



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY
APPLICATION #: OPM-0404-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

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

Manufacturer Information

Manufacturer: AADCO Medical, Inc.

Manufacturer's Technical Representative: Darrel Lasell

Mailing Address: 2279 Vermont Route 66, Catamount Commercial Park, Randolph, VT. 05060

Telephone: On File Email: On File

Product Information

Product Name: Hercules Overhead System

Product Type: Cantilever Support

Product Model Number: N/A

General Description: Overhead Support for Monitor, Lights & Injectors

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: 1/17/17

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: 909-606-7622 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: 04-10-2018

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-0404-13

THIS PREAPPROVAL CONFORMS TO THE 2016 CALIFORNIA BUILDING CODE

MANUFACTURER: **AADCO MEDICAL, INC.**
EQUIPMENT NAME: **S260/S270 INJECTOR MOUNTS**

Sheet: 1 of 21
Date: 4/6/18

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 WHERE S_{Ds} IS NOT GREATER THAN 1.30, 2.00 & 2.20.
4. FORCES PER ASCE 7-10 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3,
WHERE $S_{Ds} = 1.30$, $a_p = 2.5$, $I_p = 1.5$, $R_p = 2.5$, $z/h \leq 1$, $\Omega_o = 2.0$.; SEE DETAILS FOR APPLICABILITY.
WHERE $S_{Ds} = 2.00$, $a_p = 2.5$, $I_p = 1.5$, $R_p = 2.5$, $z/h \leq 1$, $\Omega_o = 2.0$.; SEE DETAILS FOR APPLICABILITY.
WHERE $S_{Ds} = 2.20$, $a_p = 2.5$, $I_p = 1.5$, $R_p = 2.5$, $z/h \leq 1$, $\Omega_o = 2.0$.; SEE DETAILS FOR APPLICABILITY.
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. **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 2016 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 SCHEDULE ON SHEET 2 OF 21).
 - 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 UNIT'S ANCHORS.



AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. **J. ROBERSON**

JOB NO. **11-1639**

DATE **4/6/18**

SHEET

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OF **21** 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	Torque Test	Direct Tension Test
1/2"	Sand Light Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	2"	6.75"	24"	3.25"	40 FT-LB	N/A
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:

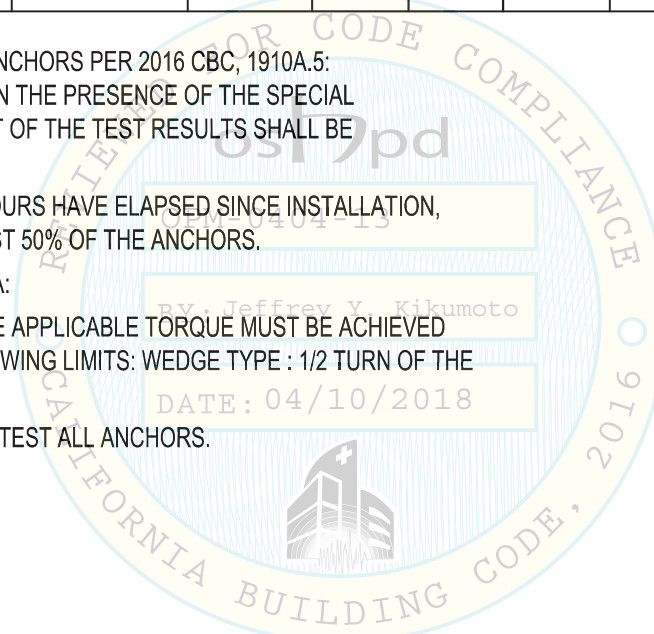
TESTING SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO OSHPD

(i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, 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.



AADCO MEDICAL, INC.

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SHEET

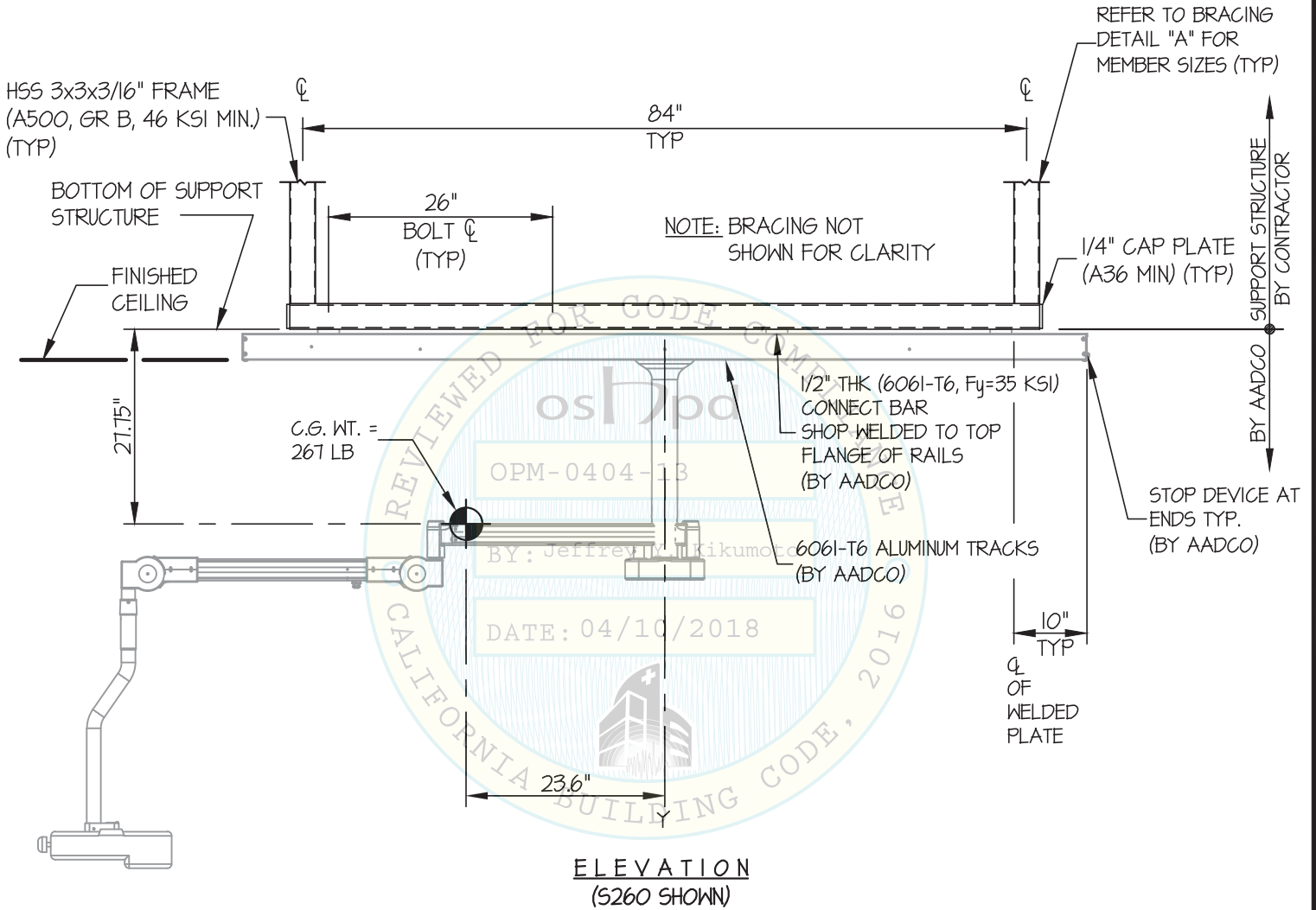
3

OF 21 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

TRACK OPTION AT S260
MAX Sds ≤ 2.00

CEILING MOUNTED



NOTES:

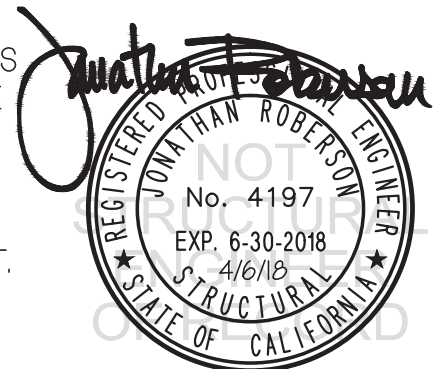
1. FORCES ARE DETERMINED PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10. STRENGTH DESIGN IS USED. (Sds = 2.00, ap = 2.5, lp = 1.5, Rp = 2.5, z/h ≤ 1)

HORIZONTAL FORCE (Eh) = 3.60 Wp

VERTICAL FORCE (Ev) = 0.40 Wp

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.



AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. **J. ROBERSON**

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DATE **4/6/18**

SHEET

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OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

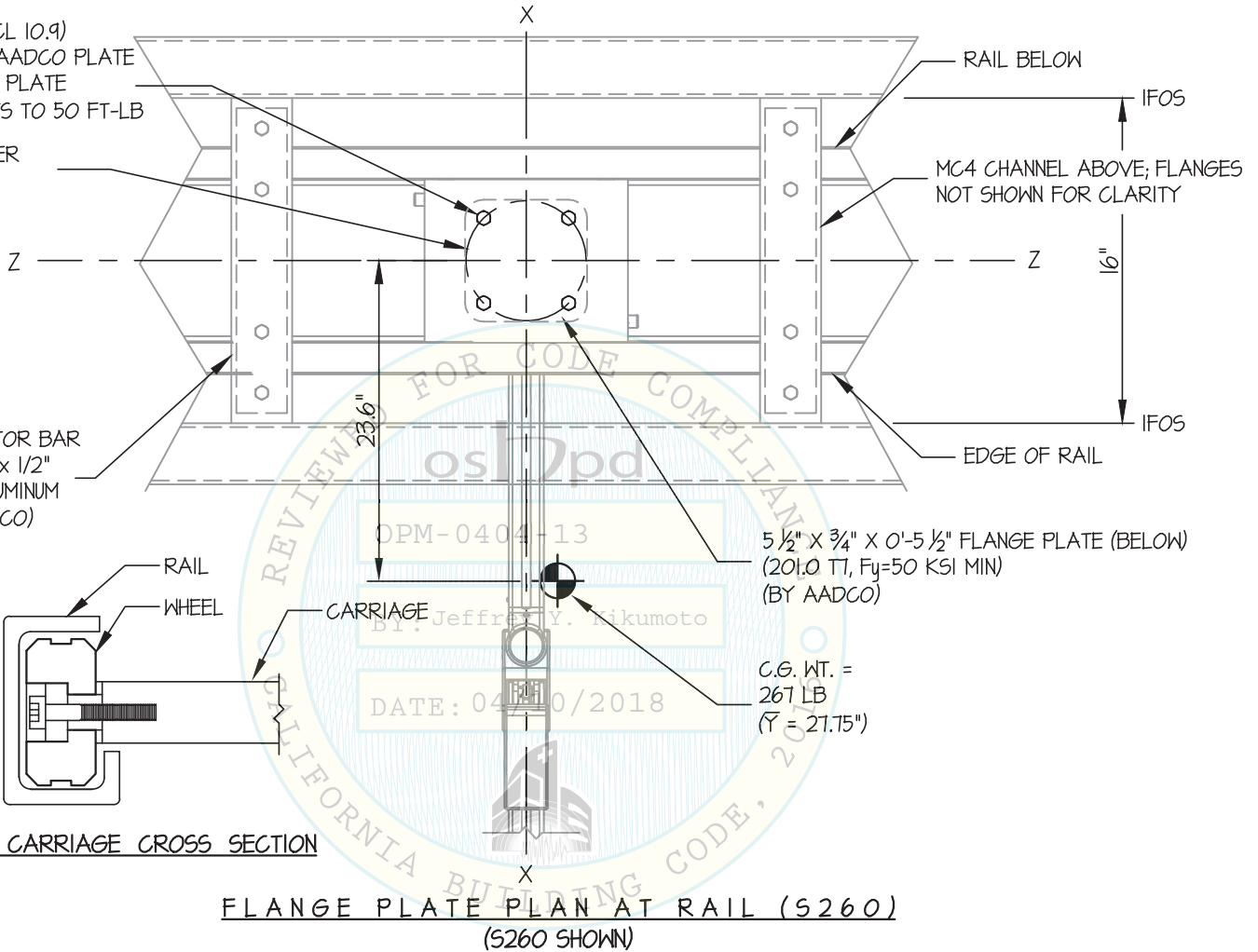
MAX Sps ≤ 2.00

FLANGE PLATE TO ANCHOR PLATE

USE (4)- M12 (CL 10.9)
BOLTS FROM AADCO PLATE
TO CARRIAGE PLATE
(TORQUE BOLTS TO 50 FT-LB)

5.918" DIAMETER
BOLT CIRCLE

CONNECTOR BAR
R 2-1/2" x 1/2"
6061 ALUMINUM
(BY AADCO)



RAIL / CARRIAGE CROSS SECTION

FLANGE PLATE PLAN AT RAIL (S260)
(S260 SHOWN)

5 1/2" x 3/4" x 0'-5 1/2" FLANGE PLATE (BELOW)
(201.0 TT, Fy=50 KSI MIN)
(BY AADCO)

C.G. WT. =
267 LB
($\bar{Y} = 21.75"$)



AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. **J. ROBERSON**

JOB NO. **11-1639**

DATE **4/6/18**

SHEET

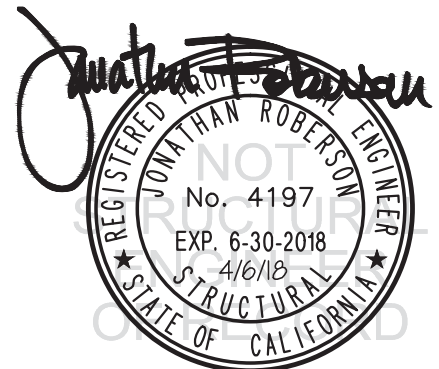
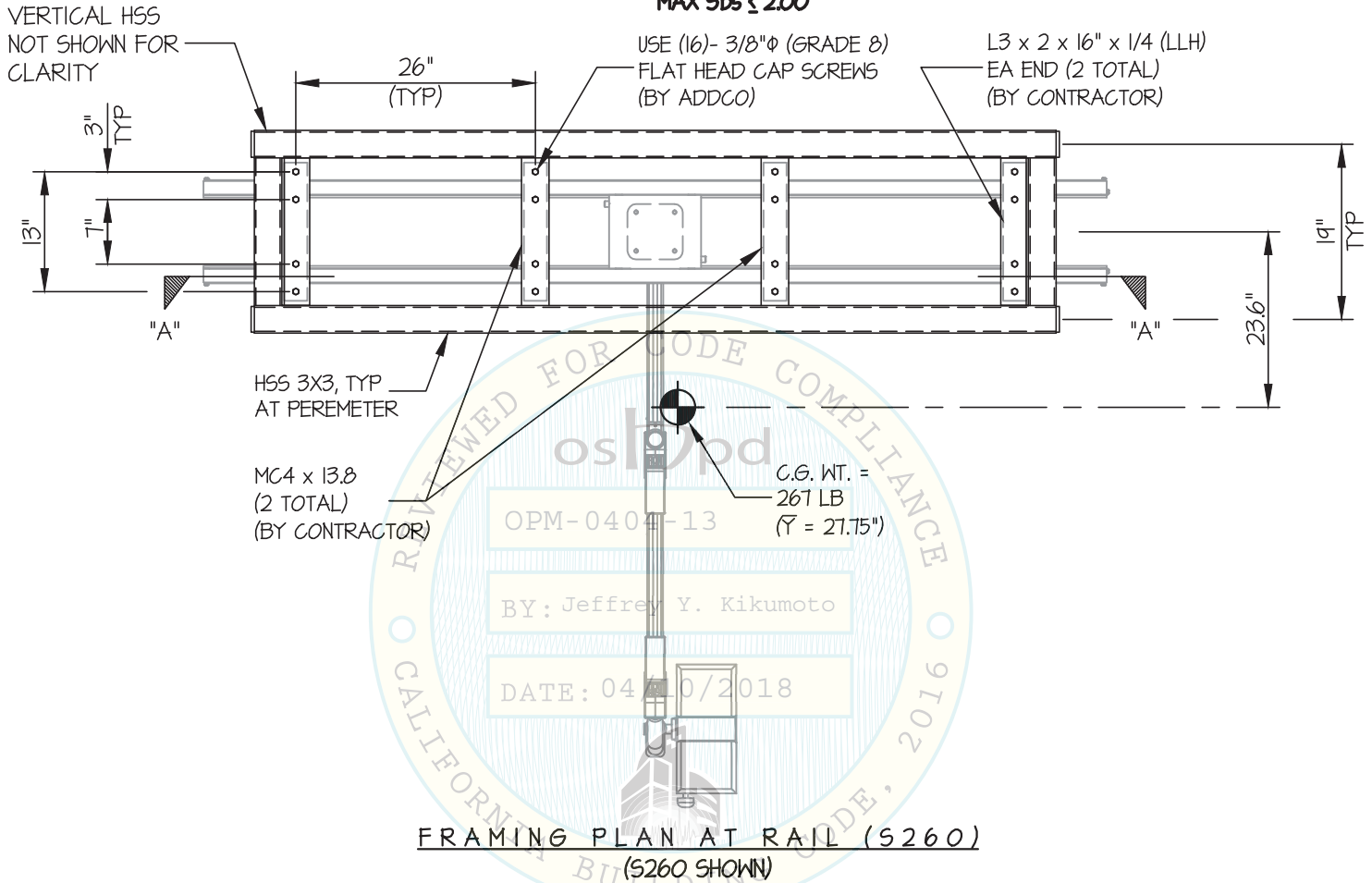
5

OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

TRACK OPTION AT S260
MAX Sps ≤ 2.00

CEILING MOUNTED



AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. **J. ROBERSON**

JOB NO. **11-1639**

DATE **4/6/18**

SHEET

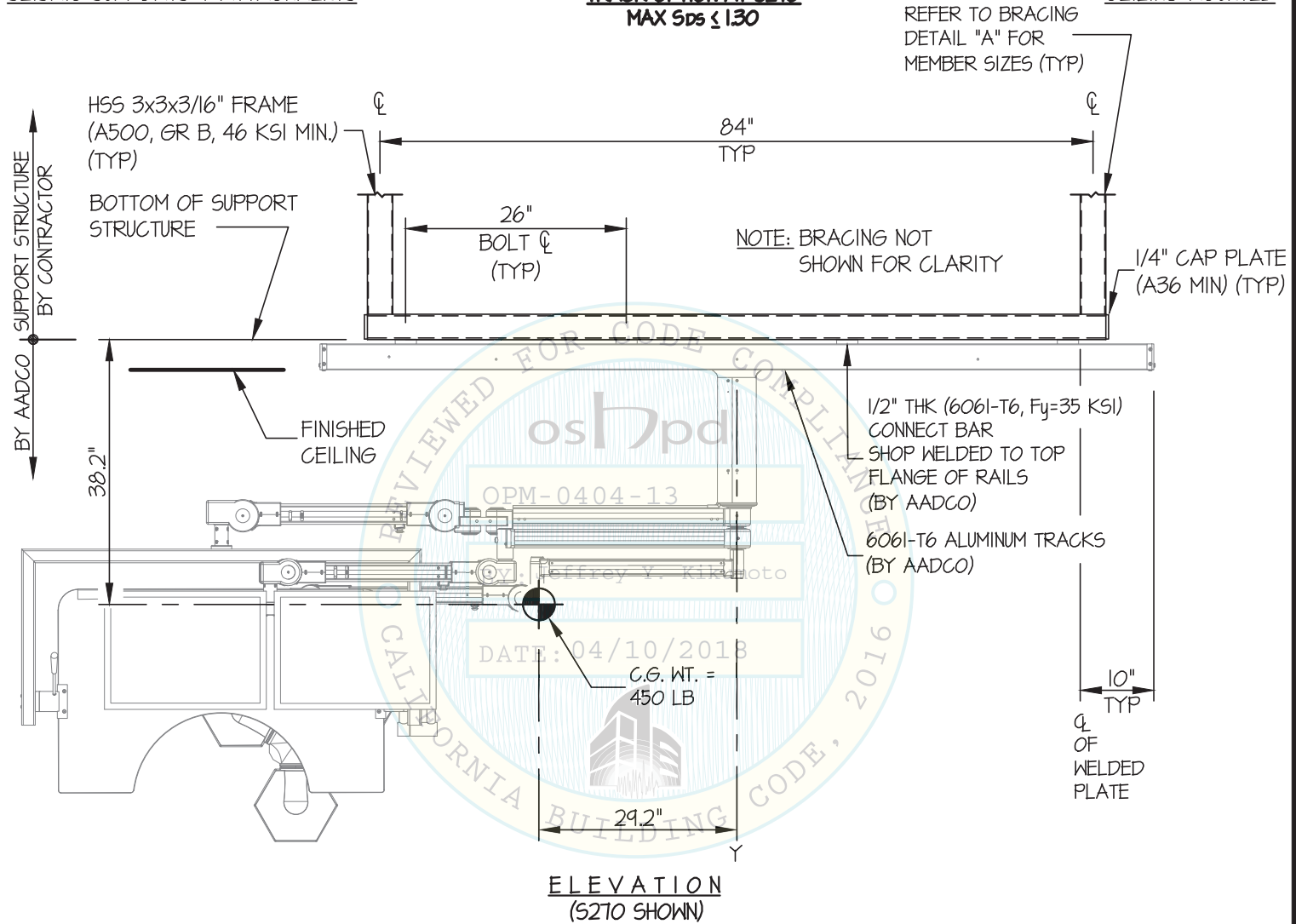
6

OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

TRACK OPTION AT S270
MAX Sds ≤ 1.30

CEILING MOUNTED



NOTES:

1. FORCES ARE DETERMINED PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10.

STRENGTH DESIGN IS USED. ($S_{ds} = 1.30$, $a_p = 2.5$, $I_p = 15$, $R_p = 2.5$, $z/h \leq 1$)

HORIZONTAL FORCE (E_h) = $2.34 W_p$

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.



AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. **J. ROBERSON**

JOB NO. **11-1639**

DATE **4/6/18**

SHEET

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OF **21** SHEETS

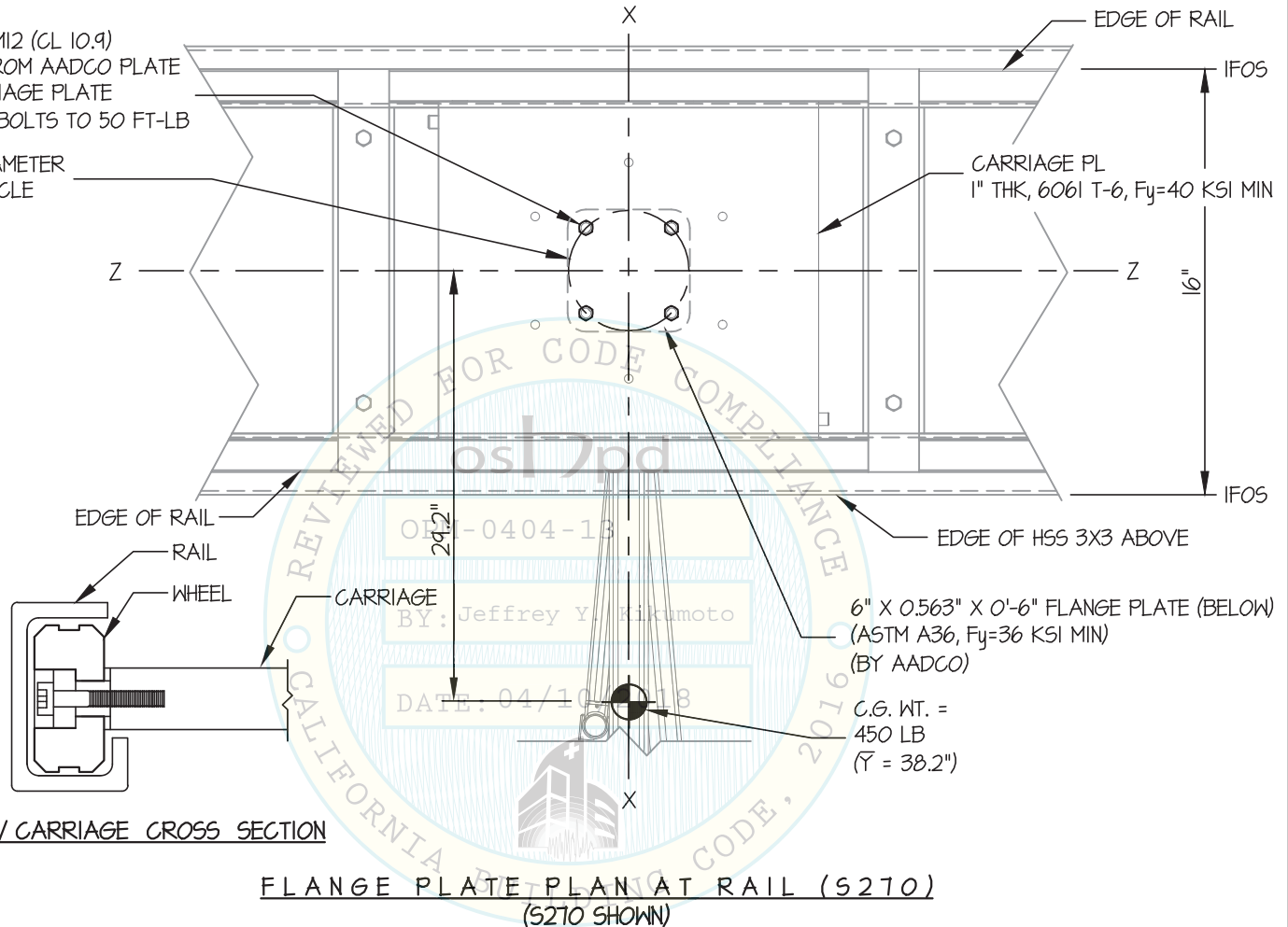
SEISMIC SUPPORTS & ATTACHMENTS

MAX $S_{ps} \leq 1.30$

FLANGE PLATE TO ANCHOR PLATE

USE (4)- M12 (CL 10.9)
BOLTS FROM AADCO PLATE
TO CARRIAGE PLATE
(TORQUE BOLTS TO 50 FT-LB)

5.918" DIAMETER
BOLT CIRCLE



RAIL / CARRIAGE CROSS SECTION

FLANGE PLATE PLAN AT RAIL (S270)
(S270 SHOWN)



AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. **J. ROBERSON**

JOB NO. **11-1639**

DATE **4/6/18**

SHEET

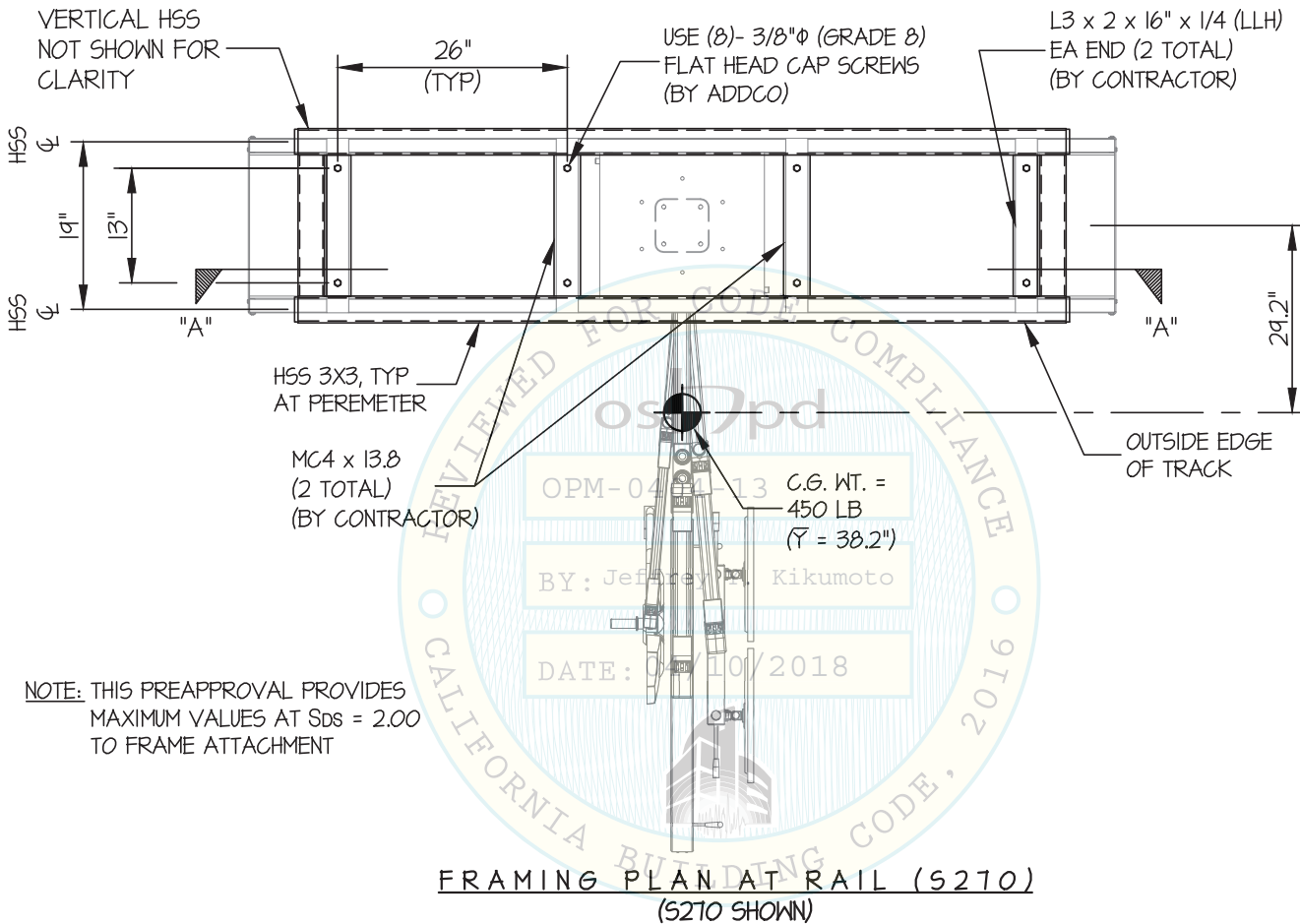
8

OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

TRACK OPTION AT S270
MAX Sds ≤ 2.20

CEILING MOUNTED



NOTE: THIS PREAPPROVAL PROVIDES MAXIMUM VALUES AT Sds = 2.00 TO FRAME ATTACHMENT

Jonathan Roberson

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2018
4/6/18
STRUCTURAL
STATE OF CALIFORNIA

AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. **J. ROBERSON**

JOB NO. **11-1639**

DATE **4/6/18**

SHEET

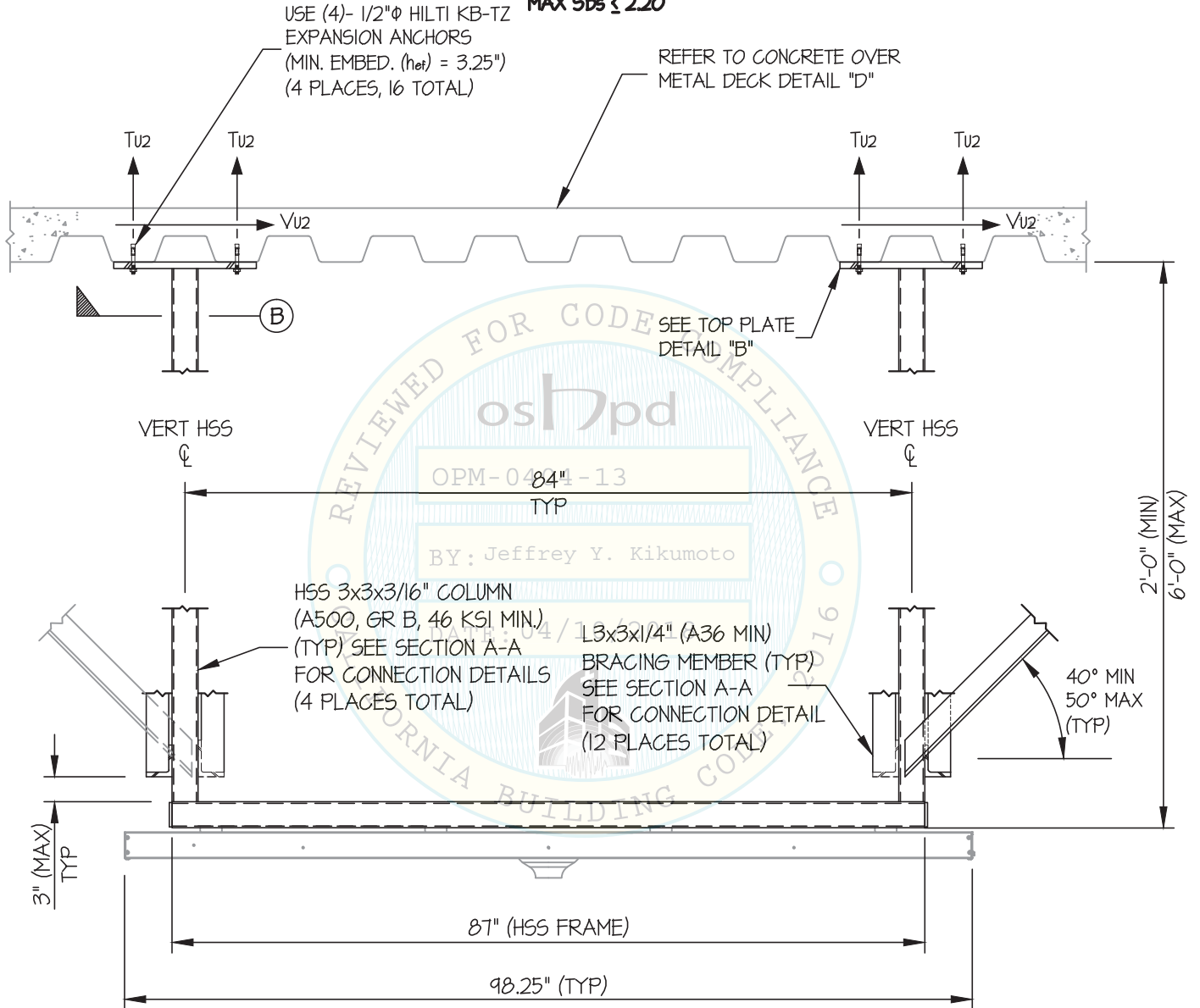
9

OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

TRACK OPTION
MAX SpS ≤ 2.20

BRACING DETAILS



BRACING DETAIL (A)



AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. **J. ROBERSON**

JOB NO. **11-1639**

DATE **4/9/18**

SHEET

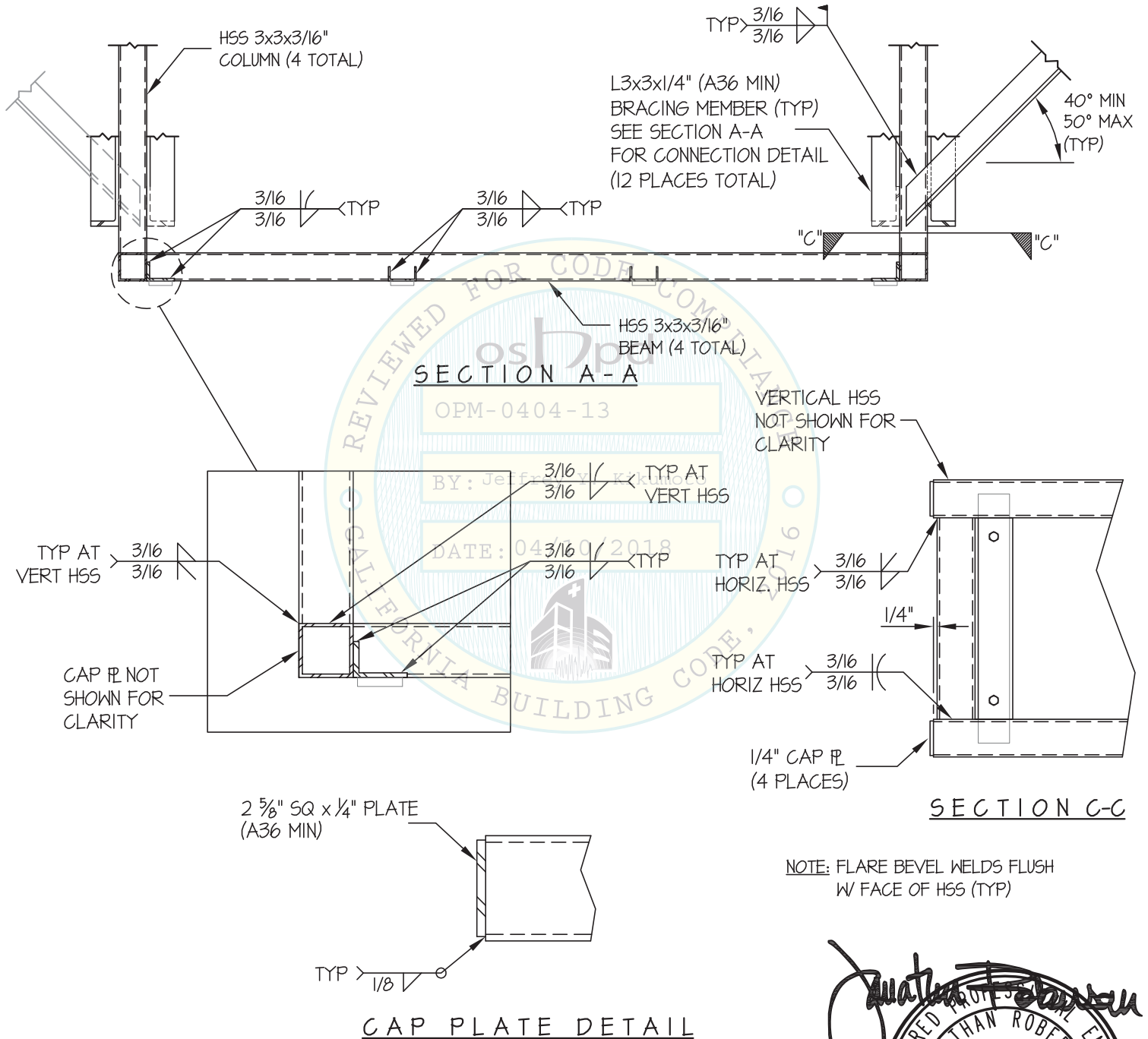
10

OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

TRACK OPTION
MAX Sps ≤ 2.20

BRACING DETAILS



AADCO MEDICAL, INC.

DES. **J. ROBERSON**

SHEET

11

S260/S270 INJECTOR MOUNTS

JOB NO. **11-1639**

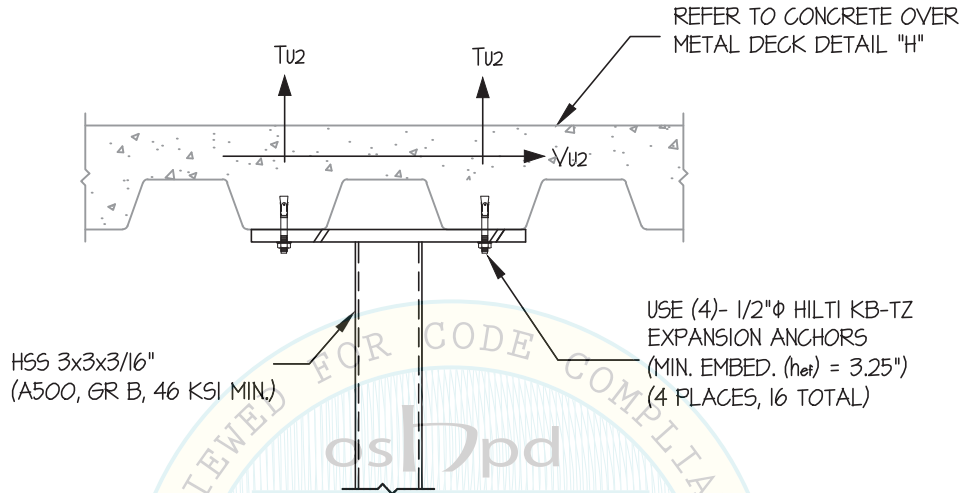
DATE **4/6/18**

OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

TRACK OPTION
MAX $S_{Ds} \leq 2.20$

BRACING DETAILS



ANCHOR AT COLUMN TOP PLATE

T_{u2} = 717 LB/BOLT (MAX)

V_{u2} = 34 LB/BOLT (MAX)

(VALUES INCLUDE $\Omega_b = 2.0$)

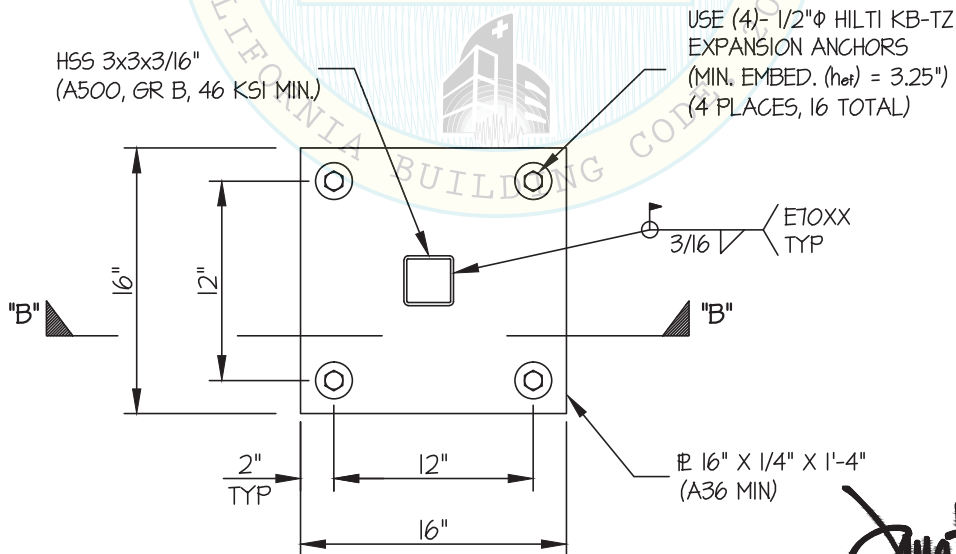
OPM-0404-13

BY: Jeffrey Y. Kikumoto

TOP PLATE

(SECTION B-B)

DATE: 04/10/2018



TOP PLATE DETAIL (B)



AADCO MEDICAL, INC.

DES. **J. ROBERSON**

SHEET

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S260/S270 INJECTOR MOUNTS

JOB NO. **11-1639**

DATE **4/6/18**

OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

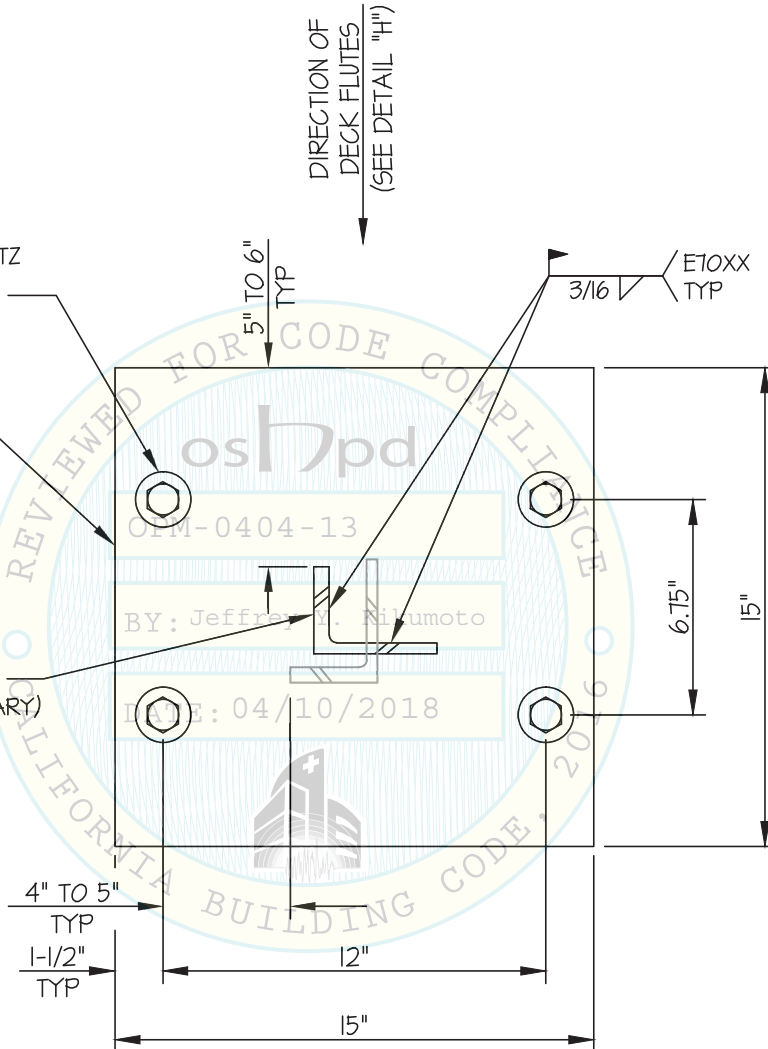
TRACK OPTION
MAX $S_Ds \leq 2.20$

BRACING DETAILS

USE (4)- 1/2" ϕ HILTI KB-TZ
EXPANSION ANCHORS
(MIN. EMBED. (h_{ef}) = 2")
(8 PLACES, 32 TOTAL)

3/8" \square (A36, MIN)

BRACING MEMBER
(ORIENTATION MAY VARY)



ANCHOR AT BRACE PLATE

$T_{u1} = 462$ LB/BOLT (MAX)

$V_{u1} = 429$ LB/BOLT (MAX)

(VALUES INCLUDE $\Omega_c = 2.0$)

BRACE PLATE DETAIL (6)



AADCO MEDICAL, INC.

DES. J. ROBERSON

SHEET

13

S260/S270 INJECTOR MOUNTS

JOB NO. 11-1639

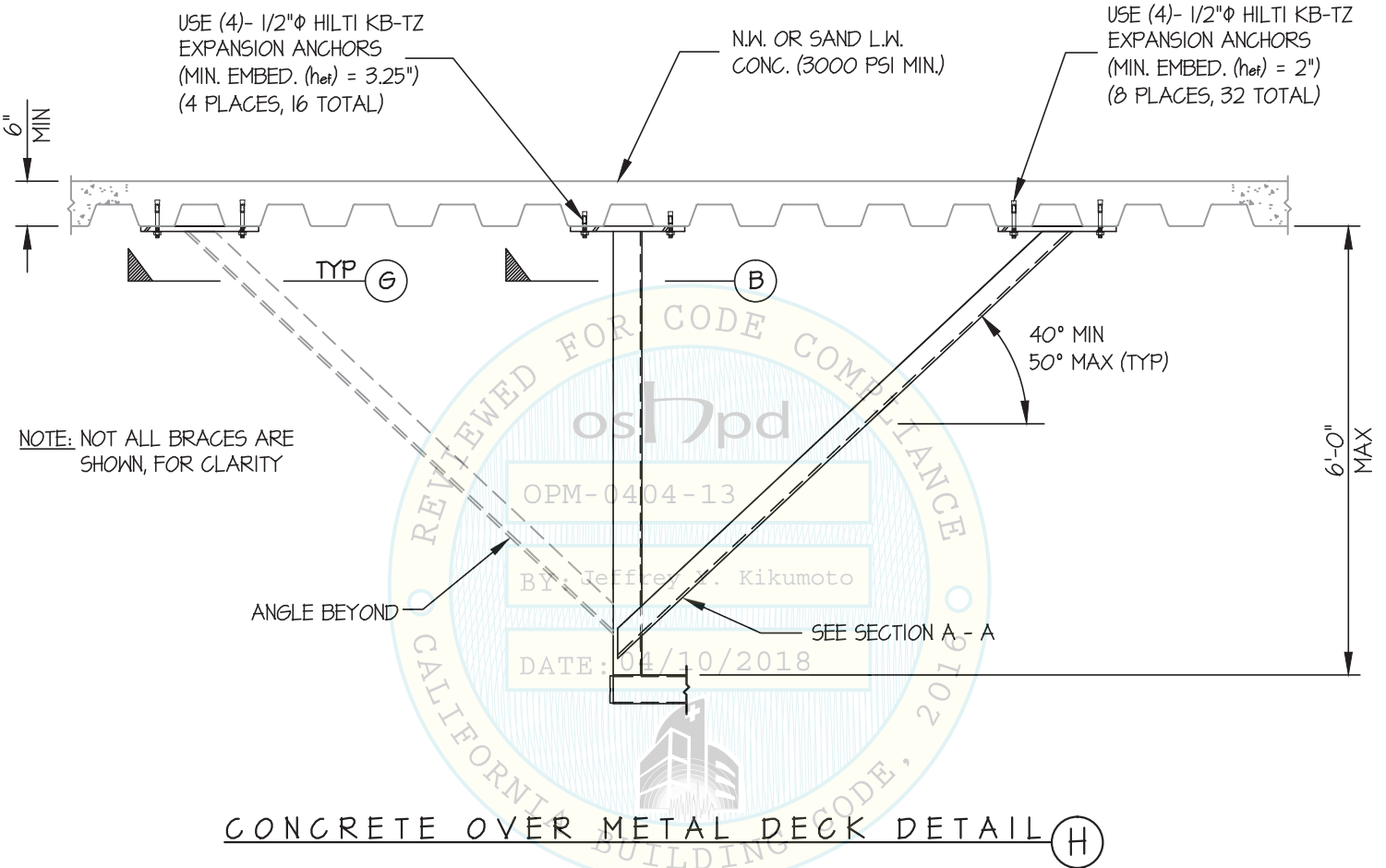
DATE 4/6/18

OF 21 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

TRACK OPTION
MAX $S_Ds \leq 2.20$

BRACING DETAILS



Jonathan Roberson

REGISTERED PROFESSIONAL ENGINEER
No. 4197
EXP. 6-30-2018
4/6/18
STRUCTURAL
STATE OF CALIFORNIA

AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. **J. ROBERSON**

JOB NO. **11-1639**

DATE **4/6/18**

SHEET

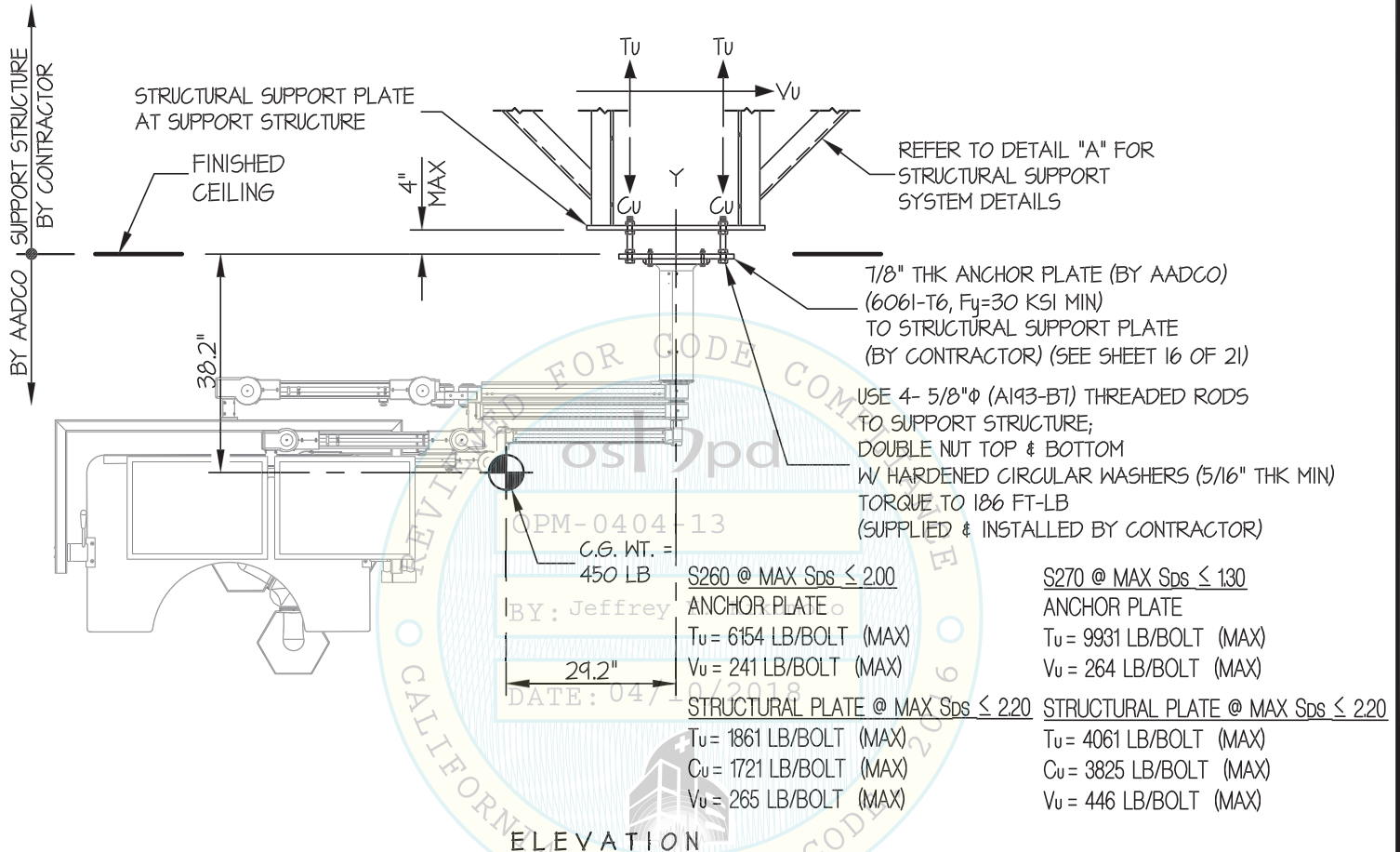
14

OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

SINGLE PLATE OPTION

CEILING MOUNTED



S260 & S270 (S270 GOVERNS, SHOWN HERE)

NOTES:

1. **FORCES ARE DETERMINED PER 2016 CALIFORNIA BUILDING CODE AND ASCE 7-10.**

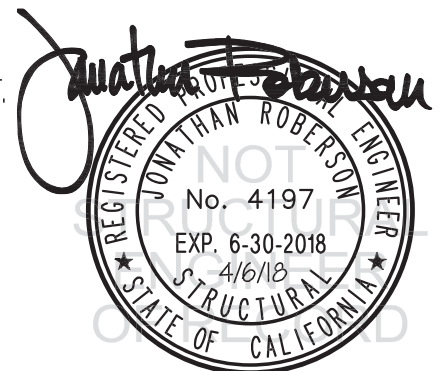
STRENGTH DESIGN IS USED. ($S_{ds} = 2.20$, $a_p = 2.5$, $I_p = 15$, $R_p = 2.5$, $z/h \leq 1$)

HORIZONTAL FORCE (E_h) = $3.96 W_p$

VERTICAL FORCE (E_v) = $0.44 W_p$

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.



AADCO MEDICAL, INC.

DES. **J. ROBERSON**

SHEET

15

S260/S270 INJECTOR MOUNTS

JOB NO. **11-1639**

DATE **3/29/18**

OF **21** SHEETS

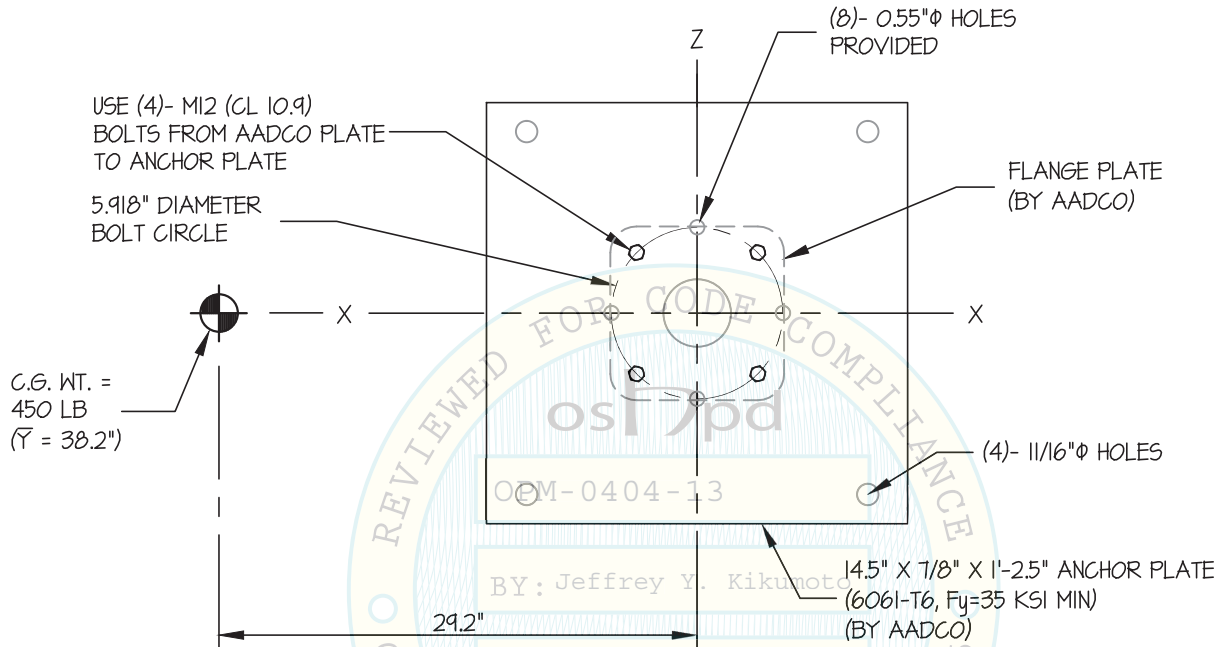
SEISMIC SUPPORTS & ATTACHMENTS

SINGLE PLATE OPTION

MAX Sds ≤ 1.30 @ S270

MAX Sds ≤ 2.00 @ S260

CEILING MOUNTED



PLAN AT ANCHOR PLATE
(S270 CONDITION SHOWN HERE)



AADCO MEDICAL, INC.

DES. **J. ROBERSON**

SHEET

16

JOB NO. **11-1639**

S260/S270 INJECTOR MOUNTS

DATE **4/6/18**

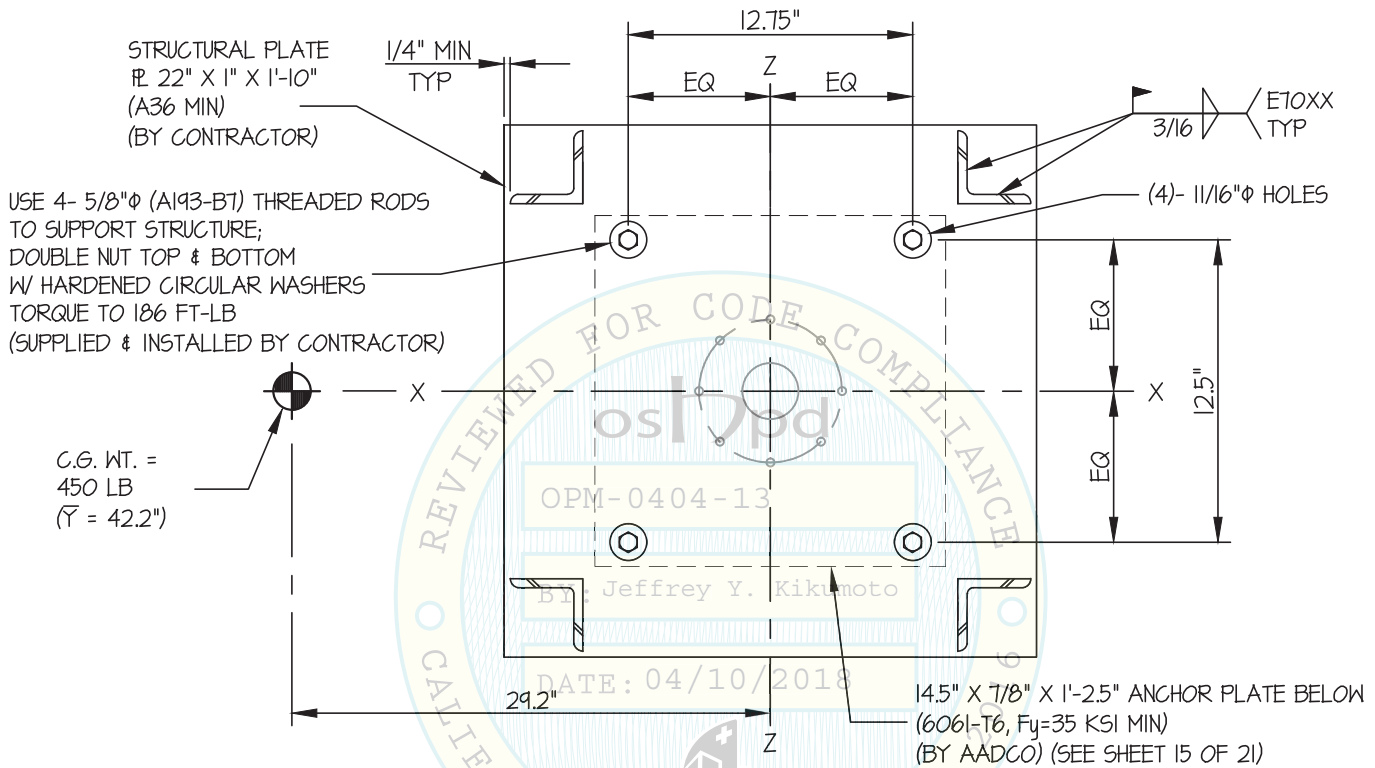
OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

SINGLE PLATE OPTION

CEILING MOUNTED

MAX $S_{Ds} \leq 2.20$ @ SUPPORT STRUCTURE



PLAN AT STRUCTURAL PLATE



AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. J. ROBERSON

JOB NO. 11-1639

DATE 4/6/18

SHEET

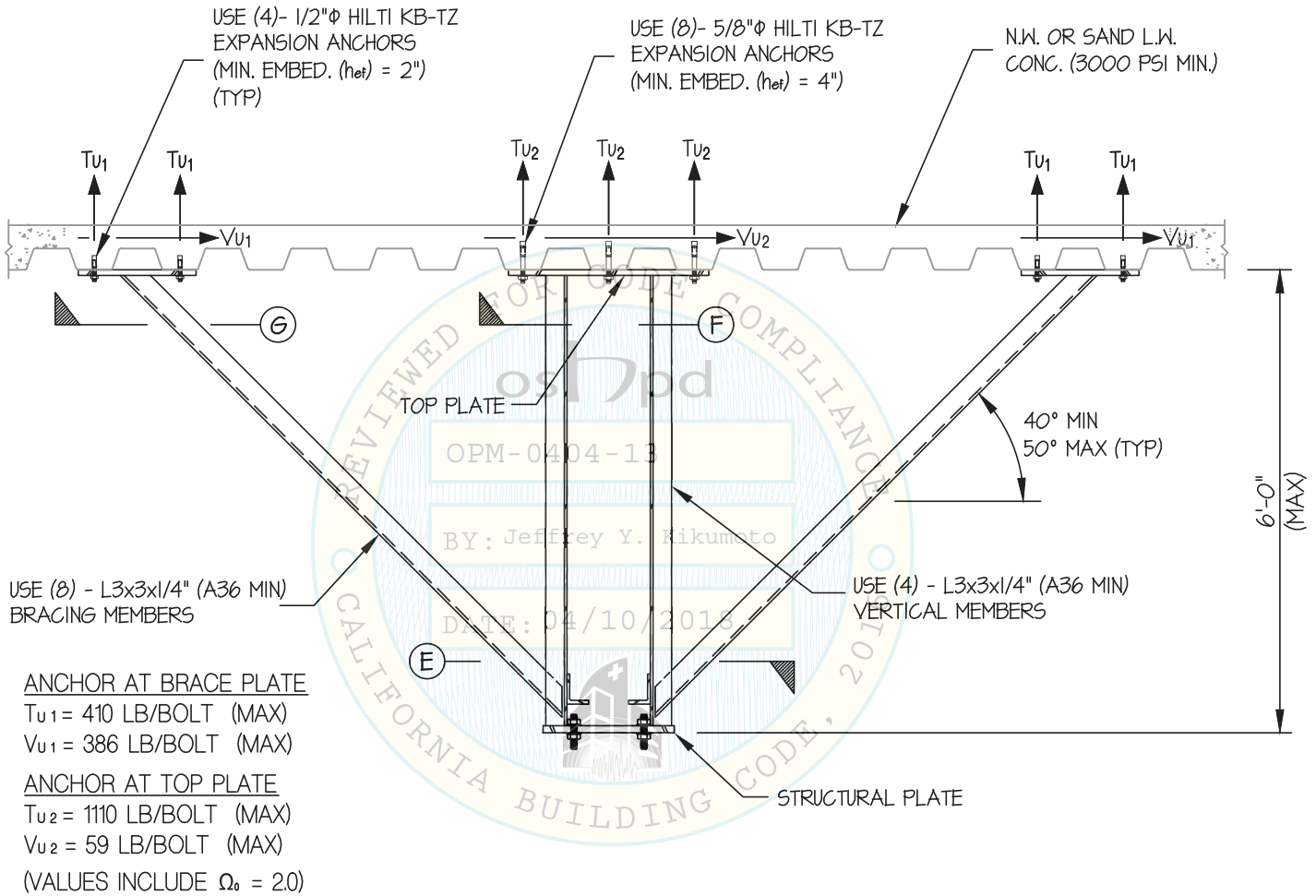
17

OF 21 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

SINGLE PLATE OPTION
MAX $S_{Ds} \leq 2.20$

BRACING DETAILS



STRUCTURAL BRACING DETAIL (D)

Jonathan Roberson

REGISTERED PROFESSIONAL ENGINEER
 JONATHAN ROBERSON
 No. 4197
 EXP. 6-30-2018
 4/6/18
 STRUCTURAL
 STATE OF CALIFORNIA

AADCO MEDICAL, INC.

DES. J. ROBERSON

SHEET

18

JOB NO. 11-1639

DATE 4/6/18

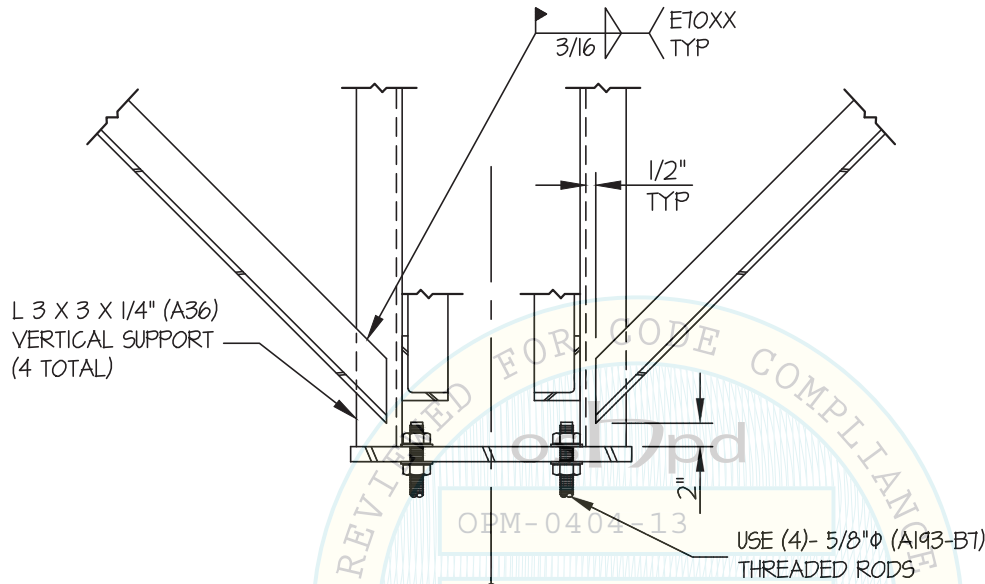
OF 21 SHEETS

S260/S270 INJECTOR MOUNTS

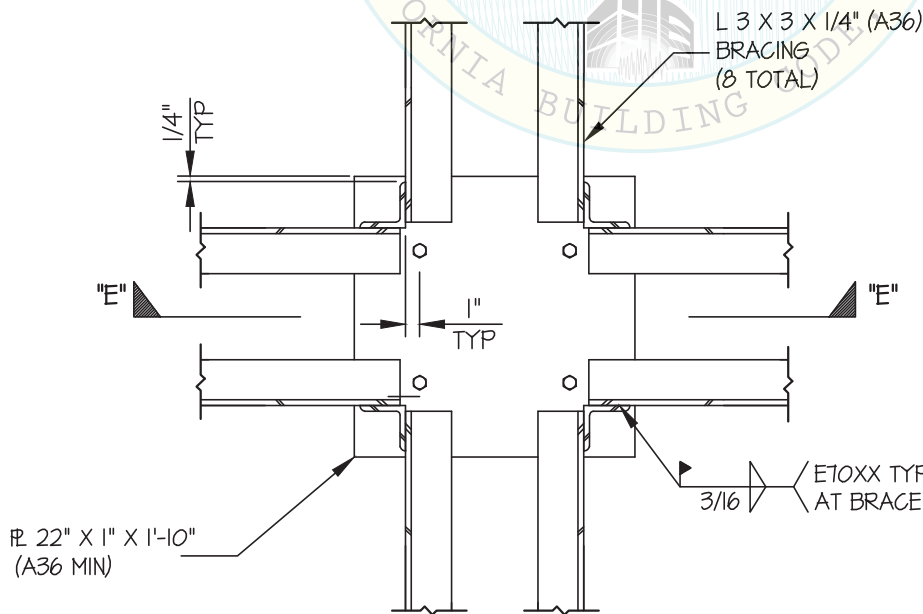
SEISMIC SUPPORTS & ATTACHMENTS

SINGLE PLATE OPTION
MAX SpS ≤ 2.20

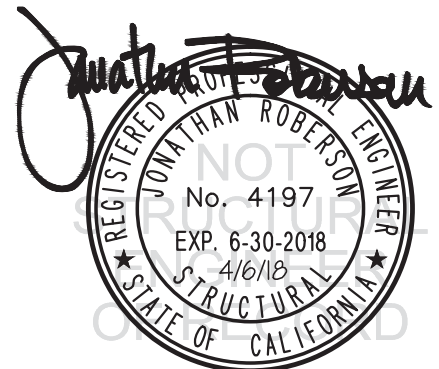
BRACING DETAILS



BOTTOM PLATE
(SECTION E-E) 4/10/2018



STRUCTURAL PLATE DETAIL (E)



AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

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JOB NO. **11-1639**

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SHEET

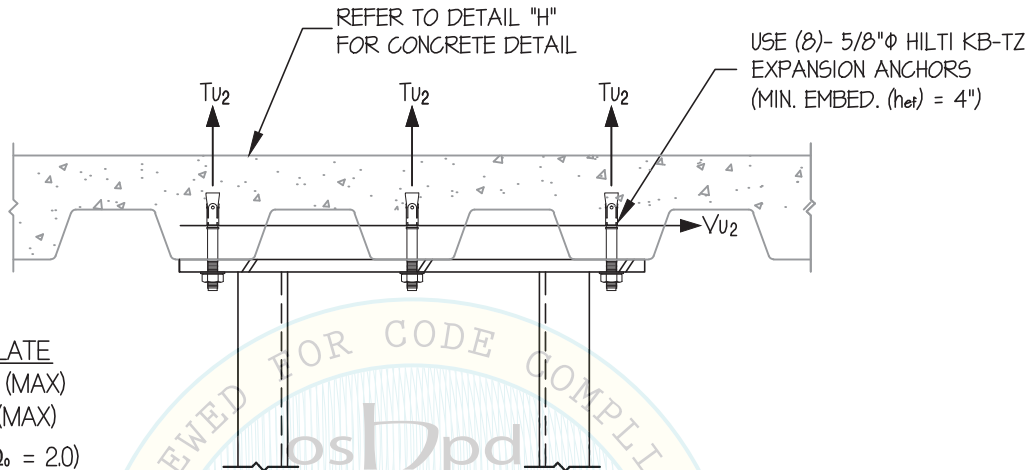
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OF **21** SHEETS

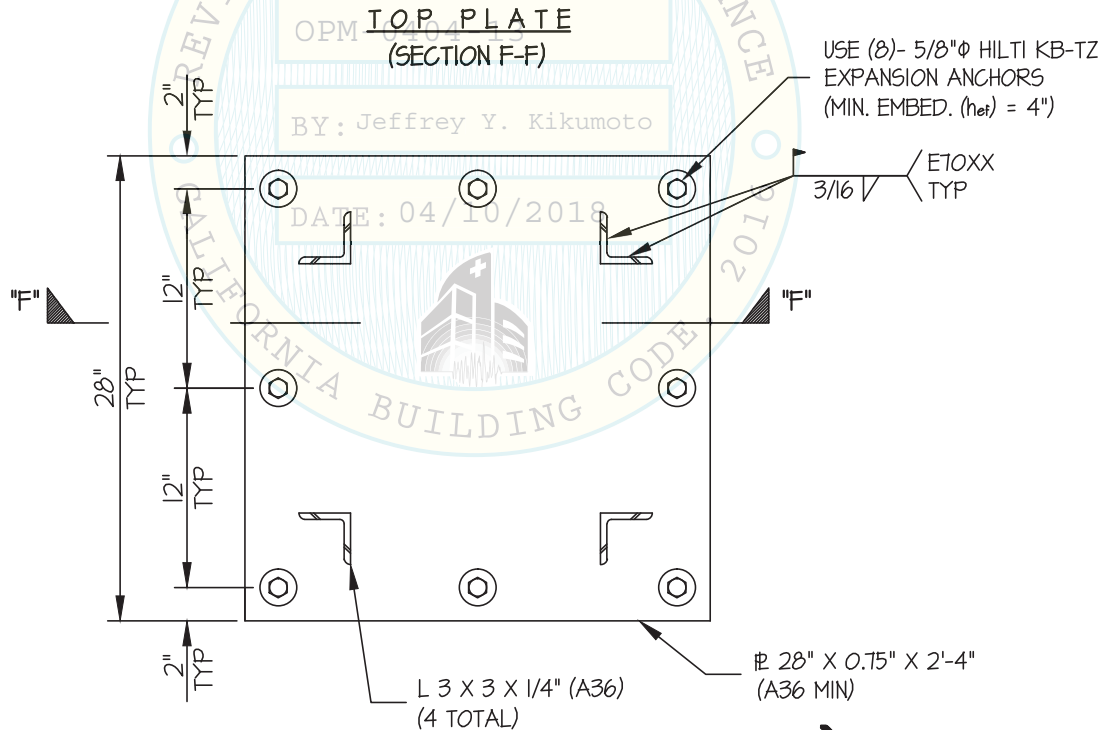
SEISMIC SUPPORTS & ATTACHMENTS

SINGLE PLATE OPTION
MAX $S_{Ds} \leq 2.20$

BRACING DETAILS



ANCHOR AT TOP PLATE
 $T_{U2} = 1110$ LB/BOLT (MAX)
 $V_{U2} = 59$ LB/BOLT (MAX)
(VALUES INCLUDE $\Omega_0 = 2.0$)



TOP PLATE DETAIL (F)



AADCO MEDICAL, INC.

DES. **J. ROBERSON**

SHEET

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JOB NO. **11-1639**

S260/S270 INJECTOR MOUNTS

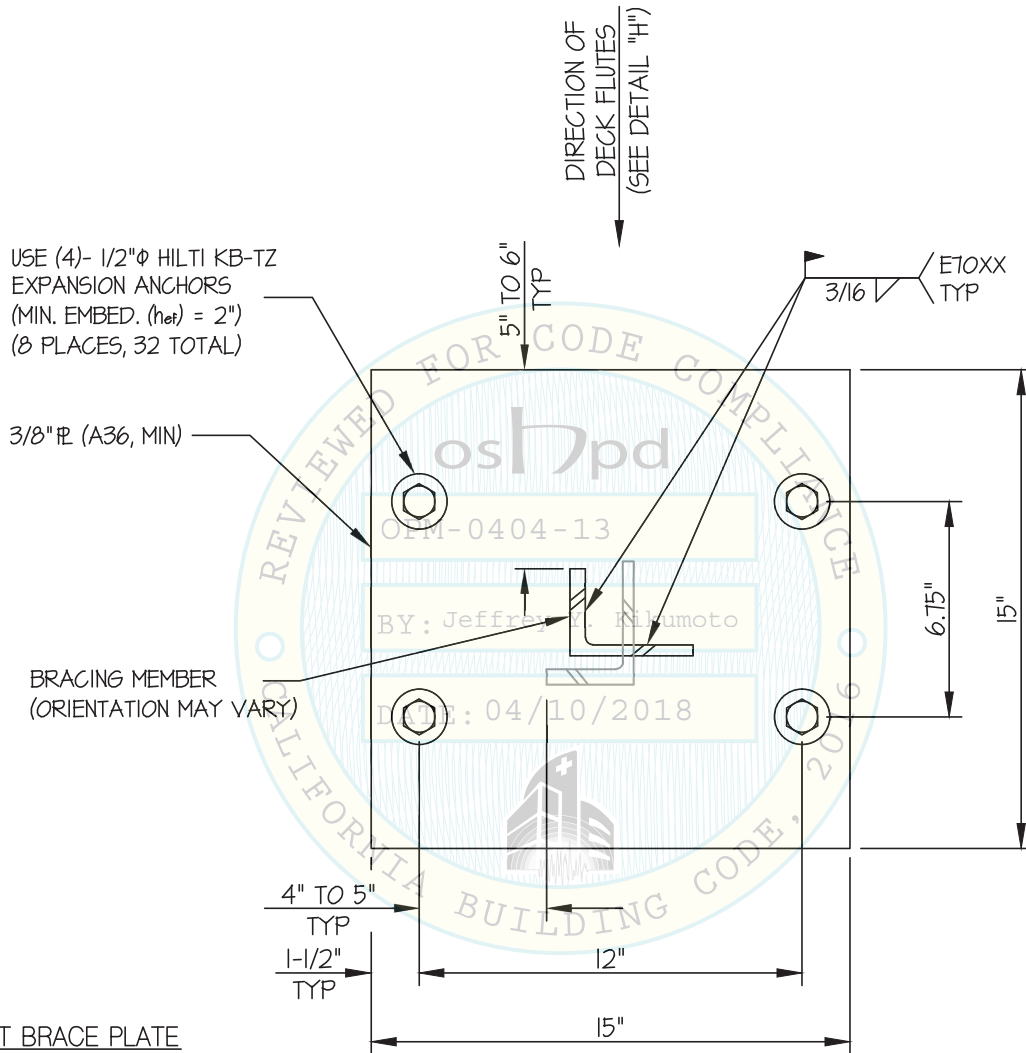
DATE **4/6/18**

OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

SINGLE PLATE OPTION
MAX $S_Ds \leq 2.20$

BRACING DETAILS



ANCHOR AT BRACE PLATE
 $T_{u1} = 410$ LB/BOLT (MAX)
 $V_{u1} = 386$ LB/BOLT (MAX)
(VALUES INCLUDE $\Omega_c = 2.0$)

BRACE PLATE DETAIL (G)



AADCO MEDICAL, INC.

S260/S270 INJECTOR MOUNTS

DES. **J. ROBERSON**

JOB NO. **11-1639**

DATE **4/6/18**

SHEET

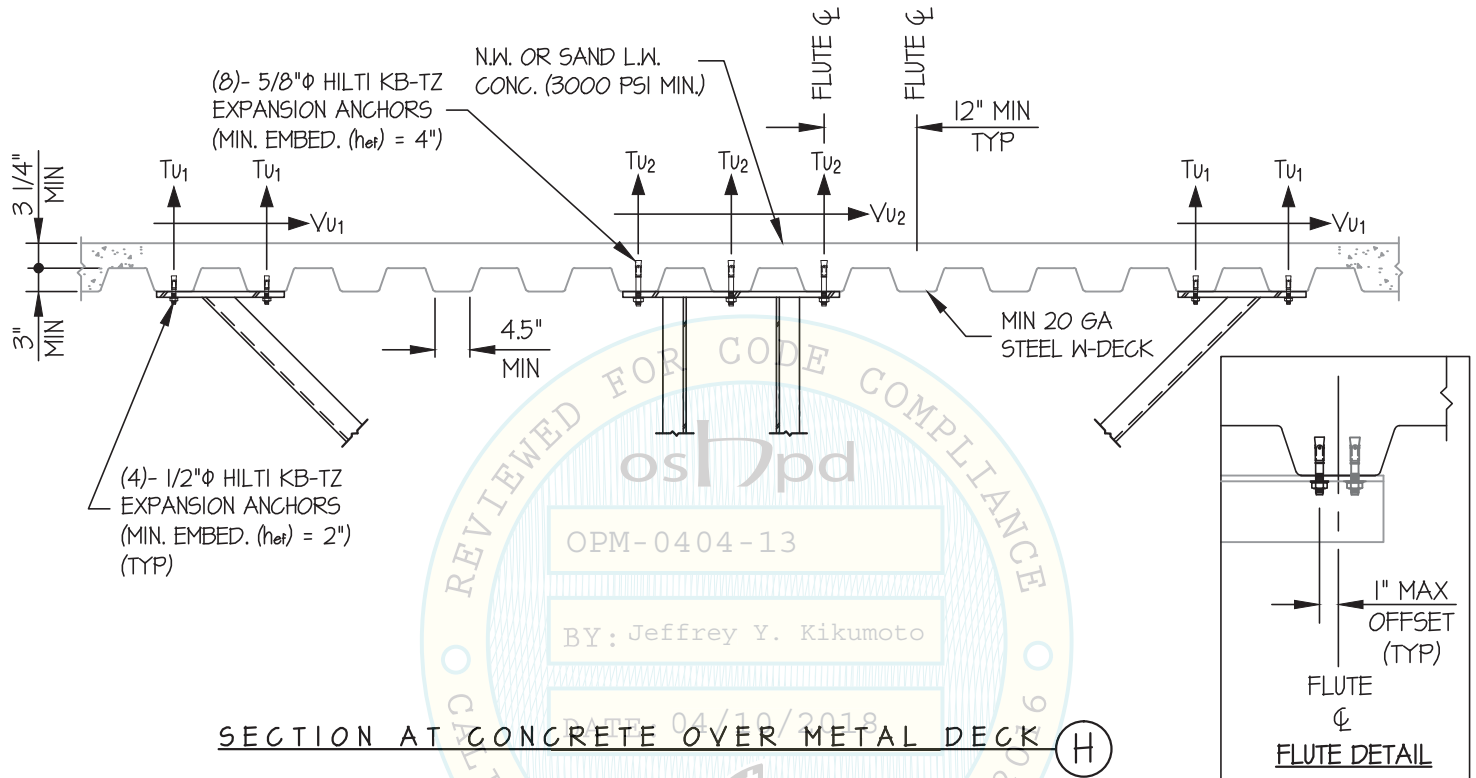
21

OF **21** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

SINGLE PLATE OPTION
MAX SpS ≤ 220

BRACING DETAILS



Jonathan Roberson

REGISTERED PROFESSIONAL ENGINEER
No. 4197
EXP. 6-30-2018
4/6/18
STRUCTURAL
STATE OF CALIFORNIA