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Technical Evaluation Report

THIS DOCUMENT CONTAINS (6) PAGES: THE FIRST PAGE MUST BEAR AN ORIGINAL SIGNATURE & SEAL OF THE CERTIFYING PE TO BE VALID FOR USE

(Issued March 4, 2020 Subject to Renew March 3, 2021)
(or next code cycle change)

EVALUATION SUBJECT: STEEL SADDLE RISER - STD., HEAVY DUTY & DESIGNER LINE

TER-20-21957

REPORT HOLDER:
SKYLIFT HARDWARE
1160 Vista Avenue SE
Salem, OR 97302 USA
Phone: (503) 361-2274 | SkyLifthardware.com

SCOPE OF EVALUATION (compliance with the following codes):

THIS IS A STRUCTURAL PERFORMANCE EVALUATION OF THE COMPONENTS LISTED HEREIN ONLY. NO OTHER PERFORMANCE RATINGS OR CERTIFICATIONS ARE OFFERED OR IMPLIED HEREIN.

Positive and negative design forces calculated for use with this system shall be determined by others on a job-specific basis in accordance with the structural requirements of the **2015/2018 IBC/IRC, 2017 (6th EDN) & 2020 (7th EDN) FLORIDA BUILDING CODE AS WELL AS CURRENT VERSIONS OF THE MN, NC, NJ, NY, OH, SC, & VA BUILDING CODES AS APPLICABLE. CODE ENFORCED COMPLIES WITH STATE OF SEAL AND IF MULTIPLE VERSIONS ARE LISTED THEN MOST STRINGENT APPLIES. DESIGN SHALL UTILIZE ASD DESIGN METHOD USING ASCE 7-16 OR ASCE 7-10 CODES FOR SITE SPECIFIC APPLICATIONS AS APPLICABLE.**

SUBSTANTIATING DATA:

Product Evaluation Documents

Substantiating documentation has been submitted to provide this report and is summarized in the sections below.

Test Reports

No testing data has been provided and this analysis is based on 360-10 Specifications for Structural Steel Building- AISC and 2015 National Design Specification - NDS standards.

INSTALLATION:

Installation shall be made in accordance with the manufacturers published installation instructions and this report.

- remove roofing materials carefully as required and save for reinstall whenever is possible. Cut an access hole through the roof directly over the exterior bearing wall. Do not cut any roof trusses or rafters.
- Verify existing surface and structure for deficiencies, cracks or other imperfections that will create rotation on the system. Design is based on full contact of base plate to host surface.
- Determine approximate positioning or layout of all SkyLift roof riser brackets prior cutting any access holes. SkyLift positioning shall be directly over exterior load bearing walls.
- Center base plate on top of existing host structure with minimum anchoring edge and end distances required.
- Integrity of existing host structure shall be verified by others for new vertical and horizontal imposed loads including re-installation of removed material from access hole.
- If the SkyLift column does not extend above the roofline, you may need to purchase a different SkyLift product. Raising SkyLift with additional blocking will create rotation on the system and it is not covered under this report.
- Install anchoring (by others) as required according to designer and manufacturer's specifications.
- Additional bracing and/or shoring (by others) may required during erection and installation process.
- Connect steel bucket to wood beam as shown and as per manufacturer's specifications. Use of wood post for upright support shall be designed by others. Dry wood may split more easily. if wood tends to split, pre-boring holes shall be used with diameters not exceeding 3/4 of the anchor diameter or use a 5/32" bit for SDS screws. a fastener that splits the wood shall be reevaluated prior loading the connection.

NOTE: THE GRAPHICAL DEPICTIONS IN THIS REPORT ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY DIFFER IN APPEARANCE.

LIMITATIONS & CONDITIONS OF USE:

Use of this product shall be in strict accordance with this report as noted herein. See remaining pages for complete limitations and conditions of use. Use provided fasteners for installation. DO NOT SUBSTITUTE FASTENERS.

FINISH:

All SkyLift risers are in powder-coated black.

MATERIAL:

Steel pipes schedule 40 conform to ASTM A53 grade B, Fy = 35 ksi and Fu = 60 ksi. Steel plates conform to ASTM A36, Fy = 36 ksi and Fu = 58 ksi. Carbon Steel. SDS screws conforme to ICC-ES ESR-2236. Thru bolts to conform to ASTM A307 and SAE J429. Concrete anchors conform to NOA 20-0427.13.

OPTIONS:

This evaluation is valid for the SkyLift Risers sizes listed herein. See following tables and drawings.

STRUCTURAL PERFORMANCE: This report is based on individual force direction capacity referred by the standards above. User / designer shall combine forces on more than one direction to find allowable capacity of riser. No allowable stress increase has been used in the preparation of this document.

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ORIGINAL SIGNATURE AND RAISED SEAL OR DIGITAL SEAL REQUIRED TO BE VALID PER CODE:

March 4, 2020
Frank Bennardo, P.E., SECB

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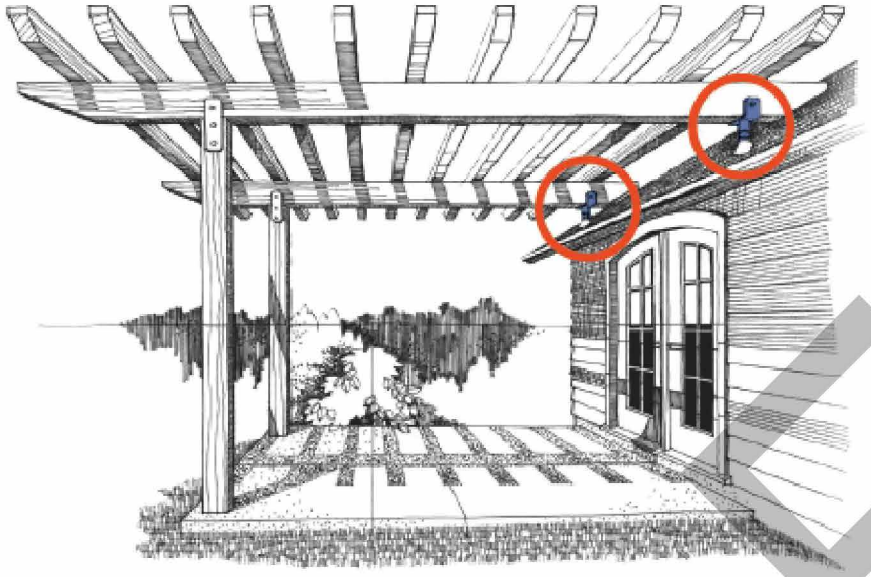
SECTION 1: TYPICAL INSTALLATION DETAILS



CONTENTS

1 Designer Riser, Black
Part No. SK-DR 3.5

12" Long with
3.5" Saddle & Plate

(16) 1/4x3 Galv. Hex Head
Wood Screws

(4) Simpson SDS Strong Tie
1/4x3 T-40 Torx® Screws

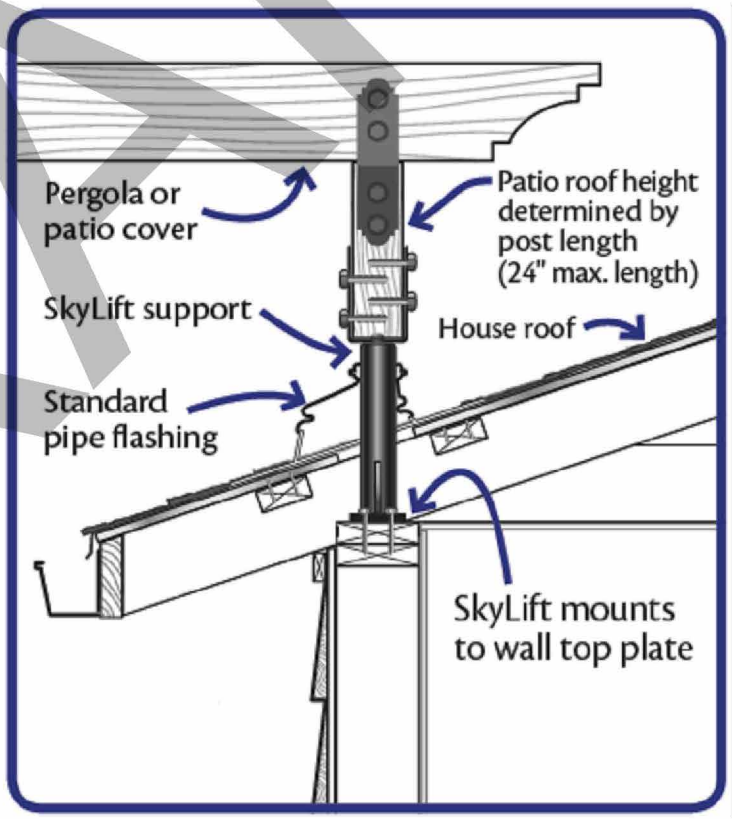
(1) Torx® Bit

(4) Simpson Outdoor
Accents Hex Head Washers

Installation instructions

Patent Pending

NOTE: FASTENERS SHOWN ABOVE MAY VARY FOR EACH RISER TYPE.



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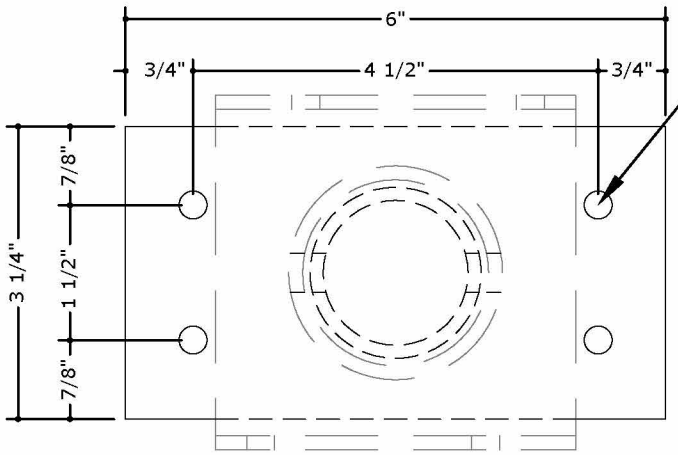
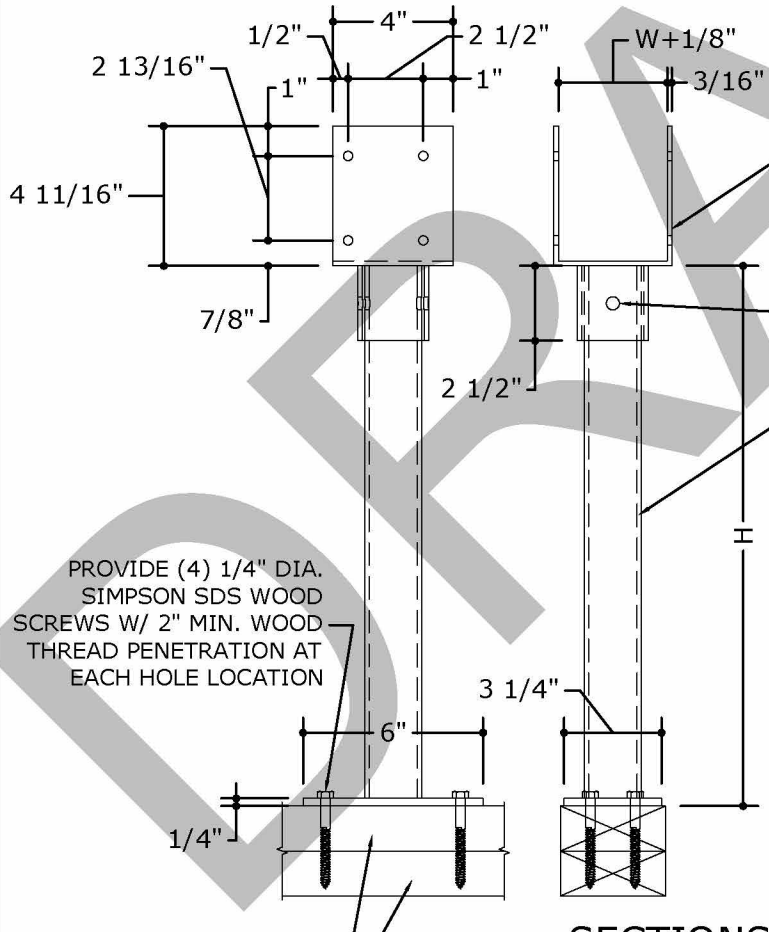
STANDARD RISER



PROVIDE 1/4" DIA. SIMPSON SDS WOOD SCREWS WITH 2" MIN. WOOD THREAD PENETRATION AT EACH HOLE LOCATION OR FOR CONCRETE APPLICATIONS PROVIDE 1/4" DIA. ELCO ULTRACONS OR EQ., 1-3/4" EMBED. INTO CONCRETE, 2-1/2" FROM ANY CONCRETE FACE

BASE PLATE



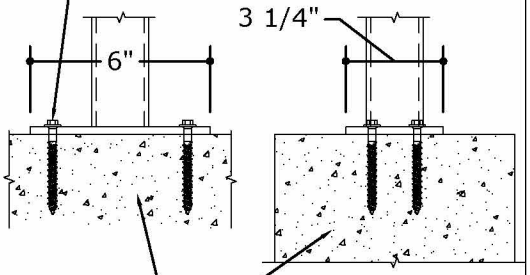
NOTE: TOP BRACKET SIZE AND BOLT LOCATIONS MAY VARY AS FIELD CONDITIONS DICTATE. TOP BRACKET CONNECTION SHALL BE VERIFIED BY OTHERS

3/8" DIA. THRU BOLT ASTM A325

1-1/2" DIA. (1.90" O.D.x0.145" THICK WALL) STEEL PIPE SCH. 40 ASTM A53 GR. B

PROVIDE (4) 1/4" DIA. SIMPSON SDS WOOD SCREWS W/ 2" MIN. WOOD THREAD PENETRATION AT EACH HOLE LOCATION

EXISTING WOOD DOUBLE TOP PLATE, G=0.50 MIN (BY OTHERS). SINGLE TOP PLATES NOT ACCEPTABLE FOR USE



PROVIDE (4) 1/4" DIA. ELCO ULTRACON OR EQ., 1-3/4" EMBED. INTO CONCRETE, 2-1/2" FROM ANY CONCRETE FACE

EXISTING CONCRETE (f'c ≥ 3,000 PSI) (BY OTHERS)

SECTIONS

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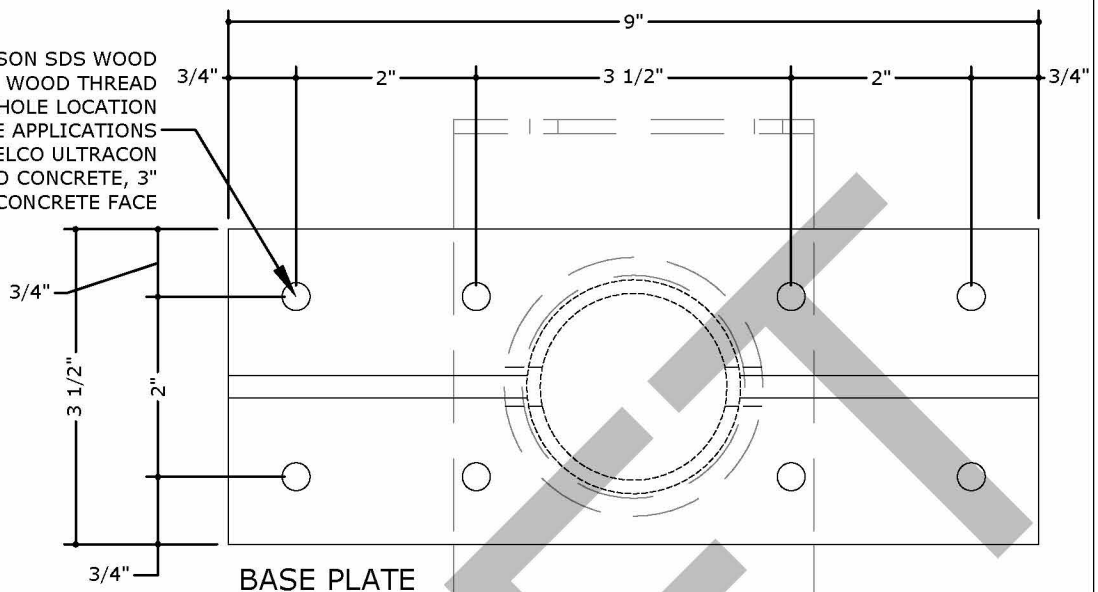
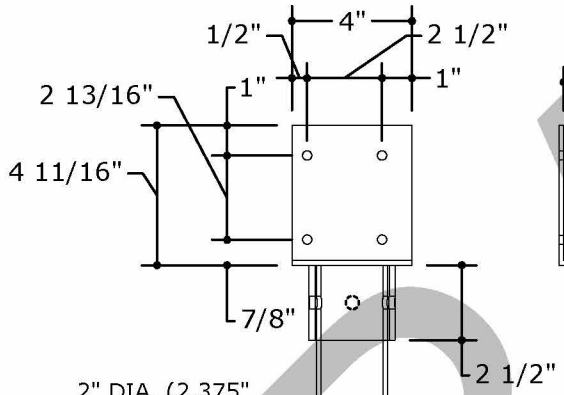
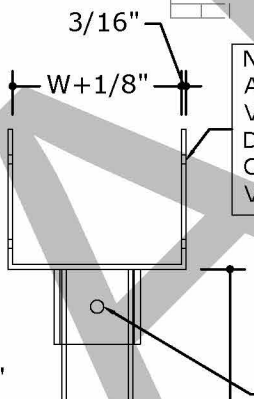
HEAVY DUTY RISER

PROVIDE 1/4" DIA. SIMPSON SDS WOOD SCREWS WITH 2" MIN. WOOD THREAD PENETRATION AT EACH HOLE LOCATION OR FOR CONCRETE APPLICATIONS PROVIDE (8) 5/16" DIA. ELCO ULTRACON OR EQ., 2" EMBED. INTO CONCRETE, 3" FROM ANY CONCRETE FACE



BASE PLATE

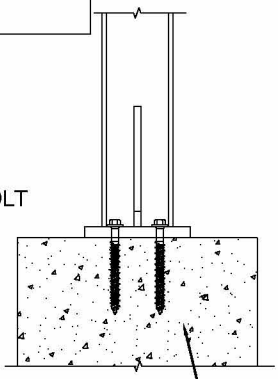




NOTE: TOP BRACKET SIZE AND BOLT LOCATIONS MAY VARY AS FIELD CONDITIONS DICTATE. TOP BRACKET CONNECTION SHALL BE VERIFIED BY OTHERS

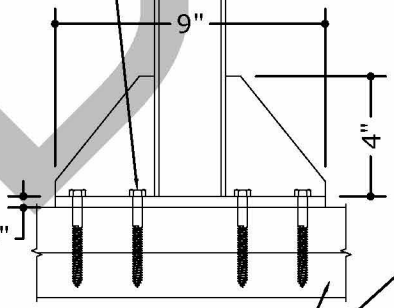
2" DIA. (2.375" O.D.x0.154" THICK WALL) STEEL PIPE SCH. 40 ASTM A53 GR. B

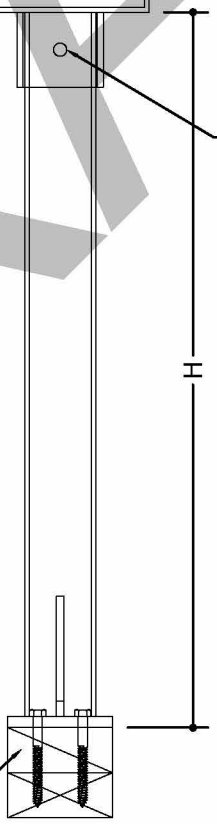
3/8" DIA. THRU BOLT ASTM A325



EXISTING CONCRETE (f'c ≥ 3,000 PSI) (BY OTHERS)

PROVIDE (8) 1/4" DIA. SIMPSON SDS WOOD SCREWS WITH 2" MIN. WOOD THREAD PENETRATION AT EACH HOLE LOCATION

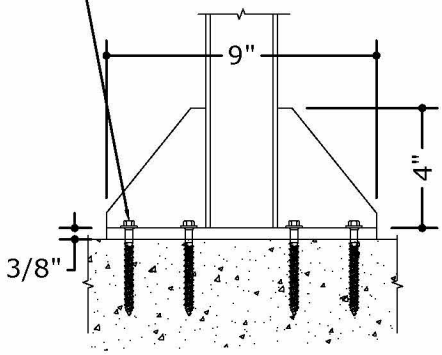




EXISTING WOOD DOUBLE TOP PLATE G=0.50 MIN (BY OTHERS). SINGLE TOP PLATES NOT ACCEPTABLE FOR USE

SECTIONS

PROVIDE (8) 5/16" DIA. ELCO ULTRACON OR EQ., 2" EMBED. INTO CONCRETE, 3" FROM ANY CONCRETE FACE



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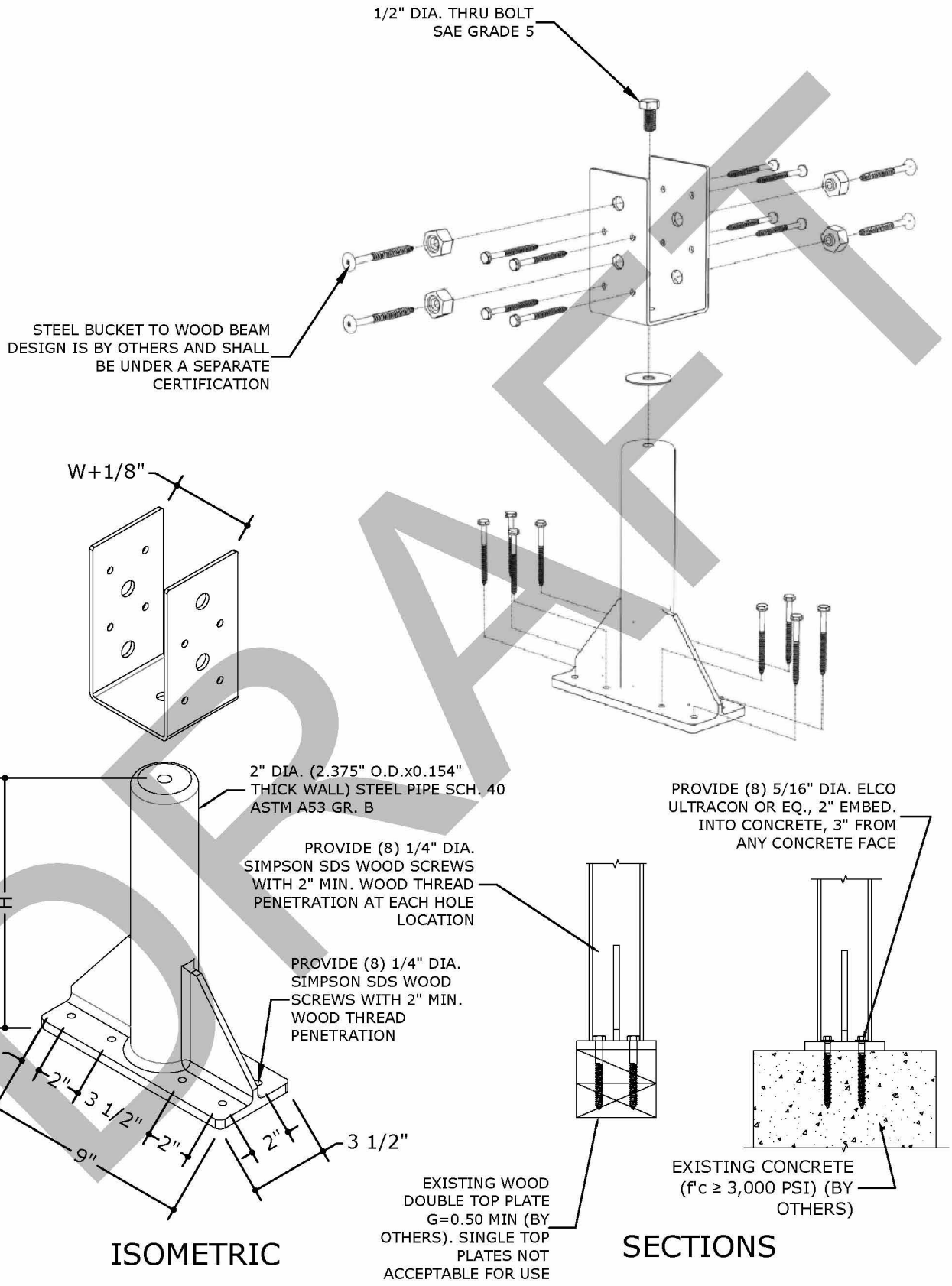
DESIGNER RISER



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SECTION 2: ALLOWABLE CAPACITIES

TABLE 1: ALLOWABLE LOAD CAPACITIES WOOD SUBSTRATE (INDIVIDUAL):

TYPE	MODEL	DIMENSIONS		SUBSTRATE	UPLIFT	DOWN	F1		F2	
		W	H				Cd = 1.0	Cd = 1.6	Cd = 1.0	Cd = 1.6
STANDARD	SK18-B 3.5	3.5 in	18.0 in	WOOD	743 lbs	2500 lbs	173 lbs	276 lbs	58 lbs	92 lbs
	SK24-B 3.5	3.5 in	24.0 in	WOOD	743 lbs	2500 lbs	130 lbs	208 lbs	43 lbs	69 lbs
HEAVY DUTY	SK18-HD 3.5	3.5 in	18.0 in	WOOD	1483 lbs	2500 lbs	351 lbs	480 lbs	154 lbs	246 lbs
	SK18-HD 4R	4.0 in	18.0 in	WOOD	1483 lbs	2500 lbs	351 lbs	480 lbs	154 lbs	246 lbs
	SK18-HD 5.5	5.5 in	18.0 in	WOOD	1483 lbs	2500 lbs	351 lbs	480 lbs	154 lbs	246 lbs
	SK18-HD 6R	6.0 in	18.0 in	WOOD	1483 lbs	2500 lbs	351 lbs	480 lbs	154 lbs	246 lbs
	SK24-HD 3.5	3.5 in	24.0 in	WOOD	1483 lbs	2500 lbs	263 lbs	360 lbs	115 lbs	184 lbs
	SK24-HD 4R	4.0 in	24.0 in	WOOD	1483 lbs	2500 lbs	263 lbs	360 lbs	115 lbs	184 lbs
	SK24-HD 5.5	5.5 in	24.0 in	WOOD	1483 lbs	2500 lbs	263 lbs	360 lbs	115 lbs	184 lbs
	SK24-HD 6R	6.0 in	24.0 in	WOOD	1483 lbs	2500 lbs	263 lbs	360 lbs	115 lbs	184 lbs
DESIGNER	SK-DR 3.5	3.5 in	12.0 in	WOOD	1055 lbs	2500 lbs	527 lbs	720 lbs	231 lbs	369 lbs
	SK-DR 4	4.0 in	12.0 in	WOOD	1055 lbs	2500 lbs	527 lbs	720 lbs	231 lbs	369 lbs
	SK-DR 5.5	5.5 in	12.0 in	WOOD	1055 lbs	2500 lbs	527 lbs	720 lbs	231 lbs	369 lbs
	SK-DR 6	6.0 in	12.0 in	WOOD	1055 lbs	2500 lbs	527 lbs	720 lbs	231 lbs	369 lbs

TABLE 2: ALLOWABLE LOAD CAPACITIES CONCRETE SUBSTRATE (INDIVIDUAL):

TYPE	MODEL	DIMENSIONS		SUBSTRATE	UPLIFT	DOWN	F1	F2
		W	H					
STANDARD	SK18-B 3.5	3.5 in	18.0 in	CONCRETE	743 lbs	2500 lbs	228 lbs	76 lbs
	SK24-B 3.5	3.5 in	24.0 in	CONCRETE	743 lbs	2500 lbs	171 lbs	57 lbs
HEAVY DUTY	SK18-HD 3.5	3.5 in	18.0 in	CONCRETE	1483 lbs	2500 lbs	315 lbs	138 lbs
	SK18-HD 4R	4.0 in	18.0 in	CONCRETE	1483 lbs	2500 lbs	315 lbs	138 lbs
	SK18-HD 5.5	5.5 in	18.0 in	CONCRETE	1483 lbs	2500 lbs	315 lbs	138 lbs
	SK18-HD 6R	6.0 in	18.0 in	CONCRETE	1483 lbs	2500 lbs	315 lbs	138 lbs
	SK24-HD 3.5	3.5 in	24.0 in	CONCRETE	1483 lbs	2500 lbs	236 lbs	103 lbs
	SK24-HD 4R	4.0 in	24.0 in	CONCRETE	1483 lbs	2500 lbs	236 lbs	103 lbs
	SK24-HD 5.5	5.5 in	24.0 in	CONCRETE	1483 lbs	2500 lbs	236 lbs	103 lbs
	SK24-HD 6R	6.0 in	24.0 in	CONCRETE	1483 lbs	2500 lbs	236 lbs	103 lbs
DESIGNER	SK-DR 3.5	3.5 in	12.0 in	CONCRETE	1055 lbs	2500 lbs	472 lbs	155 lbs
	SK-DR 4	4.0 in	12.0 in	CONCRETE	1055 lbs	2500 lbs	472 lbs	155 lbs
	SK-DR 5.5	5.5 in	12.0 in	CONCRETE	1055 lbs	2500 lbs	472 lbs	155 lbs
	SK-DR 6	6.0 in	12.0 in	CONCRETE	1055 lbs	2500 lbs	472 lbs	155 lbs

CAPACITY TABLE NOTES (ALL SIZE OPTIONS):

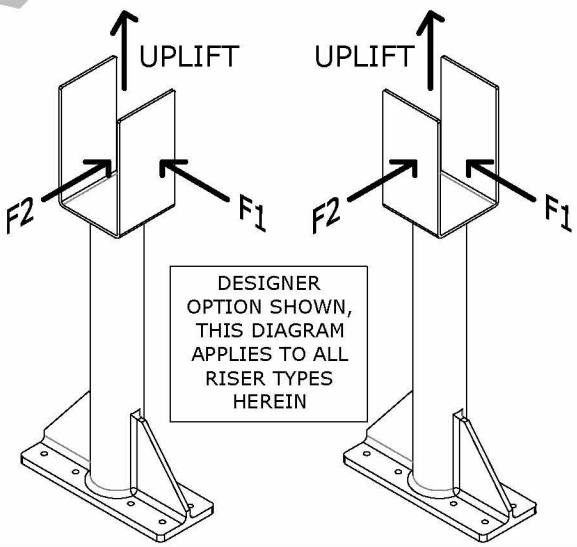
1. LOAD DURATION, Cd SHALL BE DETERMINED BY USER. USER MAY USE 1.6 FOR WIND LOADS APPLICATIONS.

2. ALLOWABLE LOAD CAPACITIES LISTED HEREIN ARE FOR INDIVIDUAL FORCES CHECK ONLY. LOAD COMBINATIONS WITH HORIZONTAL AND VERTICAL FORCES SHALL BE VERIFIED BY OTHERS IN ACCORDANCE TO ASCE 7-10 AND ASCE 7-16 LOAD COMBINATIONS AND SHALL ADHERE TO THE FOLLOWING UNITY EQUATION:

   ([UPLIFT_REQUIRED/UPLIFT] +[F1_REQUIRED/F1] + [F2_REQUIRED/F2]) < 1.0.

3. WOOD SUBSTRATE HOST STRUCTURE SHALL HAVE MINIMUM SPECIFIC GRAVITY, G EQUAL OR BETTER THAN 0.50 AND COMPRESSIVE STRENGTH OF 3,000 PSI FOR CONCRETE SUBSTRATE.

NOTE: Higher lateral values may be achieved by combining this product with the SkyLift LSS (Lateral Stabilizer Strap). See TER 20-29481.



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