



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY
APPLICATION #: OPM-0391-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: [X] New [ ] Renewal [ ] Update to Pre-CBC 2013 OPA Number:

Manufacturer Information

Manufacturer: CARESTREAM HEALTH, Inc.
Manufacturer's Technical Representative: Ted Young
Mailing Address: 1049 Ridge Road W., Rodchester, NY. 14615
Telephone: On File Email: On File

Product Information

Product Name: DRX Evolution Plus Wall Stand (Stationary Mount)
Product Type: Other Electrical and Mechanical Components
Product Model Number: N/A
General Description: X-Ray Imaging

Applicant Information

Applicant Company Name: EASE Co.
Contact Person: Jonathan Roberson, S.E.
Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA. 91709
Telephone: (909) 606-7622 Email: J.Roberson@EASECo.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: [Signature] Date: 11/7/16
Title: Principal Engineer Company Name: EASE Co.

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

**Registered Design Professional Preparing Engineering Recommendations**

Company Name: EASE Co.

Name: Jonathan Roberson, S.E. California License Number: S4197

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

Telephone: 909-606-7622 Email: J.Roberson@EASECo.com

**OSHPD Special Seismic Certification Preapproval (OSP)**

- Special Seismic Certification is preapproved under OSP-0497-10  
(Separate application for OSP is required)
- Special Seismic Certification is not preapproved

**Certification Method(s)**

- Testing in accordance with:  ICC-ES AC156  FM 1950-16
- Other\* (Please Specify): \_\_\_\_\_

\*Use of criteria other than those adopted by the California Building Standards Code, 2016 (CBSC 2016) 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 2016 may be used when approved by OSHPD prior to testing.

- Analysis
- Experience Data
- Combination of Testing, Analysis, and/or Experience Data (Please Specify): \_\_\_\_\_

**List of Attachments Supporting the Manufacturer's Certification**

- Test Report  Drawings  Calculations  Manufacturer's Catalog
- Other(s) (Please Specify): \_\_\_\_\_

**OFFICE USE ONLY – OSHPD APPROVAL VALID FOR CBC 2016 & ALL PRE-2016 CODE BASED PROJECTS**

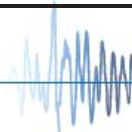
Signature:  Date: 12-11-2017

Print Name: Jeffrey Kikumoto

Title: SSE

Condition of Approval (if applicable): \_\_\_\_\_

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





**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-0391-13**

**THIS PREAPPROVAL CONFORMS TO THE 2016 CALIFORNIA BUILDING CODE**

MANUFACTURER: **CARESTREAM HEALTH, INC** Sheet: 1 of 9  
EQUIPMENT NAME: **DRX EVOLUTION PLUS WALL STAND (STATIONARY MOUNT)** Date: 12/5/17

**GENERAL NOTES**

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2016 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2016 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 2016 CALIFORNIA BUILDING CODE WHERE  $S_{ds}$  IS NOT GREATER THAN 2.20.
4. FORCES PER ASCE 7-10 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE  $S_{ds} = 2.20$ ,  $a_p = 1.0$ ,  $I_p = 1.5$ ,  $R_p = 1.5$ ,  $z/h = 0$  AT CONCRETE SLAB &  $z/h \leq 1$  AT CONCRETE SLAB ON METAL DECK. SEE FOLLOWING SHEETS FOR  $\Omega_o$ .
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 ANY ELEVATION 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 2016 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 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  $6h_{ef}$  FROM THIS UNIT'S ANCHORS.



## CARESTREAM HEALTH, INC

DES. **J. ROBERSON**

SHEET

**2**

JOB NO. **11-1617**

## DRX EVOLUTION PLUS WALL STAND (STATIONARY MOUNT)

DATE **12/5/17**

OF **9** 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	3000	Hilti Kwik Bolt TZ	ESR-1917	2"	6.75"	12"	See Detail "A"	40 FT-LB	N/A
1/2"	Normal Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	2"	6"	12"	4"	40 FT-LB	1605 lb
1/2"	Sand Light Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	2.25"	6"	7"	3.25" Over Flutes	40 FT-LB	1155 lb

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 7" OR 12" AWAY MINIMUM (i.e. - CORNER). SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

C. TESTING OF EXPANSION ANCHORS PER 2016 CBC, 1910A.5: TESTING SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO OSHPD

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

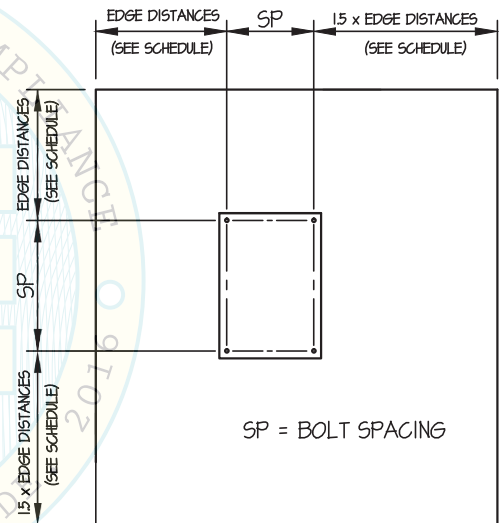
(ii) ACCEPTANCE CRITERIA:

- 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

DATE: 12/11/2017



### CARESTREAM HEALTH, INC

DES. J. ROBERSON

SHEET

3

JOB NO. 11-1617

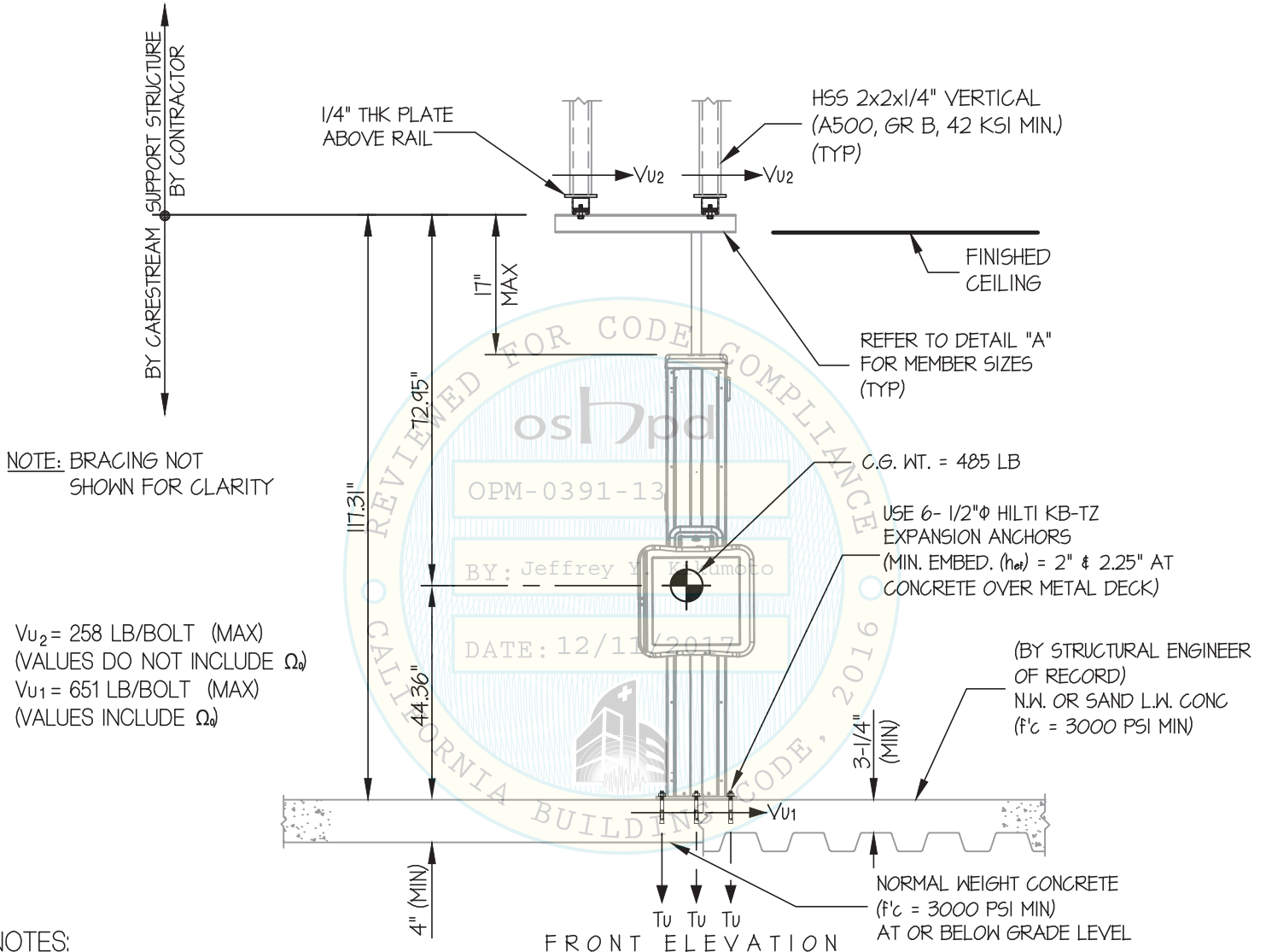
### DRX EVOLUTION PLUS WALL STAND (STATIONARY MOUNT)

DATE 12/5/17

OF 9 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB / CONCRETE SLAB ON METAL DECK



*Jonathan Roberson*

REGISTERED PROFESSIONAL ENGINEER  
No. 4197  
EXP. 6-30-2018  
12/5/17  
STATE OF CALIFORNIA

### CARESTREAM HEALTH, INC

DES. **J. ROBERSON**

SHEET

# 4

JOB NO. **11-1617**

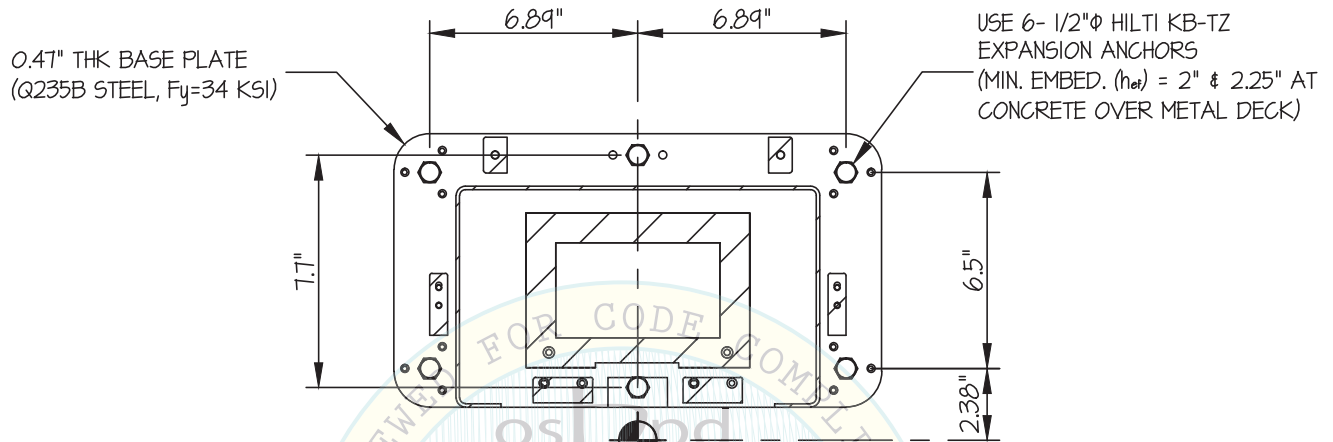
DATE **12/5/17**

OF **9** SHEETS

## DRX EVOLUTION PLUS WALL STAND (STATIONARY MOUNT)

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB / CONCRETE SLAB ON METAL DECK

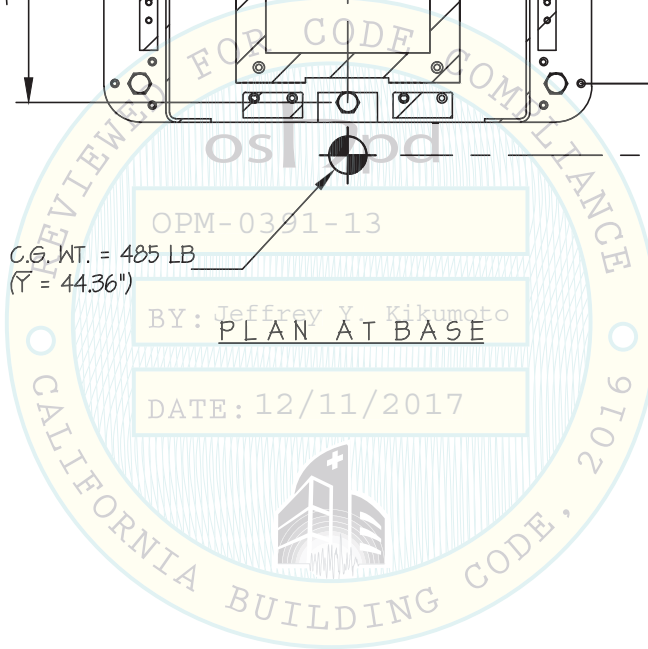


C.G. WT. = 485 LB  
( $\bar{Y} = 44.36"$ )

OPM-0391-13

BY: Jeffrey V. Kikumoto  
PLAN AT BASE

DATE: 12/11/2017



*Jonathan Roberson*

### CARESTREAM HEALTH, INC

DES. J. ROBERSON

SHEET

5

JOB NO. 11-1617

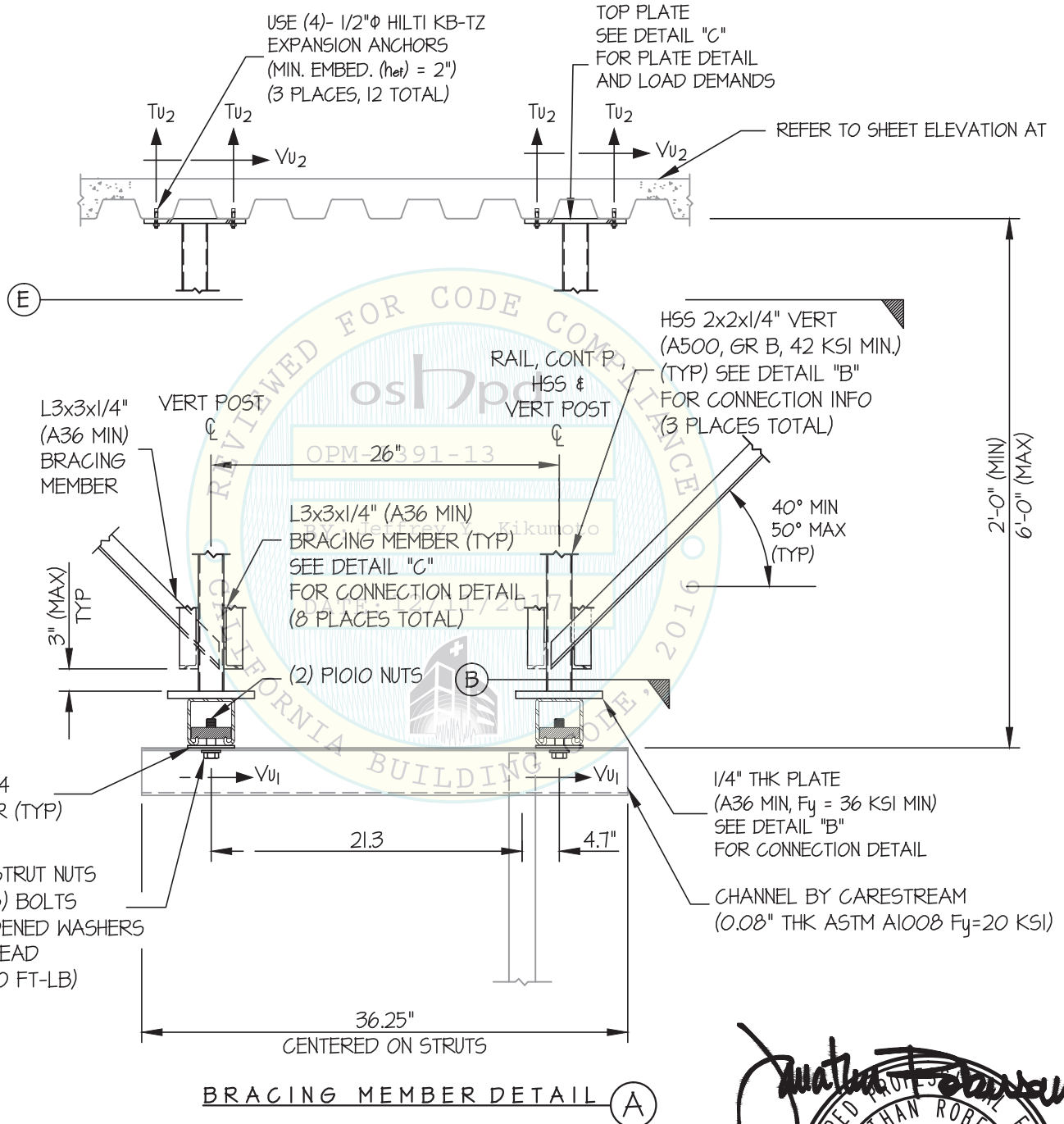
### DRX EVOLUTION PLUS WALL STAND (STATIONARY MOUNT)

DATE 12/5/17

OF 9 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



BOLT FORCES AT UNISTRUT  
 $V_{u2} = 258 \text{ LB/BOLT (MAX) (2 SHEAR BOLTS)}$



### CARESTREAM HEALTH, INC

DES. J. ROBERSON

SHEET

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### DRX EVOLUTION PLUS WALL STAND (STATIONARY MOUNT)

JOB NO. 11-1617

DATE 12/5/17

OF 9 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED

ANGLE BEYOND REFER TO DETAIL "E" FOR BRACING LAYOUT

HSS 2x2x1/4" VERT (TYP) (A500, GR B, 42 KSI MIN.) SEE DETAIL "A" FOR PLATE DETAIL AND LOAD DEMANDS

40° MIN  
50° MAX (TYP)

L3x3x1/4" (A36 MIN) BRACING MEMBER (TYP) SEE DETAIL "D" FOR PLATE DETAIL AND LOAD DEMANDS

3" MIN

UNISTRUT P1000

UNISTRUT P1064 PLATE WASHER (TYP)

POST & CHANNEL BY CARESTREAM (TESTED PER OSP-0497-10)

1.97"φ VERTICAL TUBE (BY CARESTREAM)

3/16" E70XX TYP

(2)- P1010 UNISTRUT NUTS & 1/2"-13 (GR 5) BOLTS W/ F436 HARDENED WASHERS UNDER BOLT HEAD (TORQUE TO 50 FT-LB)

OPM-0391-13

BY: Jeffrey Y. Kikumoto

DATE: 12/11/2017

SECTION B-B

CHANNEL BY CARESTREAM (0.08" THK ASTM A1008 Fy=20 KSI)

PLATE (3 X 3 X 1/4" THK)

(2)- P1010 UNISTRUT NUTS & 1/2"-13 (GR 5) BOLTS W/ F436 HARDENED WASHERS UNDER BOLT HEAD (TORQUE TO 50 FT-LB)

P1000 UNISTRUT

E70XX TYP 3/16"

TYP 1/4"

BOTTOM HSS DETAIL (PLAN VIEW) B





**CARESTREAM HEALTH, INC**

DES. **J. ROBERSON**

SHEET

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JOB NO. **11-1617**

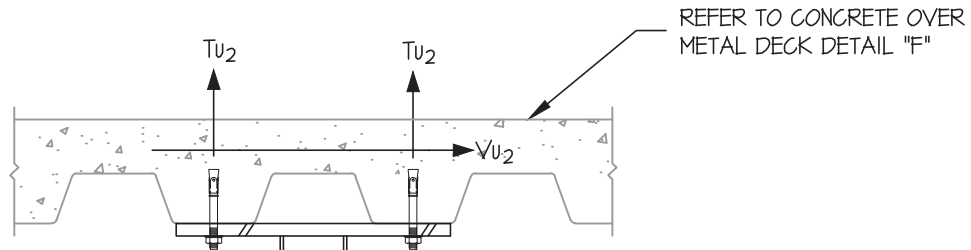
**DRX EVOLUTION PLUS  
WALL STAND (STATIONARY MOUNT)**

DATE **12/5/17**

OF **9** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACING DETAILS



HSS 2x2x1/4"  
(A500, GR B, 42 KSI MIN.)

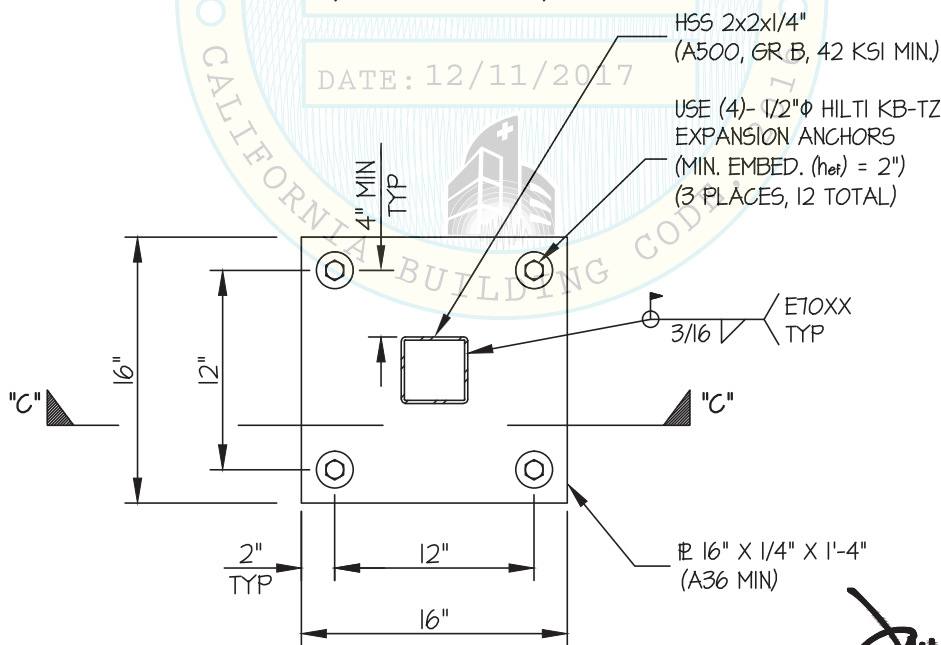
USE (4)- 1/2"φ HILTI KB-TZ  
EXPANSION ANCHORS  
(MIN. EMBED. (h<sub>ef</sub>) = 2")  
(3 PLACES, 12 TOTAL)

BOLT FORCES:

T<sub>u</sub> = 256 LB/BOLT (MAX)

V<sub>u</sub> = 19 LB/BOLT (MAX)

(VALUES INCLUDE Ω)



TOP PLATE DETAIL (C)



**CARESTREAM HEALTH, INC**

DES. **J. ROBERSON**

SHEET

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**DRX EVOLUTION PLUS  
WALL STAND (STATIONARY MOUNT)**

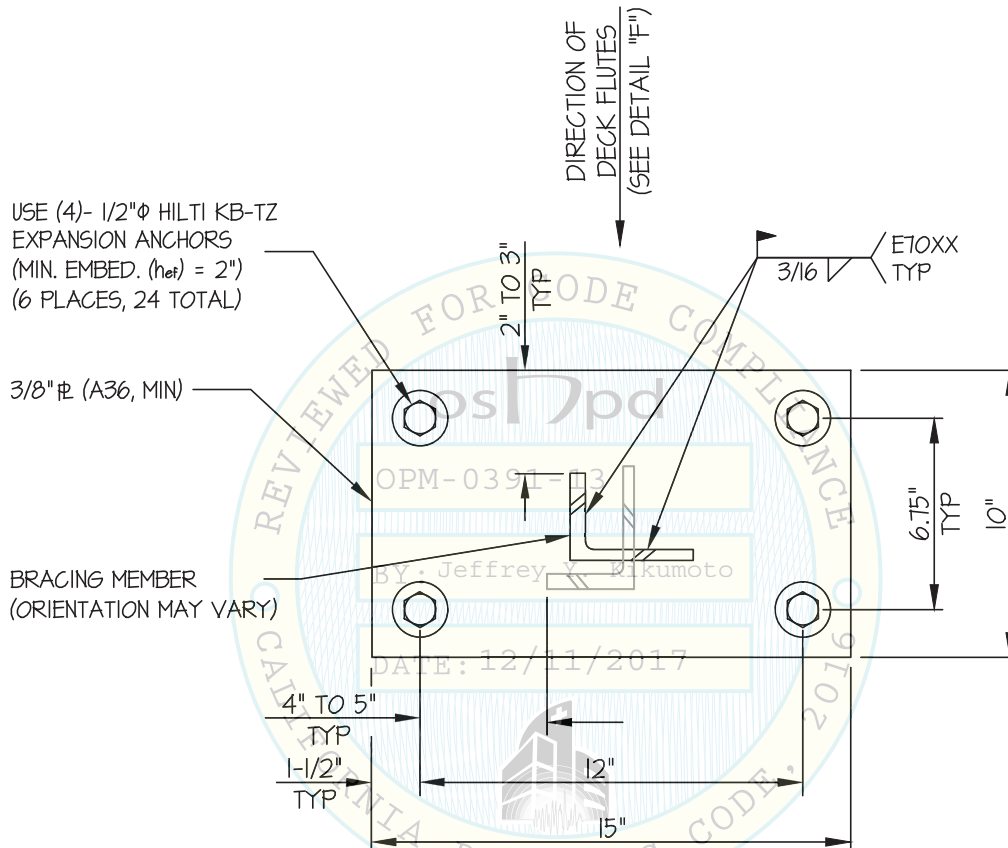
JOB NO. **11-1617**

DATE **12/5/17**

OF **9** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

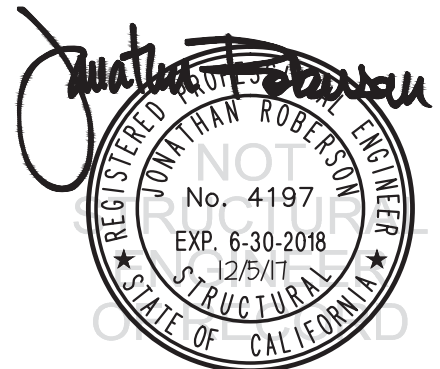
BRACING DETAILS



ANCHOR AT BRACE PLATE

$T_u = 240$  LB/BOLT (MAX)  
 $V_u = 223$  LB/BOLT (MAX)  
(VALUES INCLUDE  $\Omega$ )

BRACE PLATE DETAIL (D)



### CARESTREAM HEALTH, INC

DES. J. ROBERSON

SHEET

9

### DRX EVOLUTION PLUS WALL STAND (STATIONARY MOUNT)

JOB NO. 11-1617

DATE 12/5/17

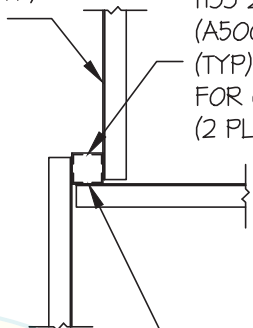
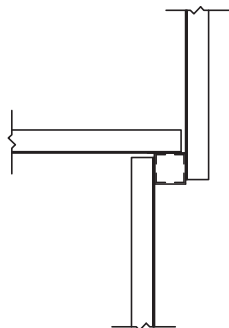
OF 9 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

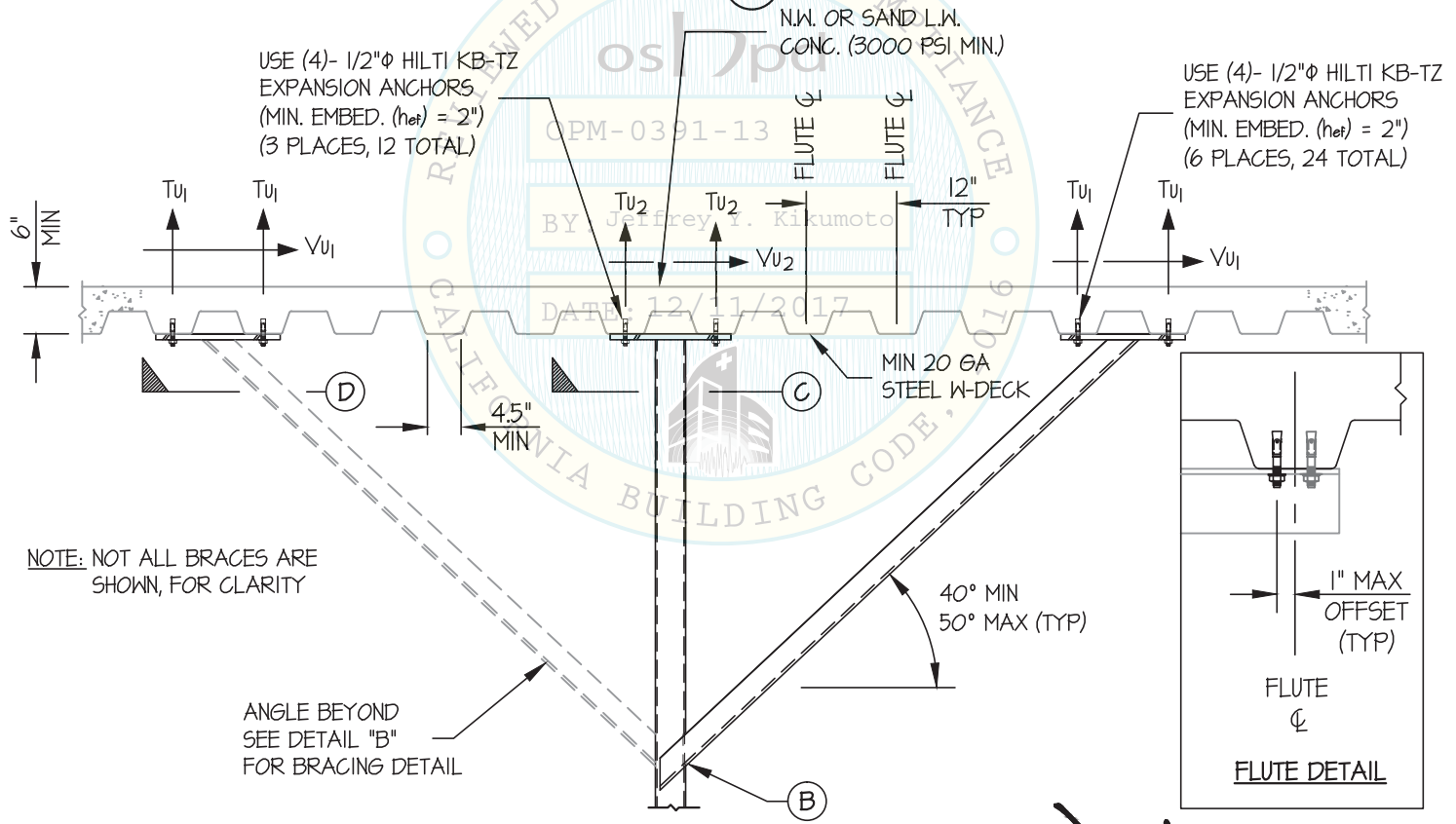
BRACING DETAILS

L3x3x1/4" (A36 MIN)  
BRACING MEMBER (TYP)  
SEE DETAIL "D"  
FOR BRACING INFO  
(6 PLACES TOTAL)

HSS 2x2x1/4" VERT  
(A500, GR B, 42 KSI MIN.)  
(TYP) SEE DETAIL "C"  
FOR COLUMN INFO  
(2 PLACES TOTAL)



PLAN VIEW (E)

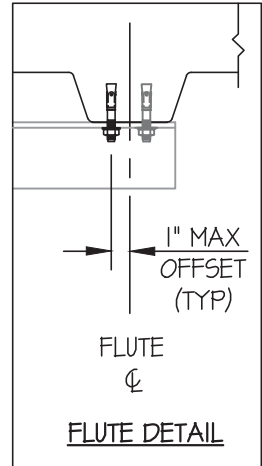


USE (4)- 1/2"φ HILTI KB-TZ  
EXPANSION ANCHORS  
(MIN. EMBED. (net) = 2")  
(3 PLACES, 12 TOTAL)

USE (4)- 1/2"φ HILTI KB-TZ  
EXPANSION ANCHORS  
(MIN. EMBED. (net) = 2")  
(6 PLACES, 24 TOTAL)

N.W. OR SAND L.W.  
CONC. (3000 PSI MIN.)

MIN 20 GA  
STEEL W-DECK



NOTE: NOT ALL BRACES ARE  
SHOWN, FOR CLARITY

ANGLE BEYOND  
SEE DETAIL "B"  
FOR BRACING DETAIL

CONCRETE OVER METAL DECK DETAIL (F)

