



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY
APPLICATION #: OPM-0289-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

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

Manufacturer Information

Manufacturer: Draeger Medical, Inc.
Manufacturer's Technical Representative: Merouane Djerbal
Mailing Address: 3135 Quarry Road, Telford, PA. 18969
Telephone: (215) 412-5868 Email: Merouane.Djerbal@draeger.com

Product Information

Product Name: Polaris System
Product Type: Overhead
Product Model Number: N/A
General Description: Ceiling Mounted Lights & Monitors

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: 12/8/15
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: 909-606-7667 Email: J.Roberson@EASECo.com

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

- Special Seismic Certification is preapproved under OSP-  
(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: 03-13-17

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-0289-13**

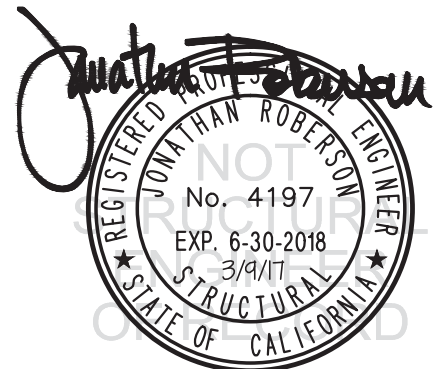
**THIS PREAPPROVAL CONFORMS TO THE 2016 CALIFORNIA BUILDING CODE**

MANUFACTURER: **DRAEGER**  
EQUIPMENT NAME: **POLARIS SYSTEM**

Sheet: 1 of 9  
Date: 3/9/17

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.
4. FORCES PER ASCE 7-10 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3,  
WHERE  $S_{Ds} = 2.20$ ,  $a_p = 2.5$ ,  $I_p = 1.5$ ,  $R_p = 2.5$ ,  $\Omega_0 = 2.5$ ,  $z/h \leq 1$ .
5. THE DETAILS IN THIS PREAPPROVAL MAY BE USED AT ANY LOCATION IN THE STATE OF CALIFORNIA, WHERE  $S_{Ds}$  IS NOT GREATER THAN 2.20.
6. ALL DESIGN FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.
7. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
8. RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING
  - A. PROVIDE SUPPORTING STRUCTURE REQUIRED 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 SHOWN IN THIS PREAPPROVAL. VERIFY THAT THE ACTUAL EQUIPMENT'S WEIGHT, CG LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS AND THE MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PREAPPROVAL DOCUMENTS.
  - C. VERIFY THAT THE COMBINATION OF  $S_{Ds}$  &  $z/h$  RESULT IN SEISMIC FORCES ( $E_h$ ,  $E_v$ ) THAT ARE NOT GREATER THAN THE VALUES ON THE DETAILS.



**DRAEGER**

**POLARIS SYSTEM**

DES. **J. ROBERSON**

JOB NO. **11-1456**

DATE **3/9/17**

SHEET

**2**

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 Over Flutes	Torque Test	Direct Tension
1/2"	Sand Light Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	3.25"	9.75"	24"	3.25"	40 FT-LB	N/A
5/8"	Sand Light Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	4"	12"	24"	3.25"	60 FT-LB	N/A

B. 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.

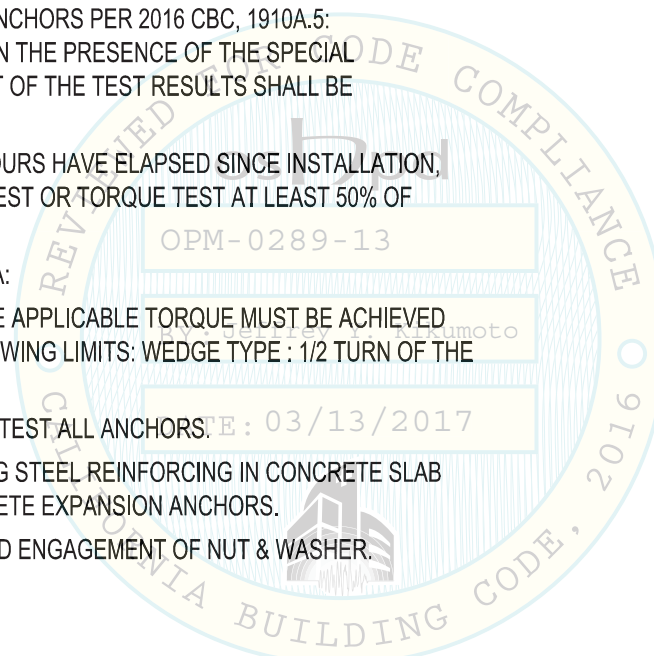
(ii) ACCEPTANCE CRITERIA:

- 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.

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

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



## DRAEGER

DES. **J. ROBERSON**

SHEET

# 3

## POLARIS SYSTEM

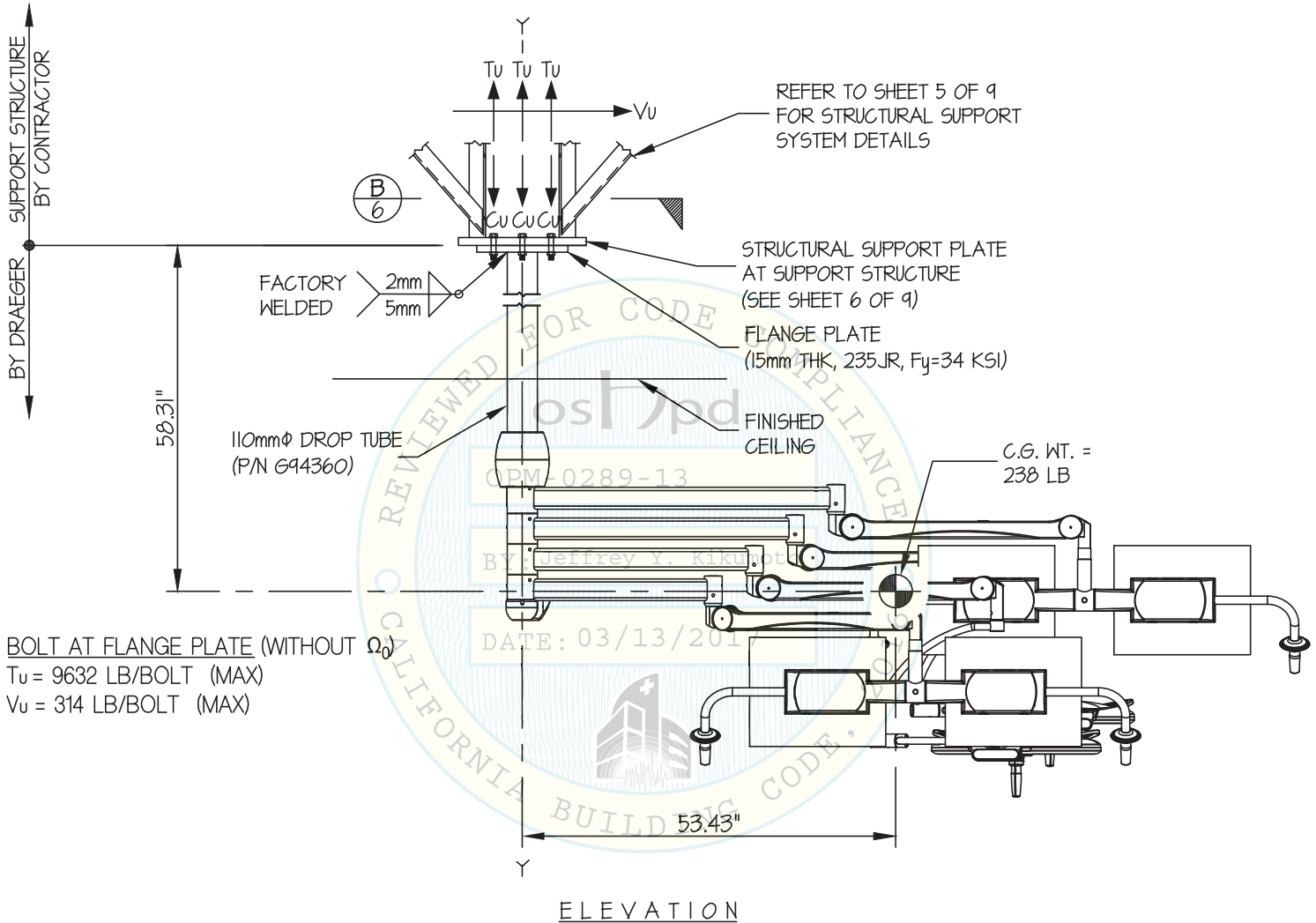
JOB NO. **11-1456**

DATE **3/9/17**

OF **9** SHEETS

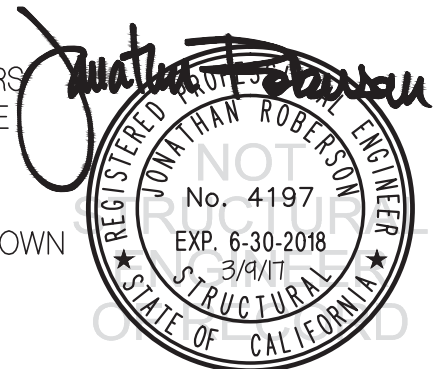
SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



**NOTES:**

- FORCES ARE DETERMINED PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10.**  
STRENGTH DESIGN IS USED. ( $S_{Ds} = 2.20$ ,  $a_p = 2.5$ ,  $I_p = 1.5$ ,  $R_p = 2.5$ ,  $z/h \leq 1$ )  
  
HORIZONTAL FORCE ( $E_h$ ) =  $3.96 W_p$   
VERTICAL FORCE ( $E_v$ ) =  $0.44 W_p$
- CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
- 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.
- SEE GENERAL NOTES: SHEETS 1



**DRAEGER**

DES. **J. ROBERSON**

SHEET

**4**

**POLARIS SYSTEM**

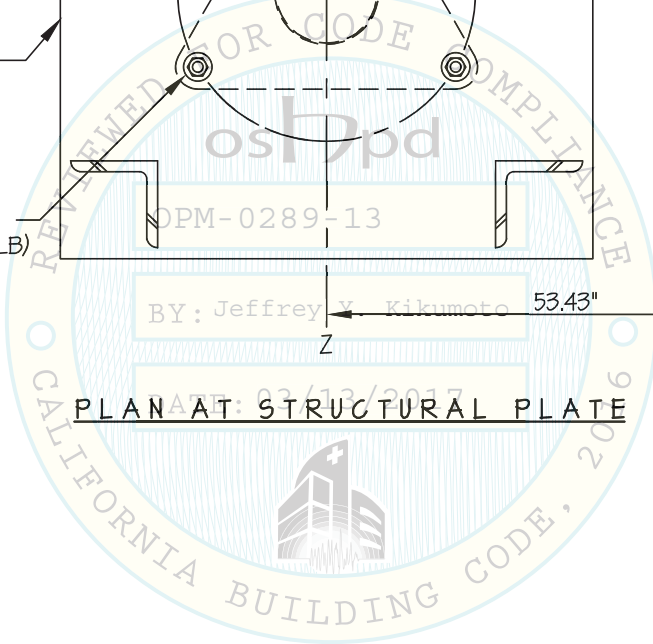
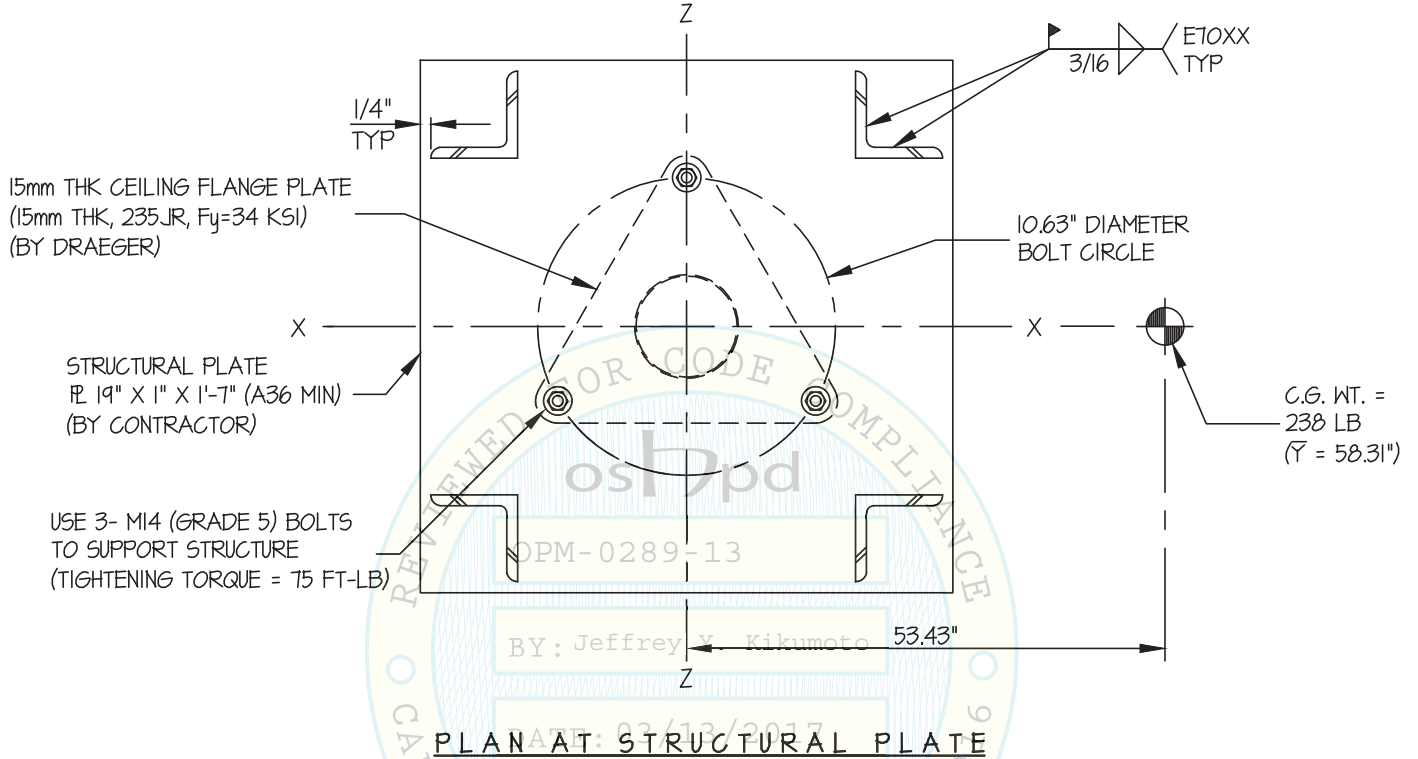
JOB NO. **11-1456**

DATE **3/9/17**

OF **9** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CEILING FLANGE PLATE TO STRUCTURAL SUPPORT PLATE



*Jonathan Roberson*

REGISTERED PROFESSIONAL ENGINEER  
JONATHAN ROBERSON  
No. 4197  
EXP. 6-30-2018  
3/9/17  
STRUCTURAL  
STATE OF CALIFORNIA

**DRAEGER**

**POLARIS SYSTEM**

DES. **J. ROBERSON**

JOB NO. **11-1456**

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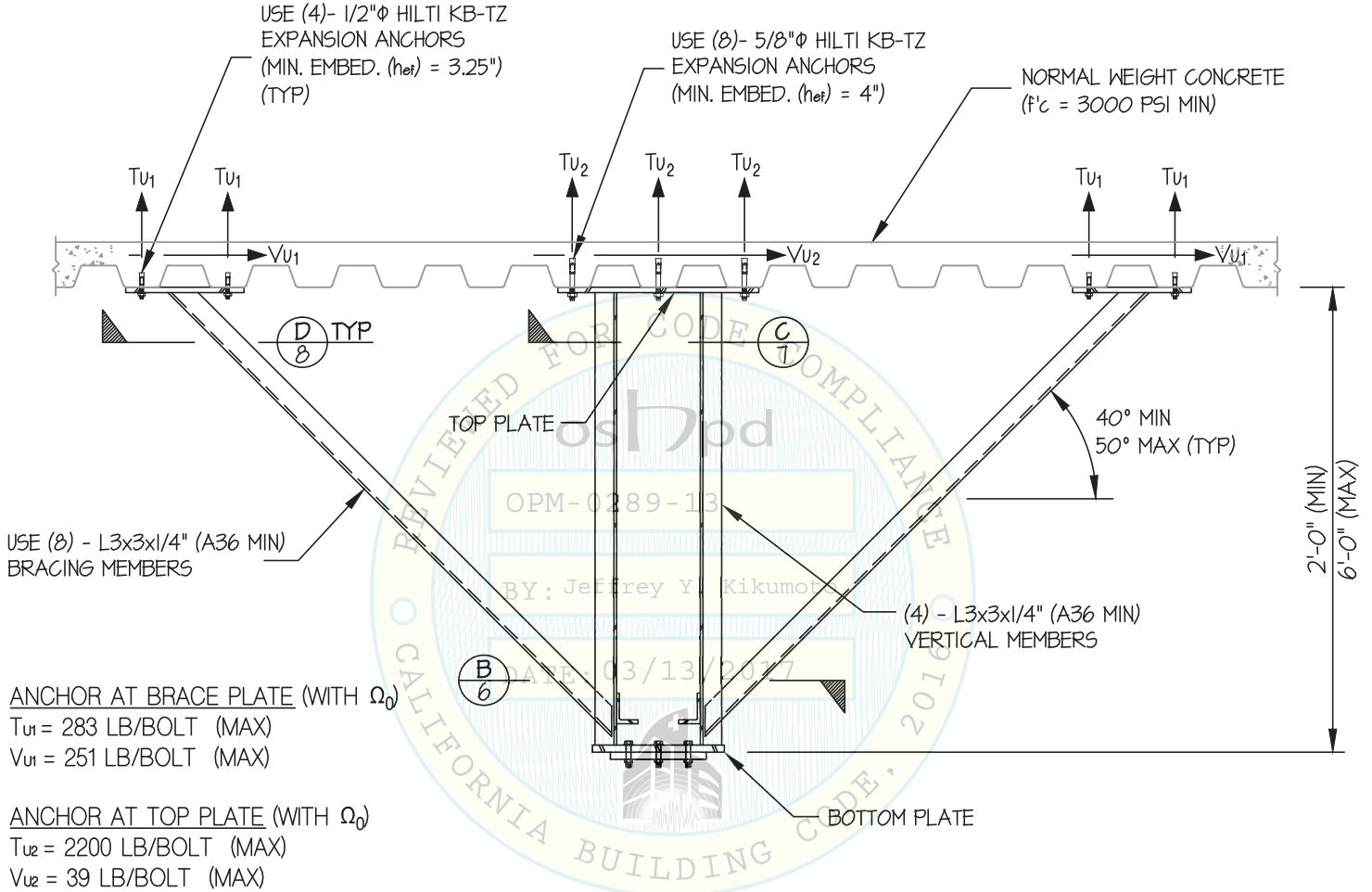
SHEET

**5**

OF **9** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACE DETAIL



(A) ELEVATION AT STRUCTURAL BRACING SYSTEM



**DRAEGER**

DES. **J. ROBERSON**

SHEET

**6**

**POLARIS SYSTEM**

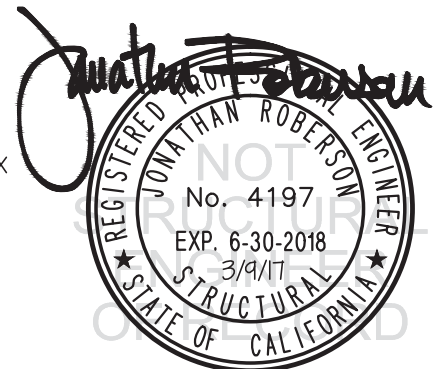
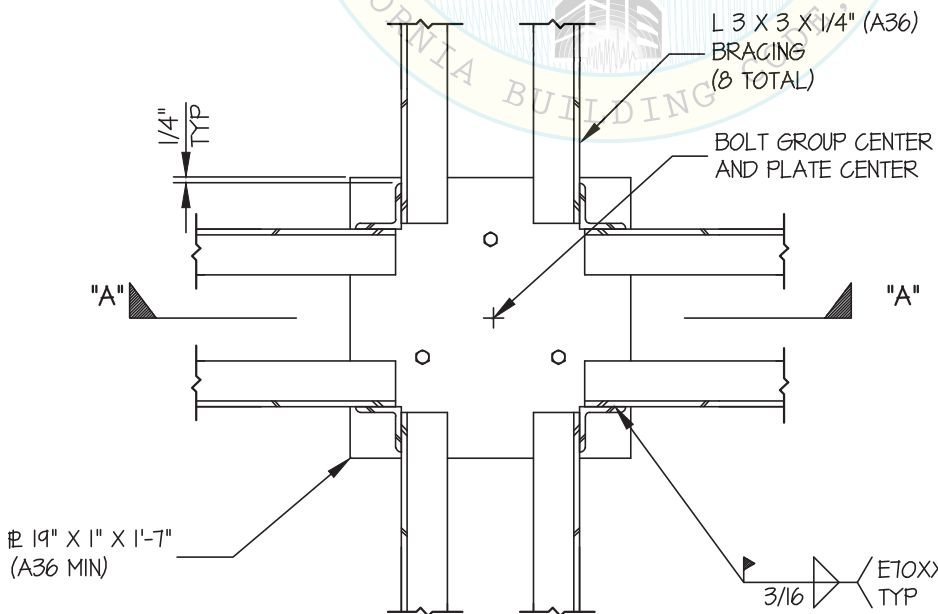
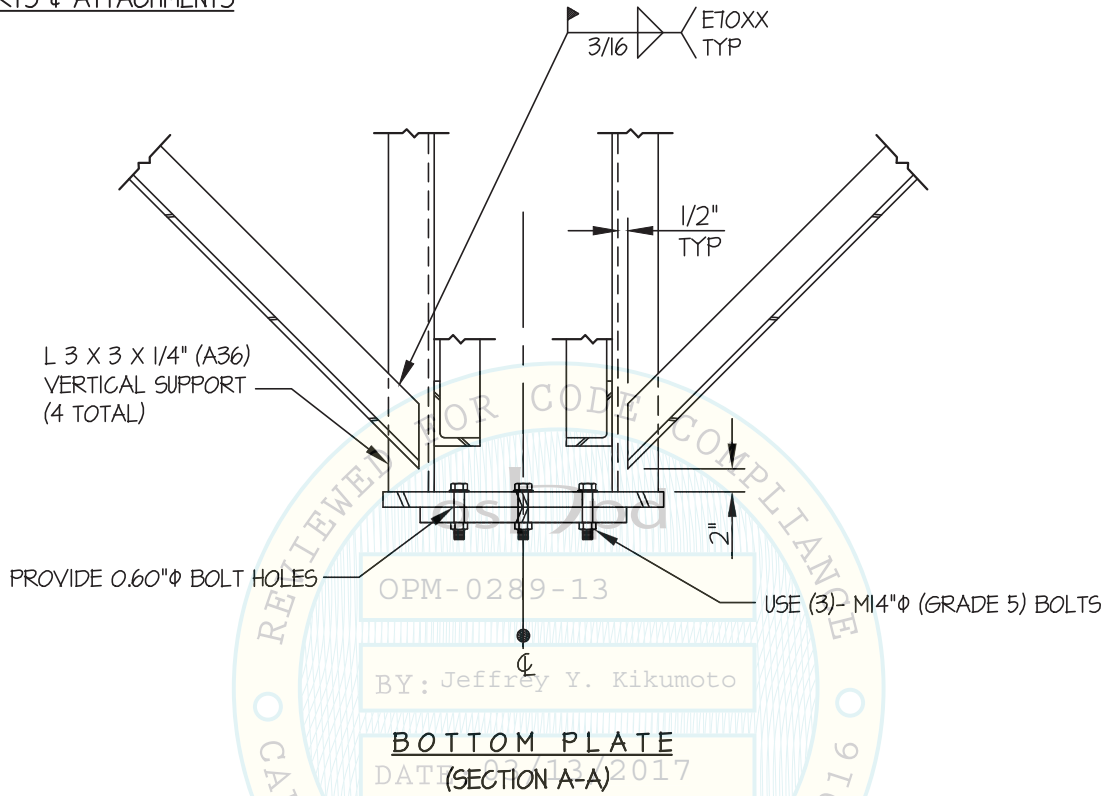
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DATE **3/9/17**

OF **9** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACE DETAIL





**DRAEGER**

DES. **J. ROBERSON**

SHEET

**7**

**POLARIS SYSTEM**

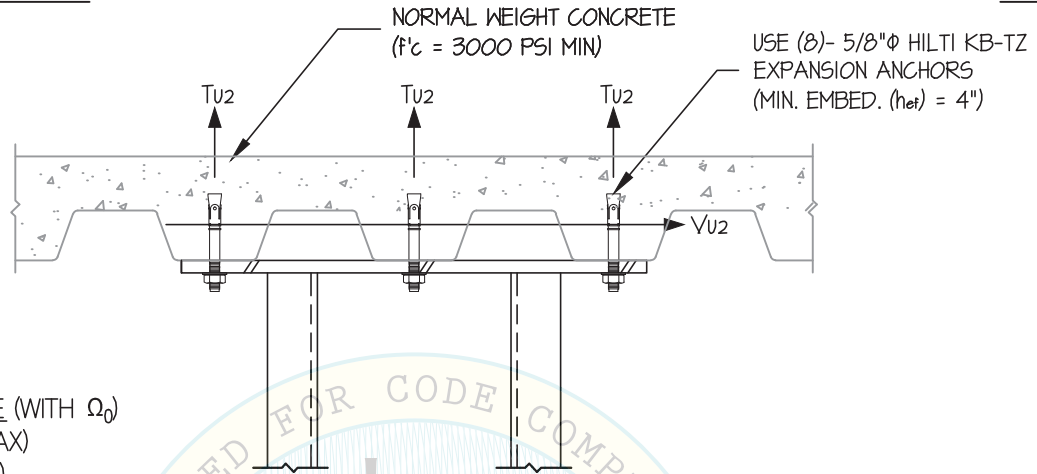
JOB NO. **11-1456**

DATE **3/9/17**

OF **9** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACE DETAIL



ANCHOR AT TOP PLATE (WITH  $\Omega_0$ )

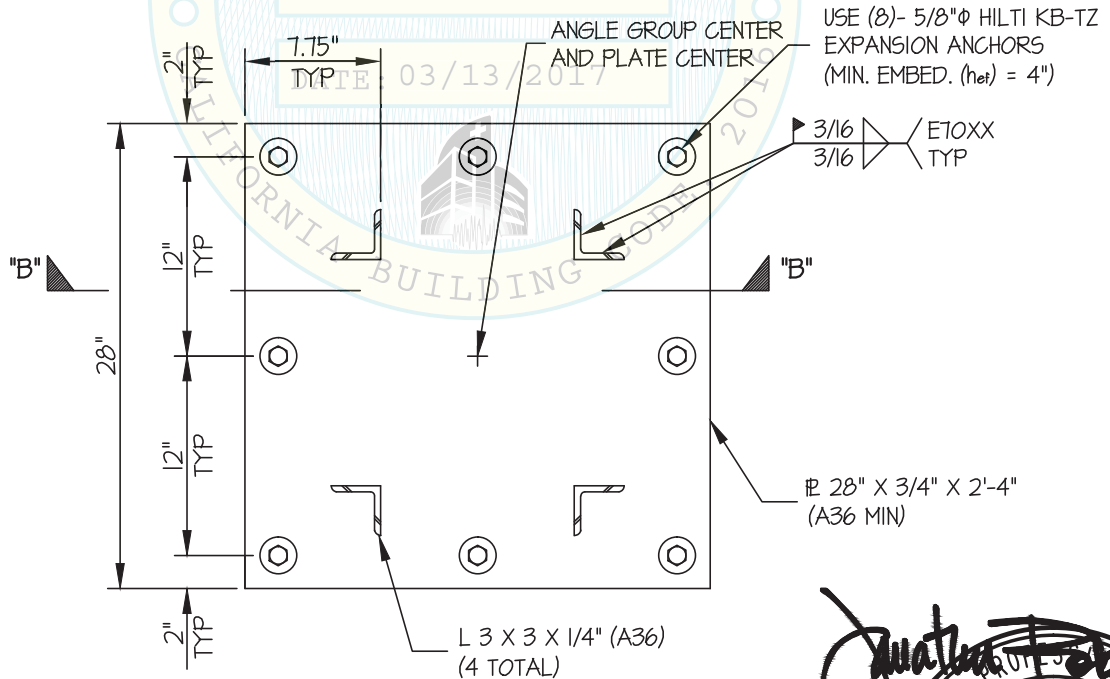
$T_{u2}$  = 2200 LB/BOLT (MAX)

$V_{u2}$  = 39 LB/BOLT (MAX)

TOP PLATE

OPM - (SECTION B-B)

BY: Jeffrey Y. Kikumoto



C TOP PLATE  
1



**DRAEGER**

DES. **J. ROBERSON**

SHEET

**8**

**POLARIS SYSTEM**

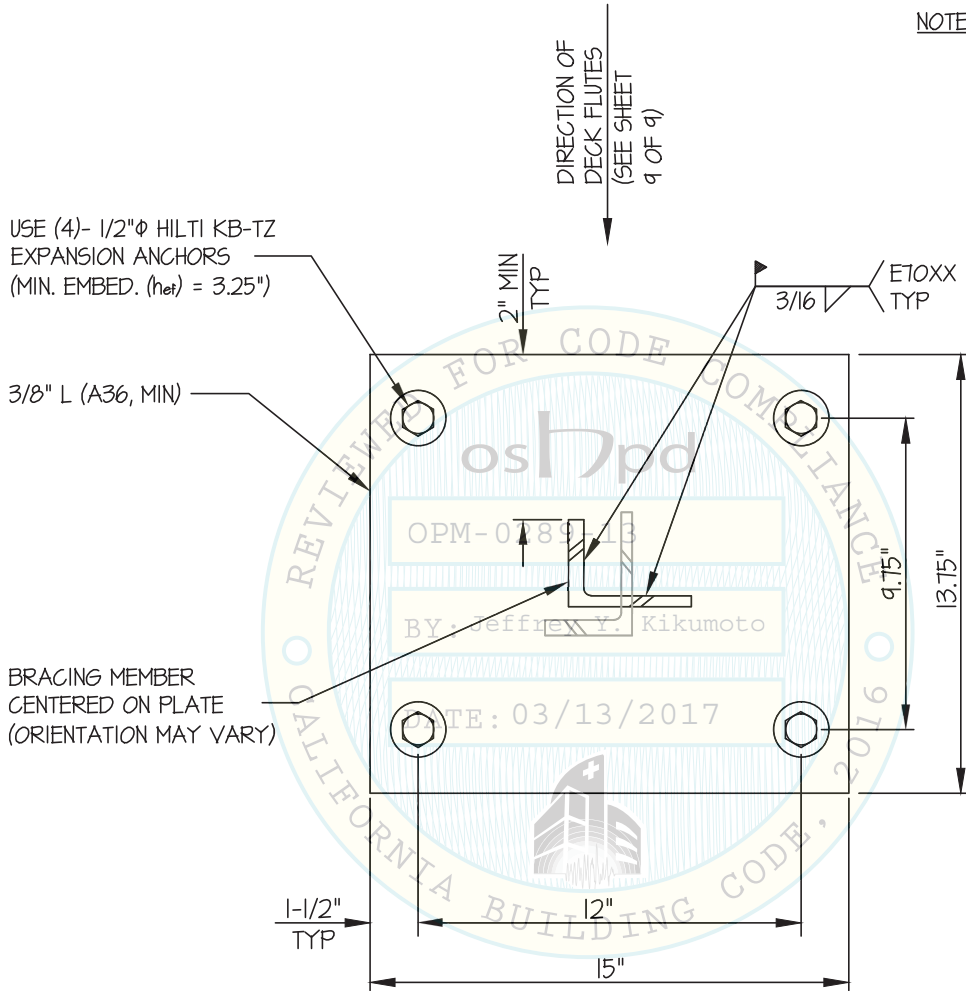
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DATE **3/9/17**

OF **9** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACE DETAIL



NOTE: PLATE MAY BE OFFSET IN LINE TO AVOID ADJACENT PLATE

USE (4)- 1/2"φ HILTI KB-TZ EXPANSION ANCHORS (MIN. EMBED. (net) = 3.25")

3/8" L (A36, MIN)

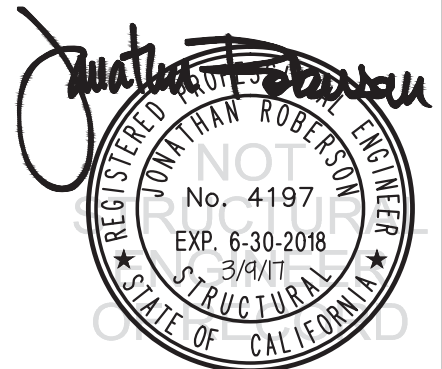
BRACING MEMBER CENTERED ON PLATE (ORIENTATION MAY VARY)

ANCHOR AT BRACE PLATE (WITH  $\Omega_D$ )

$T_{U1} = 283$  LB/BOLT (MAX)

$V_{U1} = 251$  LB/BOLT (MAX)

$\frac{D}{8}$  BRACE PLATE



### DRAEGER

### POLARIS SYSTEM

DES. **J. ROBERSON**

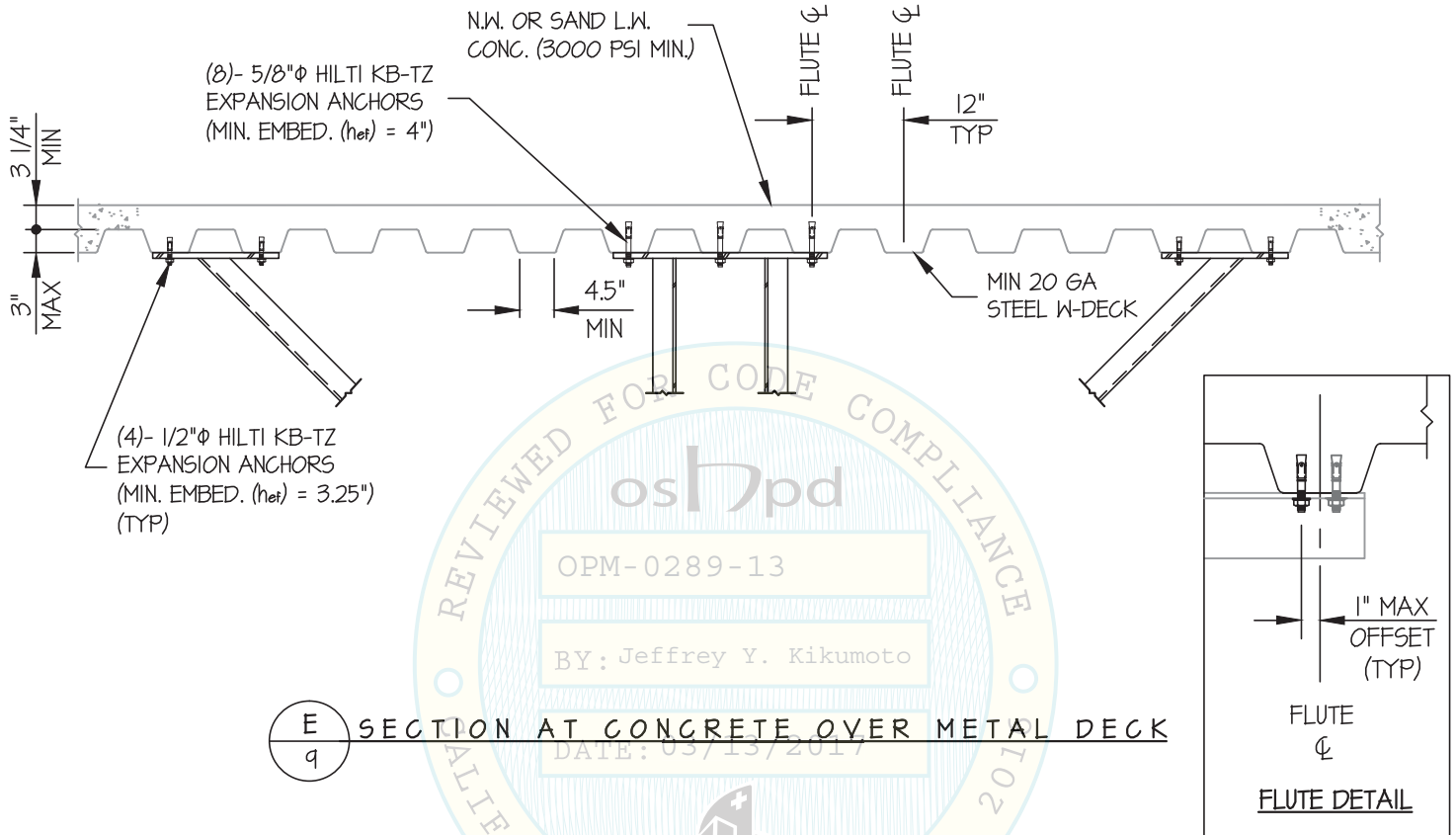
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SHEET

# 9

OF **9** SHEETS



E  
9

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