DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR HCAI PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM)

OFFICE USE ONLY

APPLICATION #: OPM-0302

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: ☐ New ☒ Renewal/Update

Manufacturer Information

Manufacturer: Chatsworth Products

Manufacturer's Technical Representative: Todd Schneider

Mailing Address: 4175 Guardian Street, Simi Valley, CA 93063

Telephone: (203) 969-4862 Email: TSchneider@chatsworth.com

Product Information

Product Name: ADJUSTABLE QUADRARACK AND SERVERRACK

Product Type: Instrumentation Cabinet

Product Model Number: 15211-X01/15215-X01, 15211-X03/15215-X03, 15211-X15/15215-X15, 15211-X08/15215-X08, 15212-X01/15216-X01, 15212-X03/15216-X03, 15212-X15/15216-X15, 15212-X08/15216-X08, 15213-X01/15217-X01, 15213-X03/15217-X03, 15213-X15/15217-X15, 15213-X08/15217-X08,15214-X01/15218-X01, 15214-X03/15218-X03, 15214-X15/15218-X15, 15214-X08/15218-X08

General Description: Telecommunication Rack

Applicant Information

Applicant Company Name: EASE LLC.

Contact Person: Tiffany Tonn

Mailing Address: 1515 FAIRVIEW AVE, STE 205, MISSOULA, MT 59801

Telephone: (406) 541-3273 Email: tiffany@easeco.com

Title: Office Manager

Registered Design Professonal Preparing Engineering Recommendations

Company Name: EASE LLC

Name: Jonathan Roberson California License Number: S4197

Mailing Address: 5877 Pine Ave., Suite 210, Chino Hills, CA 91709

Telephone: (951) 295-1892 Email: jon@EASECo.com

HCAI Special Seismic Certification Preapproval (OSP)

☐ Special Seismic Certification is preapproved under OSP OSP Number:

Certification Method

Testing in accordance with: ☐ ICC-ES AC156 ☐ FM 1950-16

☐ Other(s) (Please Specify):

*Use of criteria other than those adopted by the California Building Standards Code, 2022 (CBSC 2022) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test criteria other than those adopted in the CBSC 2022 may be used when approved by HCAI prior to testing.

☒ Analysis

☐ Experience Data

☐ Combination of Testing, Analysis, and/or Experience Data (Please Specify):

HCAI Approval

Date: 8/15/2023

Name: William Staehlin Title: Senior Structural Engineer

Condition of Approval (if applicable):

EASE
EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

5877 Pine Ave, Ste. 210
Chino Hills, CA. 91709
Phn: (909) 606-7622

The Department of Health Care Access and Information

PREAPPROVAL OF MANUFACTURER'S CERTIFICATION

OPM-0302

THIS PREAPPROVAL CONFORMS TO THE 2022 CALIFORNIA BUILDING CODE

MANUFACTURER: **CHATSWORTH PRODUCTS, INC**

EQUIPMENT NAME: **Adjustable ServerRack & QuadraRack**

Date: 8/4/23

GENERAL NOTES

1. THIS HCAI PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2022 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2022 CBC
2. THIS DOCUMENT MAY ONLY BE USED WITH THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER LISTED ABOVE FOR THE SPECIFIC PROJECT SITE AND INSTALLATION LOCATION. THIS DOCUMENT IS INVALID WITHOUT SUCH CONSENT.
3. THIS PREAPPROVAL CONFORMS TO THE 2022 CALIFORNIA BUILDING CODE WHERE S_{DS} IS NOT GREATER THAN 2.30. SEE DETAIL FOR APPLICABILITY
4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE S_{DS} = 2.30, a_p = 1.0, I_p = 1.5, R_p = 2.5, z/h = 0 AT CONCRETE SLAB & z/h $\leq$ 1 AT CONCRETE SLAB ON METAL DECK. SEE FOLLOWING SHEETS FOR Ω_0
5. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
6. ALL DESIGN FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.
7. CONCRETE SLAB ON METAL DECK DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION IN THE BUILDING. (i.e. z/h $\leq$ 1)
8. CONCRETE SLAB DETAIL VALID FOR DEMANDS SHOWN AT OR BELOW GRADE. (i.e. z/h = 0)

9. **RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING**

   A. PROVIDE SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN ADDITION TO ALL OTHER LOADS.

   B. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2022 CBC AND WITH THE DETAILS, MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PREAPPROVAL DOCUMENTS.

   C. VERIFY THAT PROJECT SPECIFIC VALUES OF S_{DS} & z/h RESULT IN SEISMIC FORCES (E_h, E_v) THAT DO NOT EXCEED THE VALUES ON THE DETAILS.

   D. VERIFY THAT THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR REPORT. AND THIS OPM.

   E. VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS (SEE TYPICAL DETAIL ON SHEET 2).

   F. VERIFY THAT ALL NEW OR EXISTING ANCHORS ARE AN ADEQUATE DISTANCE FROM THE UNIT ATTACHMENTS AND CHECK FOR INTERACTION WHERE OTHER ANCHORS ARE WITHIN 18" OR 6hef FROM THIS UNIT'S ANCHORS.

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2024
STRUCTURAL
STATE OF CALIFORNIA
8/4/23

CHATSWORTH PRODUCTS, INC

Adjustable ServerRack & QuadraRack

DES. J. ROBERSON | JOB NO. 11-2314 | DATE 8/4/23 | SHEET 2 OF 10 SHEETS

10. **EXPANSION ANCHORS:**

A. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICC REPORT.

Anchor Diameter	Concrete Type	Min. f'c (psi)	Anchor Type	ICC Report No.	Min. Embed.	Min. Spacing	Min. Edge Dist.	Min. Conc. Thickness	Torque Test	Direct Tension Test
3/8"	Sand Light Weight	3000	Hilti Kwik Bolt TZ2 (CARBON STEEL)	ESR-4266	2"	6.75	12	See Detail "A"	30 FT-LB	N/A
5/8"	Normal Weight	3000	Hilti Kwik Bolt TZ2 (CARBON STEEL)	ESR-4266	3.25"	10"	32"	5"	40 FT-LB	4107 lb

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 32" AWAY MINIMUM (i.e. - CORNER).
SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

C. TESTING AND SPECIAL INSPECTION OF EXPANSION ANCHORS SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY EMPLOYED BY THE FACILITY OWNER PER CBC 1704A & 1910A.5 AND CAC 7-149. ALL REPORTS SHALL BE SENT TO THE INSPECTOR OF RECORD, OWNER AND THE ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE.

(i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST OR TORQUE TEST AT LEAST 50% OF THE ANCHORS.

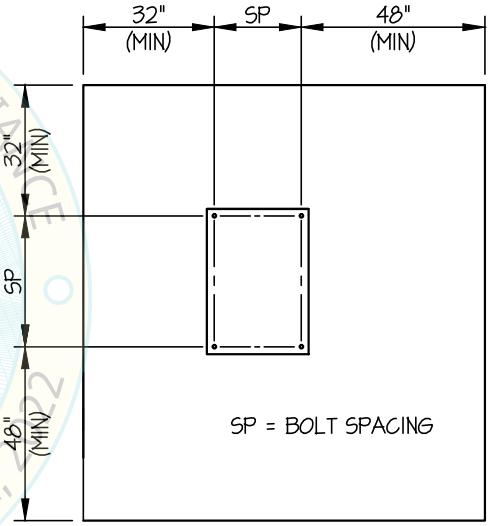
(ii) ACCEPTANCE CRITERIA:

- DIRECT TENSION TEST: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE TEST LOAD. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER BECOMES LOOSE.
- TORQUE TEST: THE APPLICABLE TORQUE MUST BE ACHIEVED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE : 1/2 TURN OF THE NUT

(iii) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.

D. AVOID DAMAGING EXISTING STEEL REINFORCING IN CONCRETE SLAB WHEN INSTALLING CONCRETE EXPANSION ANCHORS.

E. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT & WASHER.



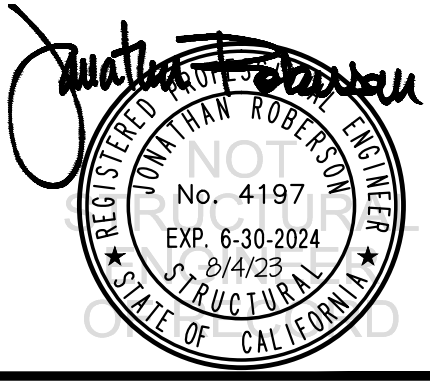
TYPICAL CONCRETE EDGE DETAIL

11. BOLTS THROUGH CONCRETE ON METAL DECK

A. BOLTS SHALL BE TORQUED BY 3/4 TURN OF THE NUTS AFTER THE SNUG TIGHT (THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT) CONDITION IS ACHIEVED, UNLESS OTHERWISE NOTED.

B. THROUGH BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16) FOR CONCRETE.

C. THROUGH-BOLTS IN CONCRETE SHALL RECEIVE SPECIAL INSPECTION AND TESTING (THROUGH BOLTS WITH STEEL TO STEEL CONNECTION IN TENSION DO NOT REQUIRE TENSION TESTING) IN ACCORDANCE WITH REQUIREMENTS FOR POST-INSTALLED ANCHORS.



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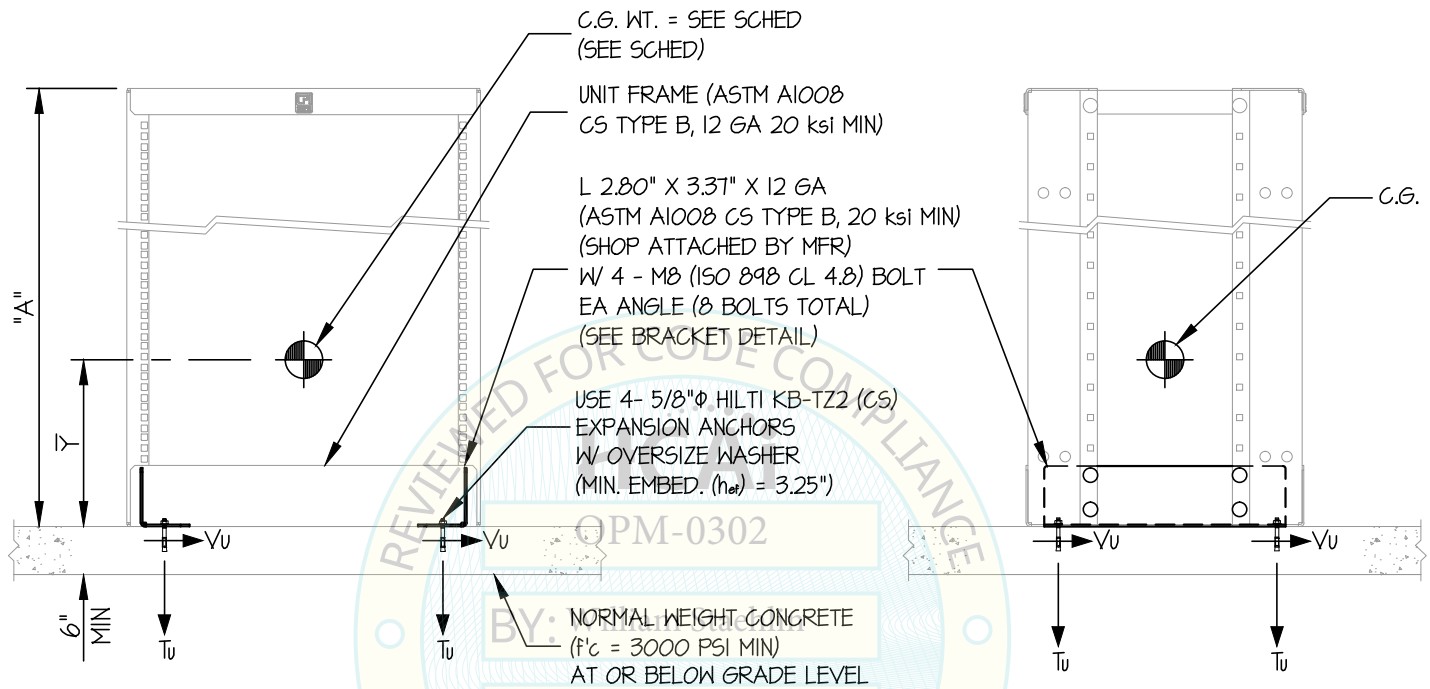
SEISMIC SUPPORTS & ATTACHMENTS — CONCRETE SLAB



FRONT ELEVATION — SIDE ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED. (EXAMPLE: S_{DS} = 2.30, a_p = 1.0, I_p = 1.5, R_p = 2.5, Ω_o = 2.0, z/h = 0)

   HORIZONTAL FORCE (Eh) = 1.035 Wp
   HORIZONTAL FORCE (Emh) = 2.07 Wp (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (Ev) = 0.46 Wp

2. THIS CALCULATION ENCOMPASSES WEIGHTS AND VERTICAL C.G. POSITIONS NOT EXCEEDING VALUES SHOWN.

3. THIS CALCULATION WAS PREPARED WITHOUT KNOWLEDGE OF ANY SITE CONDITION. COMPATIBILITY FOR USE WITH A SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD OF THE INSTALLATION (SEOR). USE REQUIRES APPROVAL BY THE SEOR.

4. STRUCTURAL ENGINEER OF RECORD FOR THE INSTALLATION SHALL VERIFY ALL CONDITIONS, EVALUATE INTERACTION WITH ADJACENT EQUIPMENT AND ANCHORS, AND PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.

5. SEE GENERAL NOTES: SHEETS 1 AND 2

REGISTERED PROFESSIONAL ENGINEER
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No. 4197
EXP. 6-30-2024
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DATE 8/4/23

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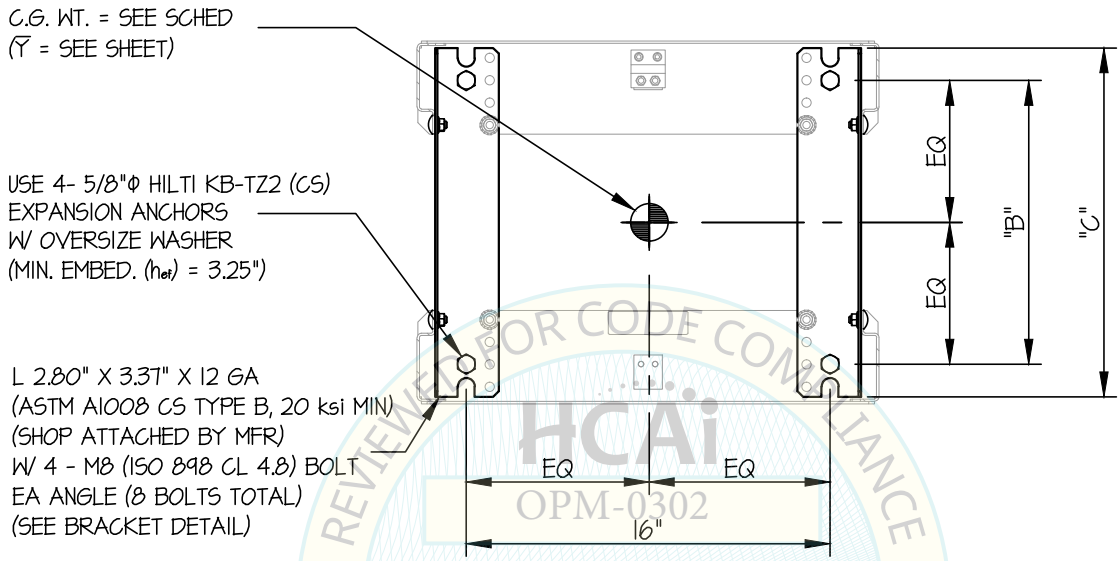
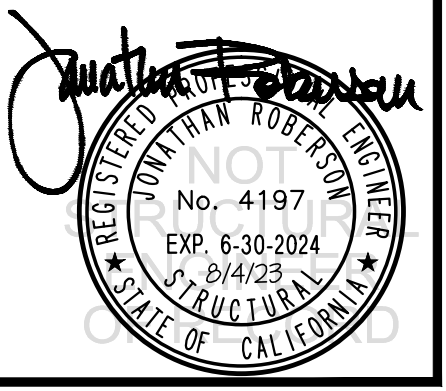
SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



PLAN AT BASE



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DES. J. ROBERSON
JOB NO. 11-2314
DATE 8/4/23
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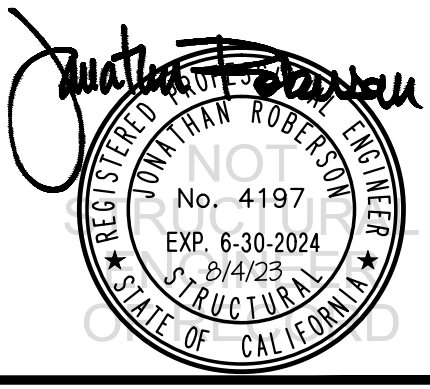
SEISMIC SUPPORTS & ATTACHMENTS — CONCRETE SLAB

MODEL NO. (SQ PUNCH RAILS/#12-24 THREADED RAILS)	*** MAX OP WEIGHT (lb.)	HEIGHT" A" (in.)	DEPTH "B" (in.)	HEIGHT $\bar{Y}$ (in.)	CHANNEL DEPTH "C" (in.)	** Tu (lb.)	** Vu (lb.)
15211-X01/15215-X01	572	72	12.47	33.4	15.34	1894	385
15211-X03/15215-X03	580	84	12.47	33.9	15.34	1950	390
15211-X15/15215-X15	587	96	12.47	45.5	15.34	2671	395
* 15211-X08/15215-X08	595	108	12.47	51.5	15.34	3073	400
15212-X01/15216-X01	576	72	19.36	33.4	22.24	1490	388
15212-X03/15216-X03	584	84	19.36	33.9	22.24	1534	393
15212-X15/15216-X15	591	96	19.36	45.5	22.24	2106	398
15212-X08/15216-X08	599	108	19.36	51.5	22.24	2424	403
15213-X01/15217-X01	580	72	26.25	33.4	29.13	1418	390
15213-X03/15217-X03	588	84	26.25	33.9	29.13	1461	396
15213-X15/15217-X15	595	96	26.25	45.5	29.13	2006	400
15213-X08/15217-X08	603	108	26.25	51.5	29.13	2310	406
15214-X01/15218-X01	584	72	33.14	33.4	36.01	1380	393
15214-X03/15218-X03	592	84	33.14	33.9	36.01	1421	398
15214-X15/15218-X15	600	96	33.14	45.5	36.01	1956	404
15214-X08/15218-X08	608	108	33.14	51.5	36.01	2252	409

** VALUES INCLUDE Ω_0
*** MAX OP WEIGHT = EQUIPMENT WEIGHT + CONTENTS (CONTENTS = 500 LB MAX)



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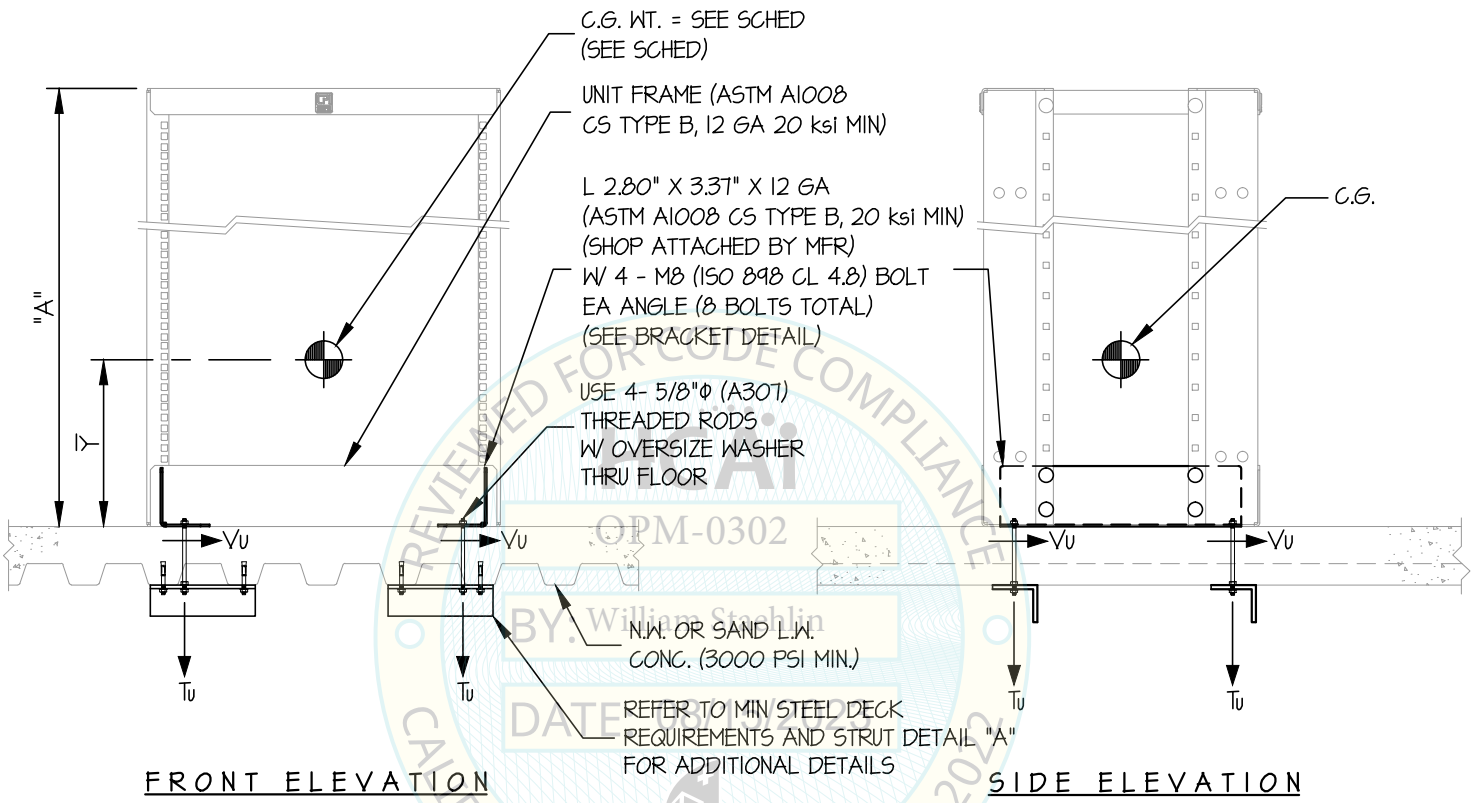
SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



FRONT ELEVATION

SIDE ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED. (EXAMPLE: S_{DS} = 2.30, a_p = 1.0, I_p = 1.5, R_p = 2.5, Ω_0 = 2.0, z/h ≤ 1)

   HORIZONTAL FORCE (E_h) = 1.66 W_p
   HORIZONTAL FORCE (E_{mh}) = 3.31 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.46 W_p

2. THIS CALCULATION ENCOMPASSES WEIGHTS AND VERTICAL C.G. POSITIONS NOT EXCEEDING VALUES SHOWN.

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5. SEE GENERAL NOTES: SHEETS 1 AND 2

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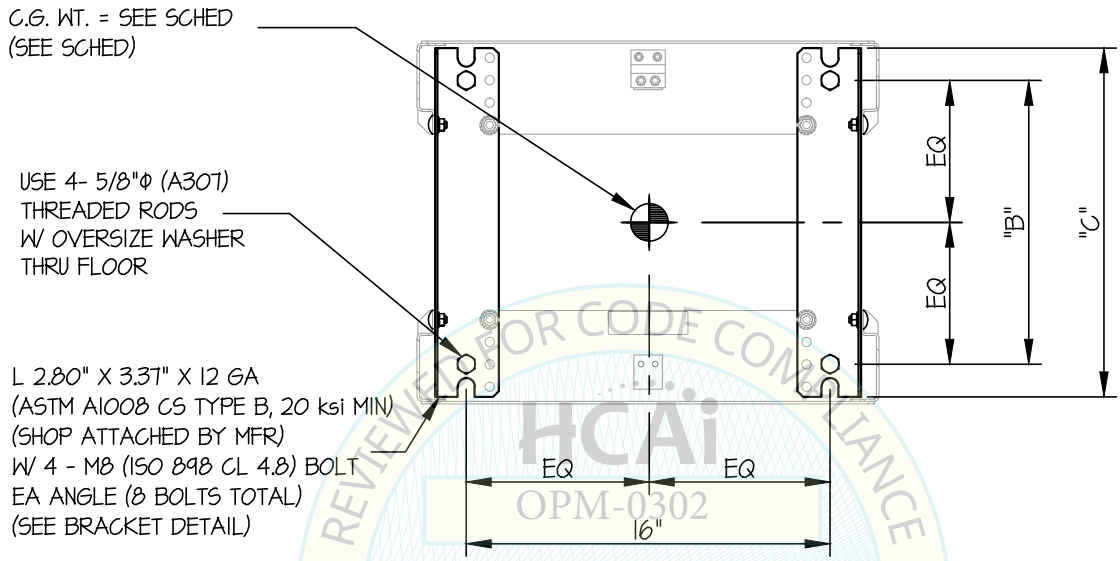
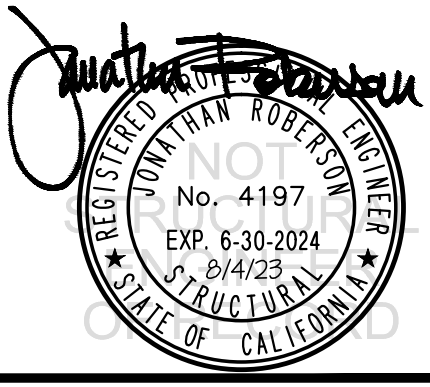
SHEET 7 OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



PLAN AT BASE



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SHEET 8 OF 10 SHEETS

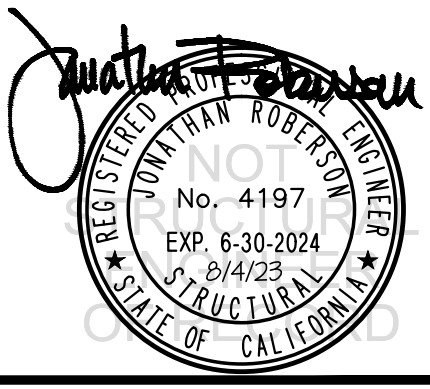
SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK

MODEL NO. (SQ PUNCH RAILS/#12-24 THREADED RAILS)	*** MAX OP WEIGHT (lb.)	HEIGHT "A" (in.)	DEPTH "B" (in.)	HEIGHT $\bar{Y}$ (in.)	CHANNEL DEPTH " C" (in.)	** Tu (lb.)	** Vu (lb.)
15211-X01/15215-X01	572	72	12.47	33.4	15.34	1506	309
15211-X03/15215-X03	580	84	12.47	33.9	15.34	1551	313
15211-X15/15215-X15	587	96	12.47	45.5	15.34	2129	317
* 15211-X08/15215-X08	595	108	12.47	51.5	15.34	2452	321
15212-X01/15216-X01	576	72	19.36	33.4	22.24	1182	311
15212-X03/15216-X03	584	84	19.36	33.9	22.24	1217	315
15212-X15/15216-X15	591	96	19.36	45.5	22.24	1676	319
15212-X08/15216-X08	599	108	19.36	51.5	22.24	1931	323
15213-X01/15217-X01	580	72	26.25	33.4	29.13	1125	313
15213-X03/15217-X03	588	84	26.25	33.9	29.13	1158	317
15213-X15/15217-X15	595	96	26.25	45.5	29.13	1596	321
15213-X08/15217-X08	603	108	26.25	51.5	29.13	1839	325
15214-X01/15218-X01	584	72	33.14	33.4	36.01	1094	315
15214-X03/15218-X03	592	84	33.14	33.9	36.01	1127	319
15214-X15/15218-X15	600	96	33.14	45.5	36.01	1555	324
15214-X08/15218-X08	608	108	33.14	51.5	36.01	1793	328

** VALUES DO NOT INCLUDE Ω_0

*** MAX OP WEIGHT = EQUIPMENT WEIGHT + CONTENTS (CONTENTS = 500 LB MAX)



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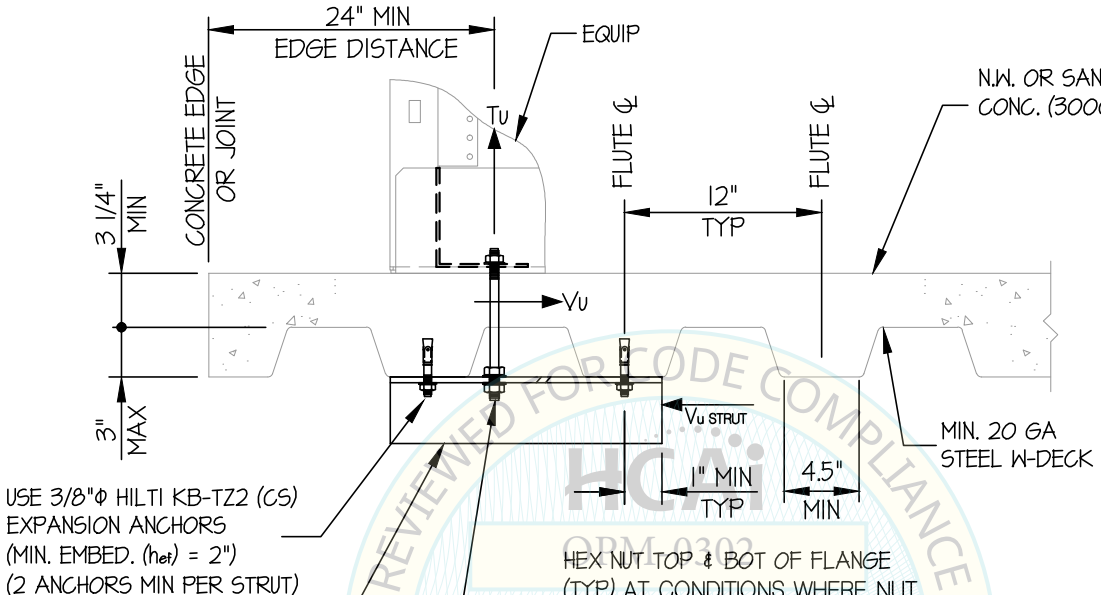
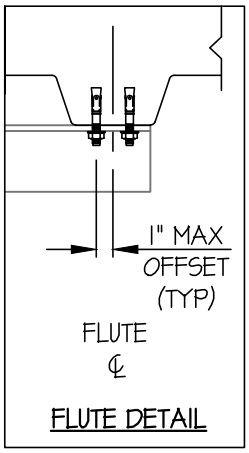
SEISMIC SUPPORTS & ATTACHMENTS



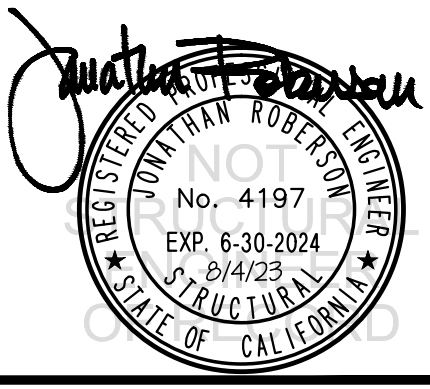
MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL (A)

CONCRETE DETAILS



FLUTE DETAIL

DEMANDS: (BASED ON UPPER FLOOR)



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SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAILS