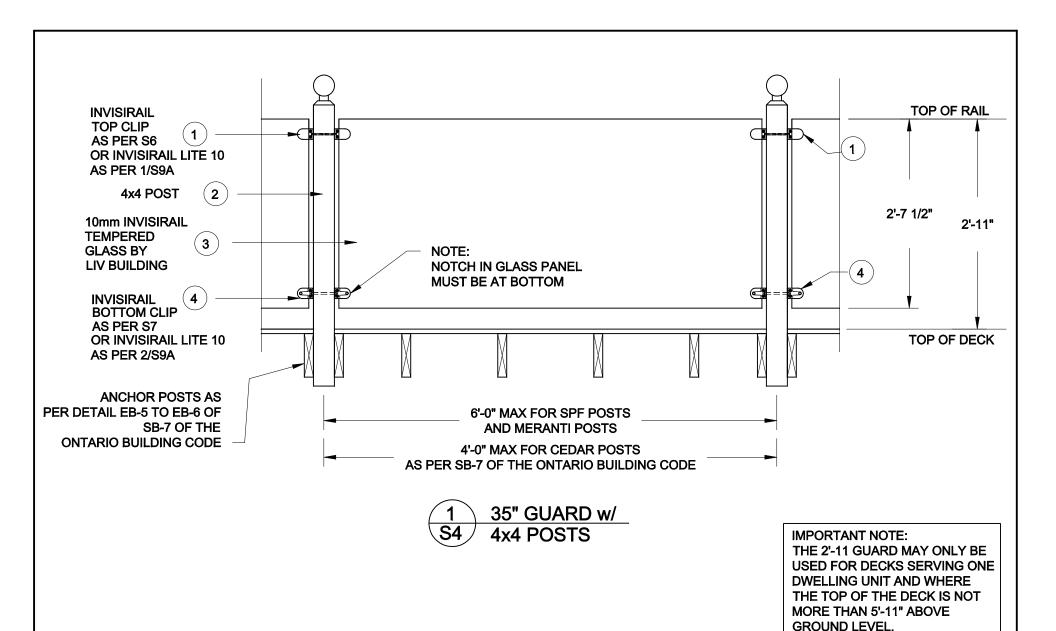
PROJECT No.: 14-079

DRAWING No.: S1 R1









SEE NOTES ON DRAWING S1

SCALE: 3/4" = 1'-0" DATE:

APRIL, 2014

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### ENGINEER'S SEAL PROJECT:



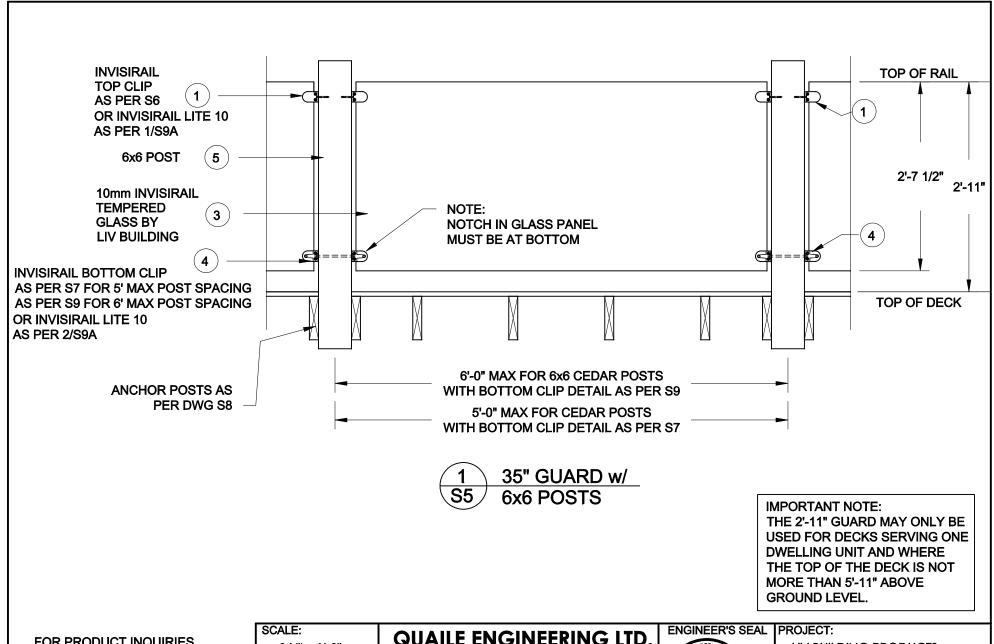
LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

35" GUARD WITH 4x4 POSTS

PROJECT No.: 14-079

DRAWING No.:

S4 R1



SEE NOTES ON DRAWING S1

3/4" = 1'-0" DATE:

**APRIL**, 2014

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LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

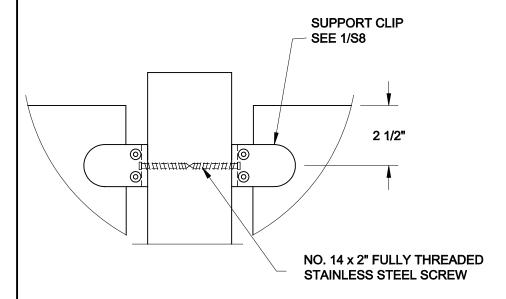
35" GUARD WITH 6x6 CEDAR **POSTS** 

PROJECT No.: 14-079

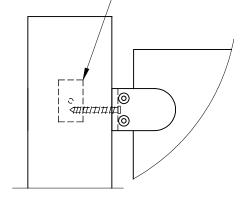
DRAWING No.:

S5 R1

C:\SJB-03\LIV BUILDING PRODUCTS\2014\14-079 GLASS GUARDS



CLIP BEYOND C/W
NO.14 x 2" FULLY THREADED
STAINLESS STEEL SCREW FOR
CORNER POST
(RAISE CLIP UP 3/8" TO
AVOID INTERFERENCE)



TOP CLIP - INTERMEDIATE POST

2 TOP CLIP - END / CORNER POST

FOR PRODUCT INQUIRIES CONTACT LIV BUILDING PRODUCTS AT 905-852-3733

**SEE NOTES ON DRAWING S1** 

SCALE: 3" = 1'-0" DATE:

APRIL, 2014

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APR 28, 2016

ENGINEER'S SEAL PROJECT:

LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

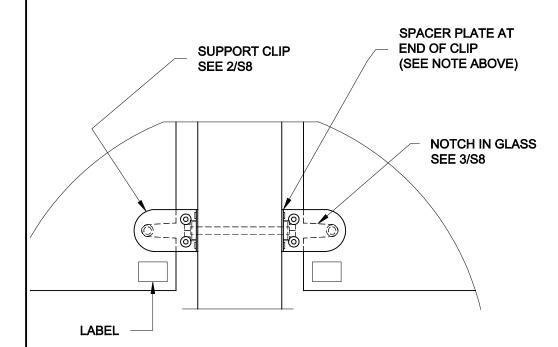
INVISIRAIL TOP CLIP DETAILS

PROJECT No.: 14-079 DRAWING No.: S6

#### NOTE:

SPACER PLATES MAY BE OMMITTED FOR THE FOLLOWING:

- SPF AND CEDAR POSTS SPACED UP TO 4'-0" O/C
- MERANTI POSTS SPACED UP TO 6'-0" O/C



CLIP BEYOND C/W SPACER, WASHER AND 5/16" DIA BOLT FOR **CORNER POST** (RAISE CLIP UP 3/8" TO 5/16" DIA STAINLESS **AVOID INTERFERENCE)** STEEL BOLT C/W NUT SUPPORT CLIP SPACER PLATE **SEE 2/S8 AS PER 1/S8** (SEE NOTE ABOVE) 7/8" DIA x 1/16" THICK **WASHER OVER** SPACER PLATE

1 S7

BOTTOM CLIP - INTERMEDIATE POST

2 S7

BOTTOM CLIP - END / CORNER POST

FOR PRODUCT INQUIRIES CONTACT LIV BUILDING PRODUCTS AT 905-852-3733

**SEE NOTES ON DRAWING S1** 

SCALE: 3" = 1'-0" DATE:

APRIL, 2014

DRAWN | CHECKED

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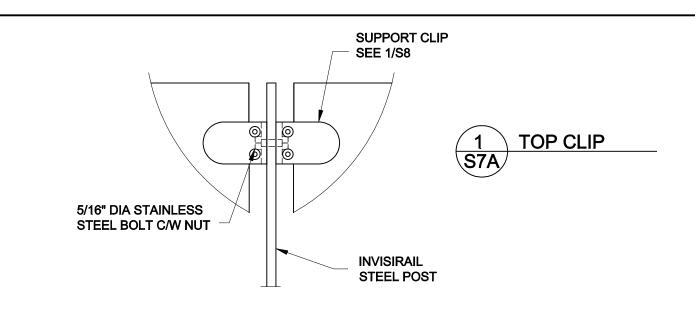
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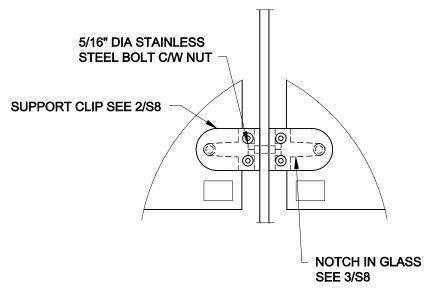


LIV BUILDING PRODUCTS
RESIDENTIAL INVISIRAIL GUARD

INVISIRAIL BOTTOM CLIP DETAILS

PROJECT No.: 14-079 DRAWING No.: \$7





**BOTTOM CLIP** 

FOR PRODUCT INQUIRIES CONTACT LIV BUILDING **PRODUCTS AT** 905-852-3733

**SEE NOTES ON DRAWING S1** 

SCALE: 3" = 1'-0"

DATE: **APRIL, 2014** 

DRAWN CHECKED SJB SJB

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F: 905-853-7682 E: quaile.eng@rogers.com ENGINEER'S SEAL PROJECT:



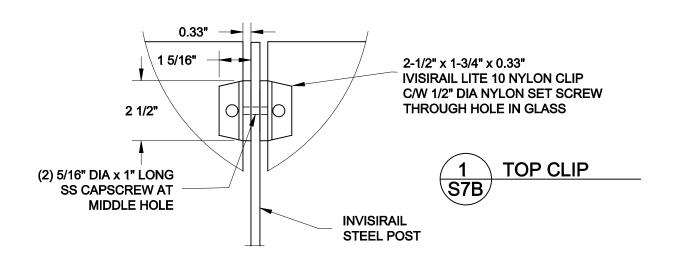
LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

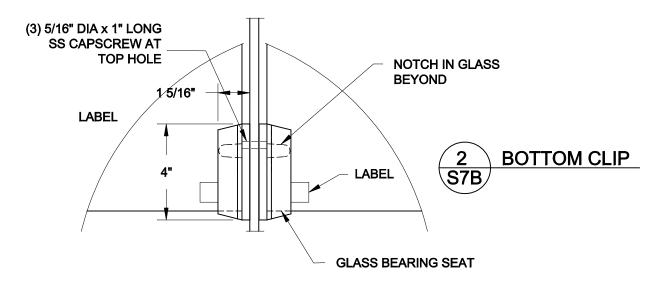
INVISIRAIL POST CLIP DETAILS

PROJECT No.: 14-079

DRAWING No.:

**S7 A** 





**SEE NOTES ON DRAWING S1** 

SCALE: 3" = 1'-0"

DATE: APRIL, 2014

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APR 28, 2016

ENGINEER'S SEAL | PROJECT:

LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

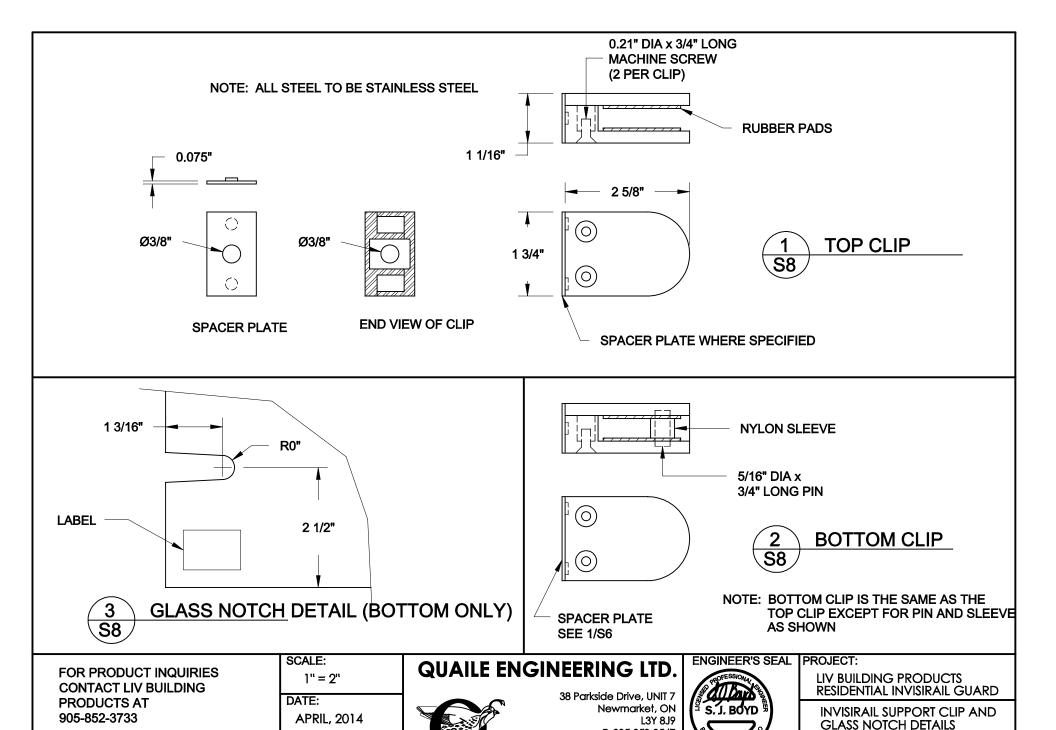
INVISIRAIL LITE 10 POST CLIP DETAILS

PROJECT No.:

DRAWING No.:

14-079

S7 B



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PROJECT No.:

14-079

DRAWING No.:

**S8** 

C:\SJB-03\LIV BUILDING PRODUCTS\2014\14-079 GLASS GUARDS

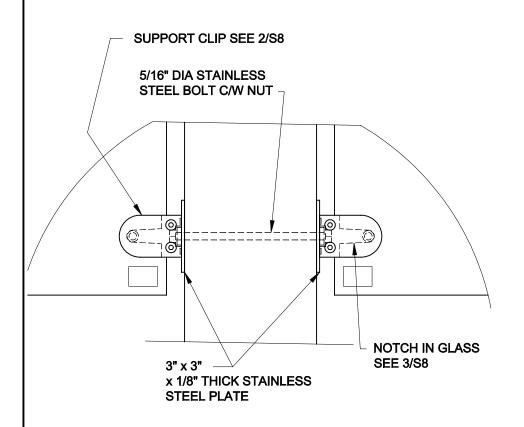
SEE NOTES ON DRAWING S1

CHECKED

SJB

DRAWN

SJB



CLIP BEYOND C/W SPACER, WASHER AND 5/16" DIA BOLT FOR **CORNER POST** (RAISE CLIP UP 3/8" TO 5/16" DIA STAINLESS **AVOID INTERFERENCE)** STEEL BOLT C/W NUT SPACER PLATE **AS PER 1/S8** 7/8" DIA x 1/16" THICK WASHER OVER SPACER PLATE **NOTCH IN GLASS SEE 3/S8** 3" x 3" x 1/8" THICK STAINLESS STEEL PLATE

**BOTTOM CLIP - INTERMEDIATE POST** 

**BOTTOM CLIP - CORNER POST** 

FOR PRODUCT INQUIRIES CONTACT LIV BUILDING PRODUCTS AT 905-852-3733

<u>S9</u>

**SEE NOTES ON DRAWING S1** 

SCALE: 3" = 1'-0"

DATE:

**APRIL, 2014** 

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### ENGINEER'S SEAL PROJECT:



LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

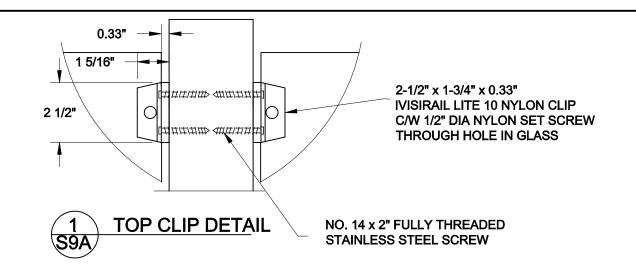
INVISIRAIL BOTTOM CLIP DETAILS FOR 6x6 CEDAR POSTS AT 6' O/C

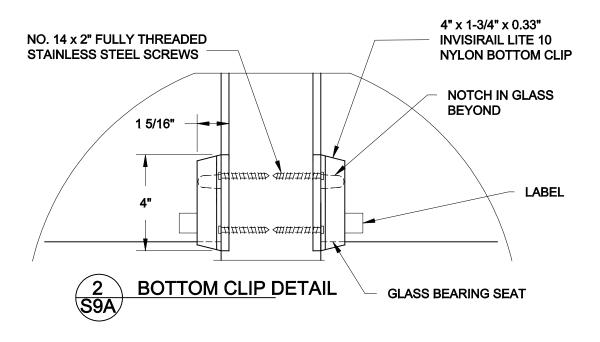
PROJECT No.:

DRAWING No.:

14-079

**S9** 





**SEE NOTES ON DRAWING S1** 

SCALE:

3" = 1'-0"

DATE:

**APRIL, 2014** 

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ENGINEER'S SEAL PROJECT:



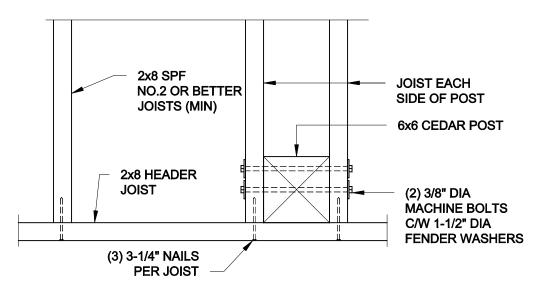
LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

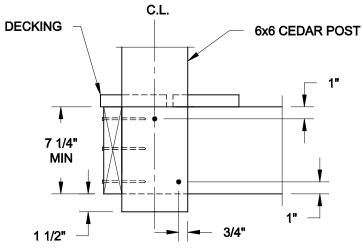
INVISIRAIL LITE 10 CLIP DETAILS FOR WOOD POSTS

PROJECT No.:

DRAWING No.:

14-079 S9A





PLAN VIEW SECTION

1 6x6 CEDAR POST TO JOIST CONNECTION 1-1/2" = 1'-0"

#### NOTE:

- 1. FASTENERS TO HAVE A CORROSION RESISTANT COATING AS PER SB-7 OF THE ONTARIO BUILDING CODE, OR SHALL BE STAINLESS STEEL.
- 2. THIS DETAIL IS ADAPTED FROM DETAIL EB-5 OF SB-7 OF THE ONTARIO BUILDING CODE AND EVALUATED FOR 6x6 CEDAR POSTS SPACED UP TO 6' O/C

FOR PRODUCT INQUIRIES CONTACT LIV BUILDING PRODUCTS AT 905-852-3733

**SEE NOTES ON DRAWING S1** 

SCALE: AS NOTED

DATE: APRIL, 2014

DRAWN CHECKED
SJB SJB

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APR 28, 2016

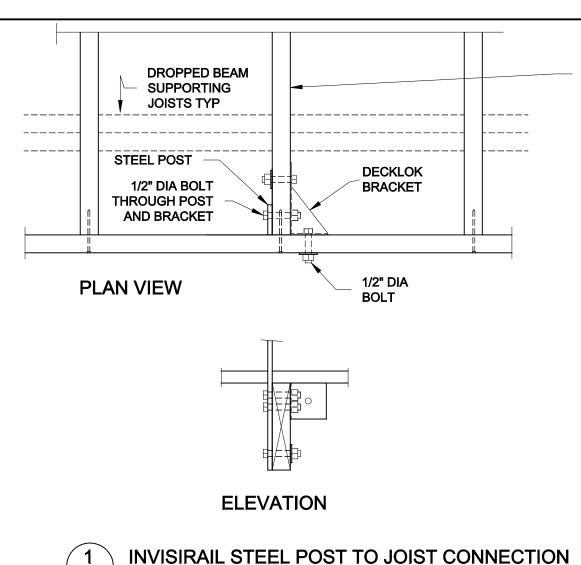
**ENGINEER'S SEAL** 

PROJECT:

LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

6x6 POST ANCHORAGE DETAIL

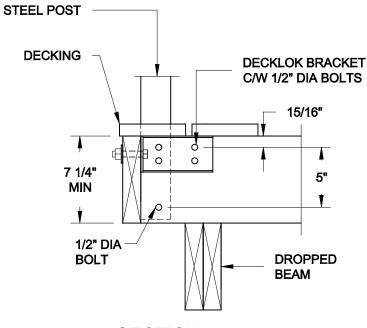
PROJECT No.: 14-079 DRAWING No.: \$10



2x8 NO.2 SPF JOISTS MIN

#### NOTE:

FASTEN STEEL POST TO 2X8 BLOCKING WHERE THE GUARD IS PARALLEL TO THE FLOOR JOISTS. FASTEN **BLOCKING TO ADJACENT FLOOR JOIST WITH 3 3-1/2" END-NAILS AS PER DETAIL EB6 OF SB-7** OF THE ONTARIO BUILDING CODE.



**SECTION** 

NOTE: BOLTS TO BE STAINLESS STEEL.

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

FOR PRODUCT INQUIRIES CONTACT LIV BUILDING **PRODUCTS AT** 905-852-3733

**SEE NOTES ON DRAWING S1** 

SCALE:

**AS NOTED** 

DATE:

APRIL, 2014

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### ENGINEER'S SEAL PROJECT:

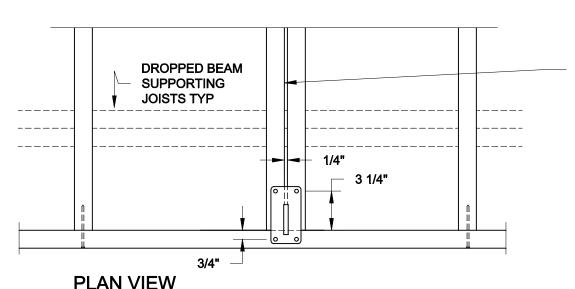


LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

INVISIRAIL STEEL POST TO JOIST **CONNECTION DETAIL** 

PROJECT No.: 14-079

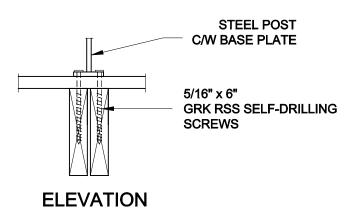
DRAWING No.: **S11** 



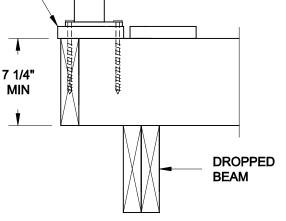
**DOUBLE 2x8 NO.2 SPF JOIST MIN** 

#### NOTE:

FASTEN STEEL POST TO 2X8 BLOCKING WHERE THE GUARD IS PARALLEL TO THE FLOOR JOISTS. FASTEN BLOCKING TO ADJACENT FLOOR JOIST WITH 3 3-1/2" **END-NAILS AS PER DETAIL EB6 OF SB-7** OF THE ONTARIO BUILDING CODE.



5/4 KAYU DECK. 1" TREX TRANSCENDS DECK. 1" GOSSEN PVC DECK. 7/8" DECKORATORS CLASSIC DECK, OR 1-1/2 x 5-1/2" 5/4 KAYU BLOCK **BETWEEN BASE PLATE AND JOISTS** 



### FLUSH MOUNT INVISIRAIL STEEL POST CONNECTION 1-1/2" = 1'-0"

NOTE: BASEPLATE MAY ONLY BEAR DIRECTLY ON SPECIFIED DECKING PRODUCTS- SEE SECTION.

FOR PRODUCT INQUIRIES CONTACT LIV BUILDING **PRODUCTS AT** 905-852-3733

SEE NOTES ON DRAWING S1

SCALE: **AS NOTED** DATE: **APRIL**, 2014

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**SECTION** 

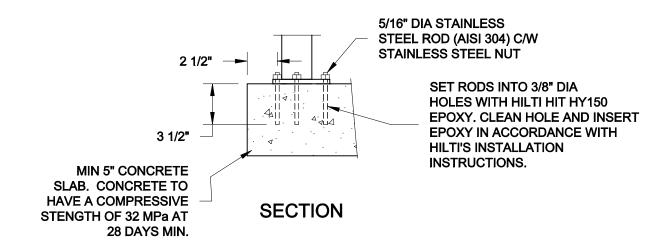
LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

FLUSH MOUNT STEEL POST **CONNECTION DETAIL** 

PROJECT No.: 14-079

DRAWING No.: S12 R1

C:\SJB-03\LIV BUILDING PRODUCTS\2014\14-079 GLASS GUARDS



FLUSH MOUNT INVISIRAIL STEEL POST CONNECTION - CONCRETE SLAB 1-1/2" = 1'-0"

FOR PRODUCT INQUIRIES **CONTACT LIV BUILDING** PRODUCTS AT 905-852-3733

**SEE NOTES ON DRAWING S1** 

SCALE:

**AS NOTED** 

DATE:

APRIL, 2014

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# ENGINEER'S SEAL PROJECT:



LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

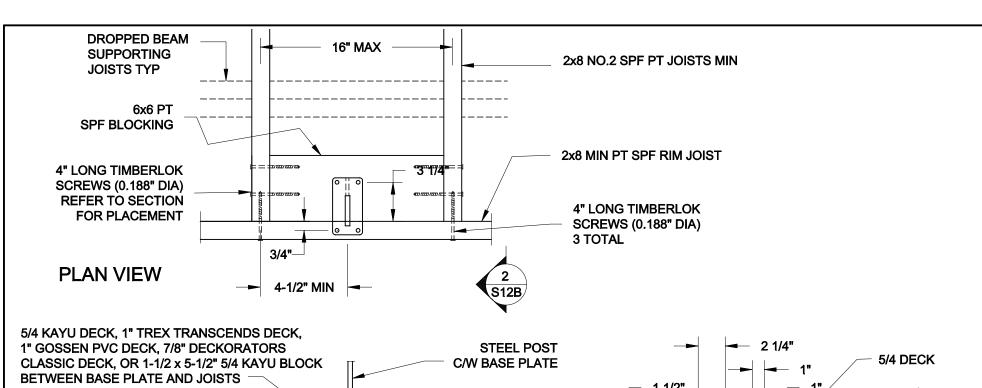
FLUSH MOUNT INVISIRAIL POST **DETAIL FOR CONCRETE SLAB** 

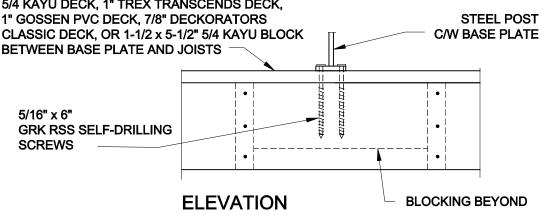
PROJECT No.:

DRAWING No.:

14-079

**S12A** 





1 1/2" 1 1/2" 5 1/2" 6x6 PT SPF BLOCKING BEYOND **TIMBERLOK SCREWS DROPPED BEAM SECTION** S12B 1-1/2" = 1'-0"

ALT FLUSH MOUNT STEEL POST CONNECTION

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

NOTE: BASEPLATE MAY ONLY BEAR DIRECTLY ON SPECIFIED DECKING PRODUCTS- SEE SECTION.

FOR PRODUCT INQUIRIES CONTACT LIV BUILDING **PRODUCTS AT** 905-852-3733

**SEE NOTES ON DRAWING S1** 

SCALE: **AS NOTED** DATE:

APRIL, 2014

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ENGINEER'S SEAL PROJECT:



LIV BUILDING PRODUCTS RESIDENTIAL INVISIRAIL GUARD

FLUSH MOUNT INVISIRAIL POST **CONNECTION DETAIL** 

PROJECT No.: 14-079

DRAWING No.: S12B R1

