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

| OFFICE USE ONLY |
|---|
| APPLICATION #: OPM-0173-13 |

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

**Type:** ☒ New ☐ Renewal ☐ Update to Pre-CBC 2013 OPA Number: _____

## Manufacturer Information

Manufacturer: Beckman Coulter

Manufacturer's Technical Representative: Hendra Tanumihardja

Mailing Address: 250 S. Kramer Blvd., Brea, CA. 92821-6232

Telephone: (800) 526-3821 Email: htanumihardja@beckman.com

## Product Information

Product Name: PE HS 5K Stockyard

Product Type: Other Mechanical or Electrical Component

Product Model Number: PC20

General Description: 5440 Tube Storage Module for Power Express Diagnostics Lab Automation System



## 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: 12/17/14

Title: Principal Engineer Company Name: **EASE Co.**

## 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: Date: 01/20/2015

Print Name: William Staehlin

Title: SSE

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-0173-13

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

MANUFACTURER: **BECKMAN COULTER**

EQUIPMENT NAME: **PE HS 5K STOCKYARD**

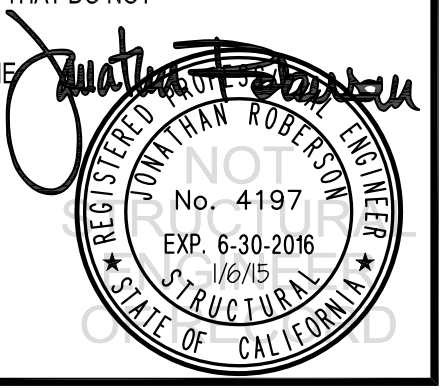


Date: 1/6/15

## 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 1.5,1.9 &2.2.
4. FORCES PER ASCE 7-10 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3,
   WHERE $S_{DS}$ = 1.50, $a_p$ = 1.0, $I_p$ = 1.5, $R_p$ = 2.5, z/h = 0 AT CONCRETE SLAB. SEE FOLLOWING SHEETS FOR $\Omega_o$
   WHERE $S_{DS}$ = 1.90, $a_p$ = 1.0, $I_p$ = 1.5, $R_p$ = 2.5, z/h = 0 AT CONCRETE SLAB. SEE FOLLOWING SHEETS FOR $\Omega_o$
   WHERE $S_{DS}$ = 2.2, $a_p$ = 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 $\Omega_o$
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 ON GRADE DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION BELOW GRADE. (i.e. z/h $\leq$ 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 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 6hef FROM THIS UNIT'S ANCHORS.



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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1/2" | Light Weight | 3000 | Hilti Kwik Bolt TZ | ESR-1917 | 2" | N/A | N/A | See Sheet 8 of 9 | 25 FT-LB | 1186 lb |
| 5/8" | Normal Weight | 3000 | Hilti Kwik Bolt TZ | ESR-1917 | 3-1/8" | 4" | 32" | 5" | 110 FT-LB | 2236 lb |
| 5/8" | Normal Weight | 3000 | Hilti Kwik Bolt TZ | ESR-1917 | 4-3/4" | 4" | 24" | 6" | 110 FT-LB | 3026 lb |

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 72" AWAY MINIMUM (i.e. - CORNER). SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

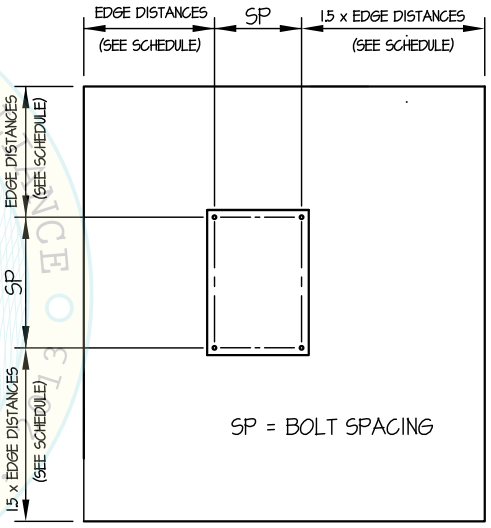
C. TESTING OF EXPANSION ANCHORS PER 2013 CBC, 1913A.7: TESTING SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO OSHPD

(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.



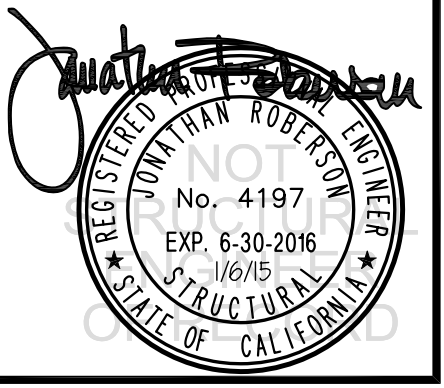

TYPICAL CONCRETE EDGE DETAIL

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.



# BECKMAN COULTER

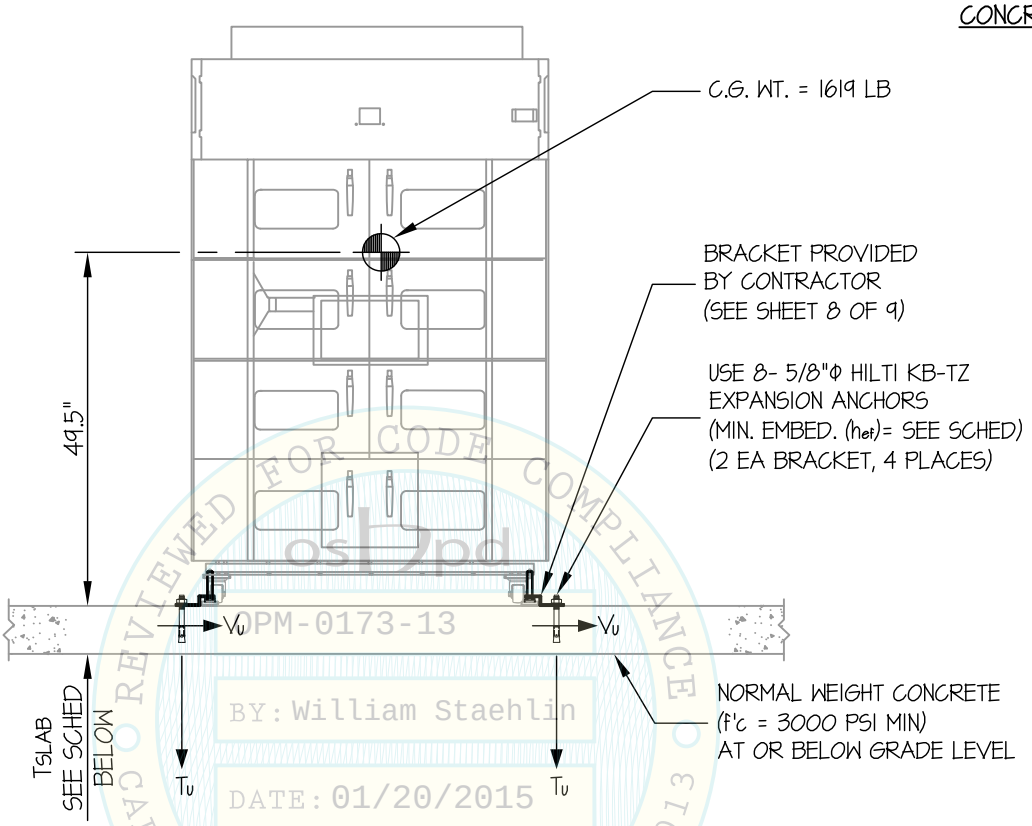
# PE HS 5K STOCKYARD

DES. J. ROBERSON
JOB NO. 11-1416
DATE 1/6/15

SHEET 3 OF 9 SHEETS

SEISMIC ANCHORAGE

CONCRETE SLAB



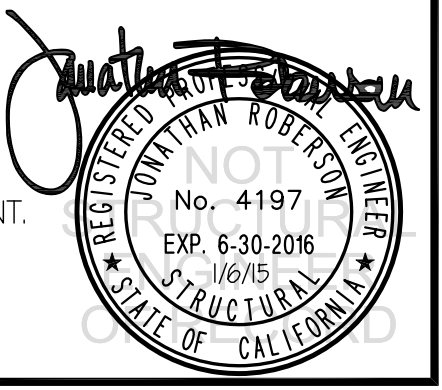

FRONT ELEVATION

| | ANCHORS | | | | | | |
|---|---|---|---|---|---|---|---|
| MAX Sds | TYPE | DIAM | EFF EMBED | QTY | TSLAB | * Tu | * Vu |
| 1.50 | HILTI KB-TZ | 5/8" | 3-1/8" | 8 | 5" | 1583 | 438 |
| 1.90 | HILTI KB-TZ | 5/8" | 4" | 8 | 6" | 2135 | 555 |

* VALUES INCLUDE $\Omega_0$

NOTES:

1. FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10 STRENGTH DESIGN IS USED. ($a_p$ = 1.0, $I_p$ = 1.5, $R_p$ = 1.5, $\Omega_0$ = 1.5, z/h = 0)
2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THESE CALCULATIONS ENCOMPASS 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.



# BECKMAN COULTER

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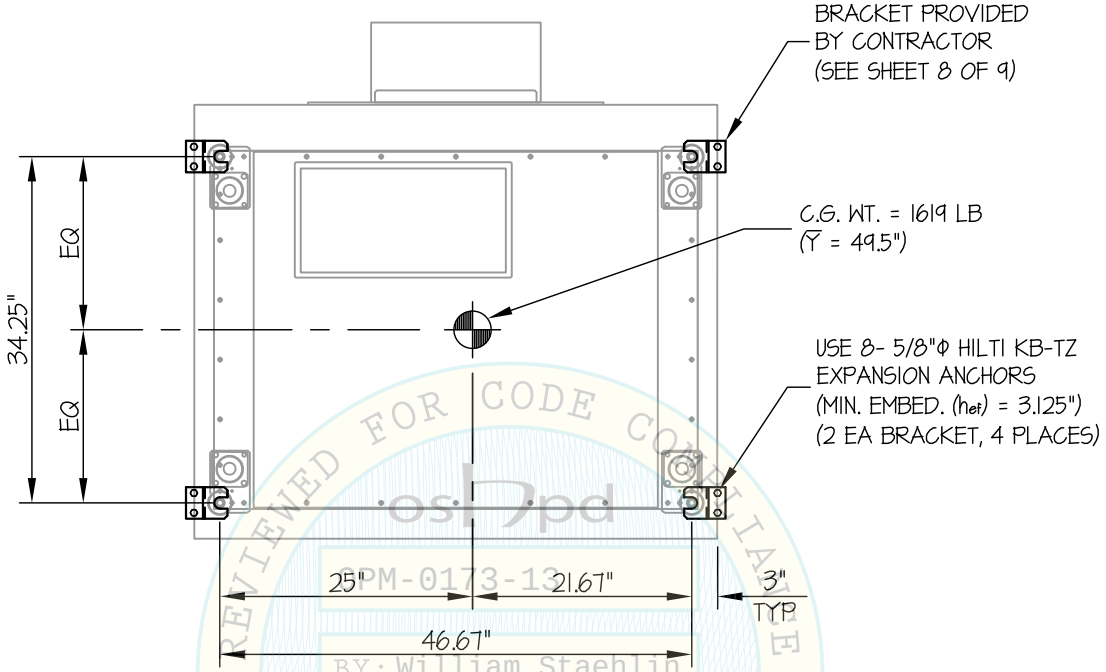
SHEET 4 OF 9 SHEETS

SEISMIC ANCHORAGE

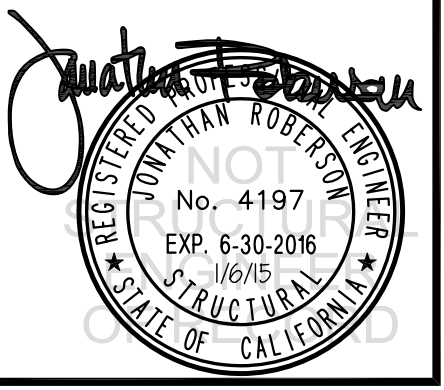
MAX $S_{DS} \leq 1.50$

CONCRETE SLAB




PLAN AT BASE





# BECKMAN COULTER

# PE HS 5K STOCKYARD

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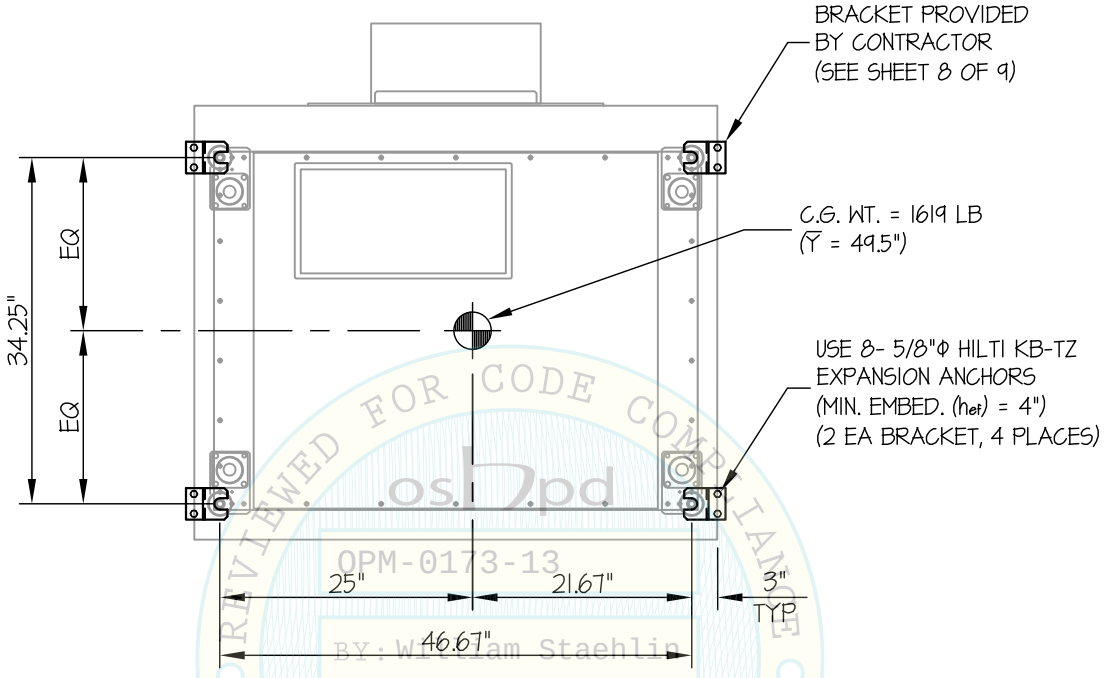
SHEET 5 OF 9 SHEETS

SEISMIC ANCHORAGE

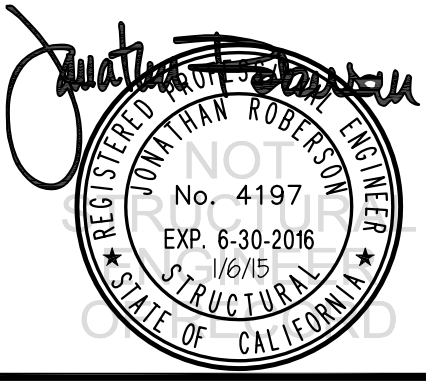
1.50 < MAX $S_{DS}$ ≤ 1.90

CONCRETE SLAB




PLAN AT BASE





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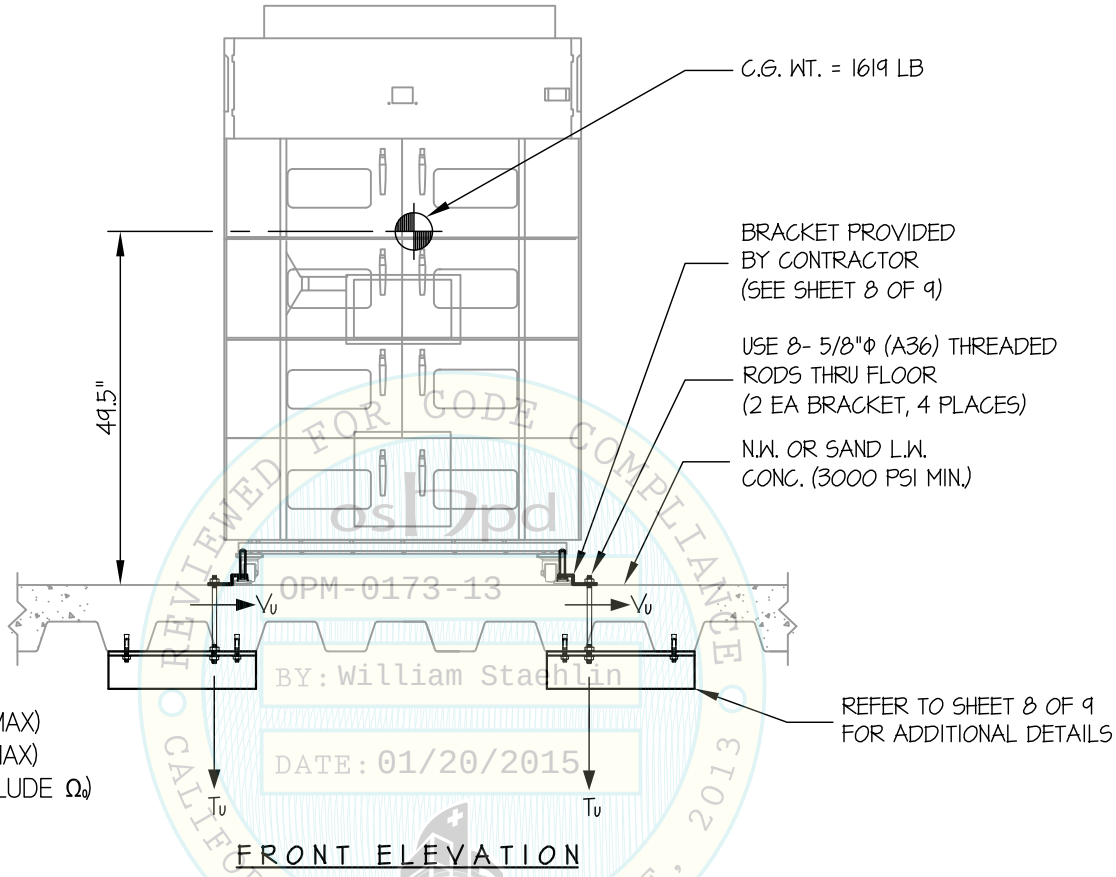
SHEET 6 OF 9 SHEETS

SEISMIC ANCHORAGE

CONCRETE SLAB ON METAL DECK




Tu = 4713 LB/BOLT (MAX)
Vu = 1144 LB/BOLT (MAX)
(VALUES DO NOT INCLUDE $\Omega_0$)

FRONT ELEVATION



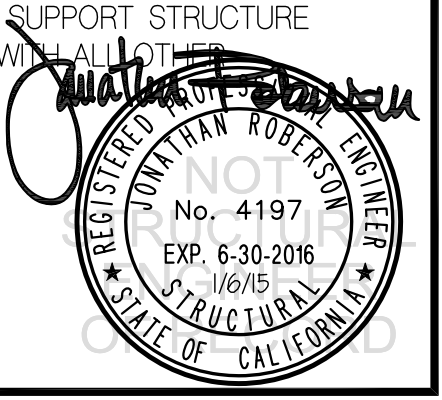
NOTES:

1. FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10 STRENGTH DESIGN IS USED. ($S_{DS}$ = 2.20, $a_p$ = 1.0, $I_p$ = 1.5, $R_p$ = 1.5, $\Omega_0$ = 1.5, z/h ≤ 1)

   HORIZONTAL FORCE ($E_h$) = 2.64 $W_p$
   HORIZONTAL FORCE ($E_{mh}$) = 3.96 $W_p$ (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE ($E_v$) = 0.44 $W_p$

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.



# BECKMAN COULTER

# PE HS 5K STOCKYARD

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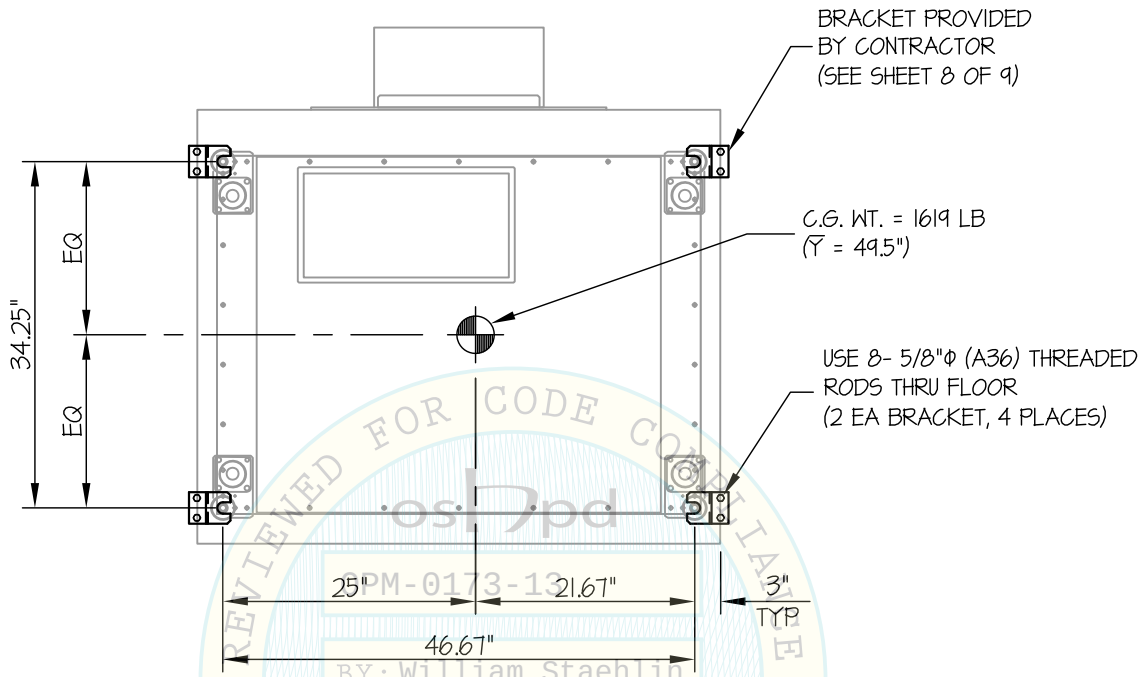
SHEET 7 OF 9 SHEETS

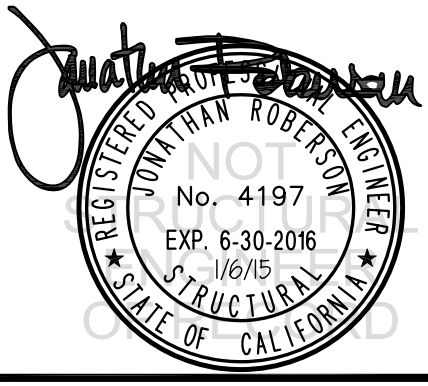
SEISMIC ANCHORAGE

CONCRETE SLAB ON METAL DECK




PLAN AT BASE





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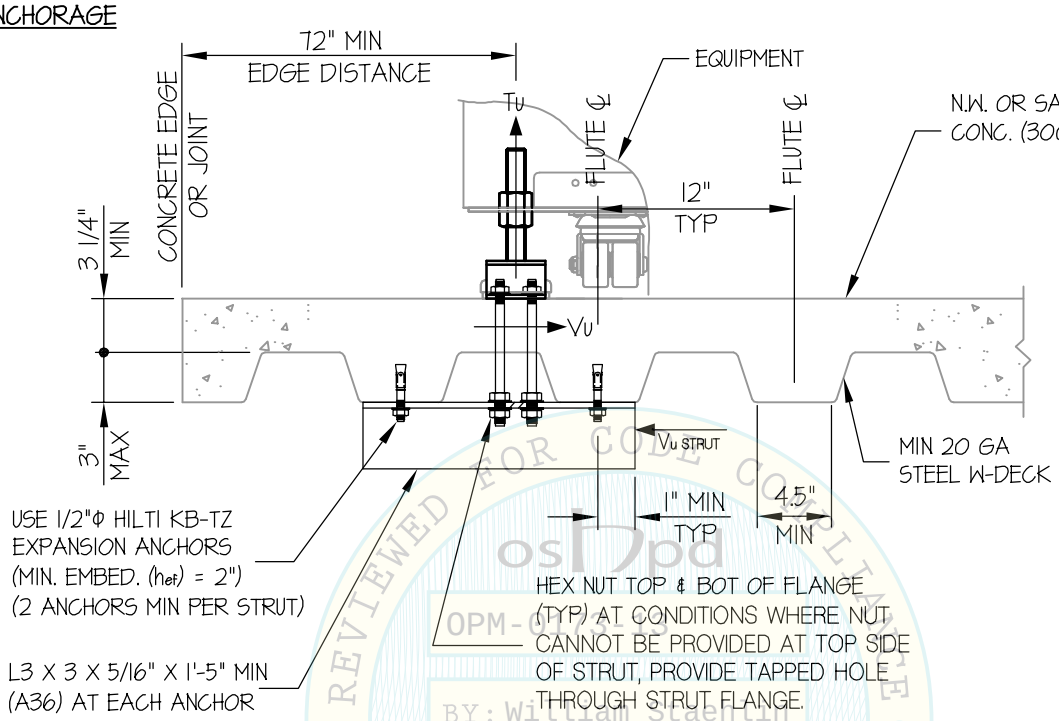
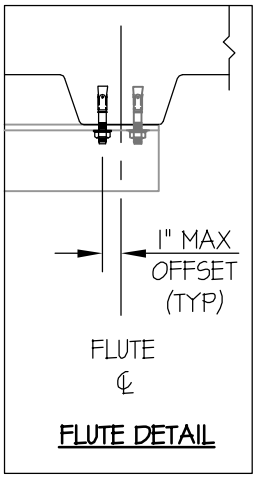
SHEET 8 OF 9 SHEETS

SEISMIC ANCHORAGE



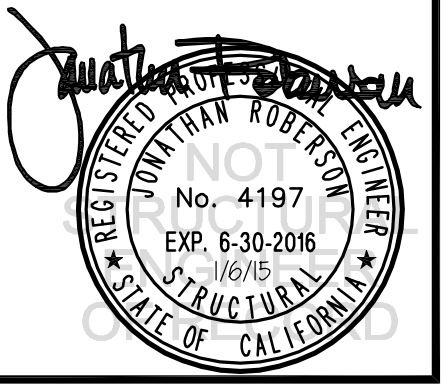

MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL

CONCRETE DETAILS




FLUTE DETAIL





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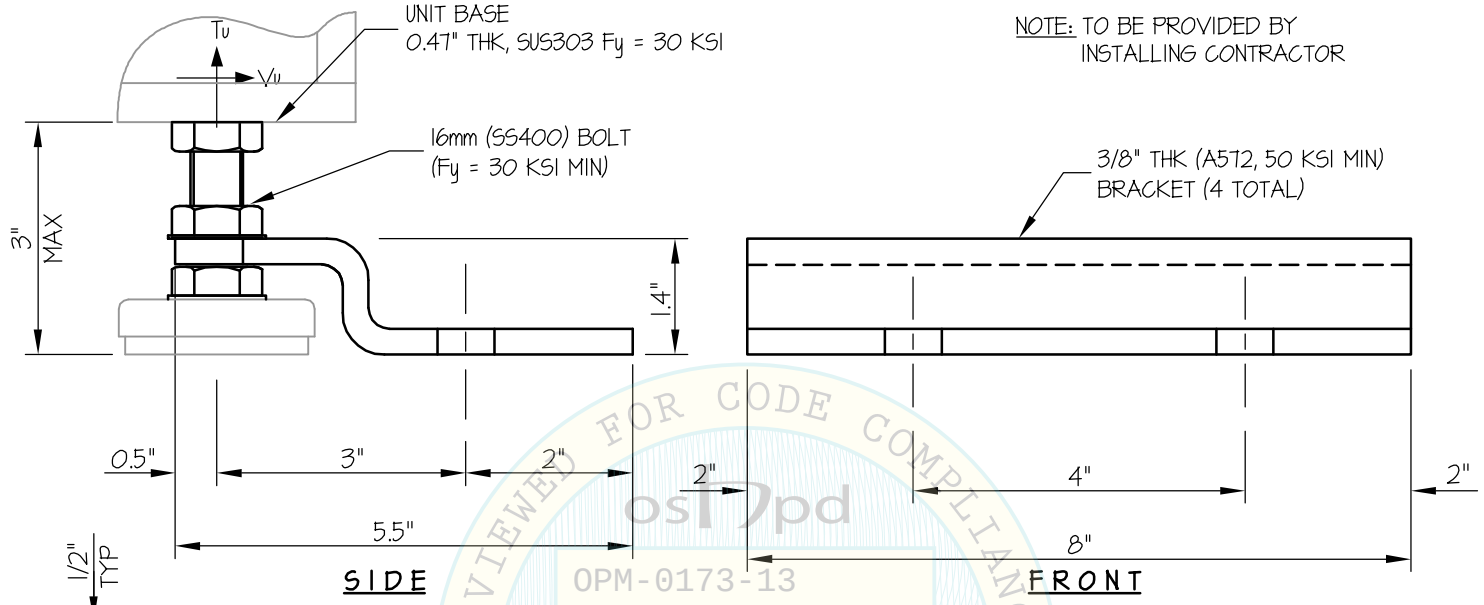
SHEET 9 OF 9 SHEETS

## SEISMIC ANCHORAGE



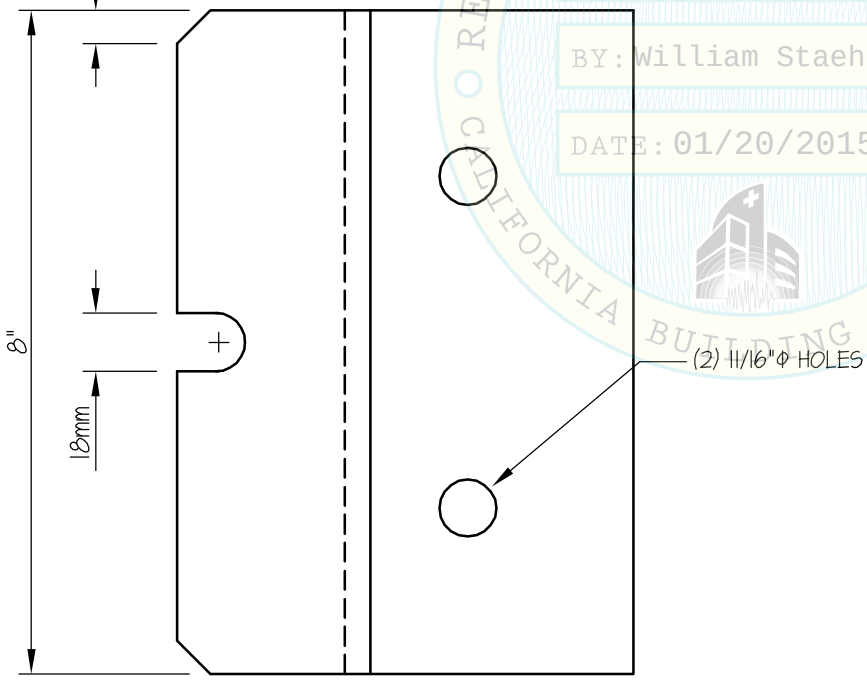

SIDE

## BRACKET DETAILS

NOTE: TO BE PROVIDED BY INSTALLING CONTRACTOR




FRONT




PLAN AT BRACKET