



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY

APPLICATION #: OPM-0643

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: New Renewal/Update

Manufacturer Information

Manufacturer: Mavig Corporation

Manufacturer's Technical Representative: James Nawrocki

Mailing Address: 25 Hytec Circle, Rochester, NY 14606

Telephone: (585) 247-1212

Email: Nawrocki@mavig.com

Product Information

Product Name: OCS Centargo Injector System

OPM-0643

Product Type: Cantilevered Element

Product Model Number: N/A

BY: William Staehlin

General Description: Ceiling Supported Injector System

DATE: 03/09/2022

Applicant Information

Applicant Company Name: EASE LLC.

Contact Person: Tiffany Tonn

Mailing Address: 1515 FAIRVIEW AVE, STE 205, MISSOULA, MT 59801

Telephone: (406) 541-3273

Email: tiffany@easeco.com

Title: office Manager

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

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

Registered Design Professional Preparing Engineering Recommendations

Company Name: EASE
Name: Jonathan Roberson California License Number: S4197
Mailing Address: 5877 Pine Ave., Suite 210, Chino Hills, CA 91709
Telephone: (951) 295-1892 Email: jon@EASECo.com

HCAI Special Seismic Certification Preapproval (OSP)

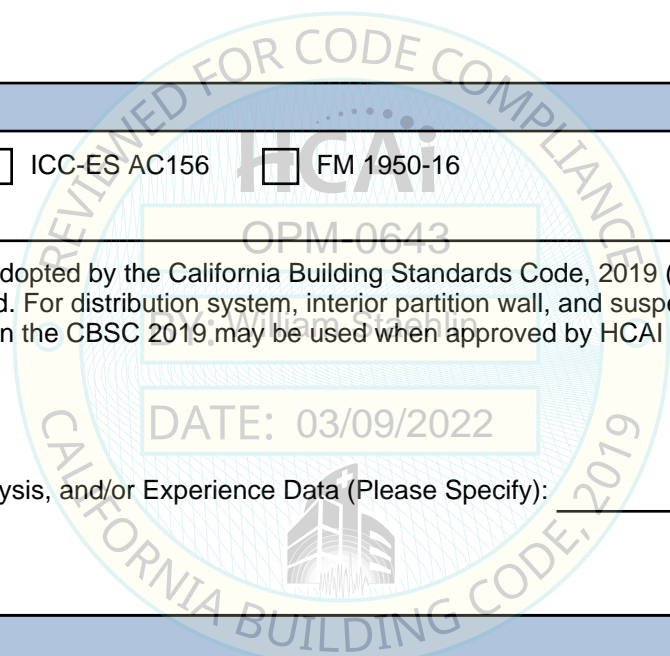
Special Seismic Certification is preapproved under OSP OSP Number: _____

Certification Method

Testing in accordance with: ICC-ES AC156 FM 1950-16
 Other(s) (Please Specify): _____

*Use of criteria other than those adopted by the California Building Standards Code, 2019 (CBSC 2019) 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 2019 may be used when approved by HCAI prior to testing.

Analysis
 Experience Data
 Combination of Testing, Analysis, and/or Experience Data (Please Specify): _____



HCAI Approval

Date: 3/9/2022
Name: William Staehlin Title: Senior Structural Engineer
Condition of Approval (if applicable): _____

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**EQUIPMENT ANCHORAGE
& SEISMIC ENGINEERING**

5877 Pine Ave, Ste. 210
Chino Hills, CA. 91709
Phn: (909) 606-7622

The Department of Health Care Access and Information
PREAPPROVAL OF MANUFACTURER'S CERTIFICATION
OPM-0643

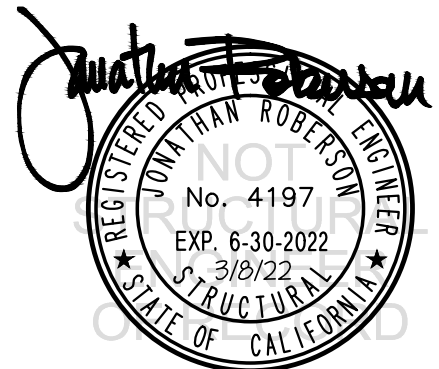
THIS PREAPPROVAL CONFORMS TO THE 2019 CALIFORNIA BUILDING CODE

MANUFACTURER: **MAVIG CORPORATION**
EQUIPMENT NAME: **OCS CENTARGO INJECTOR SYSTEM**

Sheet: 1 of 10
Date: 3/8/22

GENERAL NOTES

1. THIS HCAI PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2019 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2019 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 2019 CALIFORNIA BUILDING CODE.
4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE $S_{Ds} = 2.30$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $z/h \leq 1$.
5. THE DETAILS IN THIS PREAPPROVAL MAY BE USED AT ANY LOCATION IN THE STATE OF CALIFORNIA, WHERE S_{Ds} IS NOT GREATER THAN 2.30.
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 2019 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.



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 DES. **J. ROBERSON**

SHEET

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 OF **10** SHEETS

OCS CENTARGO INJECTOR SYSTEM
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. Over Flute	Torque Test	Direct Tension
1/2"	Sand Light Weight	3000	Hilti Kwik Bolt TZ2 (CARBON STEEL)	ESR-4266	3.25"	6.75"	24"	3.25"	50 FT-LB	N/A
5/8"	Sand Light Weight	3000	Hilti Kwik Bolt TZ2 (CARBON STEEL)	ESR-4266	4"	12"	24"	3.25"	40 FT-LB	N/A

- B. TESTING OF EXPANSION ANCHORS PER 2019 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

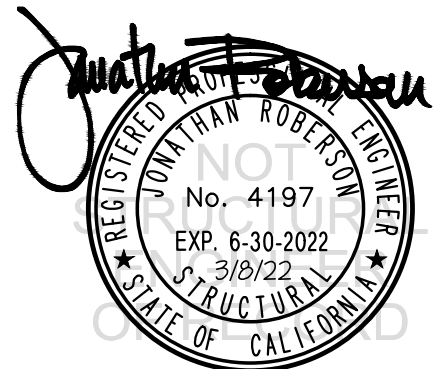
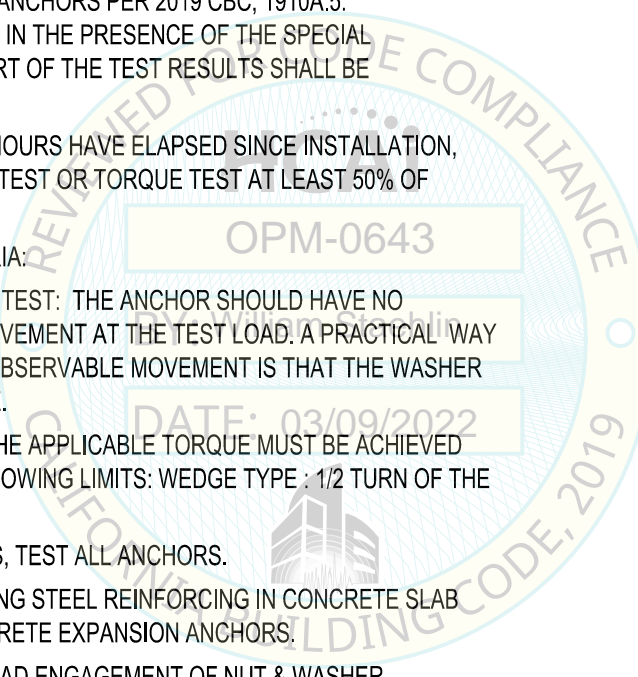
- (i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST OR TORQUE TEST AT LEAST 50% OF THE ANCHORS.

- (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.

- C. AVOID DAMAGING EXISTING STEEL REINFORCING IN CONCRETE SLAB WHEN INSTALLING CONCRETE EXPANSION ANCHORS.
- D. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT & WASHER.



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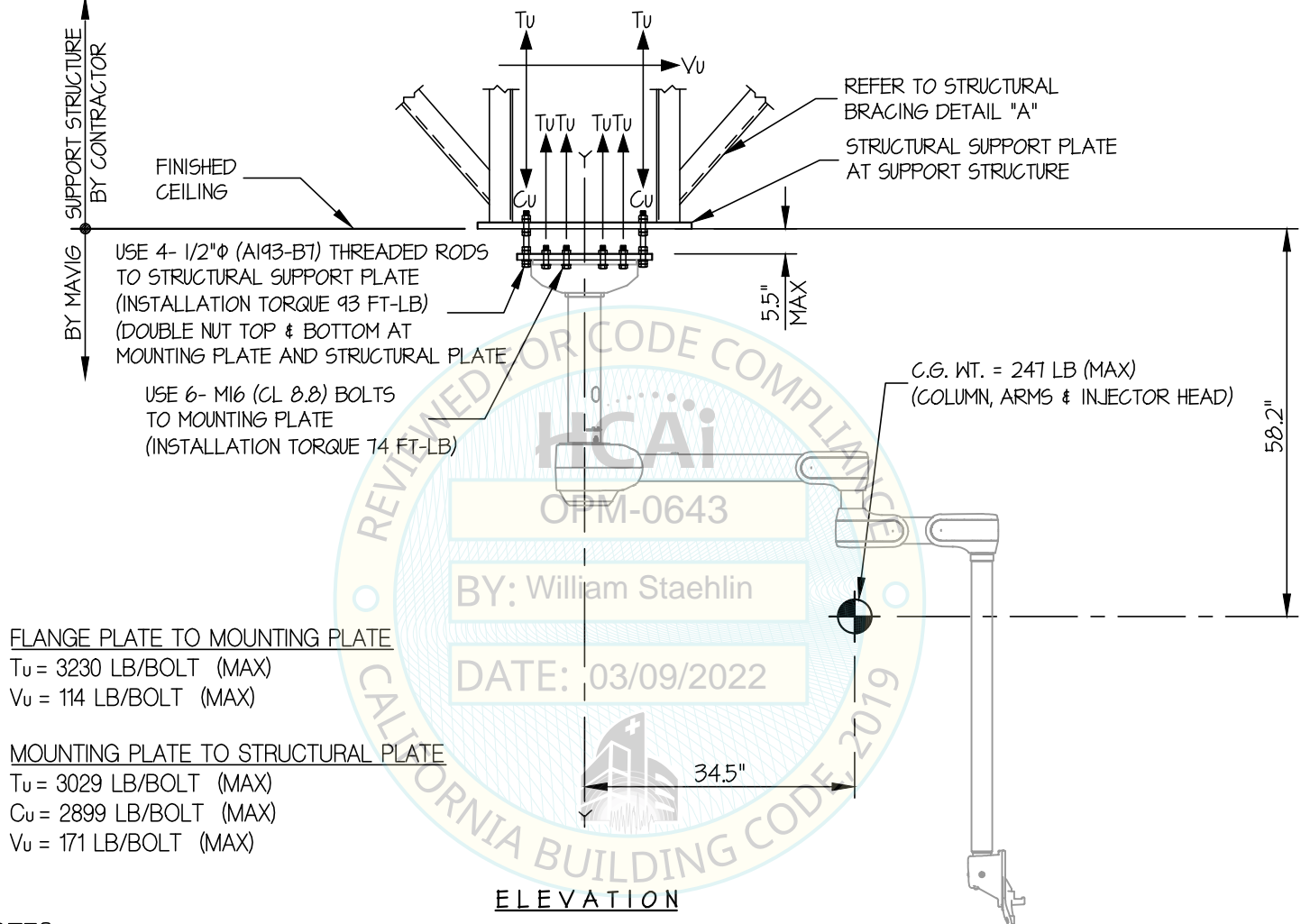
DATE **3/8/22**

OF **10** SHEETS

OCS CENTARGO INJECTOR SYSTEM

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



NOTES:

- FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16.** STRENGTH DESIGN IS USED. ($S_Ds = 2.30$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $\Omega_o = 2.0$, $z/h \leq 1$)
 HORIZONTAL FORCE (E_h) = $2.76 W_p$
 HORIZONTAL FORCE (E_{mh}) = $5.52 W_p$
 VERTICAL FORCE (E_v) = $0.46 W_p$
- CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THESE CALCULATIONS ENCOMPASS 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



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OF **10** SHEETS

OCS CENTARGO INJECTOR SYSTEM

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED

USE 4- 1/2"φ (A193-B7) THREADED RODS
TO STRUCTURAL SUPPORT PLATE
(INSTALLATION TORQUE 93 FT-LB)
(DOUBLE NUT TOP & BOTTOM AT
MOUNTING PLATE AND STRUCTURAL PLATE)

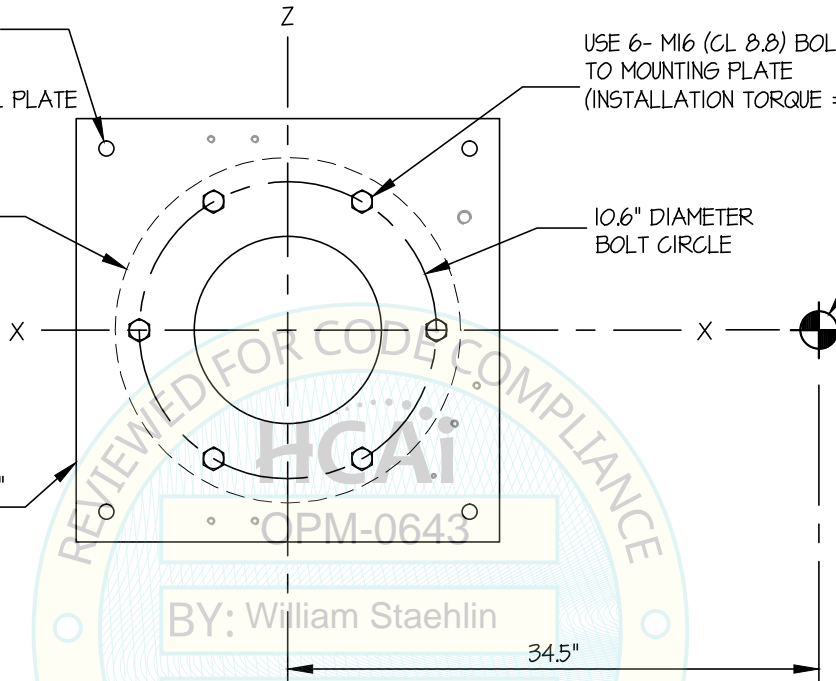
USE 6- M16 (CL 8.8) BOLTS
TO MOUNTING PLATE
(INSTALLATION TORQUE = 74 FT-LB)

FLANGE PLATE
12.5"φ X 0.59"
(A36 MIN)
(BY MFR)

10.6" DIAMETER
BOLT CIRCLE

C.G. WT. = 247 LB
(\bar{Y} = 52.7")

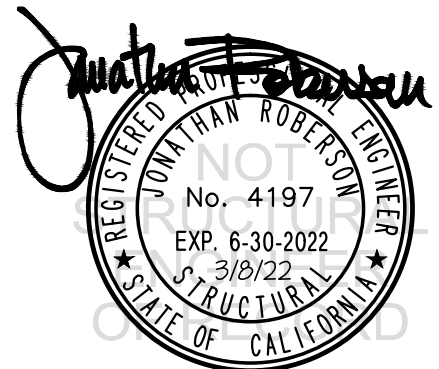
MOUNTING PLATE
15.2" X 0.59" X 1'-3.2"
(A36 MIN)
(BY MFR)



BY: William Staehlin

DATE: 03/09/2022

PLAN AT MOUNTING PLATE
(FLANGE PLATE TO MOUNTING PLATE)



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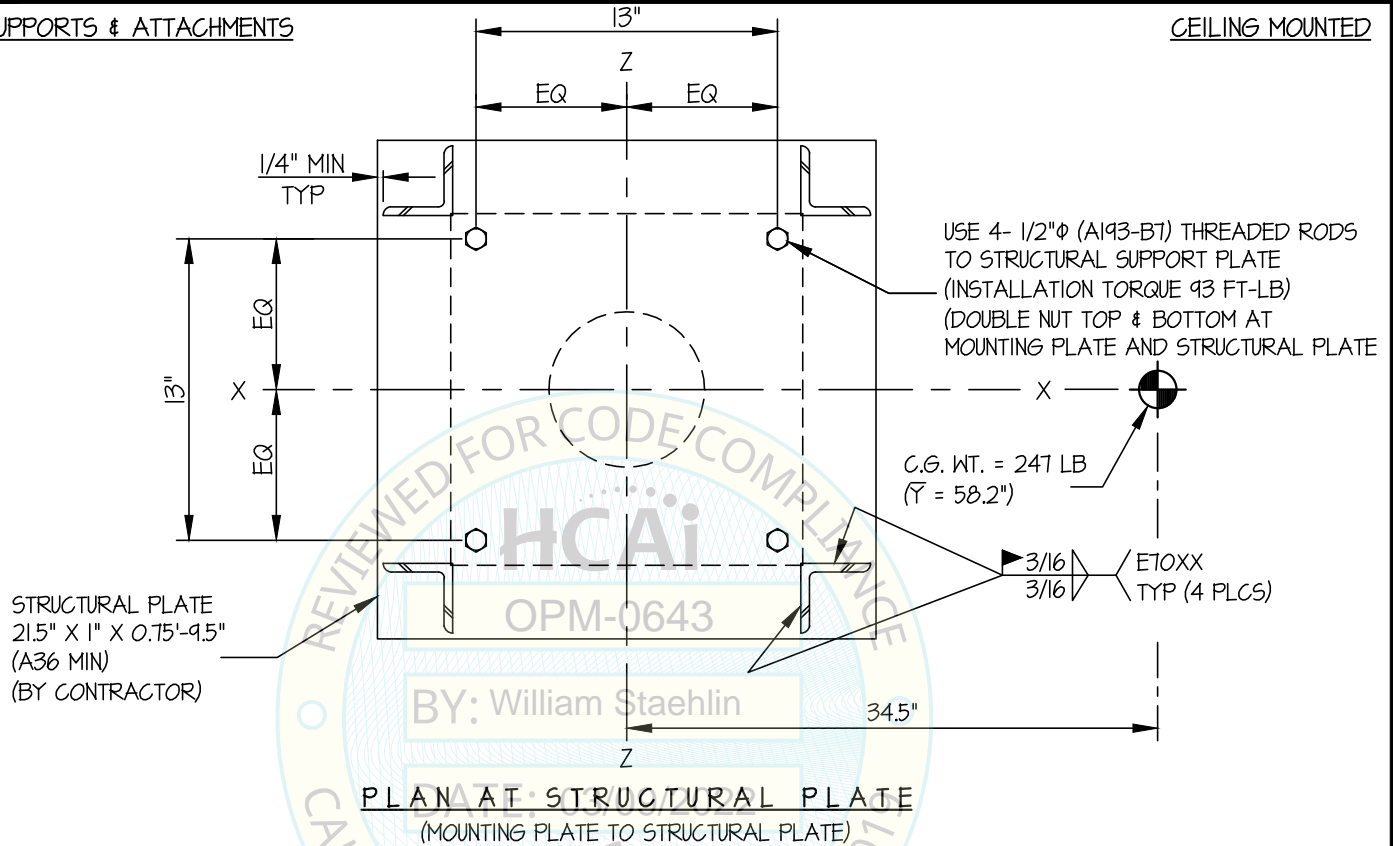
DATE **3/8/22**

OF **10** SHEETS

OCS CENTARGO INJECTOR SYSTEM

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



Jonathan Roberson

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2022
3/8/22
STRUCTURAL
STATE OF CALIFORNIA

MAVIG CORPORATION

DES. **J. ROBERSON**

SHEET

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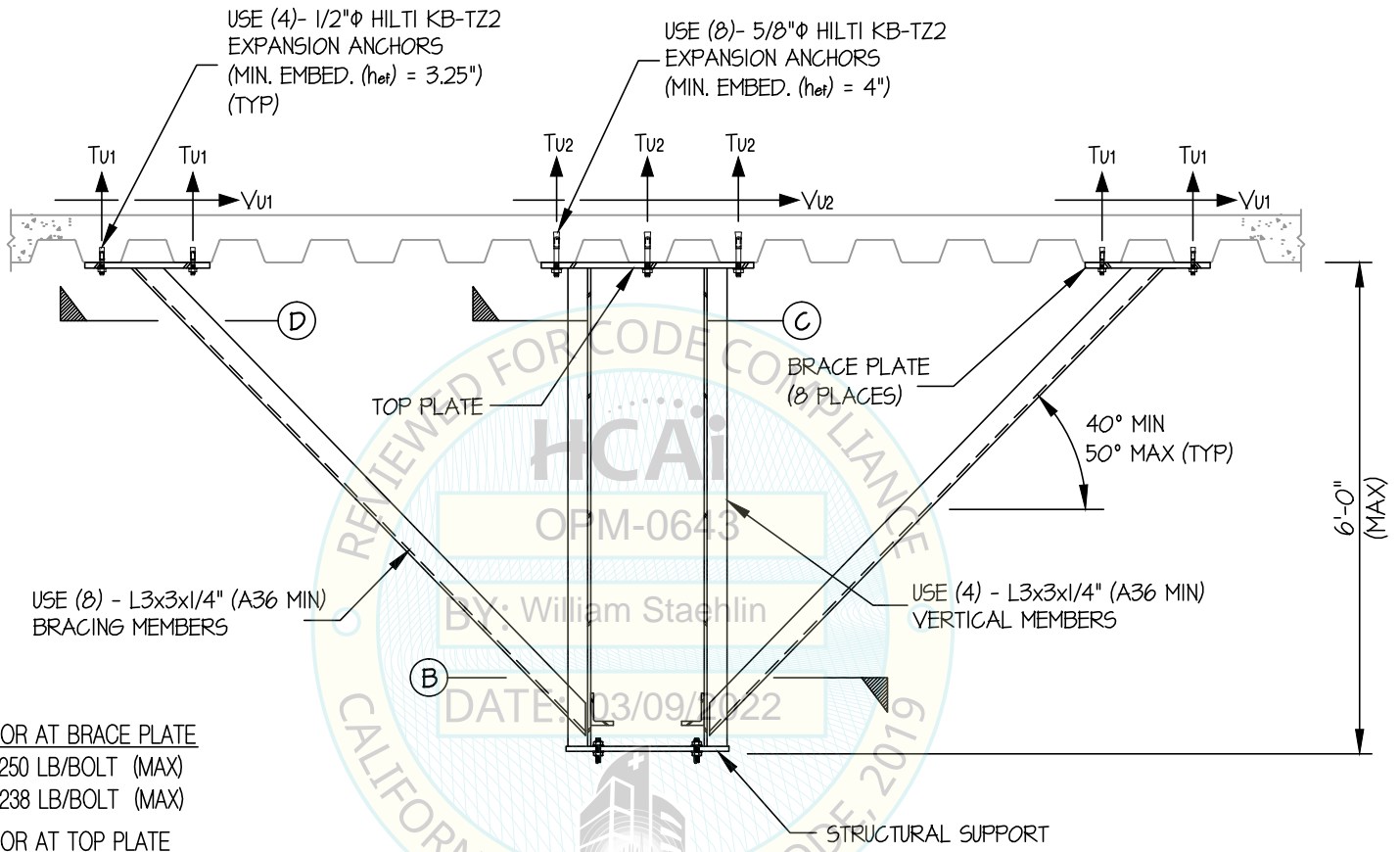
DATE **3/8/22**

OF **10** SHEETS

OCS CENTARGO INJECTOR SYSTEM

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



ANCHOR AT BRACE PLATE

Tu1 = 250 LB/BOLT (MAX)
Vu1 = 238 LB/BOLT (MAX)

ANCHOR AT TOP PLATE

Tu2 = 1845 LB/BOLT (MAX)
Vu2 = 31 LB/BOLT (MAX)
(ALL VALUES INCLUDE Ω_b)

STRUCTURAL BRACING DETAIL (A)



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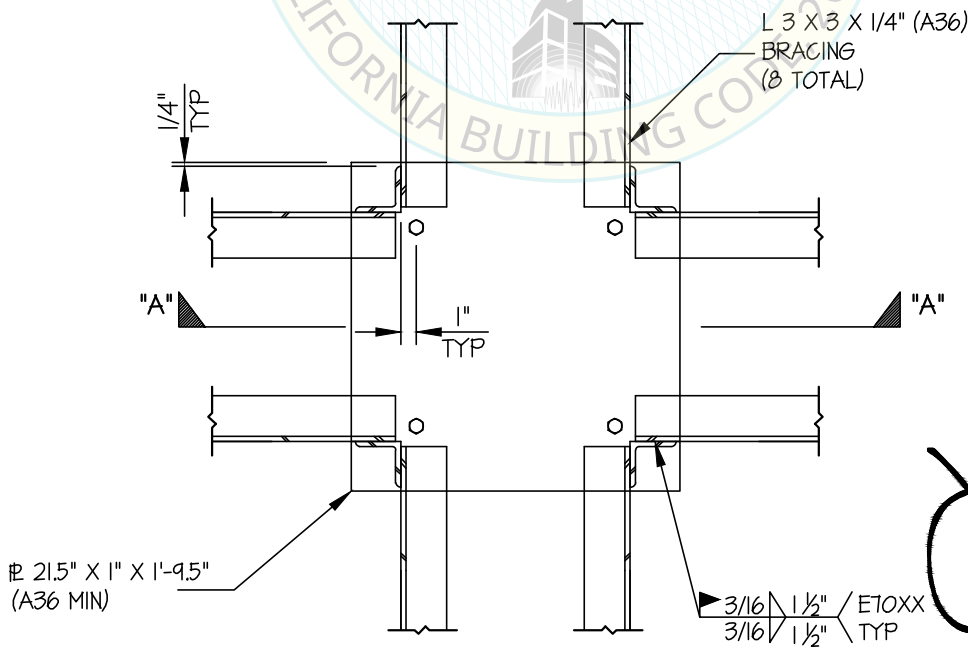
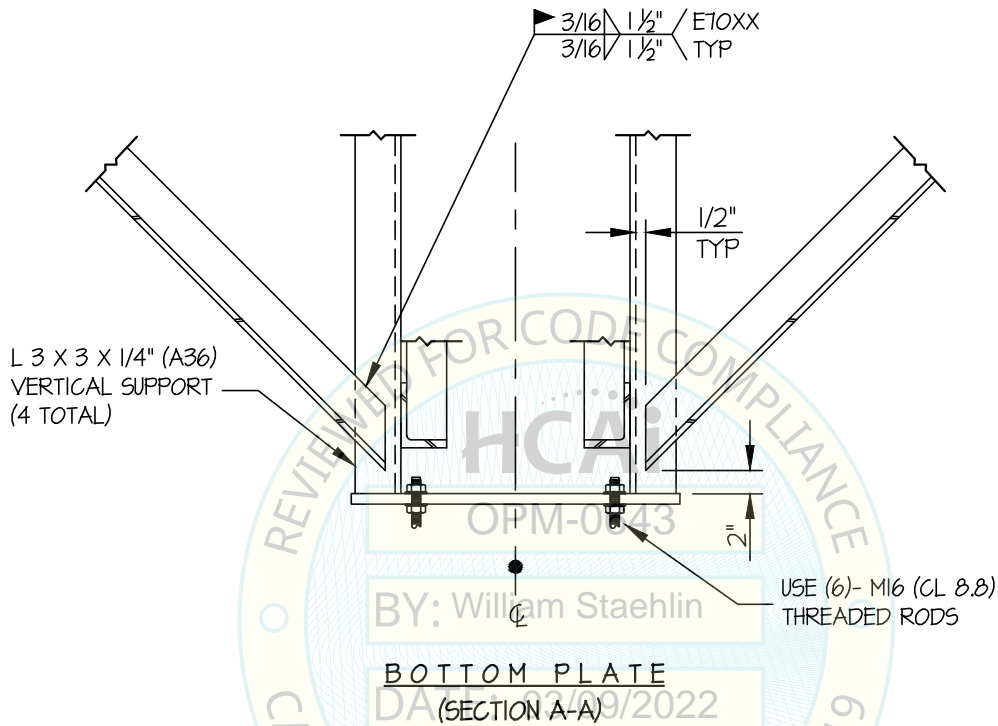
DATE 3/8/22

OF 10 SHEETS

OCS CENTARGO INJECTOR SYSTEM

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



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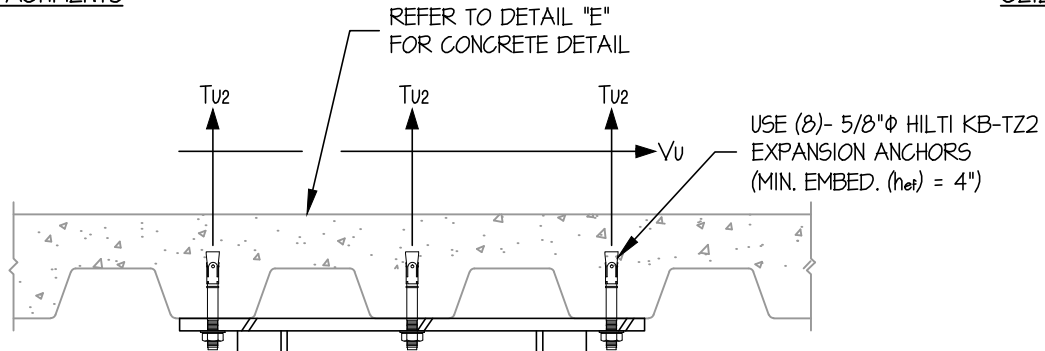
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OCS CENTARGO INJECTOR SYSTEM

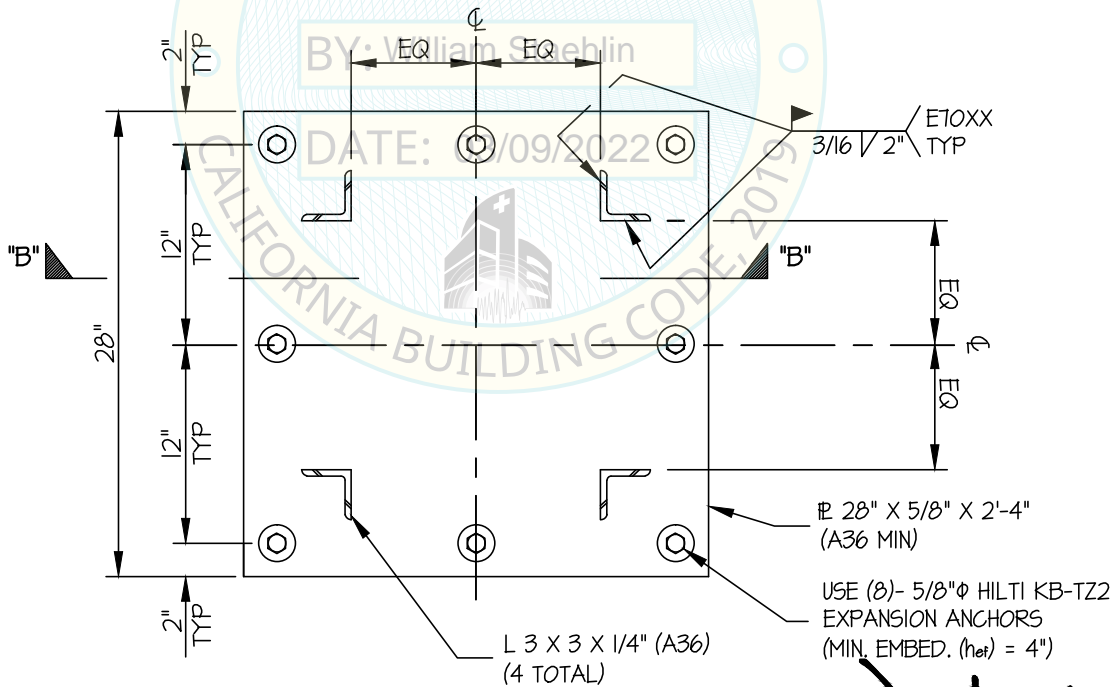
SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



ANCHOR AT TOP PLATE
 $T_{u2} = 1845$ LB/BOLT (MAX)
 $V_{u2} = 31$ LB/BOLT (MAX)
 (VALUES INCLUDE Ω)

TOP PLATE
 (SECTION B-B)



TOP PLATE DETAIL (C)



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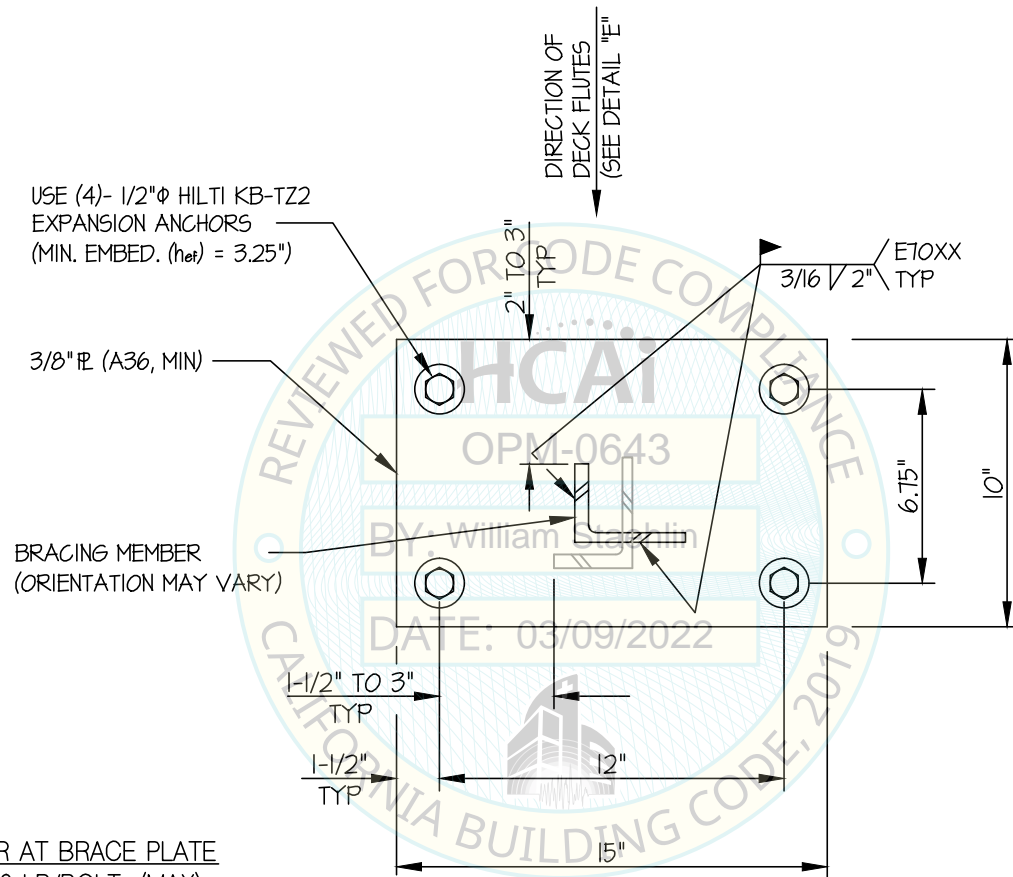
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OF **10** SHEETS

OCS CENTARGO INJECTOR SYSTEM

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



ANCHOR AT BRACE PLATE
 $T_{u2} = 250$ LB/BOLT (MAX)
 $V_{u2} = 238$ LB/BOLT (MAX)
 (VALUES INCLUDE Ω_d)



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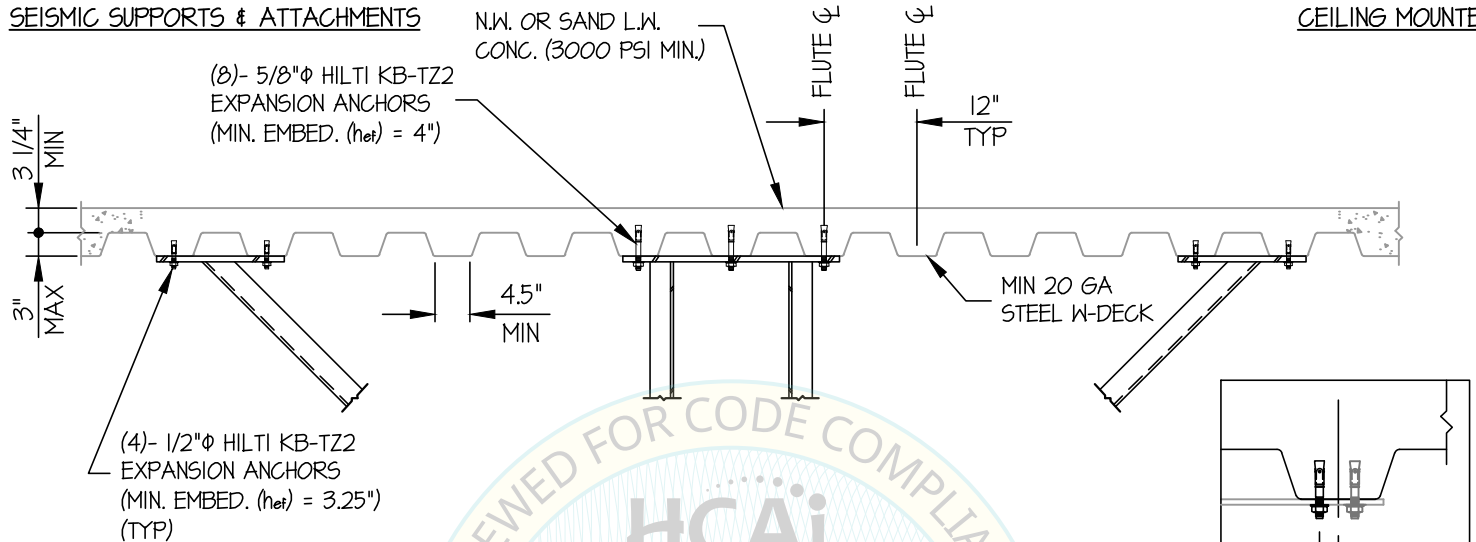
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OF **10** SHEETS

OCS CENTARGO INJECTOR SYSTEM

SEISMIC SUPPORTS & ATTACHMENTS CEILING MOUNTED



MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL (E)

