



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

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

OFFICE USE ONLY	
APPLICATION #:	OPM-0269-13

**OSHPD Preapproval of Manufacturer's Certification (OPM)**

Type:  New  Renewal  Update to Pre-CBC 2013 OPA Number: \_\_\_\_\_

**Manufacturer Information**

Manufacturer: Bracco Injengineering

Manufacturer's Technical Representative: Pierre Sarbach

Mailing Address: Avenue de Sevelin 46, CH-1004 Lausanne, Switzerland

Telephone: +41 21 621 74 00 Email: Pierre.sarbach@bracco.com

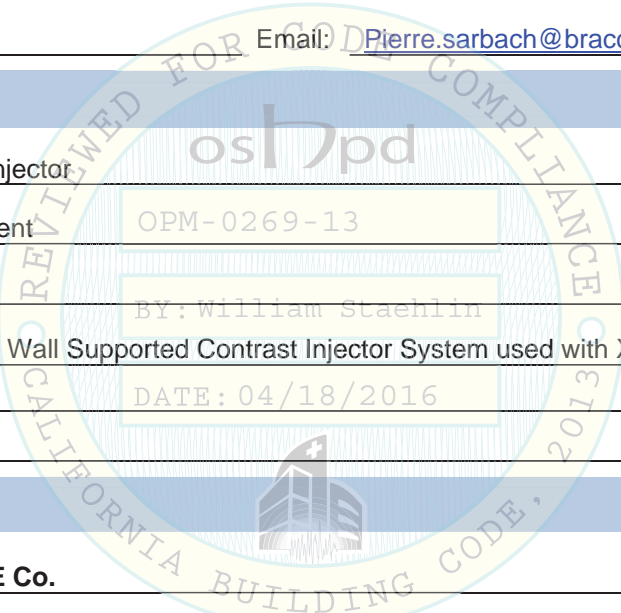
**Product Information**

Product Name: Empower CTA+Injector

Product Type: Cantilevered Element

Product Model Number: N/A

General Description: Ceiling and Wall Supported Contrast Injector System used with X-Ray



**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, 2013.

Signature of Applicant: \_\_\_\_\_ Date: 9/17/15

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 1950-10

Other\* (Please Specify): \_\_\_\_\_

\*Use of test criteria other than those adopted by the California Building Standards Code, 2013 (CBSC 2013) 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 2013 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 2013 ONLY**

Signature: *William Staehlin*

Date: 04-18-2016

Print Name: William Staehlin

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-0269-13**

**THIS PREAPPROVAL CONFORMS TO THE 2013 CALIFORNIA BUILDING CODE**

MANUFACTURER: **BRACCO INJENEERING**  
EQUIPMENT NAME: **EMPOWER CTA + INJECTOR CEILING & WALL MOUNT**

Sheet: 1 of 16  
Date: 3/23/16

**GENERAL NOTES**

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2013 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2013 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 2013 CALIFORNIA BUILDING CODE WHERE  $S_{ds}$  IS NOT GREATER THAN 1.05 & 2.20. SEE DETAIL FOR APPLICABILITY
4. FORCES PER ASCE 7-10 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3,  
WHERE  $S_{ds} = 1.30$ ,  $a_p = 2.5$ ,  $I_p = 1.5$ ,  $R_p = 2.5$ ,  $z/h \leq 1$  AT CONCRETE WALL. SEE FOLLOWING SHEETS FOR  $\Omega_o$ .  
WHERE  $S_{ds} = 2.20$ ,  $a_p = 2.5$ ,  $I_p = 1.5$ ,  $R_p = 2.5$ ,  $z/h \leq 1$ . 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 WALL DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION. (i.e.  $z/h \leq 1$ )
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 2013 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.
  - 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 UNITS ANCHORS.



## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. **J. ROBERSON**

JOB NO. **11-1516**

DATE **3/23/16**

SHEET

**2**

OF **16** 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 <sub>c</sub> (psi)	Anchor Type	ICC Report No.	Min. Embed.	Min. Spacing	Min. Edge Dist.	Min. Conc. Thickness	Torque Test	Direct Tension Test
3/8" (MIN)	Normal Weight	3000	Hilti HIT-HY 200	ESR-3187	4"	7.625"	12"	6"	N/A	1968 lb
1/2"	Sand Light Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	2"	N/A	N/A	See Sheet 12 of 16	40 FT-LB	980 lb
5/8"	Sand Light Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	4"	N/A	N/A	See Sheet 12 of 16	60 FT-LB	3148 lb

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

C. TESTING OF EXPANSION ANCHORS PER 2013 CBC, 1913A.7: 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:

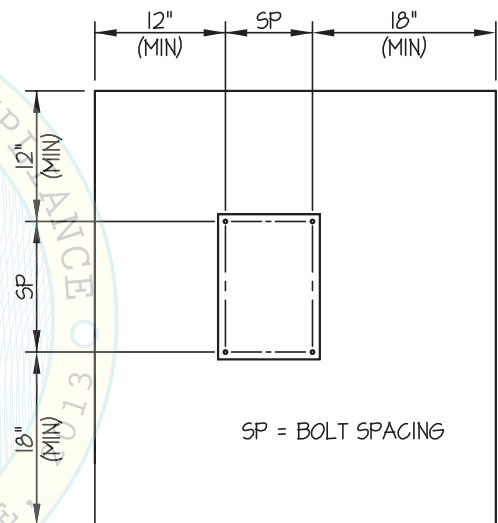
- DIRECT TENSION TEST: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE TEST LOAD. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER BECOMES LOOSE.
- TORQUE TEST: THE APPLICABLE TORQUE MUST BE ACHIEVED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE : 1/2 TURN OF THE NUT

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

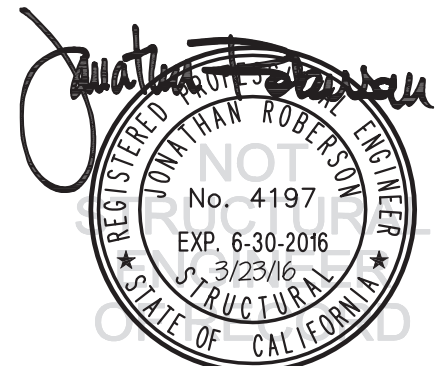
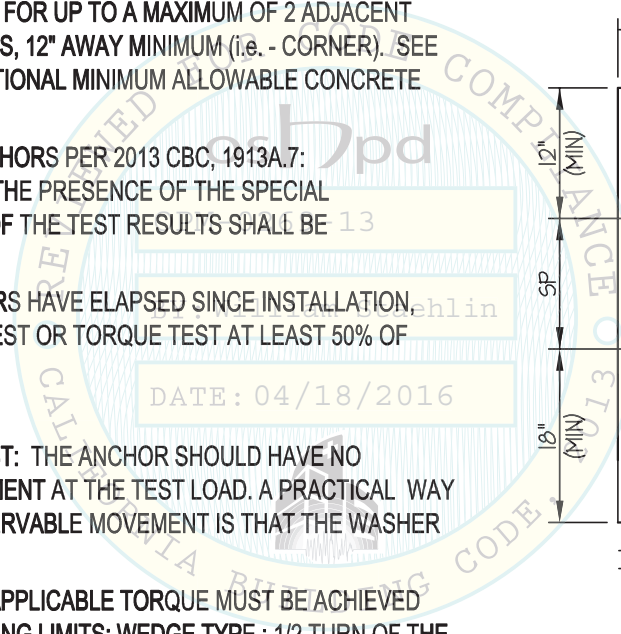
D. AVOID DAMAGING EXISTING STEEL REINFORCING IN CONCRETE WALL WHEN INSTALLING CONCRETE EXPANSION ANCHORS.

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

F. PROVIDE CONTINUOUS INSPECTION FOR ADHESIVE ANCHORS PER SECTION 4.4 OF ESR-3187 AND ACI318-11, SECTIONS D.9.2.2, D.9.2.3, AND D.9.2.4



TYPICAL CONCRETE EDGE DETAIL



## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. J. ROBERSON

JOB NO. 11-1516

DATE 3/23/16

SHEET

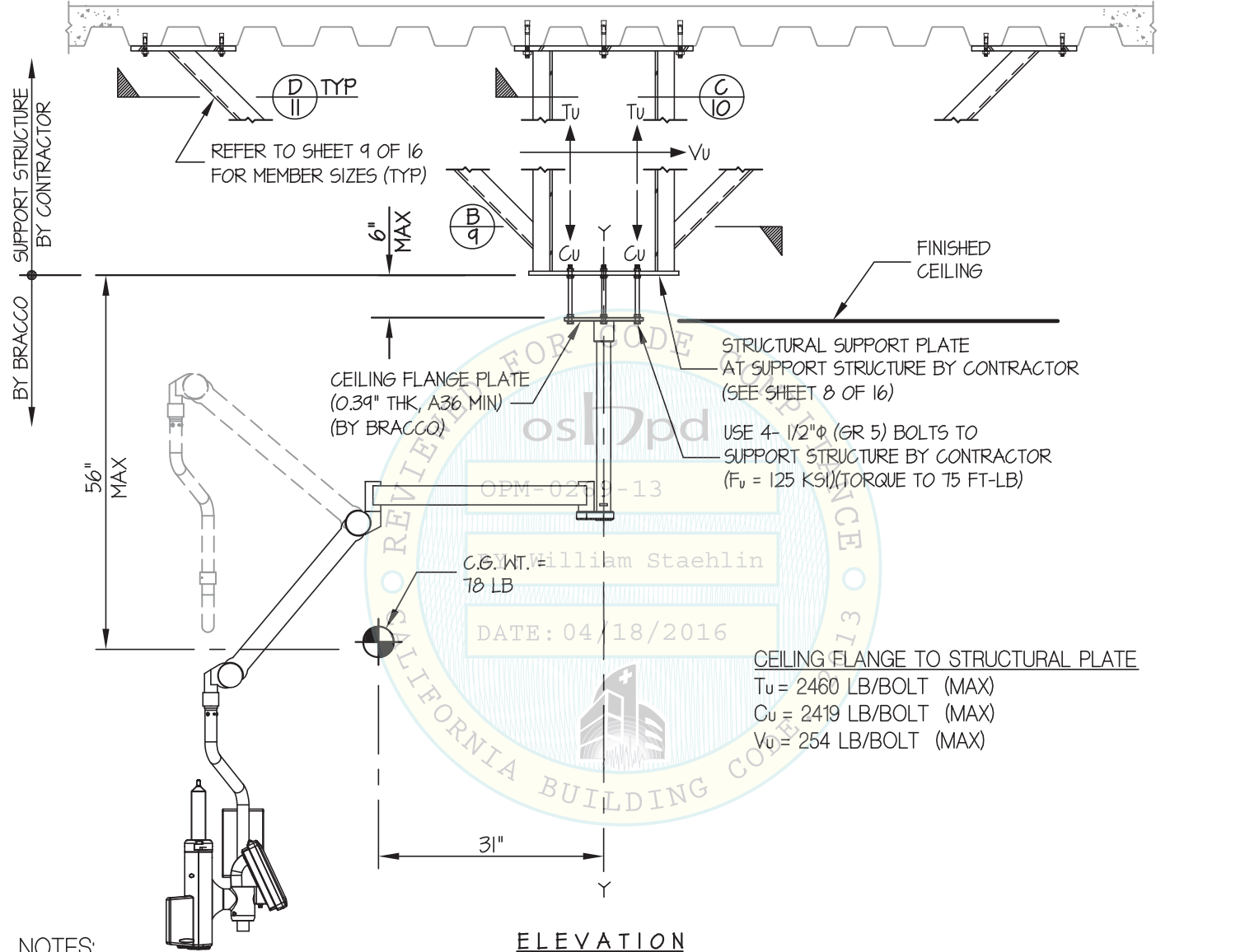
3

OF 16 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

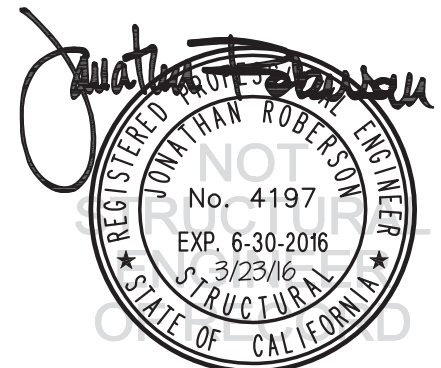
OPTION 1: LARGE CEILING MOUNT

CEILING MOUNTED



**NOTES:**

- FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10. STRENGTH DESIGN IS USED. (S<sub>Ds</sub> = 2.20, a<sub>p</sub> = 2.5, I<sub>p</sub> = 1.5, R<sub>p</sub> = 2.5, z/h ≤ 1)  
 HORIZONTAL FORCE (E<sub>h</sub>) = 3.96 W<sub>p</sub>  
 VERTICAL FORCE (E<sub>v</sub>) = 0.44 W<sub>p</sub>
- 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 AND 2.



## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. **J. ROBERSON**

JOB NO. **11-1516**

DATE **3/23/16**

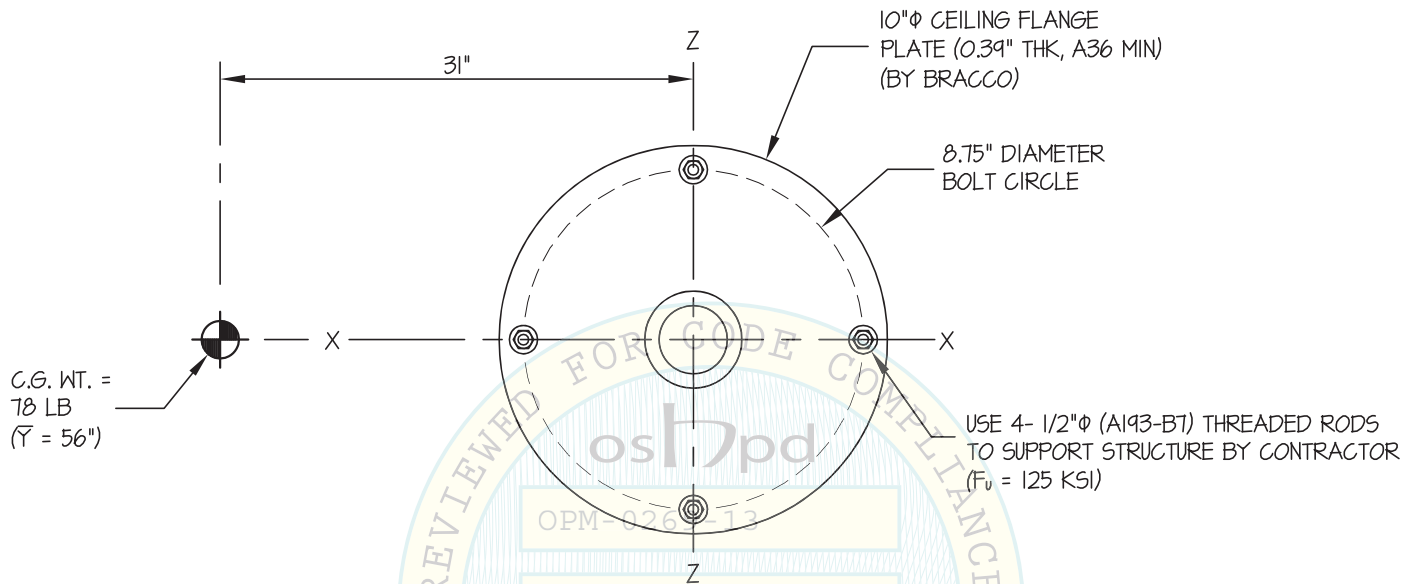
SHEET

**4**

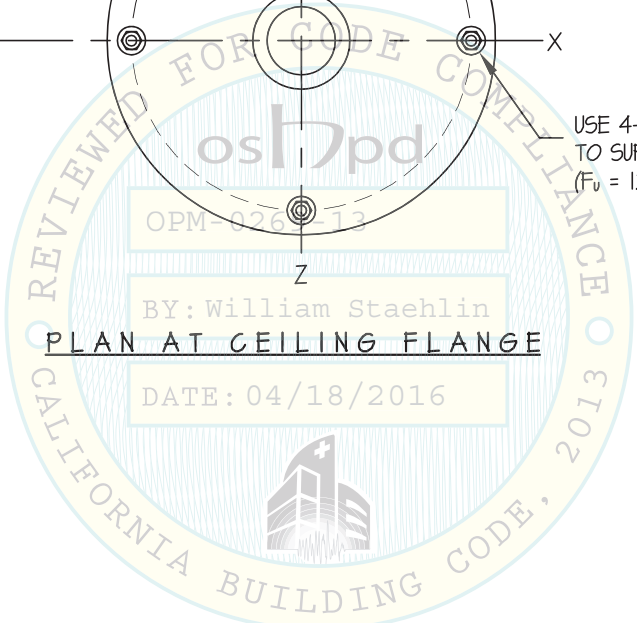
OF **16** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

OPTION I: LARGE CEILING MOUNT CEILING FLANGE PLATE TO STRUCTURAL SUPPORT PLATE



REVIEWED FOR CODE COMPLIANCE  
BY: William Staehlin  
PLAN AT CEILING FLANGE  
DATE: 04/18/2016



*Jonathan Roberson*  
REGISTERED PROFESSIONAL ENGINEER  
No. 4197  
EXP. 6-30-2016  
3/23/16  
STRUCTURAL  
STATE OF CALIFORNIA

## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. J. ROBERSON

JOB NO. 11-1516

DATE 3/23/16

SHEET

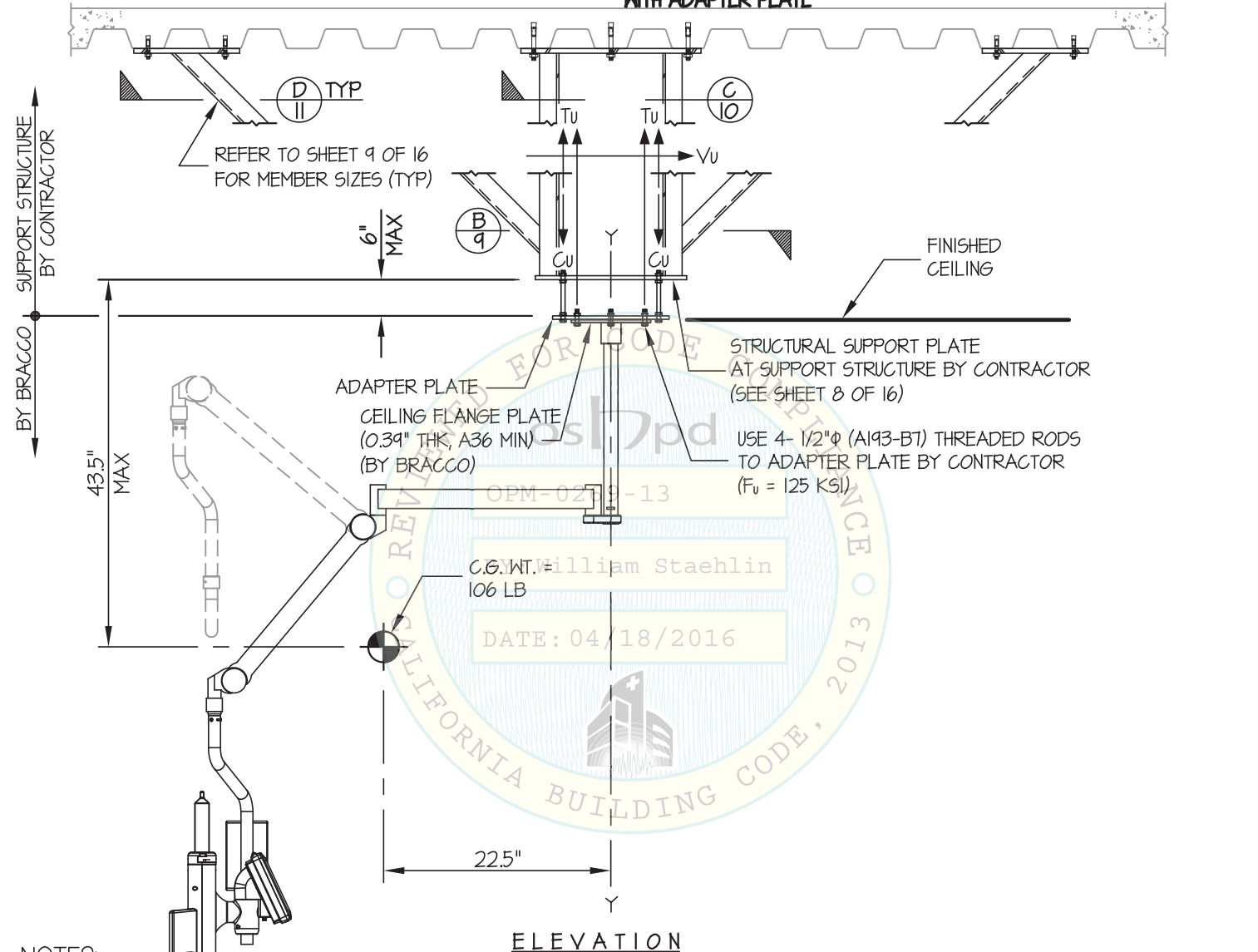
5

OF 16 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

OPTION 2: LARGE CEILING MOUNT  
WITH ADAPTER PLATE

CEILING MOUNTED



**NOTES:**

- FORCES ARE DETERMINED PER 2013 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 AND 2.



## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. **J. ROBERSON**

JOB NO. **11-1516**

DATE **3/23/16**

SHEET

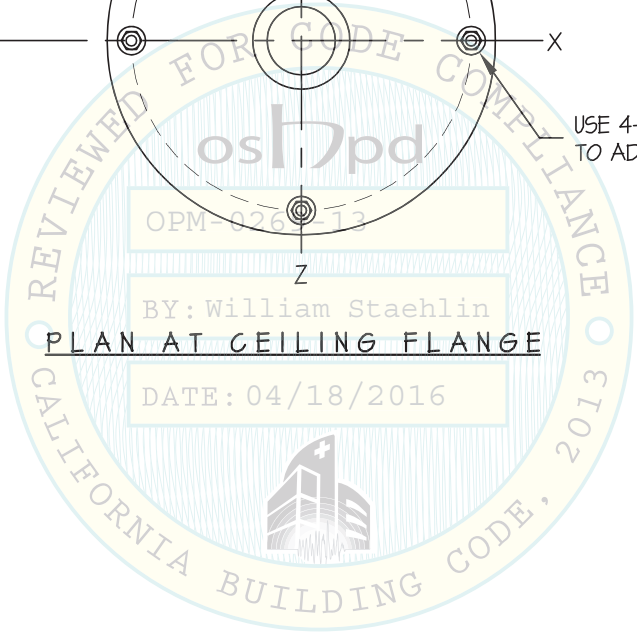
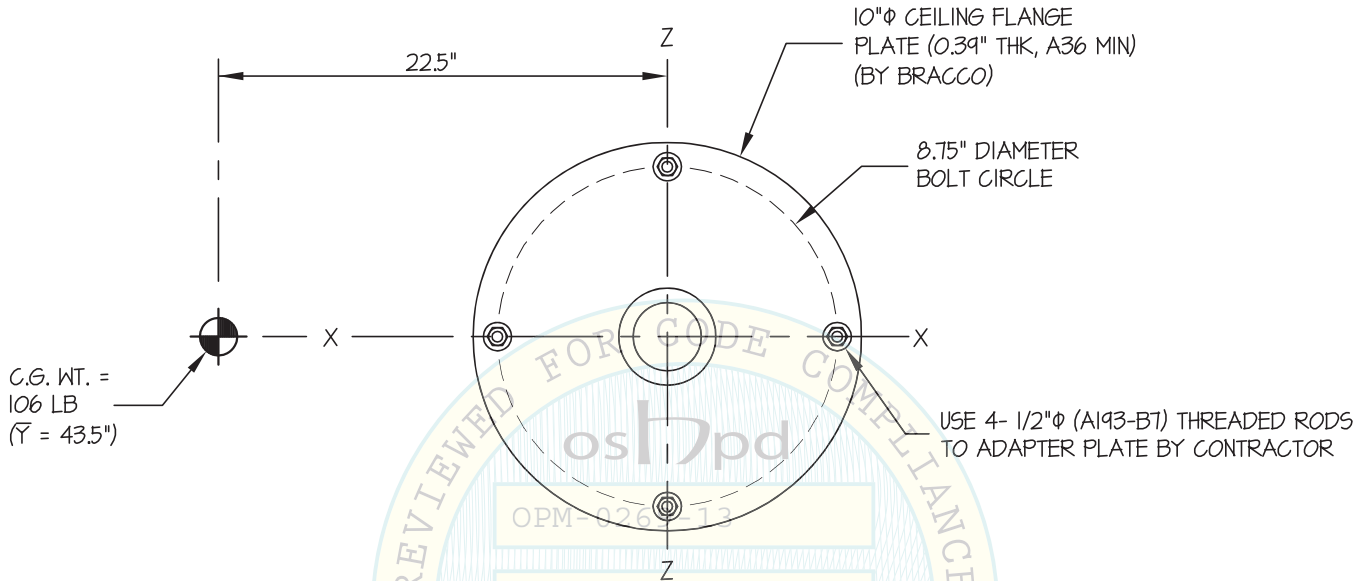
# 6

OF **16** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

**OPTION 2: LARGE CEILING MOUNT  
WITH ADAPTER PLATE**

CEILING FLANGE PLATE TO ADAPTER PLATE



BY: William Staehlin  
**PLAN AT CEILING FLANGE**  
DATE: 04/18/2016





## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. **J. ROBERSON**

JOB NO. **11-1516**

DATE **3/23/16**

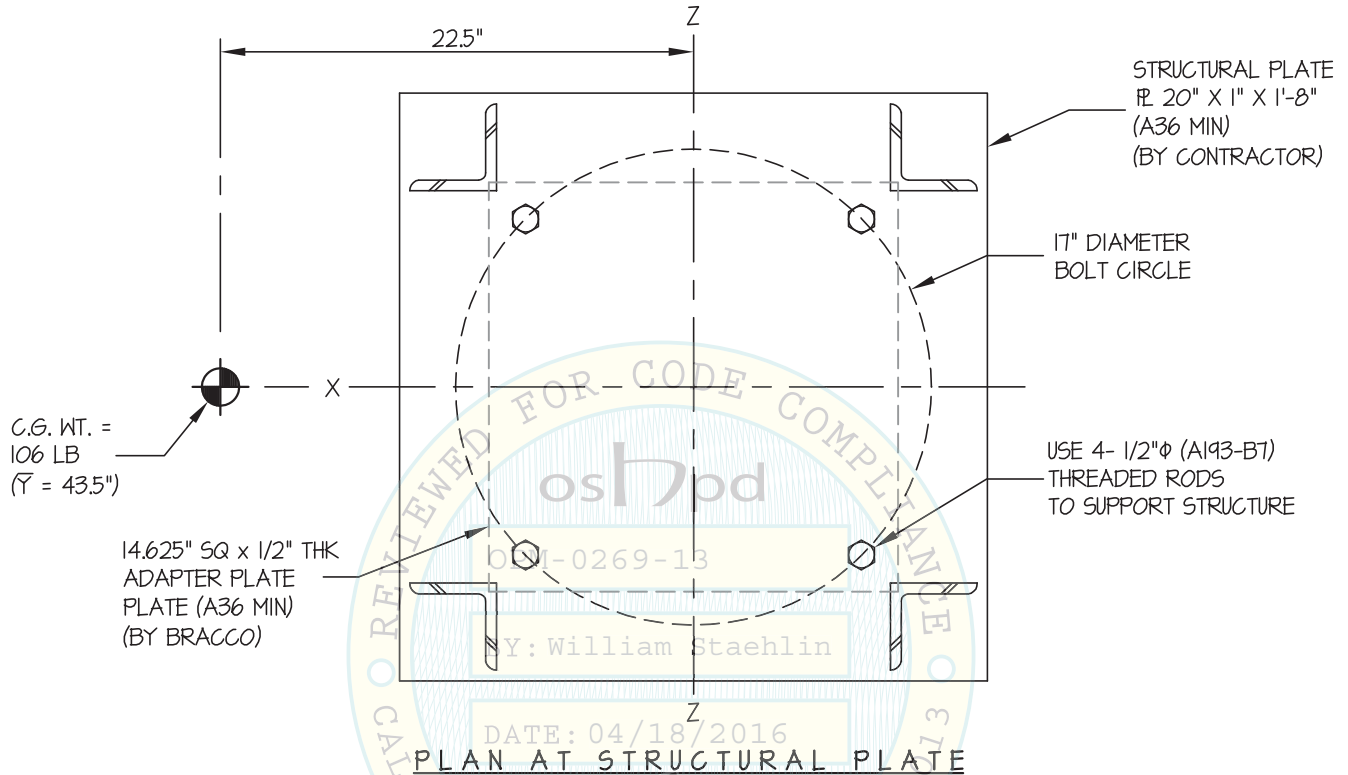
SHEET

**7**

OF **16** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

OPTION 2: LARGE CEILING MOUNT WITH ADAPTER PLATE ADAPTER PLATE TO STRUCTURAL SUPPORT PLATE



## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. **J. ROBERSON**

JOB NO. **11-1516**

DATE **3/23/16**

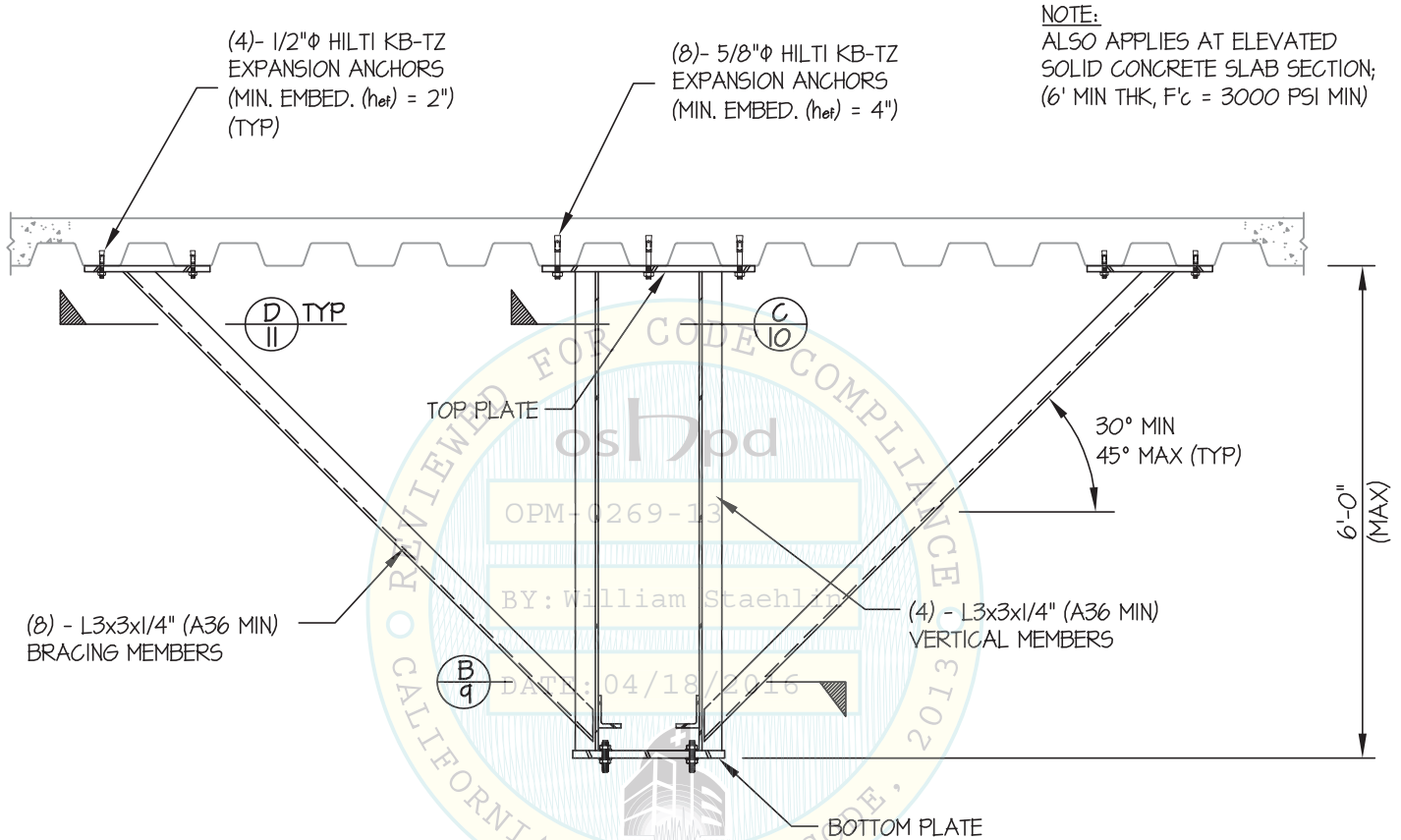
SHEET

**8**

OF **16** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACING DETAILS



**A**  
**B** ELEVATION AT STRUCTURAL BRACING SYSTEM

*Jonathan Roberson*

REGISTERED PROFESSIONAL ENGINEER  
No. 4197  
EXP. 6-30-2016  
3/23/16  
STRUCTURAL  
STATE OF CALIFORNIA

## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. J. ROBERSON

JOB NO. 11-1516

DATE 3/23/16

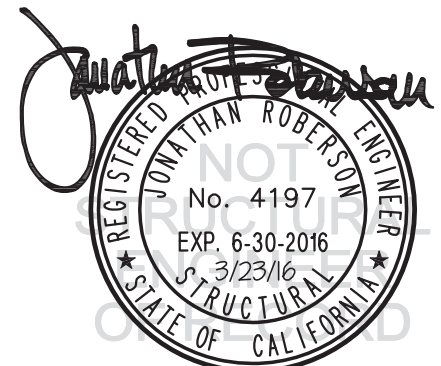
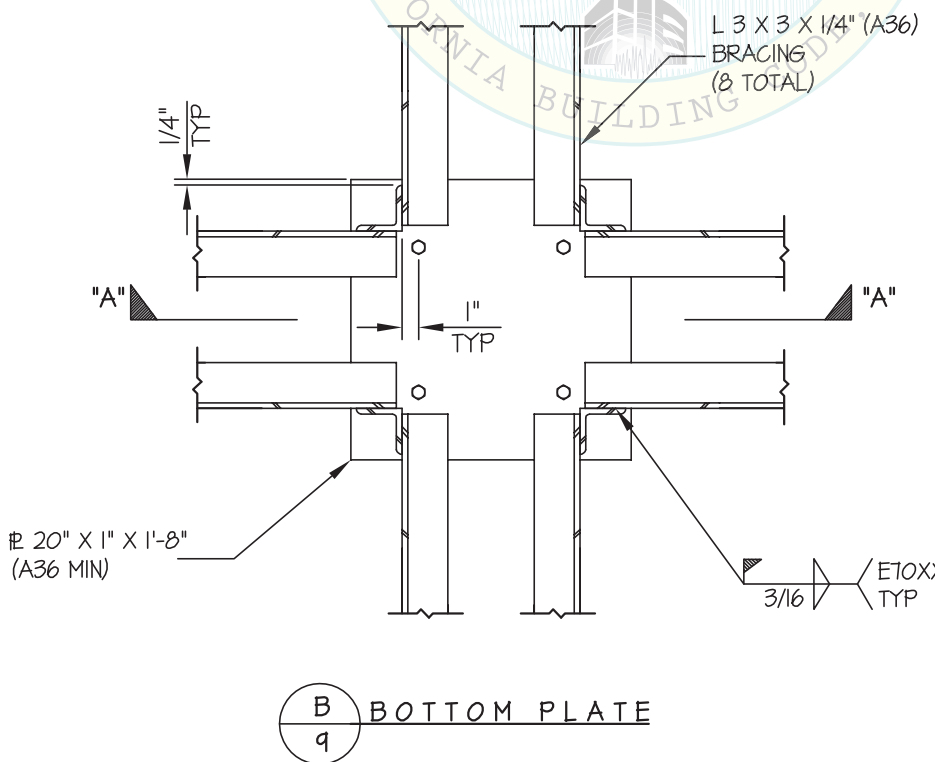
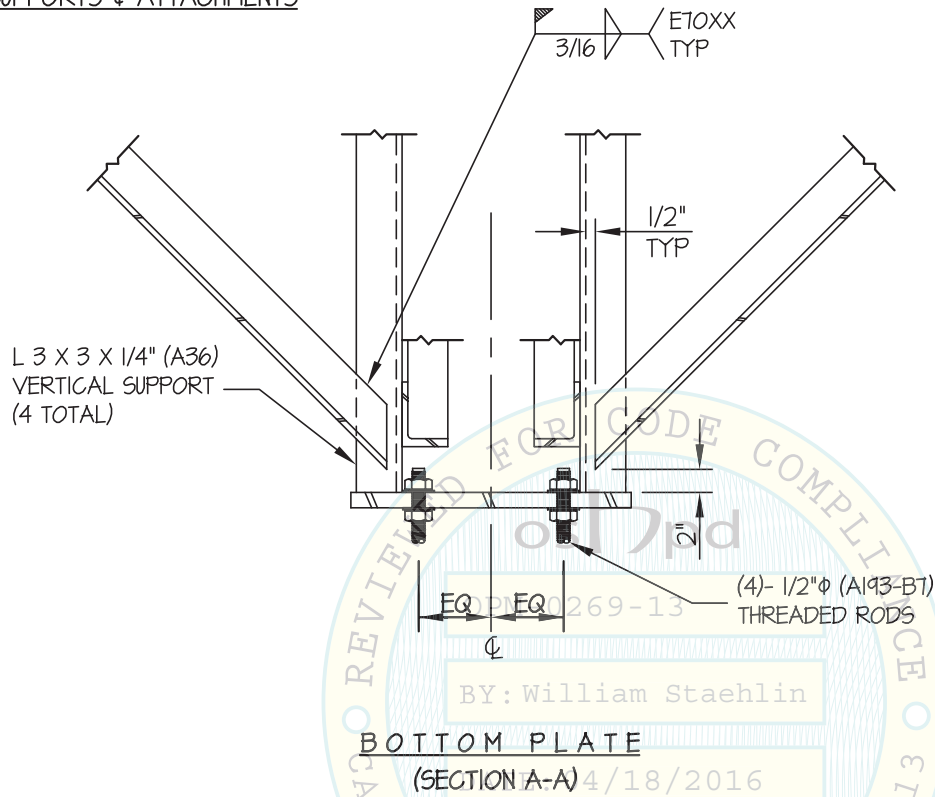
SHEET

9

OF 16 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACING DETAILS





## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. **J. ROBERSON**

JOB NO. **11-1516**

DATE **3/23/16**

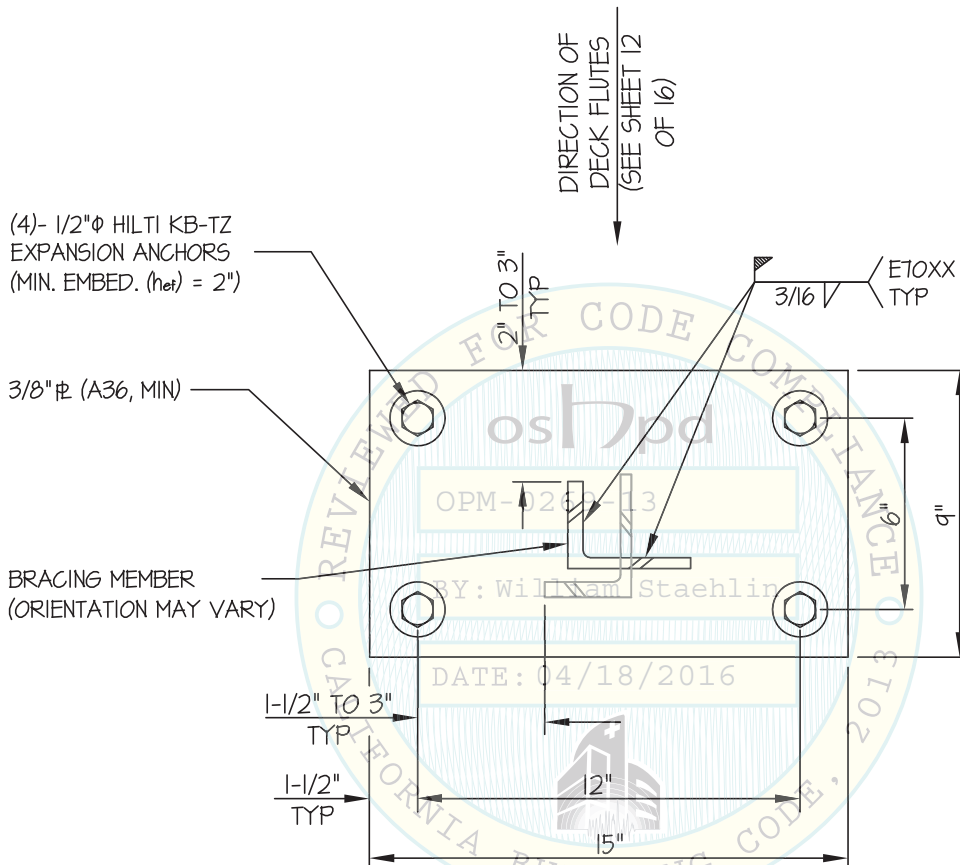
SHEET

**11**

OF **16** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACING DETAILS



D BRACE PLATE

*Jonathan Roberson*  
 REGISTERED PROFESSIONAL ENGINEER  
 JONATHAN ROBERSON  
 No. 4197  
 EXP. 6-30-2016  
 3/23/16  
 STRUCTURAL  
 STATE OF CALIFORNIA

### BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. J. ROBERSON

JOB NO. 11-1516

DATE 3/23/16

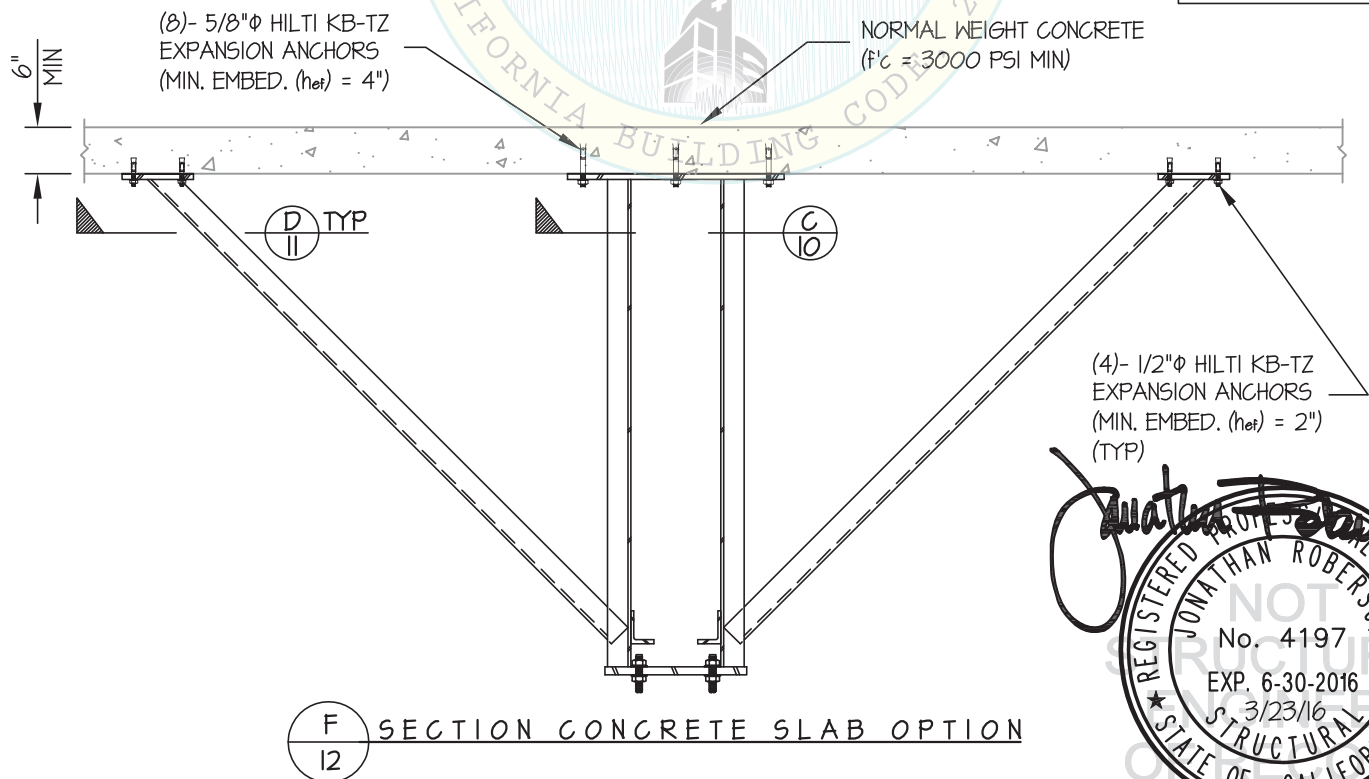
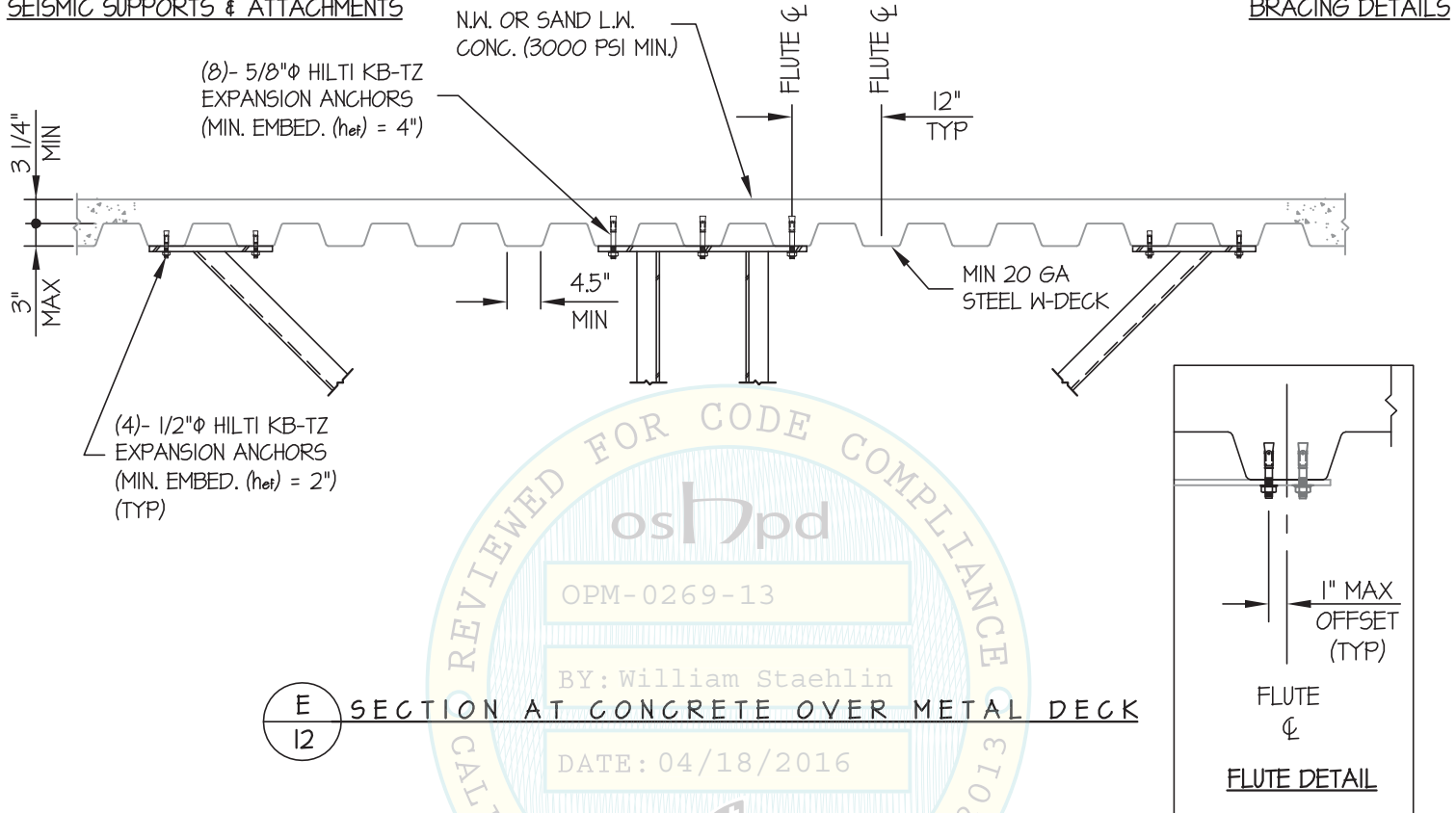
SHEET

# 12

OF 16 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACING DETAILS



*Jonathan Roberson*

REGISTERED PROFESSIONAL ENGINEER  
JONATHAN ROBERSON  
No. 4197  
EXP. 6-30-2016  
3/23/16  
STRUCTURAL  
STATE OF CALIFORNIA

## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. **J. ROBERSON**

JOB NO. **11-1516**

DATE **3/23/16**

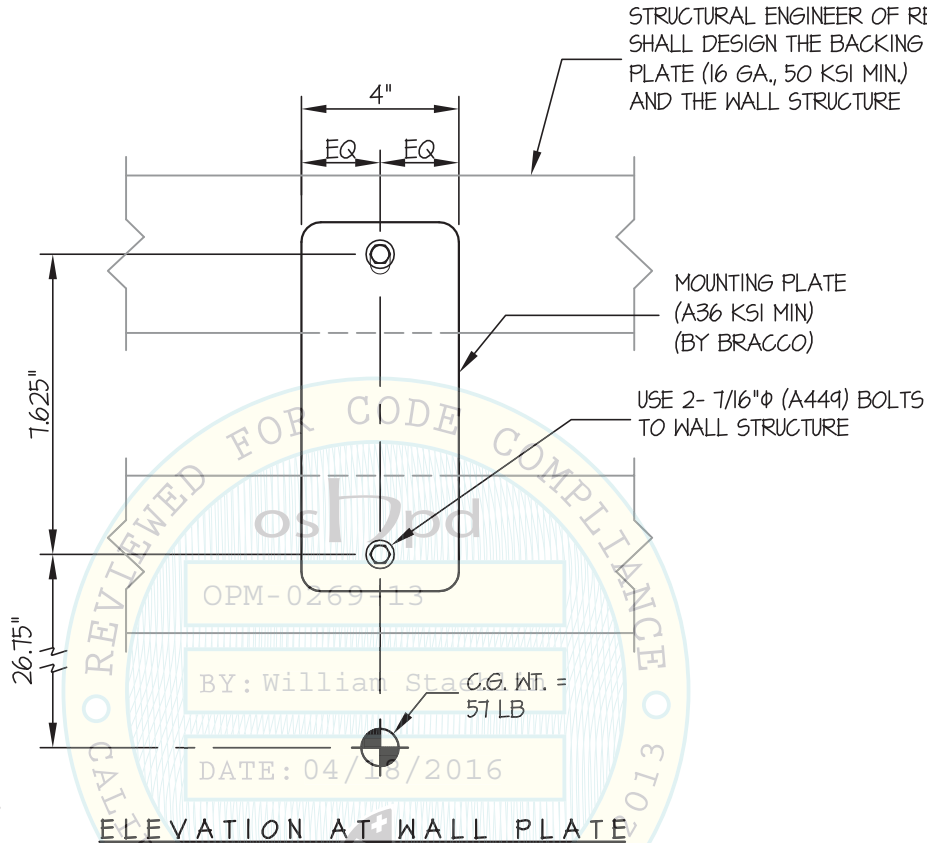
SHEET

# 13

OF **16** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



$T_u = 1445$  LB/BOLT (MAX)  
 $V_u = 1559$  LB/BOLT (MAX)  
(VALUES DO NOT INCLUDE  $\Omega$ )

**NOTES:**

- FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10. STRENGTH DESIGN IS USED. ( $S_{ds} = 2.20$ ,  $a_p = 2.5$ ,  $I_p = 15$ ,  $R_p = 2.5$ ,  $z/h \leq 1$ )

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 AND 2.



### BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. J. ROBERSON

JOB NO. 11-1516

DATE 3/23/16

SHEET

# 14

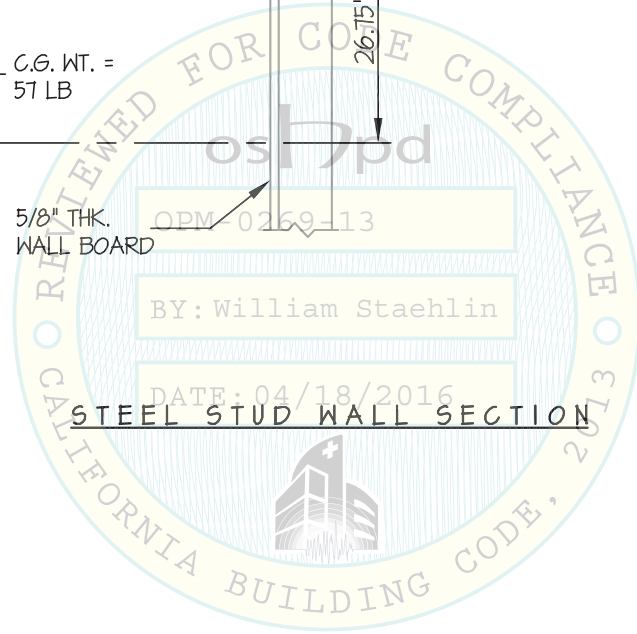
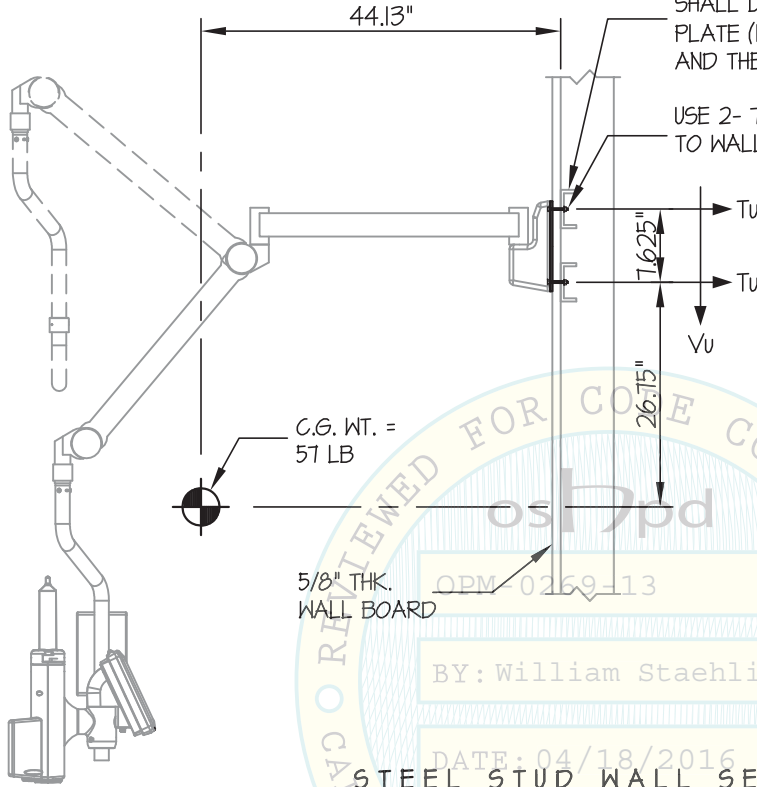
OF 16 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

STRUCTURAL ENGINEER OF RECORD  
SHALL DESIGN THE BACKING  
PLATE (16 GA., 50 KSI MIN.)  
AND THE WALL STRUCTURE

USE 2- 7/16"Φ (A449) BOLTS  
TO WALL STRUCTURE

WALL MOUNTED



STEEL STUD WALL SECTION





## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. **J. ROBERSON**

JOB NO. **11-1516**

DATE **3/23/16**

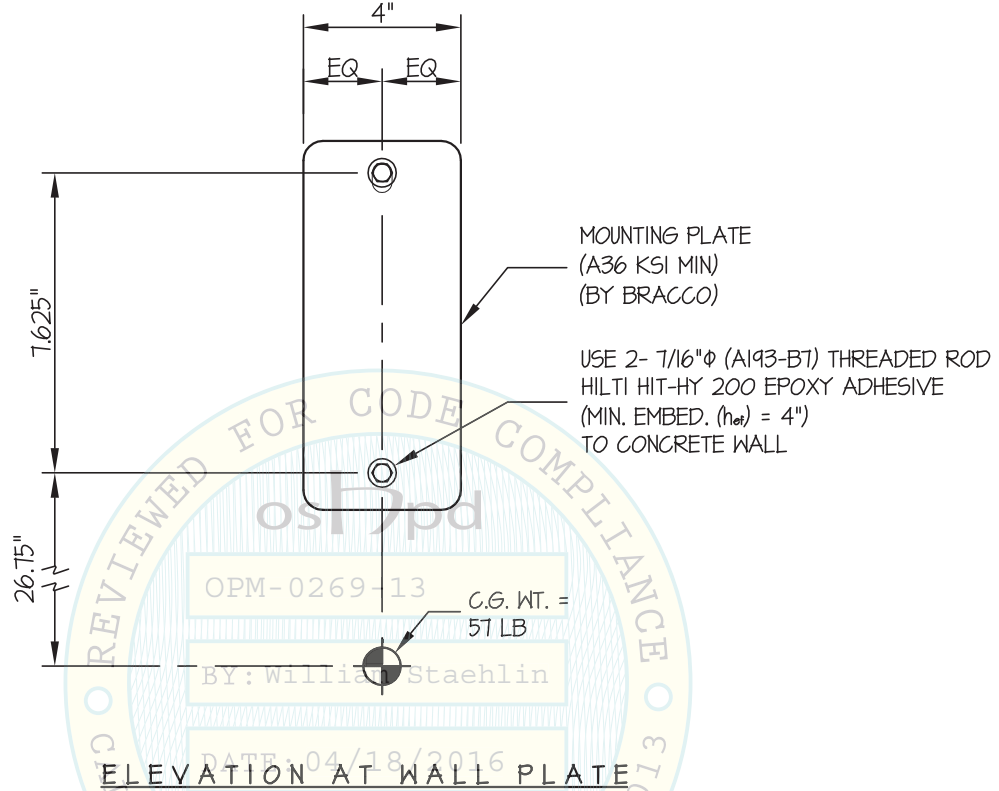
SHEET

# 15

OF **16** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED

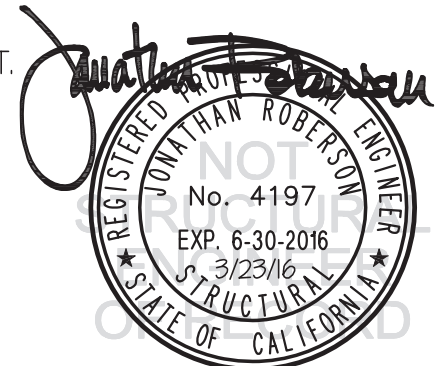


$T_u = 1807$  LB/BOLT (MAX)  
 $V_u = 1976$  LB/BOLT (MAX)  
(VALUES INCLUDE  $\Omega_c$ )

ELEVATION AT WALL PLATE

**NOTES:**

- FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10. STRENGTH DESIGN IS USED. ( $S_{Ds} = 1.30$ ,  $\alpha_p = 2.5$ ,  $I_p = 1.5$ ,  $R_p = 2.5$ ,  $\Omega_o = 2.5$ ,  $z/h \leq 1$ )  
 HORIZONTAL FORCE ( $E_h$ ) =  $2.34 W_p$   
 HORIZONTAL FORCE ( $E_{mh}$ ) =  $5.85 W_p$  (FOR CONCRETE ANCHORAGE)  
 VERTICAL FORCE ( $E_v$ ) =  $0.26 W_p$
- 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 AND 2.



## BRACCO INJENEERING

### EMPOWER CTA + INJECTOR CEILING & WALL MOUNT

DES. **J. ROBERSON**

JOB NO. **11-1516**

DATE **3/23/16**

SHEET

# 16

OF **16** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED

