



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

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

|                 |             |
|-----------------|-------------|
| OFFICE USE ONLY |             |
| APPLICATION #:  | OPM-0168-13 |

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

Type:     New     Renewal     Update to Pre-CBC 2013 OPA Number: 2154-07

**Manufacturer Information**

Manufacturer: 3M Health Care

Manufacturer's Technical Representative: Bryan S. Behun

Mailing Address: 3M Center, 270-2N-03, St. Paul, MN 55144

Telephone: 651-737-7649      Email: Dbsbehun@mmm.com

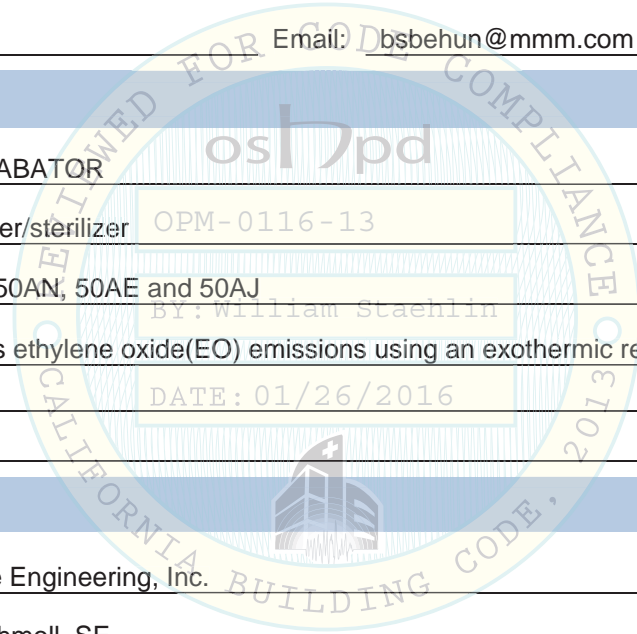
**Product Information**

Product Name: 50 SCFM ETO-ABATOR

Product Type: Exhaust/air cleaner/sterilizer      OPM-0116-13

Product Model Number: Model 50AN, 50AE and 50AJ

General Description: Eliminates ethylene oxide(EO) emissions using an exothermic reaction to convert EO into carbon dioxide and water vapor.



**Applicant Information**


Applicant Company Name: Rice Engineering, Inc.

Contact Person: Gustave L. Schmoll, SE

Mailing Address: 105 School Creek Trail, Luxemburg, WI 54217

Telephone: 920-845-1042      Email: gusschmoll@rice-inc.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: 11-14-14

Title: Engineering Manager      Company Name: Rice Engineering, Inc.

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





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**Registered Design Professional Preparing Engineering Recommendations**

Company Name: Rice Engineering Inc.

Name: Gustave L. Schmoll, SE California License Number: 6131

Mailing Address: 105 School Creek Trail, Luxemburg, WI; 54217

Telephone: 920-845-1042 Email: gusschmoll@rice-inc.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 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: 01/26/2016

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"

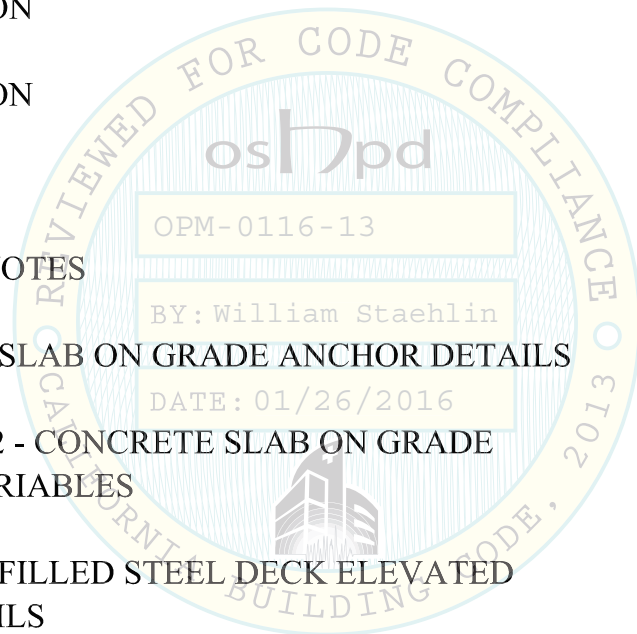


|   |   |  |                    |
|---|---|--|--------------------|
| <b><i>RICE</i></b><br><b>ENGINEERING</b><br>105 School Creek Trail      Phone (920) 845-1042<br>Luxemburg, WI 54217      Fax (920) 845-1048<br>Email: rice@rice-inc.com | <b>OPM-0168-13</b>                        |  | Date: 10-7-15      |
|   | Manufacturer: <b>3M Health Care</b>       |  | Job No.: 14-08-059 |
|   | Product: <b>50 SCFM ETO-ABATOR</b>        |  | Engineer: JAH      |
|   | Model Number: <b>50AN, 50AE, AND 50AJ</b> |  | Drafter: BMC       |
|   |   |  | Page: 3 OF 8       |

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**PREAPPROVAL OF MANUFACTURER'S CERTIFICATION**  
 This OSHPD Pre-approval of Manufacturer's Certification (OPM) is based on the CBC 2013.  
 The demand (design forces) for use with this OPM shall be based on the 2013 California Building Code.

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|   |   |                    |
|---|---|--------------------|
| <b><i>RICE</i></b><br><b>ENGINEERING</b><br>105 School Creek Trail Phone (920) 845-1042<br>Luxemburg, WI 54217 Fax (920) 845-1048<br>Email: rice@rice-inc.com | <b>OPM-0168-13</b>                        | Date: 10-7-15      |
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|   |   | Page: 4 OF 8       |

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**Design Criteria:** GENERAL NOTES

- Seismic forces per CBC2013 and ASCE 7-10 section 13.3.1, Equations 13.3-1, 13.3-2 and 13.3-3 where  $\Omega_0 = 1.5$ ,  $I_p = 1.5$ ,  $a_p = 1.0$ ,  $R_p = 1.5$ , and  $S_d$ s and  $z/h$  vary. Amplification and response factors ( $a_p$ ,  $R_p$ ) were taken from Table 13.6-1 under the classification of "Other Mechanical and Electrical Equipment". Anchors were designed per ACI-318-11 appendix D, section D3.3.4.3(d) for tension and D3.3.5.3(c) for shear.
- The Thru bolt detail in this Pre-Approval may be used at any height on a building and at any location in the State of California, where  $S_d$ s is not greater than 1.93. The Hilti Kwik Bolt TZ torque controlled anchors are allowed to be used when  $S_d$ s and  $z/h$  ratios are less than or equal to what is shown in Table 1 anywhere below the curve. Linear interpolation between data points is acceptable.
- The demand forces shown on the drawings are Factored Loads (LRFD).
- This Pre-approval only covers the supports and attachments of the equipment to the structure.
- Formed connecting channels shall be ASTM A611 Grade A and welded to unit base with minimum of E60xx weld electrode ( $F_y=50$ ksi).
- Unit shall be floor mounted on an elevated concrete slab or slab on grade as shown in drawings. Concrete is assumed to be normal weight cracked concrete with strength of  $f'_c = 3,000$  psi minimum and 4" minimum thickness. Concrete anchors shall be 1/2" Diameter Hilti Kwik Bolt TZ – CS (ICC ESR-1917) with 2 inch effective embedment depth, 6 inch minimum edge distance and 6 inch minimum spacing as per the drawings. Anchors shall be installed per the manufacturer's specifications, and tested per CBC 2013 Section 1913A.7 with special inspection requirements per CBC 2013 section 1704A. Testing shall be done in the presence of the special inspector and a report of the test results shall be submitted to OSHPD. Acceptance criteria for post-installed anchors shall be based on approved test report. The torque wrench method using a calibrated torque wrench shall be used. The tested anchors must attain the manufacturers specified installation torque of 40 ft-lbs within 1/2 turn of the nut. 50% of the fasteners shall be tested. If any anchor fails this criteria, all anchors of the same type shall be tested, which are installed by the same trade, not previously tested until (20) consecutive anchors pass, then resume the initial test frequency.

| Anchor Diameter | Concrete Type | Min. $f'_c$ (psi) | Anchor Type           | ICC Report No. | $H_{ef}$ Embed. | Min. Spacing | Min. Edge Dist. | Min. Conc. Thickness | Installation. Torque | Tension Load |
|-----------------|---------------|-------------------|-----------------------|----------------|-----------------|--------------|-----------------|----------------------|----------------------|--------------|
| 3/8"            | Normal Weight | 3000              | Hilti Kwik Bolt-TZ-CS | ESR-1917       | 2"              | 4"           | 5"              | 4"                   | 25 ft*lbs            | 799*         |
| 1/2"            | Normal Weight | 3000              | Hilti Kwik Bolt-TZ-CS | ESR-1917       | 2"              | 6"           | 6"              | 4"                   | 40 ft*lbs            | 1599*        |

\*INCLUDES OVERSTRENGTH FACTOR  $\Omega_0=1.5$

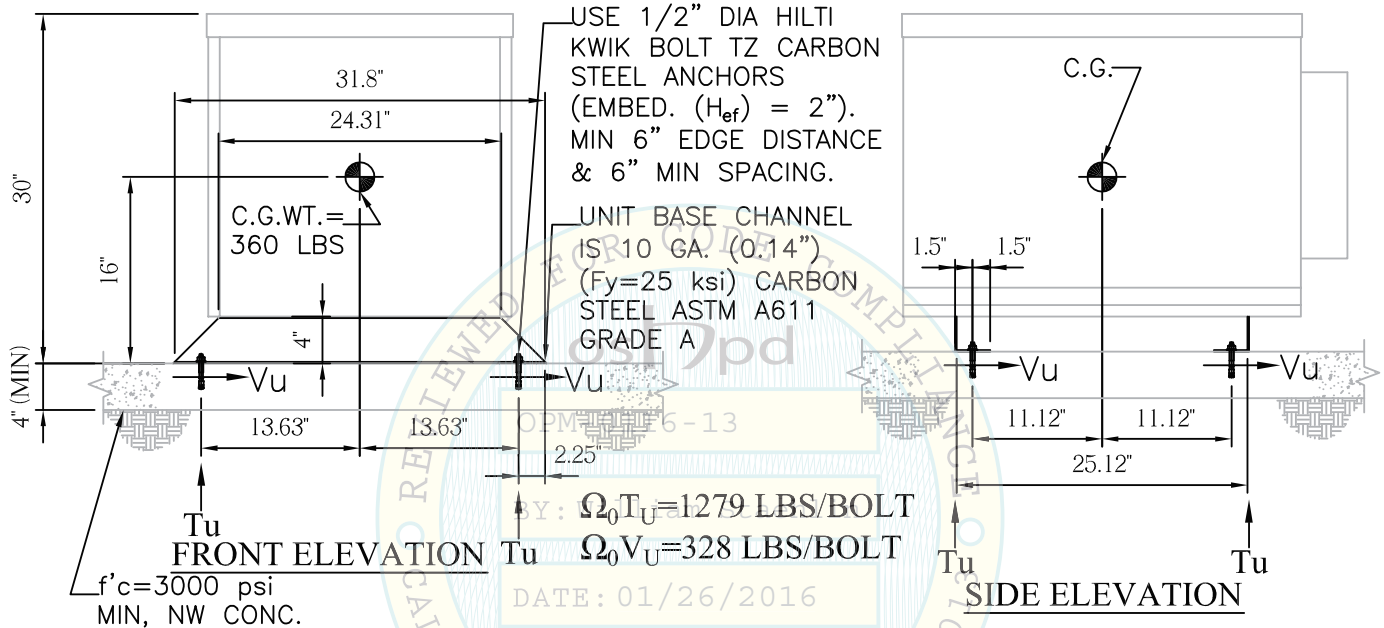
**Responsibilities of the Structural Engineer of Record:**

- Design any supplementary members and their attachments which the unit is attached to. Verify the adequacy of any existing members and their attachments which the unit is attached to for the forces exerted on them by the unit in addition to all other loads and forces.
- Verify that the installation is in conformance with the 2013 CBC and with the details shown in this Pre-Approval. Verify that the equipment's actual weight, cg location, anchor locations, anchor details and the material and gage of the unit where attachments are made agree with the information shown in this Pre-Approval.
- Verify that the concrete slab to which the equipment is attached to conforms to Section 1903 and 1905 of the IBC per the requirements of ICC ESR-1917 evaluation report section 3.2.

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**SLAB ON GRADE ANCHOR DETAILS**



**NOTES:**

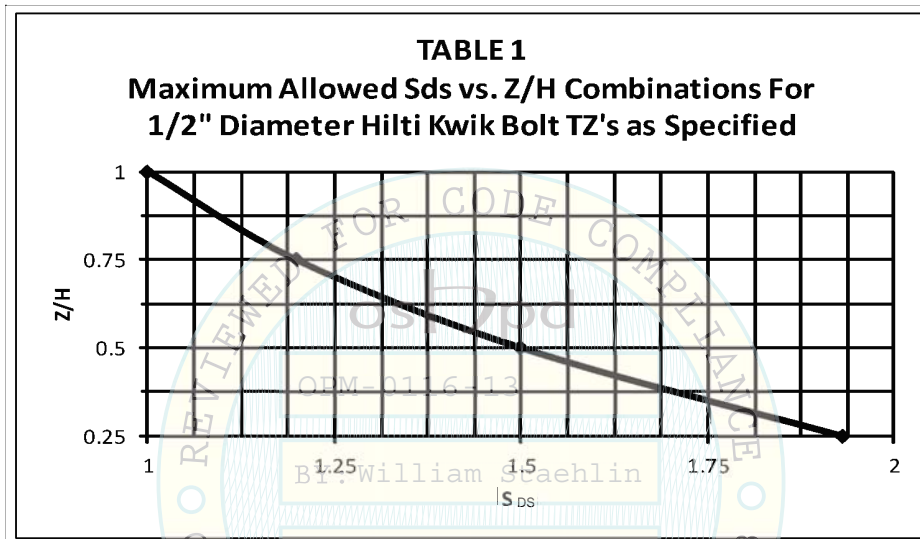
- FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10 STRENGTH DESIGN IS USED. ( $a_p=1.0$ ,  $I_p=1.5$ ,  $R_p=1.5$ ,  $\Omega_0=1.5$ ) FOR  $S_{DS}$ ,  $z/h$ , HORIZONTAL FORCE, AND VERTICAL FORCE SEE TABLE 1 & 2 ON FOLLOWING PAGE 6.
- CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN, WITH THE CORRESPONDING  $S_{DS}$  &  $z/h$  RATIOS IN TABLE 1 & 2 ON FOLLOWING PAGE 6.
- 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: PAGE 4.



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SLAB ON GRADE DESIGN VARIABLES



\*LINEAR INTERPOLATION BETWEEN DATA POINTS ALLOWED\*

**TABLE 2 - SEISMIC FORCES**

| $S_{DS}$ | Z/H  | EH        | EV        |
|----------|------|-----------|-----------|
| 1.0      | 1.0  | 1.2 (WP)  | 0.2 (WP)  |
| 1.2      | 0.75 | 1.2 (WP)  | 0.24 (WP) |
| 1.5      | 0.5  | 1.2 (WP)  | 0.3 (WP)  |
| 1.93     | 0.25 | 1.16 (WP) | 0.39 (WP) |

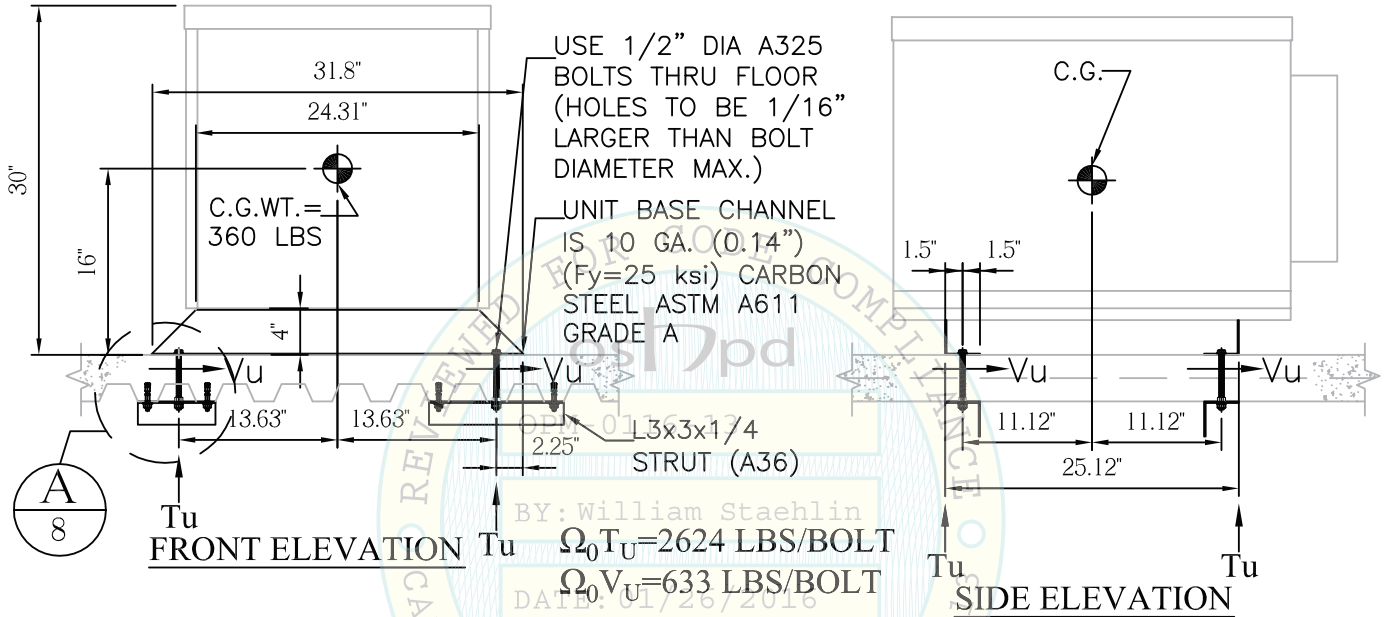
**KEY:**

- $S_{DS}$  - 5% DAMPED DESIGN SPECTRAL RESPONSE ACCELERATION
- Z - HEIGHT IN STRUCTURE AT POINT OF ATTACHMENT
- H - AVERAGE ROOF HEIGHT OF STRUCTURE
- EH - HORIZONTAL SEISMIC FORCE
- EV - VERTICAL SEISMIC FORCE
- WP - WEIGHT OF UNIT

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**CONCRETE FILLED STEEL DECK ELEVATED SLAB DETAILS**



**NOTES:**

1. FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10 STRENGTH DESIGN IS USED. ( $S_{DS}=1.93$ ,  $a_p=1.0$ ,  $I_p=1.5$ ,  $R_p=1.5$ ,  $\Omega_0=1.5$ ,  $z/h \leq 1$ )

HORIZONTAL FORCE ( $E_h$ ) =  $(2.32) W_p$   
VERTICAL FORCE ( $E_v$ ) =  $(0.39) W_p$

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

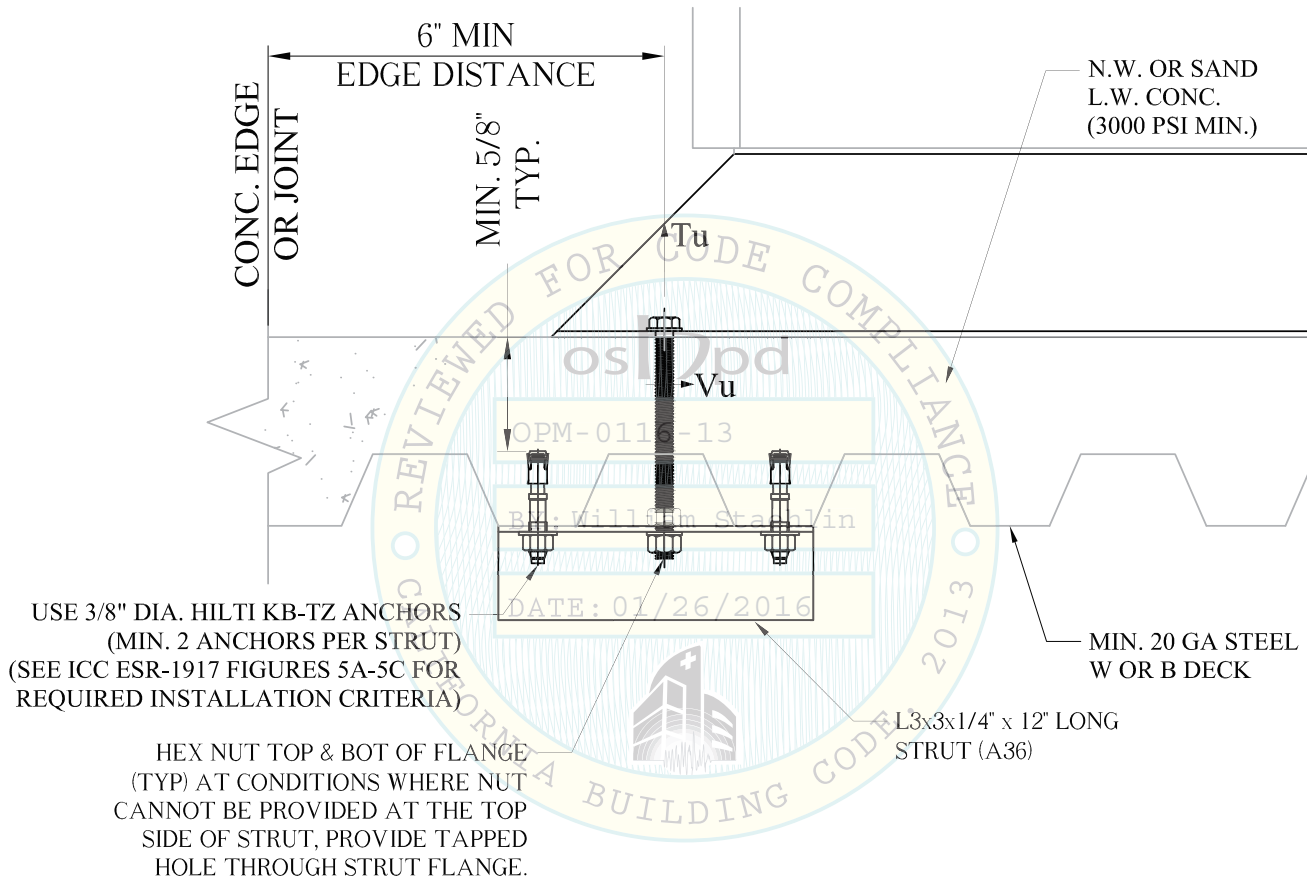
3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.

4. SEE GENERAL NOTES: PAGE 4.

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**CONCRETE FILLED STEEL DECK ELEVATED SLAB STRUT DETAILS**



**A** MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL  
8 SCALE: NTS

- Through bolt holes in concrete shall have up to 1/16" over sizing (hole size = bolt size + 1/16") specified on the drawings with tolerance of 1/16". Holes in concrete will be required to be filled with epoxy grout when hole size exceed bolt size by more than 3/16" (hole size is > bolt size + 3/16").
  - Category 1 shall be assumed for hole size of d + 1/16".
  - Category 2 shall be assumed for hole size of d + 1/8".
  - Category 3 shall be assumed for hole size of d + 3/16".
- 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.
- Through bolt 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.