OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OPM-0590

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: [X] New [ ] Renewal/Update

Manufacturer Information

Manufacturer: Carestream Health

Manufacturer's Technical Representative: Christopher Kralles

Mailing Address: 1049 Ridge Road West, Rochester, NY 14615

Telephone: (800) 328-2910 Email: christopher.kralles@carestreamhealth.com

Product Information

Product Name: DRX-Excel Plus RF Table

Product Type: Other Electrical & Mechanical Components

Product Model Number: N/A

General Description: Fluoroscopy and General Radiology Imaging

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 OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

Registered Design Professonal Preparing Engineering Recommendations

Company Name: EASE LLC

Name: Jonathan Roberson California License Number: S4197

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

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

OSHPD Special Seismic Certification Preapproval (OSP)

[X] Special Seismic Certification is preapproved under OSP OSP Number: OSP-0675

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, 2019 (CBSC 2019) 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 2019 may be used when approved by OSHPD prior to testing.

[X] Analysis

[ ] Experience Data

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

OSHPD Approval

Date: 11/18/2021

Name: Jeffrey Kikumoto 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

Office of Statewide Health Planning and Development

PREAPPROVAL OF MANUFACTURER'S CERTIFICATION

OPM-0590

THIS PREAPPROVAL CONFORMS TO THE 2019 CALIFORNIA BUILDING CODE

MANUFACTURER: **CARESTREAM HEALTH, INC**

EQUIPMENT NAME: **DRX EXCEL PLUS DIGITAL R/F SYSTEM RF TABLE**

Sheet: 1 of 12

Date: 11/18/21

GENERAL NOTES

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2019 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2019 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 2019 CALIFORNIA BUILDING CODE WHERE S_{DS} IS NOT GREATER THAN 1.20, 2.00 & 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} = 1.20, a_p = 1.0, I_p = 1.5, R_p = 1.5, z/h = 0 AT CONCRETE SLAB. SEE FOLLOWING SHEETS FOR Ω_o

   WHERE S_{DS} = 2.30, a_p = 1.0, I_p = 1.5, R_p = 1.5, z/h = 0 AT CONCRETE SLAB. SEE FOLLOWING SHEETS FOR Ω_o

   WHERE S_{DS} = 2.00, a_p = 1.0, I_p = 1.5, R_p = 1.5, z/h = 0 AT CONCRETE SLAB & z/h $\leq$ 1 AT CONCRETE SLAB ON METAL DECK. SEE FOLLOWING SHEETS FOR Ω_o
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 2019 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. 6-30-2022
11/18/21
STRUCTURAL
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CARESTREAM HEALTH, INC

DRX EXCEL PLUS DIGITAL R/F SYSTEM
RF TABLE

DES. J. ROBERSON | JOB NO. 11-2002 | DATE 11/18/21 | SHEET 2 OF 12 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
1/2"	Sand Light Weight	4400	Hilti Kwik Bolt TZ2 (CARBON STEEL)	ESR-4266	2.5"	7.50"	24"	See Detail "A"	50 FT-LB	N/A
1/2"	Normal Weight	3000	Hilti Kwik Bolt TZ2 (CARBON STEEL)	ESR-4266	3.25"	10"	24"	6"	50 FT-LB	3325 lb
1/2"	Normal Weight	3000	Hilti HIT HY-200	ESR-3187	9"	10"	24"	11"	N/A	8384 lb

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 24" 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.

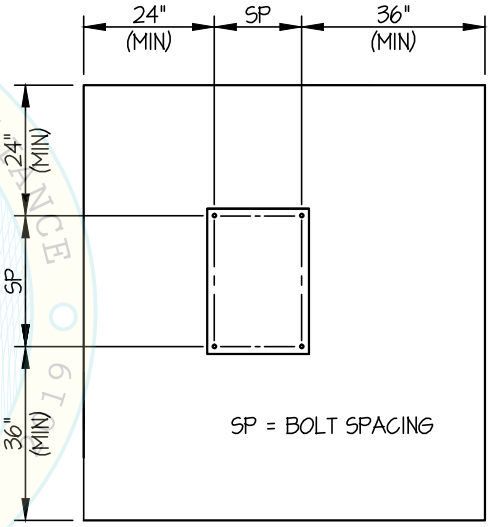
(ii) ACCEPTANCE CRITERIA:

- 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

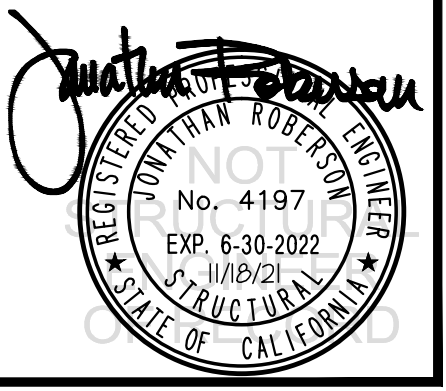
11. BOLTS THROUGH CONCRETE ON METAL DECK

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

C. (HOLE SIZE = BOLT SIZE + 1/16) FOR CONCRETE.

D. 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.



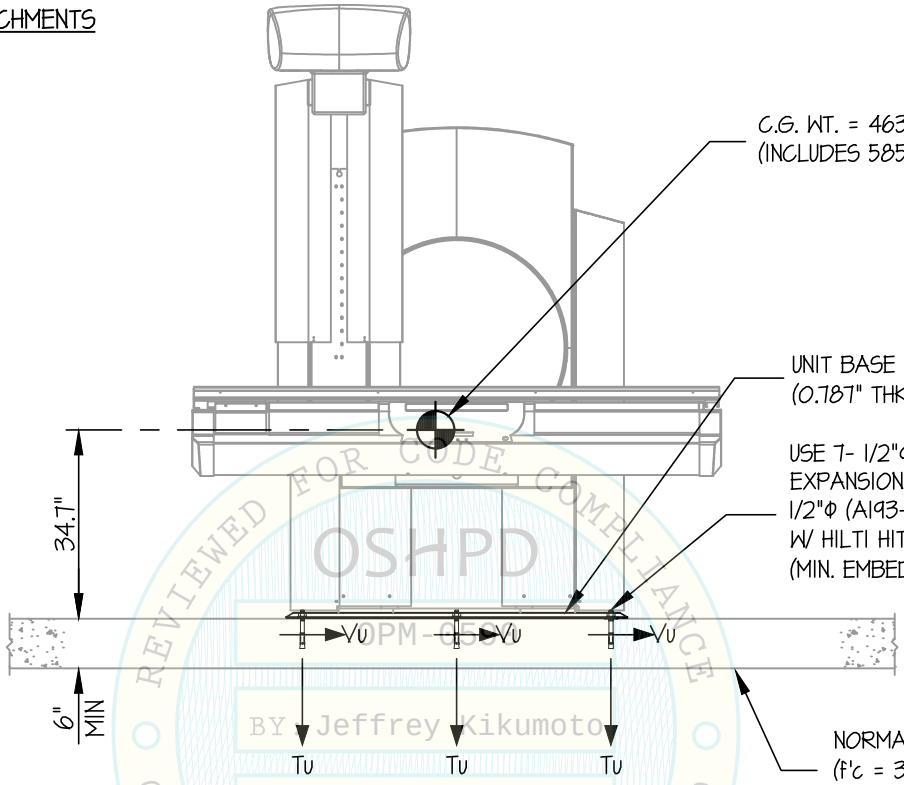
CARESTREAM HEALTH, INC

DRX EXCEL PLUS DIGITAL R/F SYSTEM
RF TABLE

DES. J. ROBERSON | JOB NO. 11-2002 | DATE 11/18/21 | SHEET 3 OF 12 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



COLUMN TO BASE PL
Tu = 9282 LB/BOLT (MAX)
Vu = 1732 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ω0)

FRONT ELEVATION
(WORST CASE: HORIZONTAL POSITION W/PATIENT)

	CONCRETE CONNECTION						
MAX SDS	TYPE	DIAM	EFF EMBED	QTY	TSLAB	*Tu (lb)	*Vu (lb)
1.20	HILTI KB-TZ2	1/2"	3.25"	7	6"	2284	1220
2.30	HILTI HIT-HY 200	1/2"	9"	7	11"	4093	2239

* VALUES INCLUDE Ω0

NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16.** STRENGTH DESIGN IS USED. (a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 1.5, z/h = 0)
2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
4. RF TABLE (UUT-2001-1) HAS OBTAINED SPECIAL SEISMIC CERTIFICATION REFER TO OSP-0675
5. SEE GENERAL NOTES: SHEETS 1 AND 2.

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NOT STRUCTURAL ENGINEER OF RECORD

CARESTREAM HEALTH, INC

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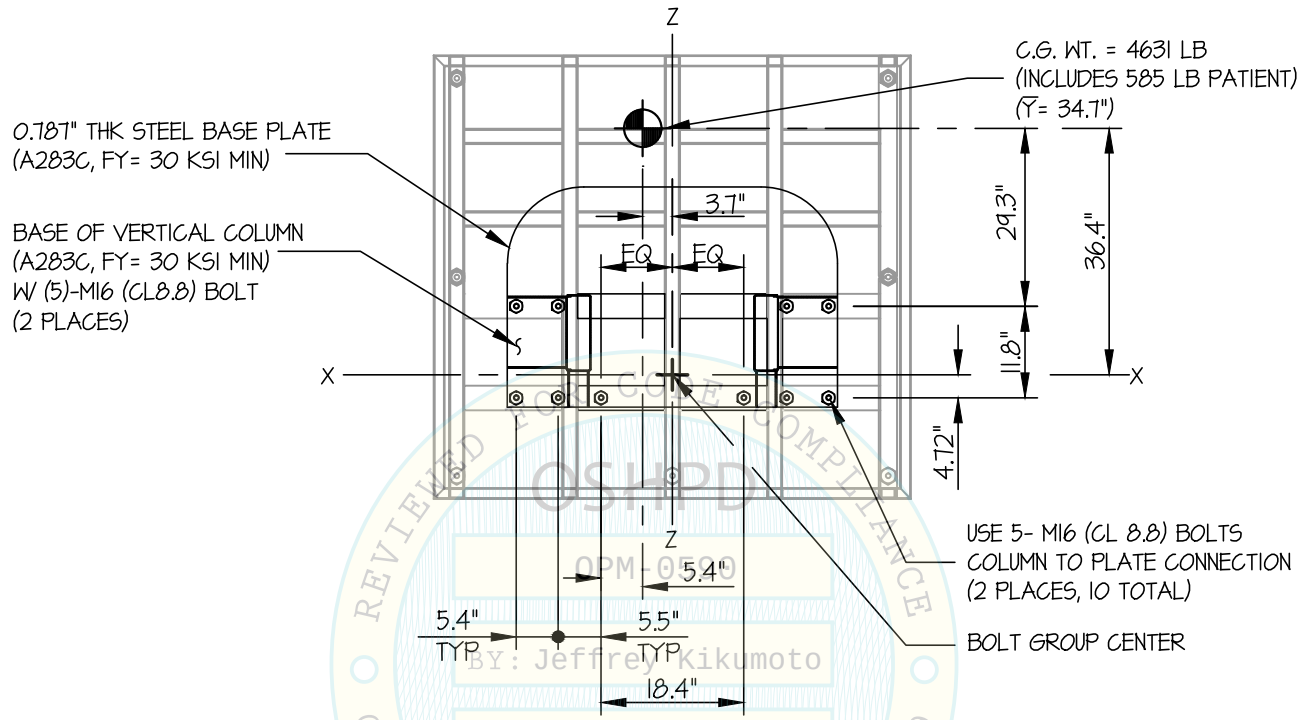
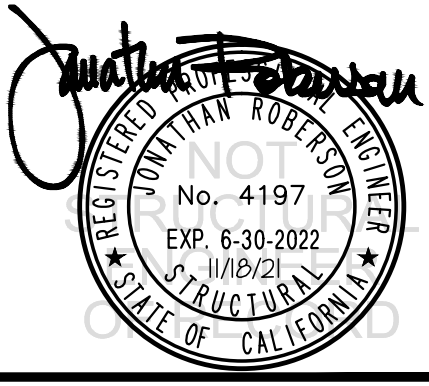
SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB



PLAN AT BASE
(COLUMN TO PLATE CONNECTION)



CARESTREAM HEALTH, INC

DRX EXCEL PLUS DIGITAL R/F SYSTEM
RF TABLE

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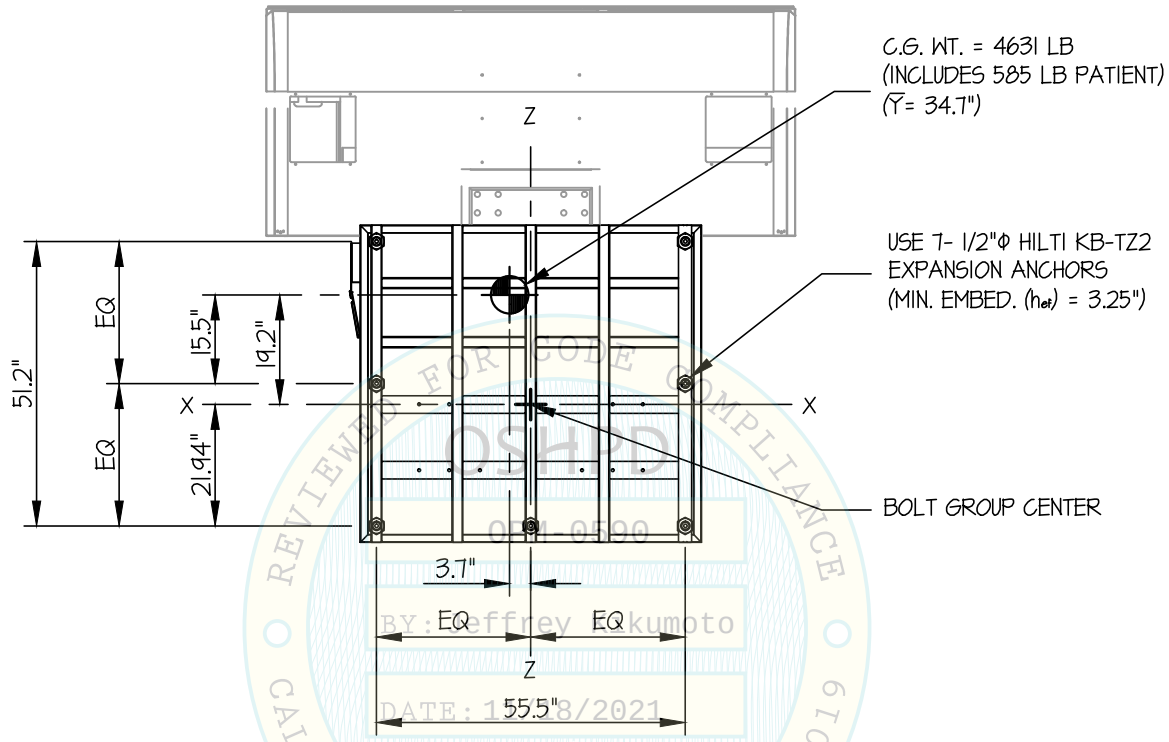
DATE	11/18/21
SHEET	5
OF	12 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS | MAX $S_{DS} \leq 1.20$ | CONCRETE SLAB



PLAN AT BASE
(PLATE TO CONCRETE CONNECTION)

REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

CARESTREAM HEALTH, INC

DRX EXCEL PLUS DIGITAL R/F SYSTEM
RF TABLE

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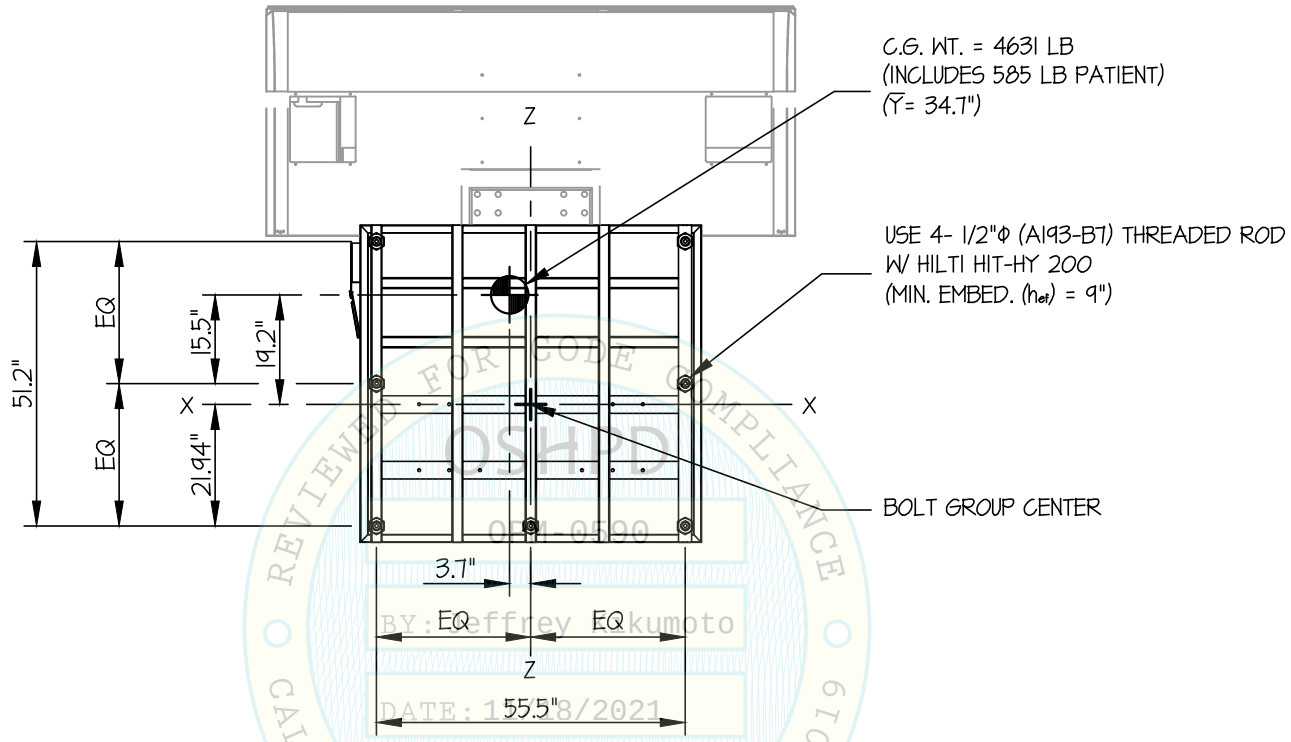
OF	12 SHEETS

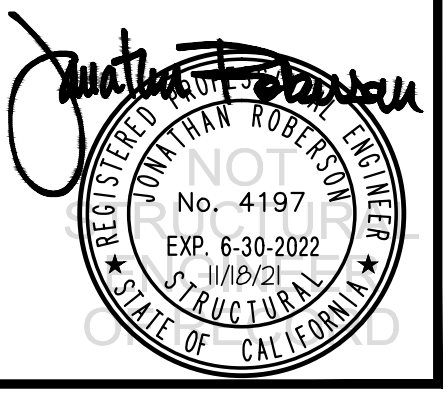
SEISMIC SUPPORTS & ATTACHMENTS

MAX $S_{DS} \leq 2.30$

CONCRETE SLAB



PLAN AT BASE
(PLATE TO CONCRETE CONNECTION)



CARESTREAM HEALTH, INC

DRX EXCEL PLUS DIGITAL R/F SYSTEM
RF TABLE

DES. J. ROBERSON
JOB NO. 11-2002
DATE 11/18/21

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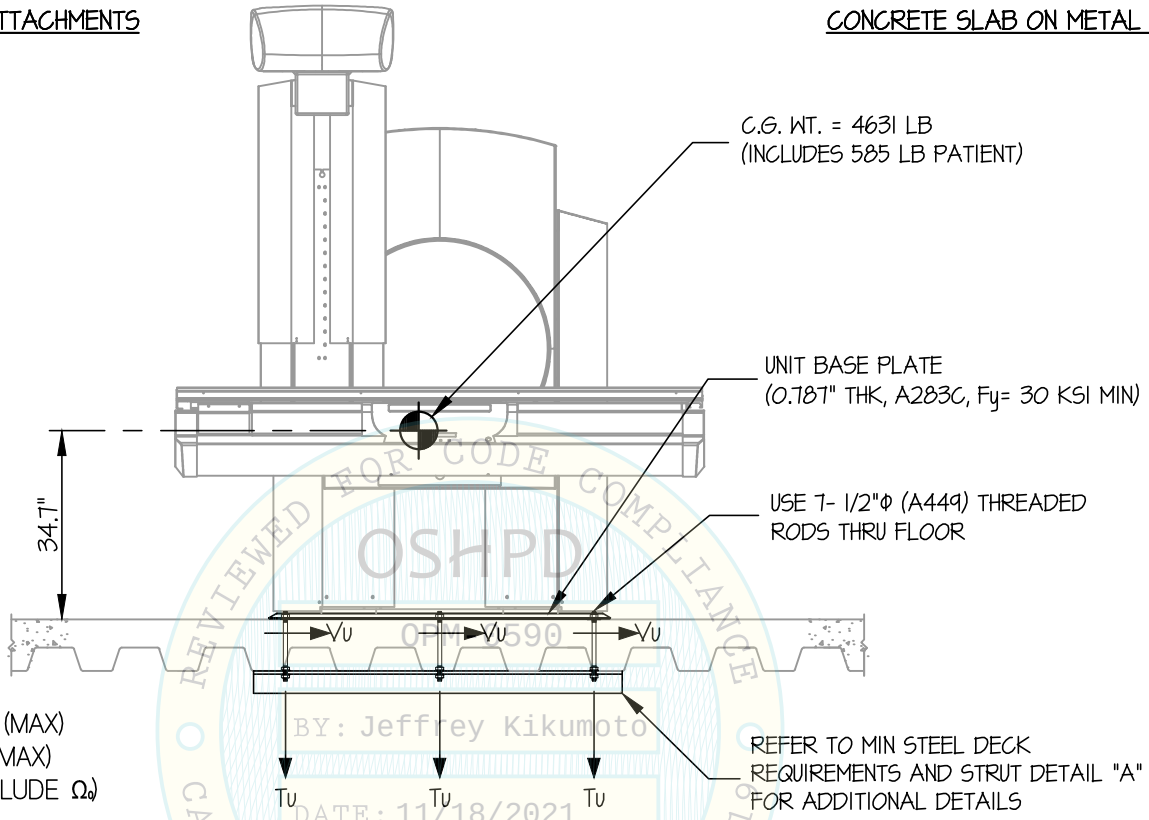
SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



FRONT ELEVATION
(WORST CASE: HORIZONTAL POSITION W/PATIENT)

COLUMN TO BASE PL
Tu = 14,229 LB/BOLT (MAX)
Vu = 4,016 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ω_0)

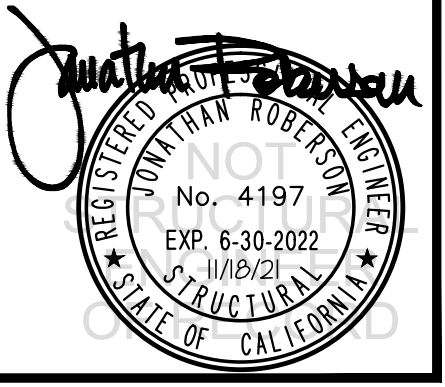
FLOOR ANCHORS
Tu = 4,661 LB/BOLT (MAX)
Vu = 2,712 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE Ω_0)

NOTES:

1. **FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16**
   STRENGTH DESIGN IS USED. (S_{DS} = 2.00 a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 2.0, $z/h \leq 1$)

   HORIZONTAL FORCE (E_h) = 2.40 W_p
   HORIZONTAL FORCE (E_{mh}) = 4.80 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.40 W_p

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
4. RF TABLE (UUT-2001-1) HAS OBTAINED SPECIAL SEISMIC CERTIFICATION REFER TO OSP-0675
5. SEE GENERAL NOTES: SHEETS 1 AND 2.



CARESTREAM HEALTH, INC

DRX EXCEL PLUS DIGITAL R/F SYSTEM
RF TABLE

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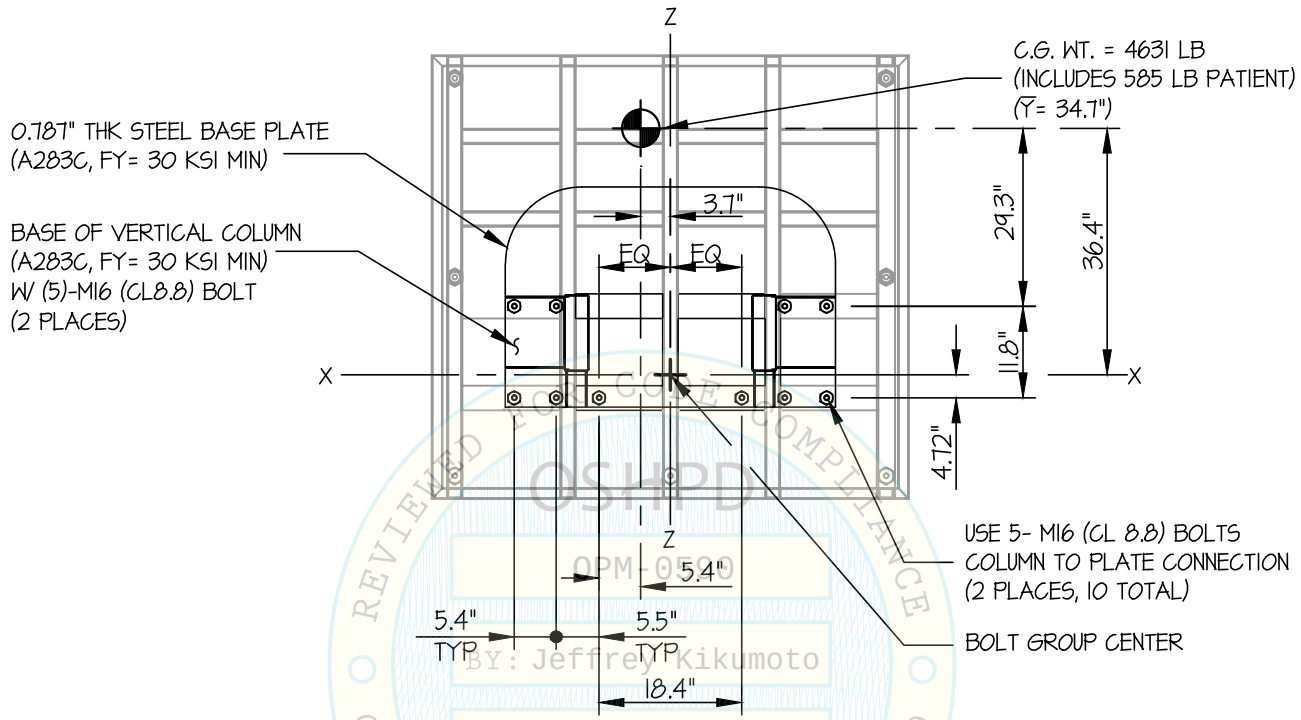
SHEET 8 OF 12 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



PLAN AT BASE
(COLUMN TO PLATE CONNECTION)

CARESTREAM HEALTH, INC

DRX EXCEL PLUS DIGITAL R/F SYSTEM
RF TABLE

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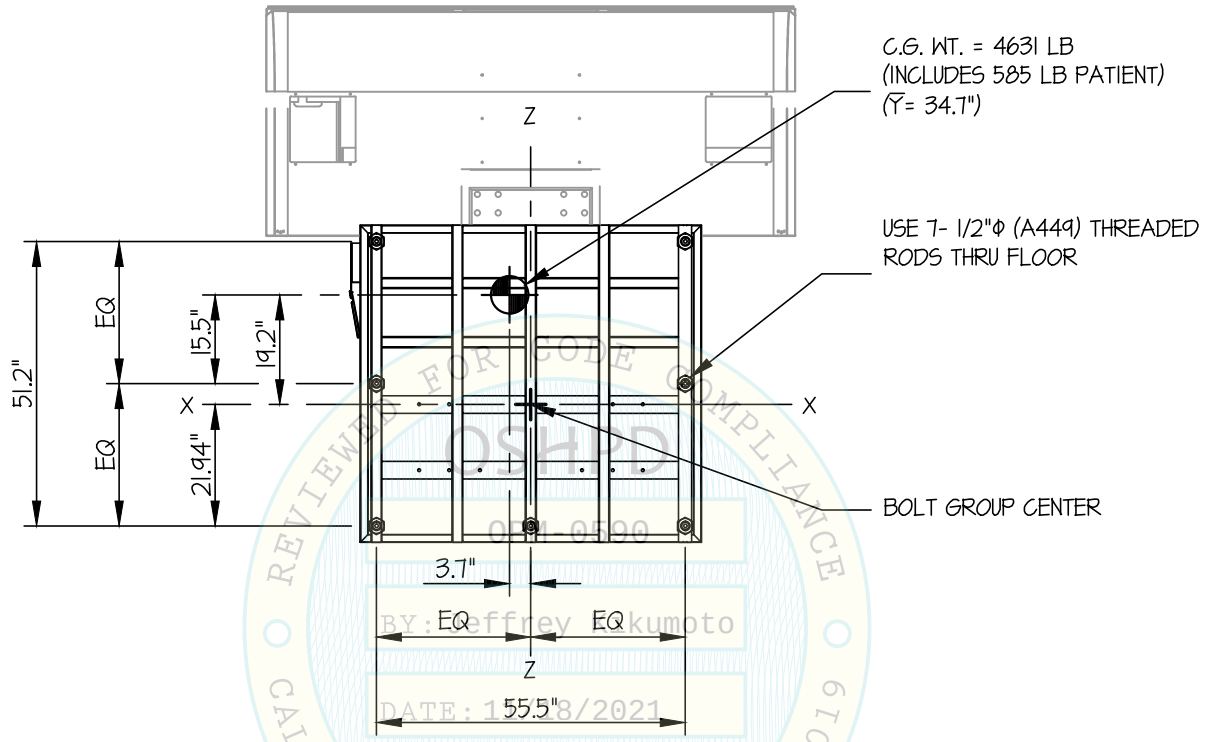
SHEET 9 OF 12 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK



PLAN AT BASE
(PLATE TO CONCRETE CONNECTION)

CARESTREAM HEALTH, INC

DRX EXCEL PLUS DIGITAL R/F SYSTEM
RF TABLE

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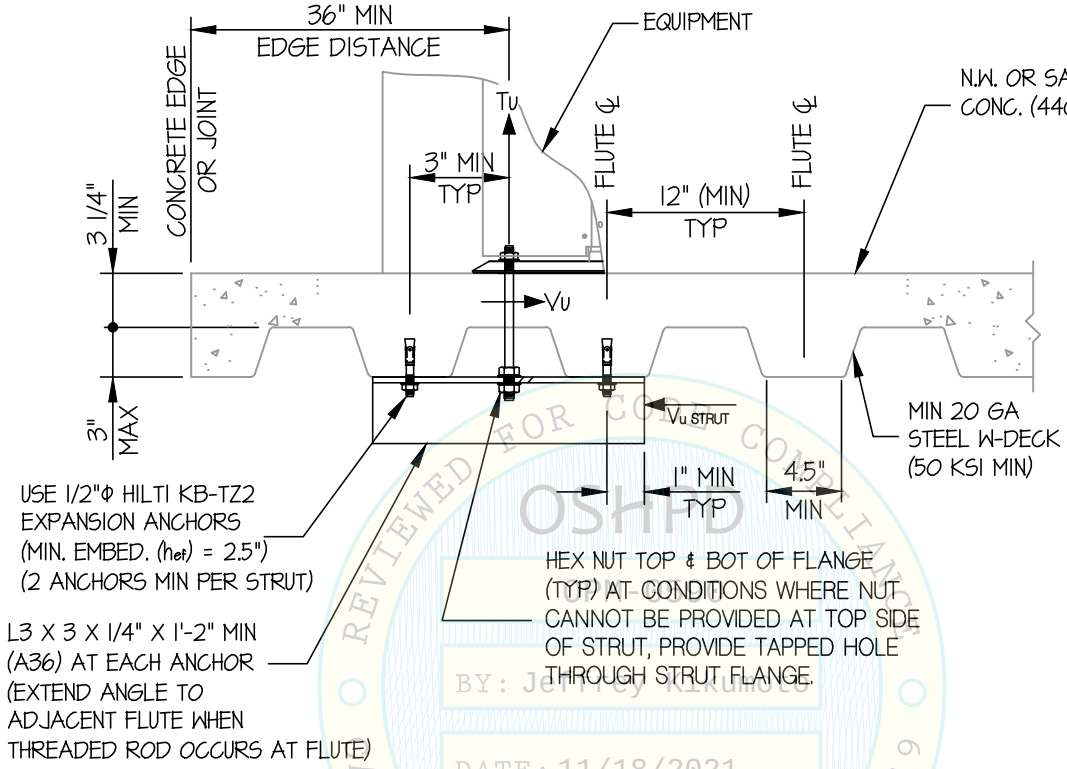
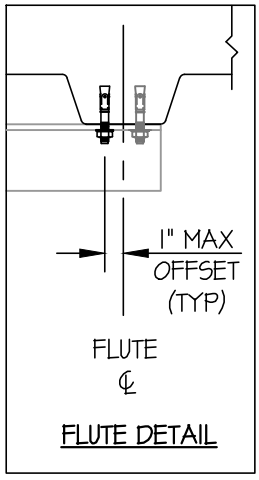
SEISMIC ANCHORAGE

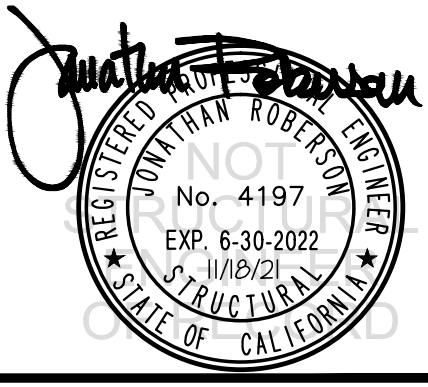


MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL (A)

CONCRETE DETAIL



FLUTE DETAIL



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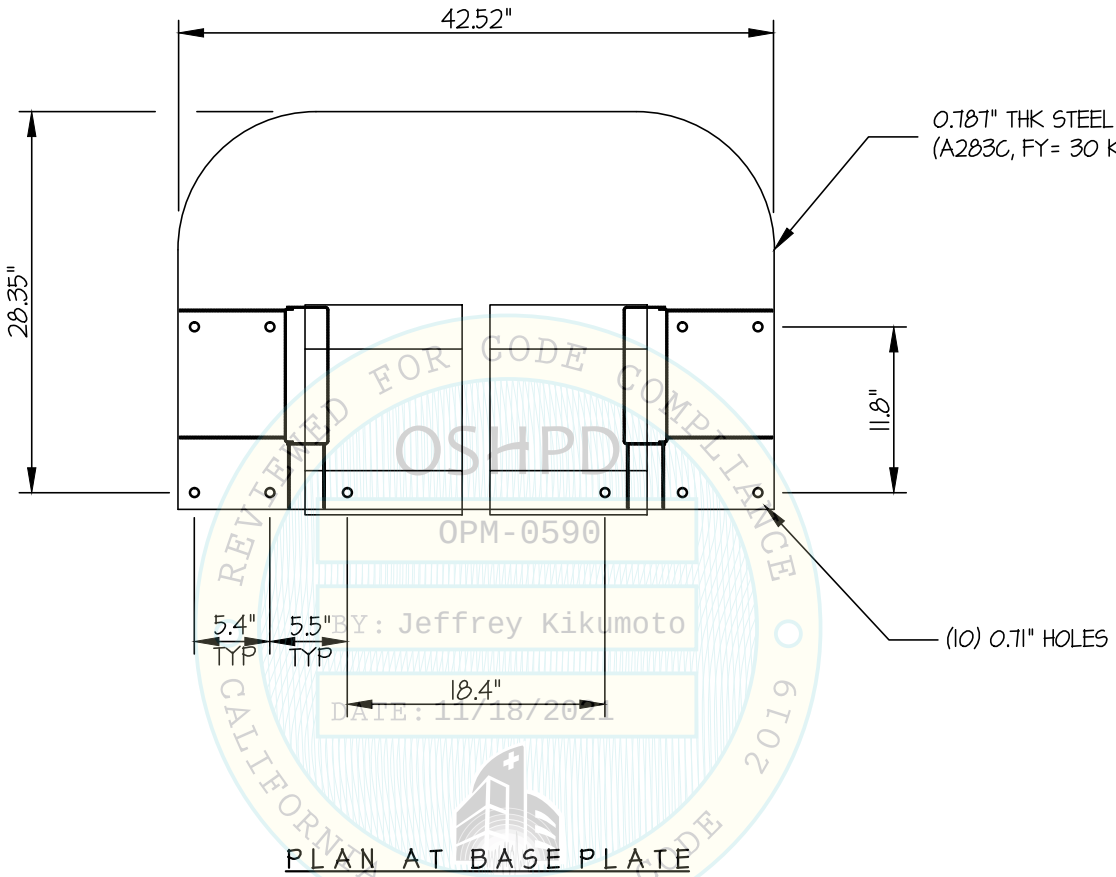
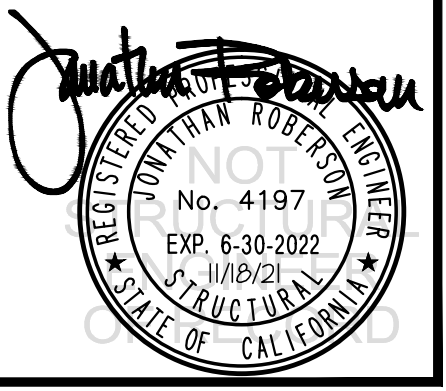
SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAILS



PLAN AT BASE PLATE



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RF TABLE

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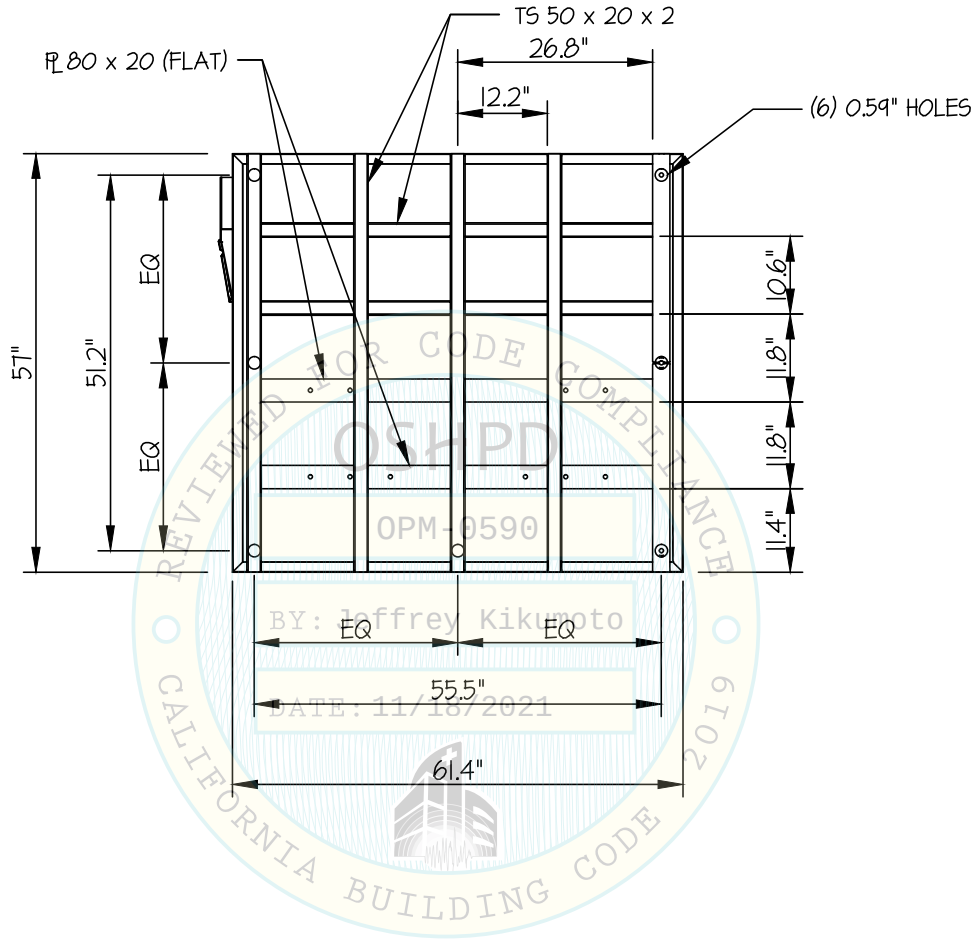
SHEET 12 OF 12 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAILS



PLAN AT FLOOR PLATE