



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OPM-0504-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

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

Manufacturer Information

Manufacturer: Plexus Engineering Solutions

Manufacturer's Technical Representative: Chandler North

Mailing Address: 120 Main Street, Neenah, Wisconsin 54957

Telephone: 1-920-969-6016 Email: Chandler.north@plexus.com

Product Information

Product Name: Cerner RX Station 2 Tower Modular

Product Type: Medication Dispenser OPM-0504-13

Product Model Number: Cerner RX Station

General Description: Medication Dispenser

Applicant Information

Applicant Company Name: Plexus Engineering Solutions

Contact Person: Chandler North

Mailing Address: 120 Main Street, Neenah, Wisconsin 54957

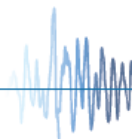
Telephone: 1-920-969-6016 Email: Chandler.north@plexus.com

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: [Handwritten Signature] Date: 02-OCT-2018

Title: Product Engineer Company Name: Plexus Engineering Solutions

"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: CYS Structural Engineers, Inc.

Name: Dieter T. Siebald California License Number: S4346

Mailing Address: 2495 Natomas Park Drive, Suite #650

Telephone: 1-916-920-2020 Email: dieters@cyseng.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

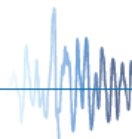
Signature: *Jeffrey Kikumoto* Date: 3/6/2019

Print Name: Jeffrey Kikumoto

Title: SE

Condition of Approval (if applicable): \_\_\_\_\_

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



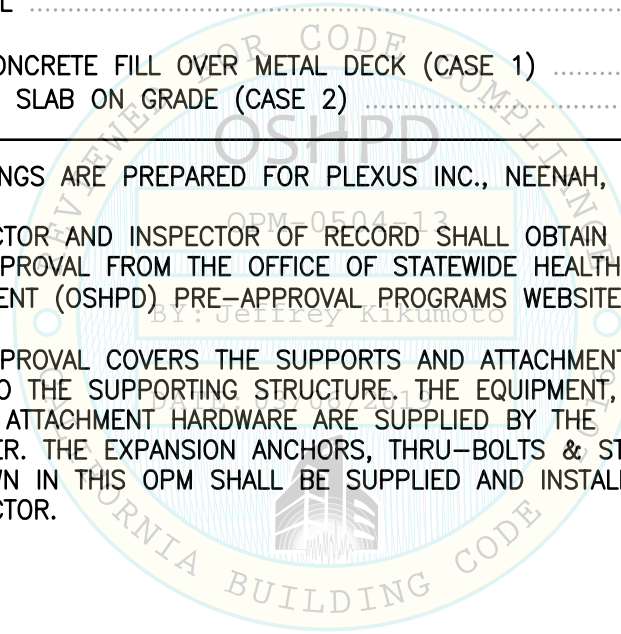


## TABLE OF CONTENTS

### OPM-0504-13

	PAGE
GENERAL NOTES .....	2
ABBREVIATIONS & DESIGN CRITERIA .....	4
EQUIPMENT PLAN & ELEVATIONS .....	5
REAR BRACKET ASSEMBLY DETAIL .....	6
REAR BRACKET "B" DETAIL .....	7
REAR BRACKET "C" DETAIL .....	8
FRONT BRACKET ASSEMBLY DETAIL .....	9
FRONT BRACKET "D" DETAIL .....	10
FRONT BRACKET "E" DETAIL .....	11
ATTACHMENT DETAIL TO CONCRETE FILL OVER METAL DECK (CASE 1) .....	12
ATTACHMENT DETAIL TO 4" SLAB ON GRADE (CASE 2) .....	15

- NOTES:**
1. THESE DRAWINGS ARE PREPARED FOR PLEXUS INC., NEENAH, WISCONSIN.
  2. THE CONTRACTOR AND INSPECTOR OF RECORD SHALL OBTAIN A COPY OF THIS PRE-APPROVAL FROM THE OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT (OSHPD) PRE-APPROVAL PROGRAMS WEBSITE.
  3. THIS PRE-APPROVAL COVERS THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE SUPPORTING STRUCTURE. THE EQUIPMENT, SUPPORT BRACKETS & ATTACHMENT HARDWARE ARE SUPPLIED BY THE MANUFACTURER. THE EXPANSION ANCHORS, THRU-BOLTS & STRUT PLATES SHOWN IN THIS OPM SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.



SHEET TITLE: TABLE OF CONTENTS

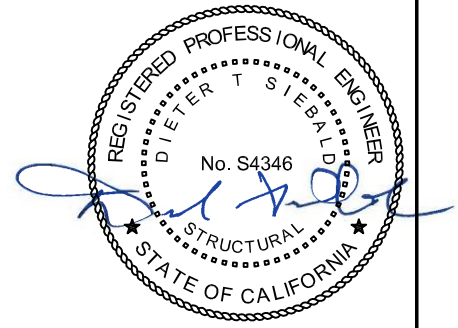
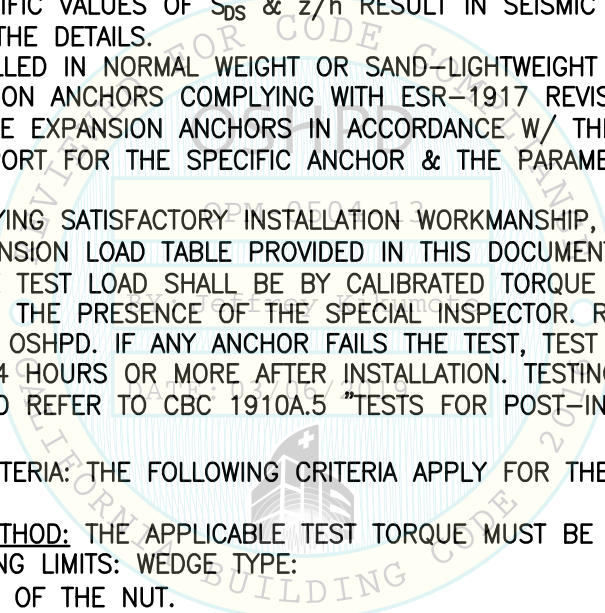
	<b>CYS STRUCTURAL ENGINEERS, INC.</b>	Job No: 18029	
	2495 NATOMAS PARK DRIVE, SUITE 650	TEL (916) 920-2020	Date: 3-04-2019
	SACRAMENTO, CA 95833	www.cyseng.com	Page: 1 of 15

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**GENERAL NOTES:**

1. THIS OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2016. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2016.
2. IT IS THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD FOR A SITE SPECIFIC PROJECT TO VERIFY:
  - A. THE ADEQUACY OF THE NEW OR EXISTING STRUCTURE TO RESIST THE FORCES & WT SPECIFIED FOR EA EQUIP IN ADDITION TO ALL OTHER LOADS. PROVIDE & DESIGN SUPPLEMENTARY MEMBERS AS REQ.
  - B. THAT THE FLR ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPGS.
  - C. THAT THE FLR ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY NEW OR EXISTING ANCHORS. THE SPCG SHOWN IN THE TEST LOADS TABLE ON PG 3 IS THE REQ MIN SPCG OF THE 1/2" DIA AB'S. THE REQ SPCG FROM ANCHORS OF OTHER DIAMETERS & EMBEDMENTS MAY VARY & SHALL BE EVALUATED BY THE SEOR.
  - D. THAT THE INSTALLATION IS IN CONFORMANCE W/ THE CBC 2016 & W/ THE DETAILS SHOWN IN THIS PRE-APPROVAL.
  - E. THAT THE ACTUAL EQUIP'S WT, CENTER OF GRAVITY (CG) LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, & THE MATERIAL & GA OF THE EQUIP WHERE ATTACHMENTS ARE MADE, AGREE W/ THE INFO SHOWN ON THE PRE-APPROVAL DOCUMENTS.
  - F. THAT THE PROJECT SPECIFIC VALUES OF  $S_{DS}$  &  $z/h$  RESULT IN SEISMIC FORCES ( $E_h$ ,  $E_v$ ) THAT DO NOT EXCEED THE VALUES IN THE DETAILS.
3. EXPANSION ANCHORS INSTALLED IN NORMAL WEIGHT OR SAND-LIGHTWEIGHT CONCRETE SHALL BE CARBON STEEL HILTI KB-TZ EXPANSION ANCHORS COMPLYING WITH ESR-1917 REVISED APRIL 2018.
  - A. INSTALLATION: INSTALL THE EXPANSION ANCHORS IN ACCORDANCE W/ THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR & THE PARAMETERS GIVEN IN THE TABLE ON PG 3.
  - B. JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOB SITE TESTING IN ACCORDANCE W/ THE TENSION LOAD TABLE PROVIDED IN THIS DOCUMENT. TEST 50% OF THE INSTALLED ANCHORS. THE TEST LOAD SHALL BE BY CALIBRATED TORQUE WRENCH METHOD. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE SPECIAL INSPECTOR. REPORT OF TEST RESULTS SHALL BE SUBMITTED TO OSHPD. IF ANY ANCHOR FAILS THE TEST, TEST ALL ANCHORS. THE TEST SHALL BE PERFORMED 24 HOURS OR MORE AFTER INSTALLATION. TESTING MAY BE DONE PRIOR TO EQUIP INSTALLATION. ALSO REFER TO CBC 1910A.5 "TESTS FOR POST-INSTALLED ANCHORS IN CONCRETE".
  - C. FAILURE/ACCEPTANCE CRITERIA: THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
    - TORQUE WRENCH METHOD: THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE: ONE-HALF (1/2) TURN OF THE NUT.



SHEET TITLE: GENERAL NOTES

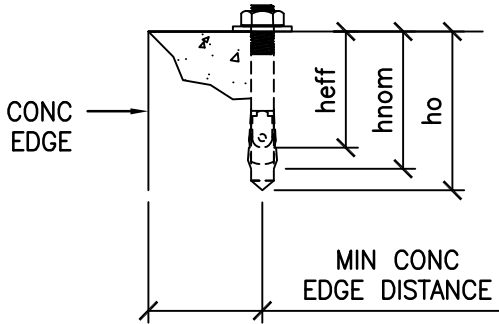
<p><b>CYS STRUCTURAL ENGINEERS, INC.</b>                  2495 NATOMAS PARK DRIVE, SUITE 650                  SACRAMENTO, CA 95833</p>	TEL (916) 920-2020 www.cyseng.com	Job No: 18029 Date: 3-04-2019 Page: 2 of 15

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**GENERAL NOTES CONTINUED:**

D. TEST TORQUE: APPLY TEST TORQUE AS PER TABLE BELOW.



ANCHOR DIA (INCH) da	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) hef	MIN HOLE DEPTH (INCH) ho	MIN CONC THICKNESS (INCH) h <sub>min</sub>	MIN CONC EDGE DISTANCE (INCH)	MIN AB SPCG (INCH)	TEST TORQUE (FT-LBS)	CONDITION OF ANCHORAGE
1/2	2 3/8	2	2 5/8	4	6	4 1/8	40	CASE 2

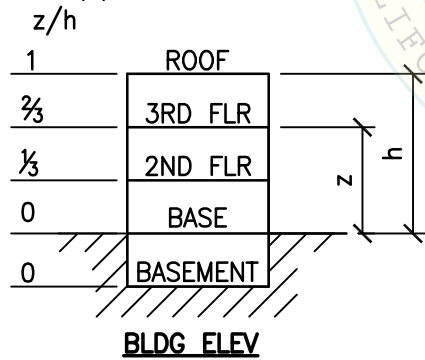
4. BOLTS THRU CONC ON MTL DECK:

- A. BOLTS SHALL BE TORQUED BY 3/4 TURN OF THE NUTS AFTER SNUG TIGHT (THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQ TO BRING THE CONNECTED PLIES INTO FIRM CONTACT) CONDITION IS ACHIEVED, UNO.
- B. THRU-BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16")
- C. THRU-BOLTS IN CONC SHALL RECEIVE SPECIAL INSPECTION & TESTING (THRU-BOLTS W/ STL-TO-STL CONNECTION IN TENSION DO NOT REQUIRE TESTING) IN ACCORDANCE W/ REQUIREMENTS FOR POST-INSTALLED ANCHORS.

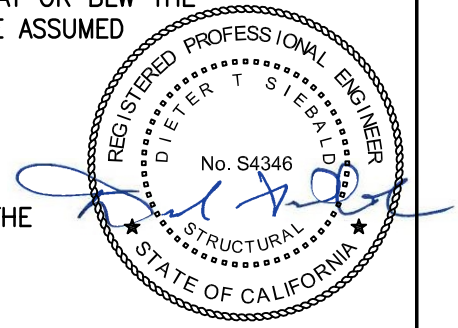
5. TWO (2) CASES OF ANCHORAGE ARE SPECIFIED & PRESENTED IN THIS PRE-APPROVAL:

**CASE 1:** ANCHORAGE DETAILS LOCATED AT UPPER FLRS ABV THE BASE OF A BLDG (z/h<=0.9), IT IS ASSUMED THAT THE FLRS ARE BUILT OF A MIN 3 1/4" SLWC TOPPING OVER MTL DECK (f'c = 3000 PSI, MIN).

**CASE 2:** ANCHORAGE DETAILS LOCATED AT OR BLW THE BASE OF A BLDG (z/h=0). THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 4" NWC SLAB (f'c = 3000 PSI, MIN).



6. THIS PRE-APPROVAL MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA, WHERE S<sub>ps</sub> IS LESS THAN OR EQ TO 2.13.



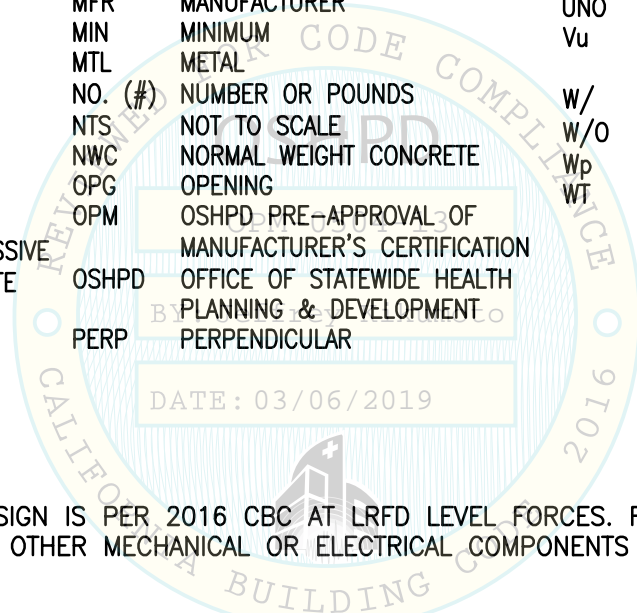
SHEET TITLE: GENERAL NOTES (CONTINUED)

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**ABBREVIATIONS:**

AB	ANCHOR BOLT	FT (')	FOOT/FEET	PG	PAGE
ABV	ABOVE	F <sub>p</sub>	HORIZONTAL SEISMIC FORCE PER ASCE 7-10 SEISMIC FORCE REQUIREMENTS	PL	PLATE
ADJ	ADJACENT	F <sub>y</sub>	SPECIFIED MINIMUM YIELD STRESS OF STEEL	PSI	POUNDS PER SQUARE INCH
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	GA	GAUGE	PSF	POUNDS PER SQUARE FOOT
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	GR	GRADE	REQ	REQUIRED
BLDG	BUILDING	ICC	INTERNATIONAL CODE COUNCIL	SEOR	STRUCTURAL ENGINEER OF RECORD
BLW	BELOW	INFO	INFORMATION	SLWC	SAND-LIGHTWEIGHT CONCRETE
BOTT	BOTTOM	KSI	KIPS PER SQUARE INCH	SPCG	SPACING
CBC	CALIFORNIA BUILDING CODE	LBS	POUNDS	STL	STEEL
CG	CENTER OF GRAVITY	LRFD	LOAD AND RESISTANCE FACTOR DESIGN	THRD	THREAD/THREADED
CL	CENTERLINE	MAX	MAXIMUM	Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
CONC	CONCRETE	MFR	MANUFACTURER	TOC	TOP OF CONCRETE
CONN	CONNECTION	MIN	MINIMUM	TYP	TYPICAL
COORD	COORDINATE	MTL	METAL	T&B	TOP & BOTTOM
DBL	DOUBLE	NO. (#)	NUMBER OR POUNDS	UNO	UNLESS NOTED OTHERWISE
DIA (∅)	DIAMETER	NTS	NOT TO SCALE	Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
(E)	EXISTING CONDITION	NWC	NORMAL WEIGHT CONCRETE	W/	WITH
EA	EACH	OPG	OPENING	W/O	WITHOUT
EE	EACH END	OPM	OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION	W <sub>p</sub>	OPERATING WEIGHT
ELEV	ELEVATION	OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT	WT	WEIGHT
EQ	EQUAL	PERP	PERPENDICULAR		
EQUIP	EQUIPMENT				
f'c	MIN ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE				
FF	FINISH FLOOR				
FLR	FLOOR				



**DESIGN CRITERIA**

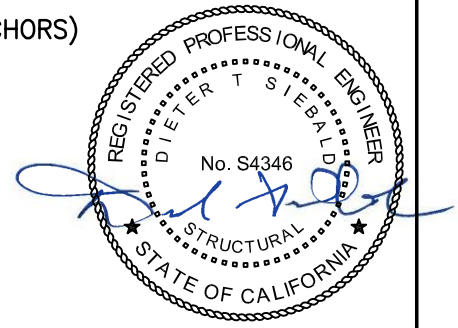
SUPPORT & ATTACHMENT DESIGN IS PER 2016 CBC AT LRFD LEVEL FORCES. FLR MOUNTED MECHANICAL & ELECTRICAL COMPONENTS, OTHER MECHANICAL OR ELECTRICAL COMPONENTS PER TABLE 13.6.1 OF ASCE 7-10 SUPPLEMENT #1

$q_p = 1.0$        $R_p = 1.5$        $I_p = 1.5$        $\Omega_0 = 1.5$  (CONC ANCHORS)

$W_p = 758\#$

FOR CASE 1 - UPPER FLRS ABV THE BASE,  $z/h \leq 0.9$   
 $S_{Ds} = 2.13$        $F_p = 2.38 W_p$        $F_v = 0.43 W_p$

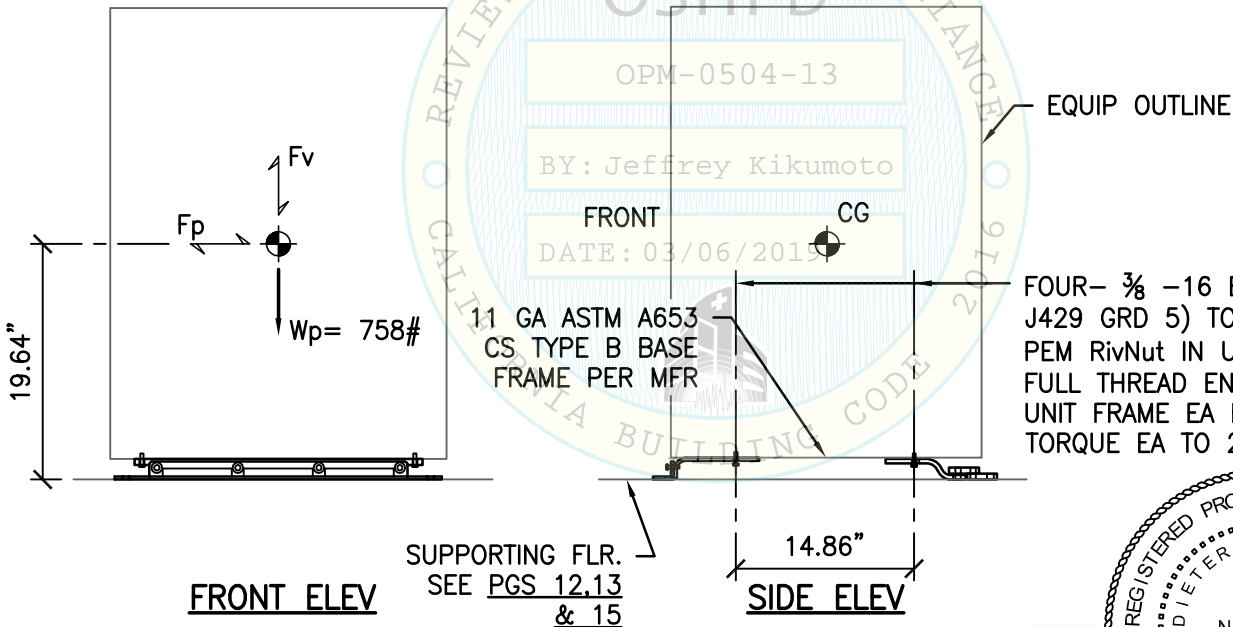
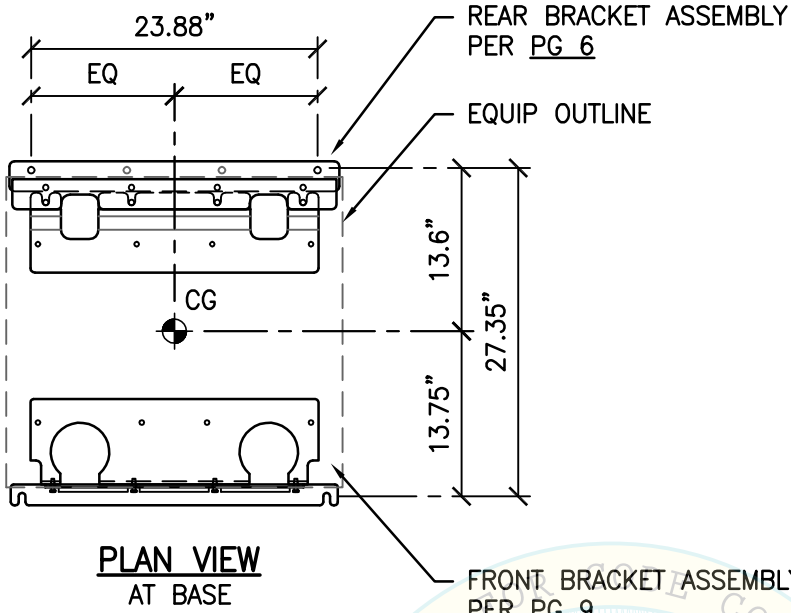
FOR CASE 2 - SLAB AT OR BLW BASE,  $z/h = 0$   
 $S_{Ds} = 2.13$        $F_p = 0.96 W_p$        $F_v = 0.43 W_p$



SHEET TITLE: ABBREVIATIONS & DESIGN CRITERIA

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SHEET TITLE: COMPONENT PLAN & ELEVATIONS



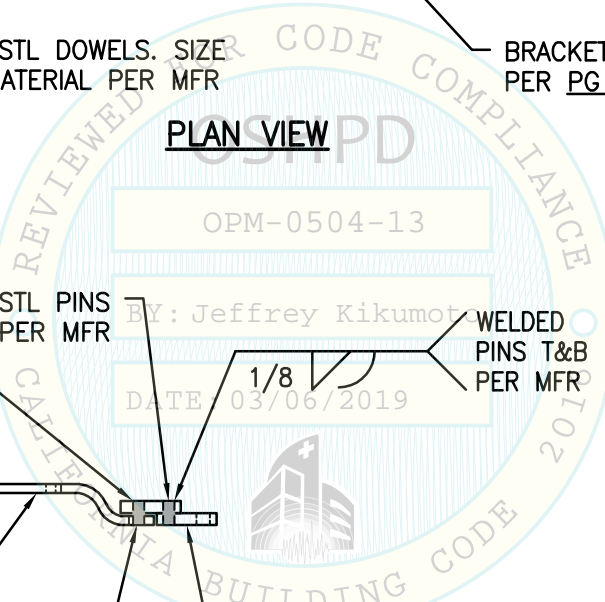
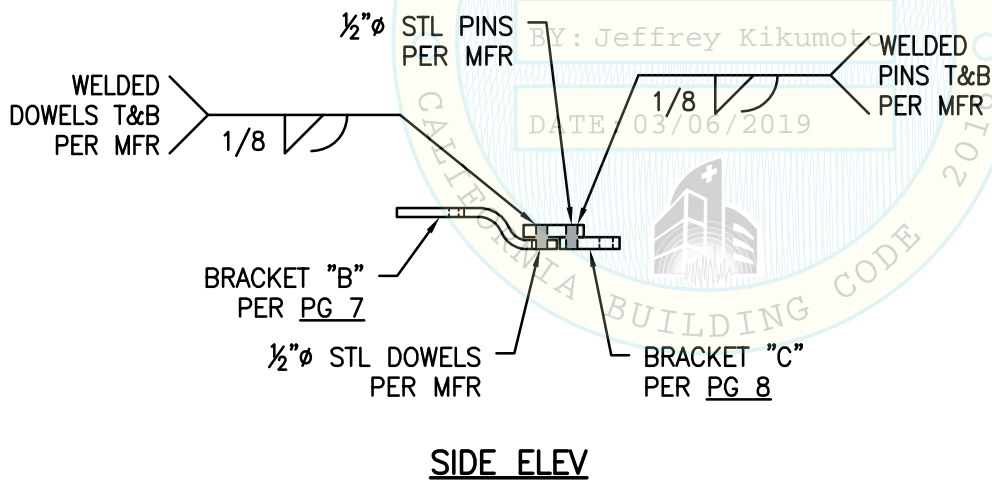
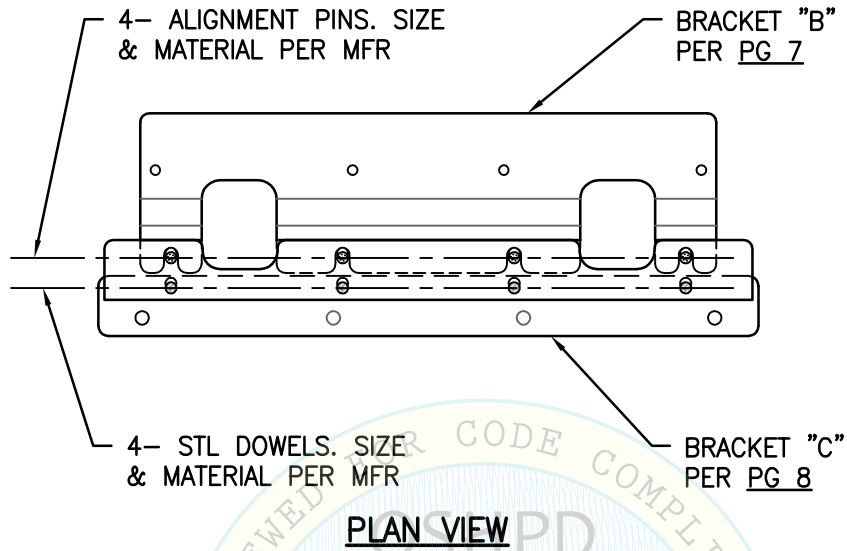
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Job No:	18029
Date:	3-04-2019
Page:	5 of 15

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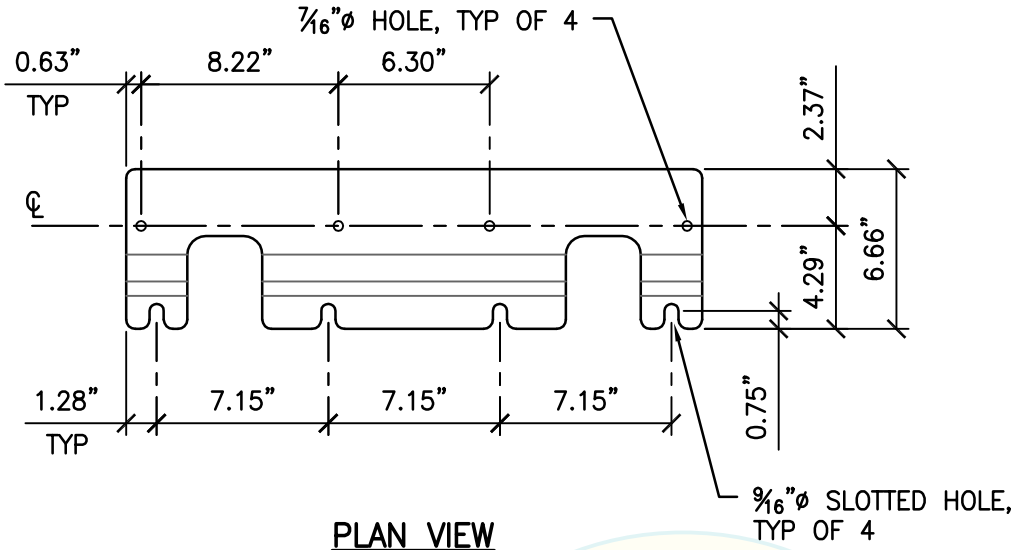


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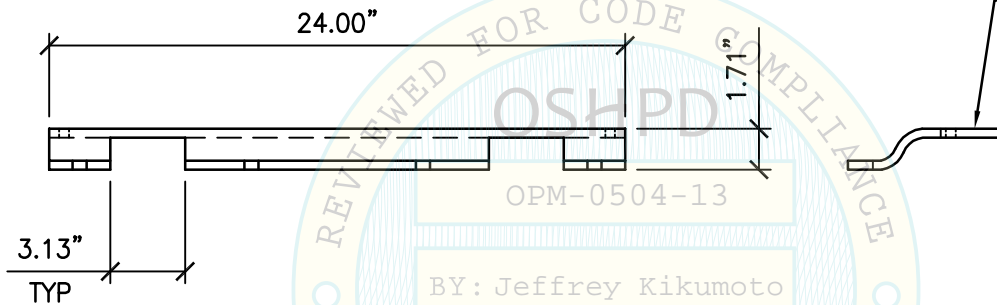
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L:\Jobs\18029 Plexus - Cerner RX 2 Tower Module OPM\ACAD\S1.dwg Time:Mar04,2019-09:09am Login:camachom DimScale:1 LTScale:6



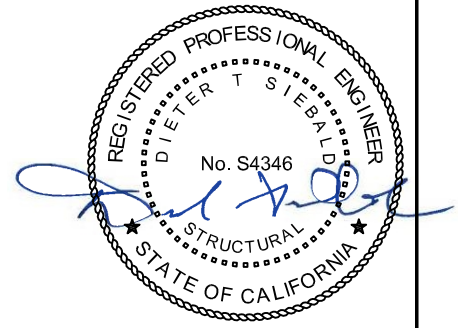
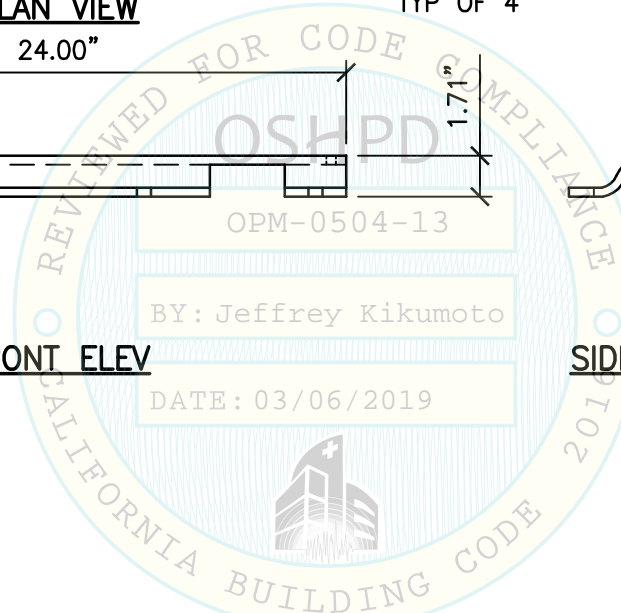


**PLAN VIEW**



**FRONT ELEV**

**SIDE ELEV**



SHEET TITLE: REAR BRACKET "B" DETAIL



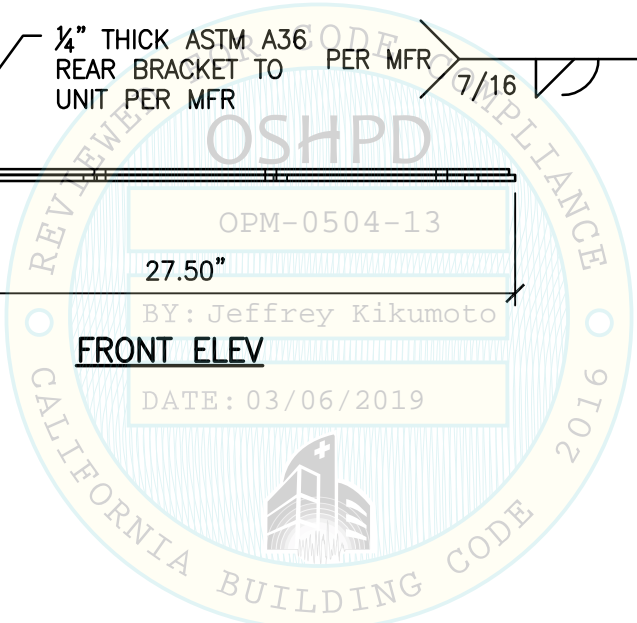
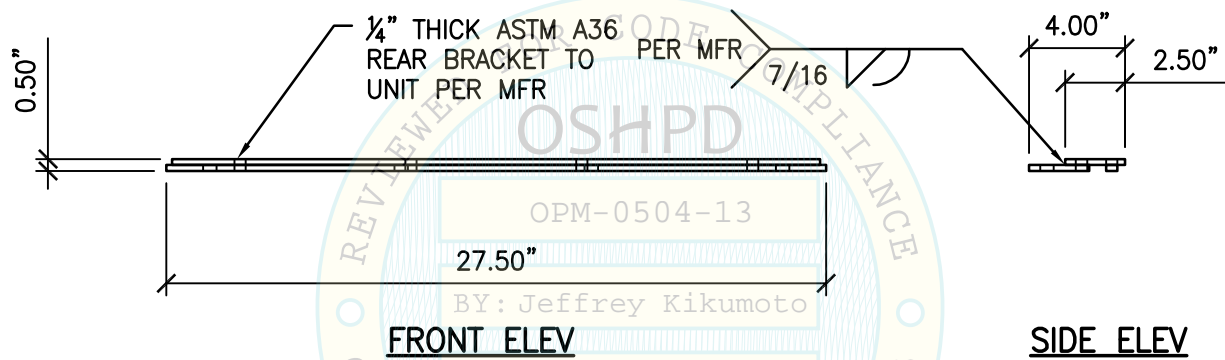
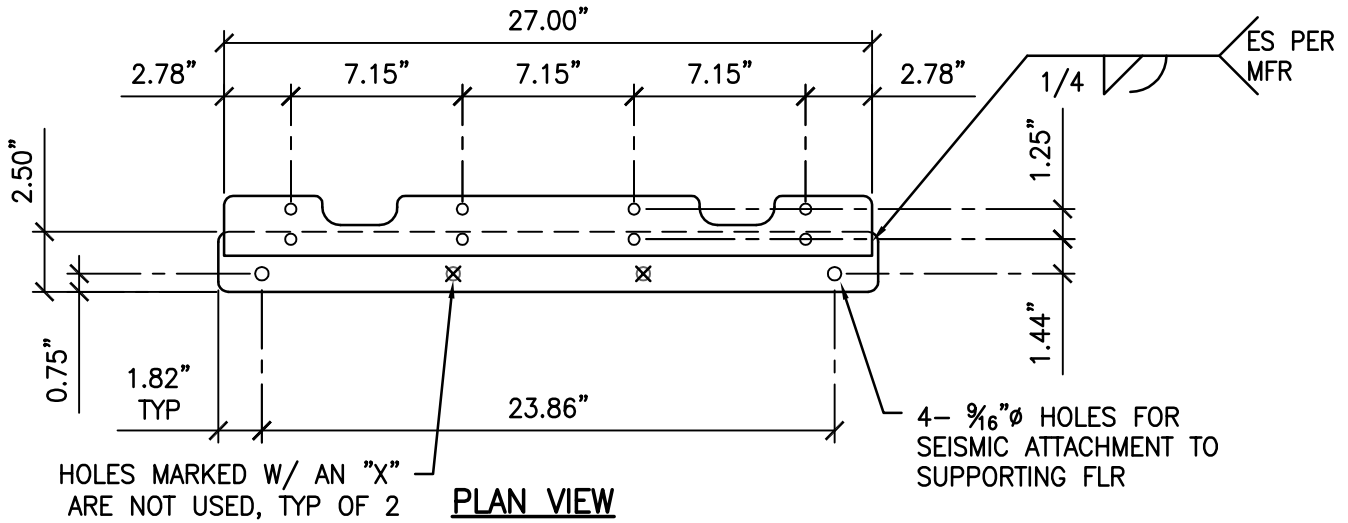
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Job No:	18029
Date:	3-04-2019
Page:	7 of 15

L:\Jobs\18029 Plexus - Cerner RX 2 Tower Module OPM\ACAD\S1.dwg Time:Mar04,2019-09:10am Login:camachom DimScale:1 LTScale:6



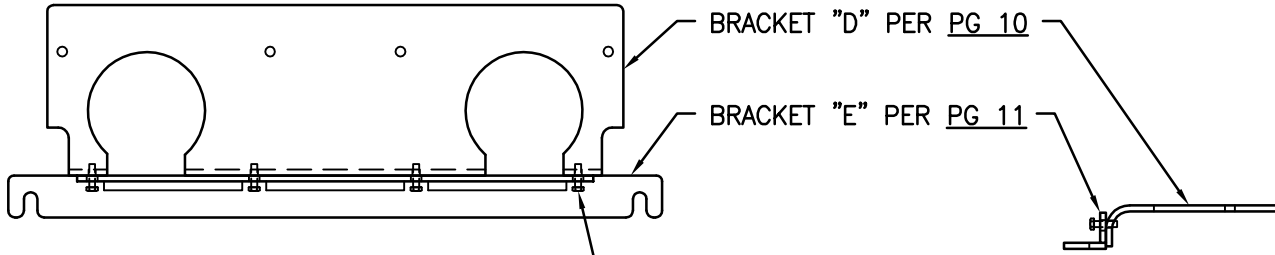
- NOTES:**
- FOR CASE 1 ATTACHMENT TO FLR, SEE PGS 12-14.
  - FOR CASE 2 ATTACHMENT TO FLR, SEE PG 15.



SHEET TITLE: REAR BRACKET "C" DETAIL

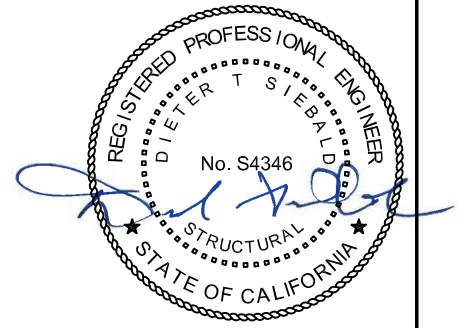
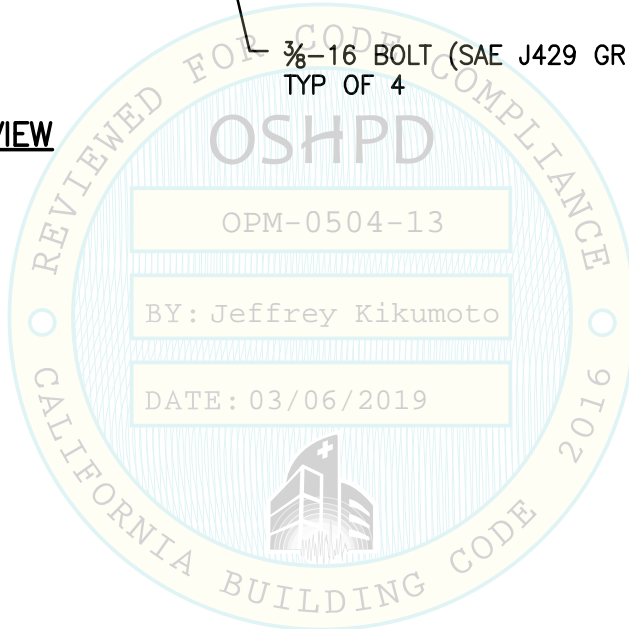
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	Date: 3-04-2019
	Page: 8 of 15
TEL (916) 920-2020 www.cyseng.com	

L:\Jobs\18029 Plexus - Cerner RX 2 Tower Module OPM\ACAD\S1.dwg Time:Mar04,2019-09:10am Login:cmachom DimScale:1 LTScale:6



PLAN VIEW

SIDE ELEV



SHEET TITLE: FRONT BRACKET ASSEMBLY DETAIL



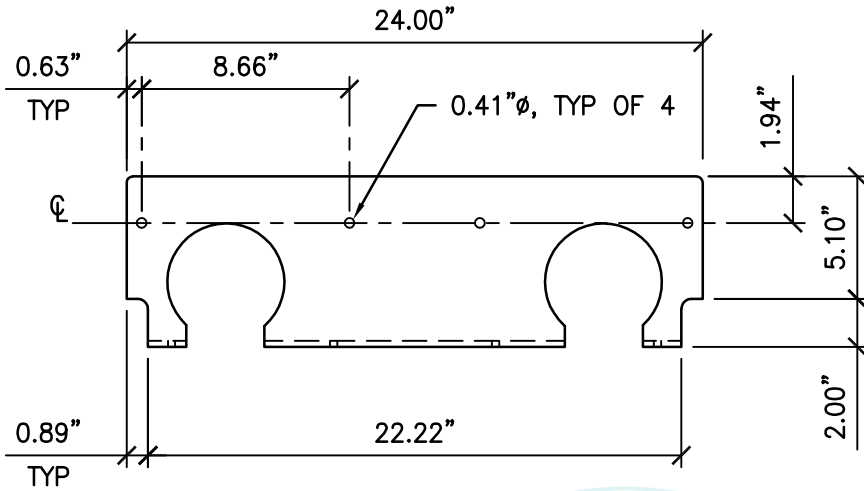
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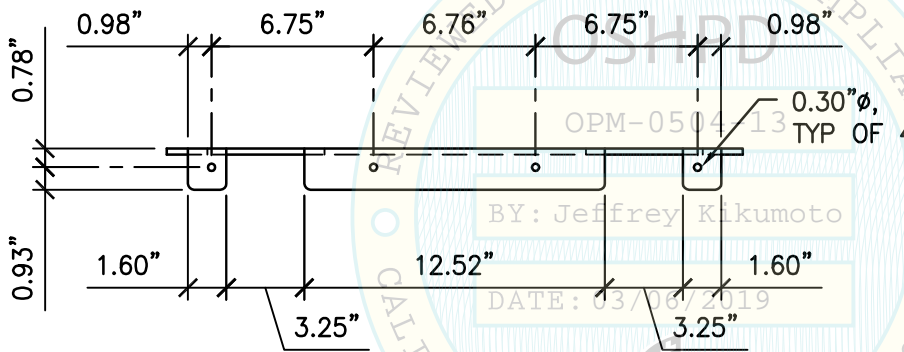
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Date:	3-04-2019
Page:	9 of 15

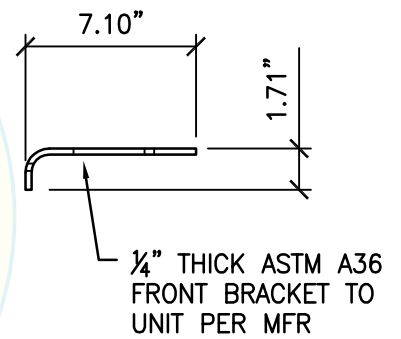
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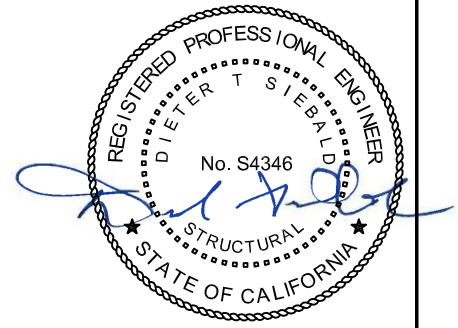
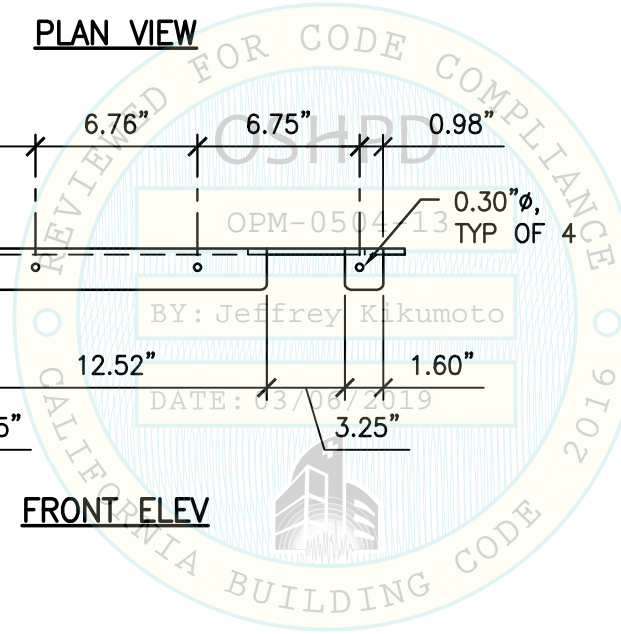
**PLAN VIEW**



**FRONT ELEV**



**SIDE ELEV**



SHEET TITLE: FRONT BRACKET "D" DETAIL



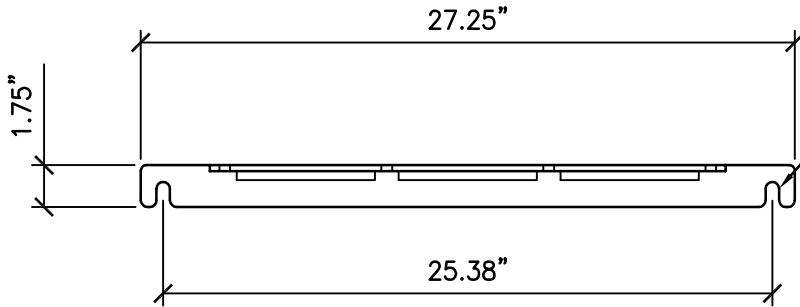
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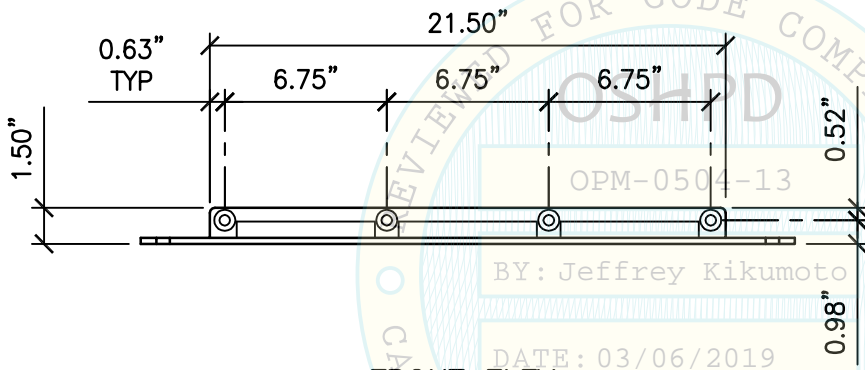
Job No:	18029
Date:	3-04-2019
Page:	10 of 15

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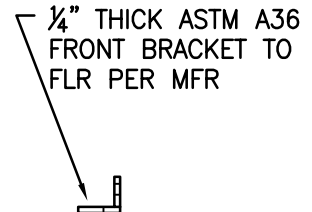


$\frac{9}{16}$ "  $\emptyset$  SHORT SLOTTED HOLE FOR SEISMIC ATTACHMENT TO SUPPORTING FLR, TYP OF 2

**PLAN VIEW**



**FRONT ELEV**



**SIDE ELEV**

**NOTES:**

1. FOR CASE 1 ATTACHMENT TO FLR, SEE PGS 12-14.
2. FOR CASE 2 ATTACHMENT TO FLR, SEE PG 15.



SHEET TITLE: FRONT BRACKET "E" DETAIL

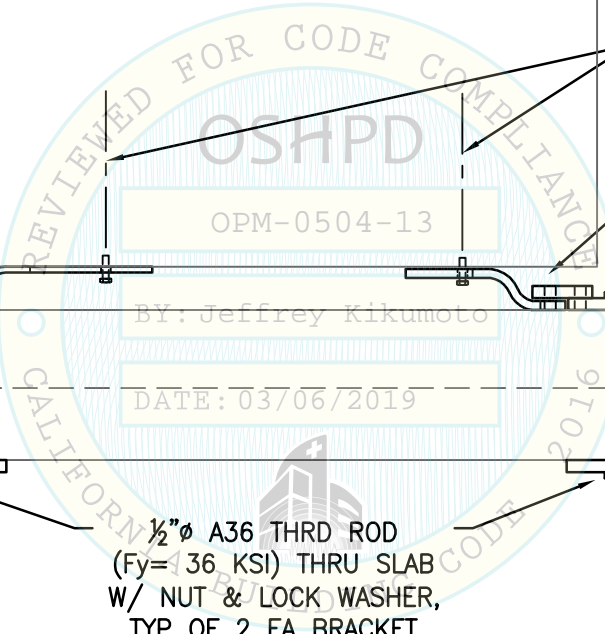
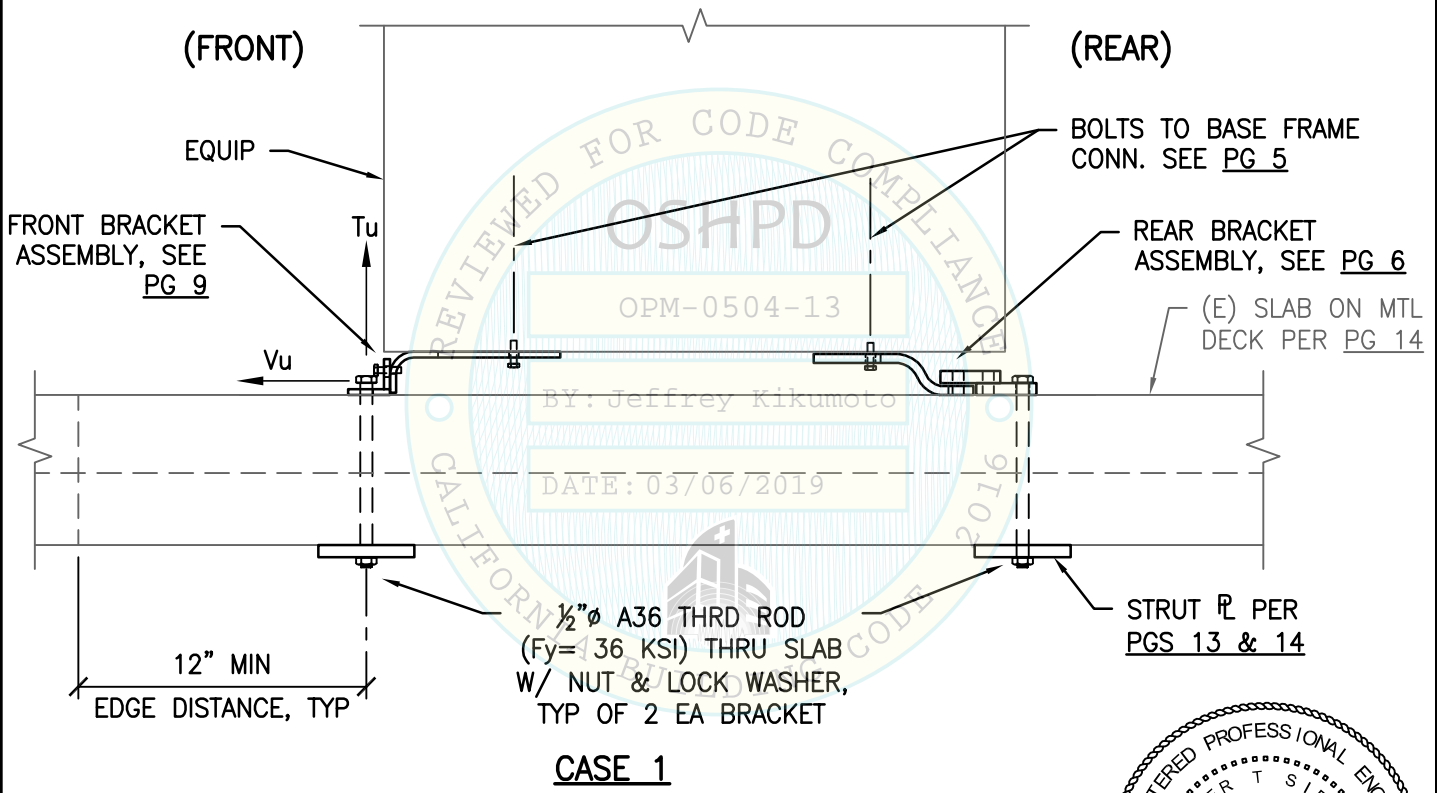
<p><b>CYS STRUCTURAL ENGINEERS, INC.</b> 2495 NATOMAS PARK DRIVE, SUITE 650 SACRAMENTO, CA 95833</p>	TEL (916) 920-2020 www.cyseng.com	Job No: 18029 Date: 3-04-2019 Page: 11 of 15
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	MAX ANCHOR FORCES IN LBS AT LRFD AT EA AB			
	FRONT BRACKET		REAR BRACKET	
	Tu	Vu	Tu	Vu
CASE 1 z/h ≤ 0.9 W/O Ω <sub>o</sub>	843	452	415	1039
CASE 1 z/h ≤ 0.9 W/ Ω <sub>o</sub>	N/A	678	N/A	1559

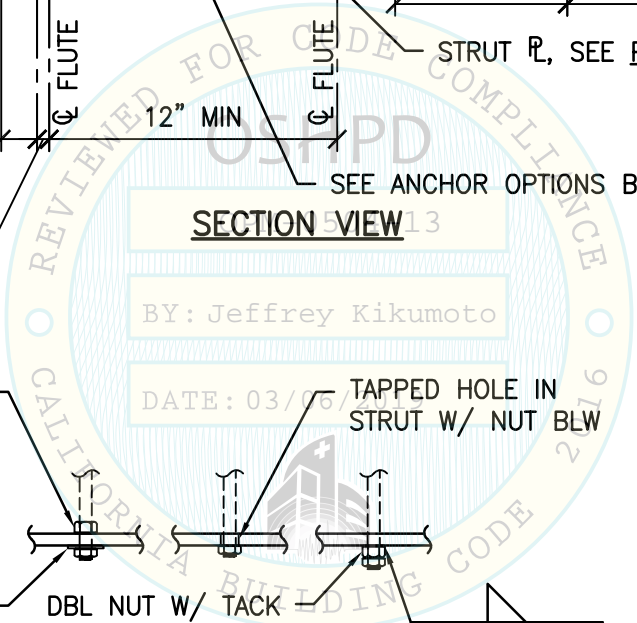
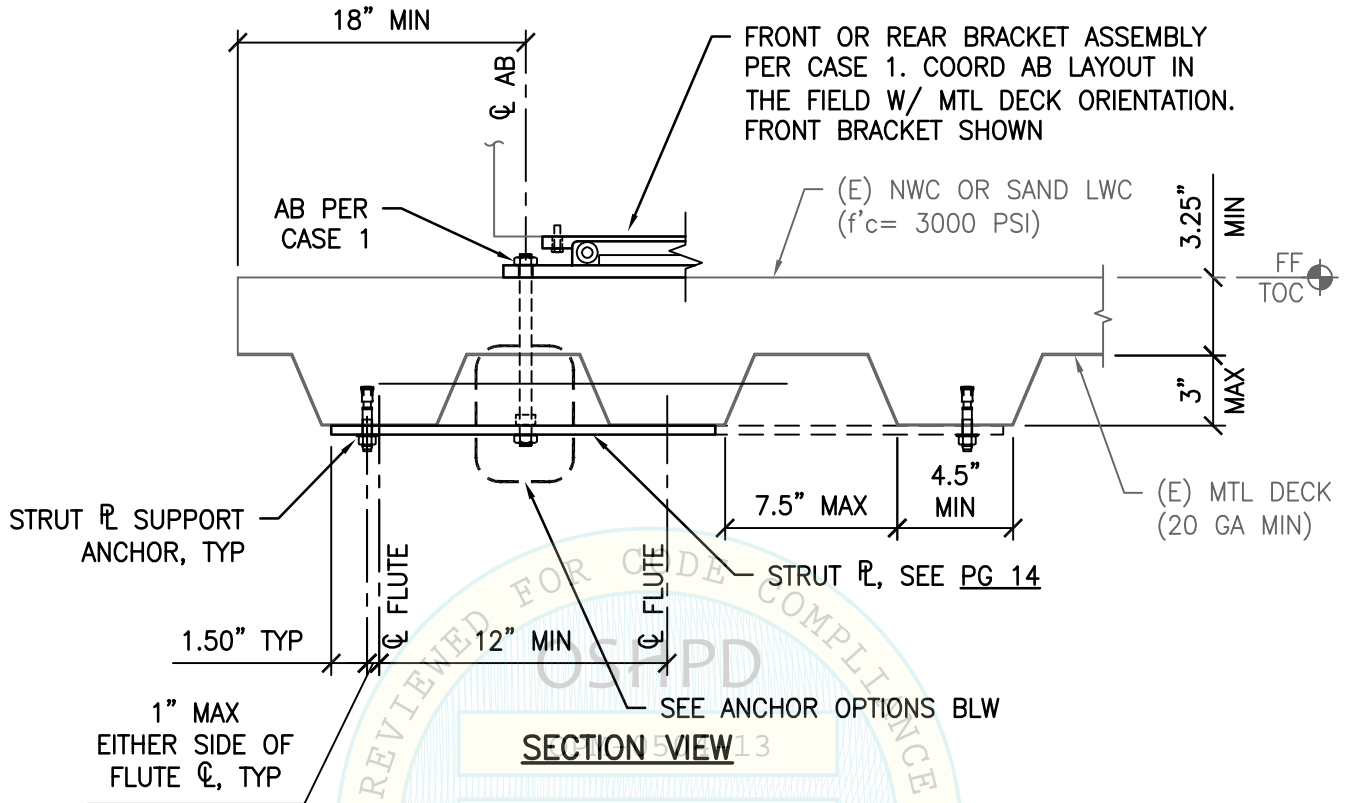
(Ω<sub>o</sub> = 1.5) OVERSTRENGTH FACTOR IS APPLIED TO SHEAR FORCE ONLY



SHEET TITLE: ATTACHMENT DETAIL TO  
CONCRETE FILL OVER METAL DECK (CASE 1)

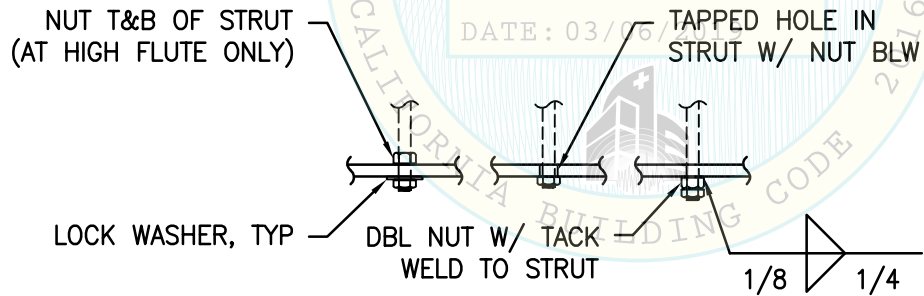
<p><b>CYS STRUCTURAL ENGINEERS, INC.</b> 2495 NATOMAS PARK DRIVE, SUITE 650 SACRAMENTO, CA 95833</p>	TEL (916) 920-2020 www.cyseng.com	Job No: 18029 Date: 3-04-2019 Page: 12 of 15
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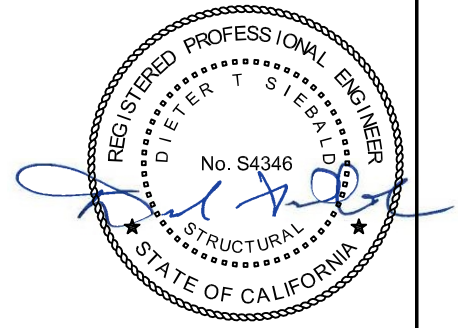


**SECTION VIEW**

BY: Jeffrey Kikumoto  
 DATE: 03/06/2019



**ANCHOR OPTIONS**



SHEET TITLE: STRUT PLATE DETAIL

<p><b>CYS STRUCTURAL ENGINEERS, INC.</b>                  2495 NATOMAS PARK DRIVE, SUITE 650                  SACRAMENTO, CA 95833</p>	TEL (916) 920-2020 www.cyseng.com	Job No: 18029 Date: 3-04-2019 Page: 13 of 15
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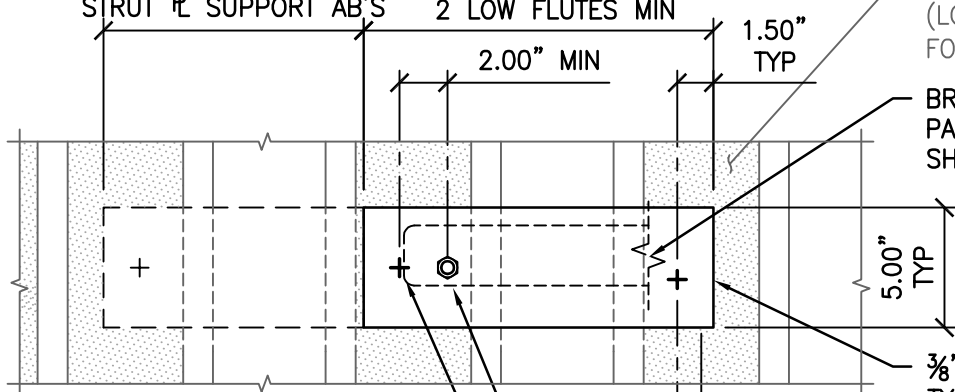
L:\Jobs\18029 Plexus - Cerner RX 2 Tower Module OPM\ACAD\S1.dwg Time:Mar04,2019-09:10am Login:cmachom DimScale:1 LTScale:6



EXTEND STRUT LENGTH TO NEXT ADJ LOW FLUTE IF AB'S ARE LESS THAN 2" FROM STRUT  $\bar{r}$  SUPPORT AB'S  
 LENGTH SHALL ENGAGE 2 LOW FLUTES MIN  
 2.00" MIN  
 1.50" TYP

BOTT OF (E) MTL DECK (LOW FLUTES SHADED FOR CLARITY)

BRACKET ASSEMBLY ABV. PARTIAL BRACKET LENGTH SHOWN



$\frac{3}{8}$ " STRUT  $\bar{r}$  (ASTM A36), TYP. EE OF BRACKET ASSEMBLY. FIELD VERIFY DECK ORIENTATION FOR COORD W/ AB LAYOUT

STRUT  $\bar{r}$  SUPPORT ANCHORS: HILTI KB-TZ  $\frac{3}{8}$ " $\phi$  X 2" EMBED CONC AB (ICC ESR-1917) 1 EE OF  $\bar{r}$ . (TORQUE TEST TO 25 FT-LBS), TYP

AB PER CASE 1

FLUTE  $\bar{c}$  1.00" MAX  
 EITHER SIDE OF FLUTE  $\bar{c}$ , TYP

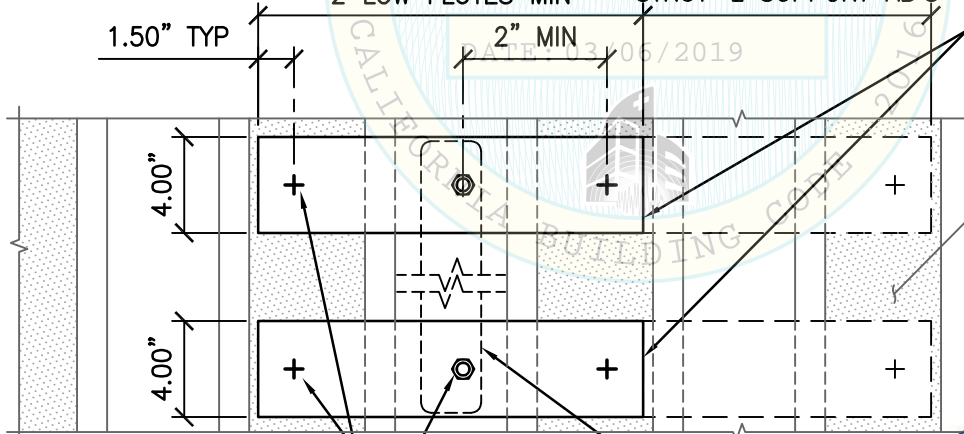
**PLAN VIEW (NTS)**

ANCHORS PERP TO FLUTES

EXTEND STRUT LENGTH TO NEXT ADJ LOW FLUTE IF AB'S ARE LESS THAN 2" FROM STRUT  $\bar{r}$  SUPPORT AB'S  
 LENGTH SHALL ENGAGE 2 LOW FLUTES MIN  
 2" MIN  
 1.50" TYP

$\frac{3}{8}$ " STRUT  $\bar{r}$  (ASTM A36). FIELD VERIFY DECK ORIENTATION FOR COORD W/ AB LAYOUT

BOTT OF MTL DECK (LOW FLUTES SHADED FOR CLARITY)



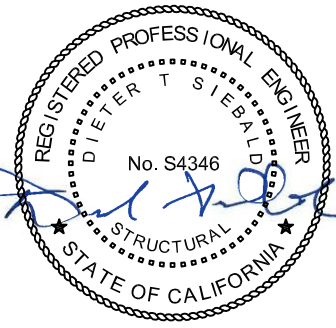
STRUT  $\bar{r}$  SUPPORT ANCHORS: HILTI KB-TZ  $\frac{3}{8}$ " $\phi$  X 2" EMBED CONC AB (ICC ESR-1917) 1 EE OF  $\bar{r}$ . (TORQUE TEST TO 25 FT-LBS), TYP

AB PER CASE 1

BRACKET ASSEMBLY ABV

**PLAN VIEW (NTS)**

ANCHORS PARALLEL TO FLUTES



SHEET TITLE: STRUT PLATE DETAIL



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 Date: 3-04-2019  
 Page: 14 of 15

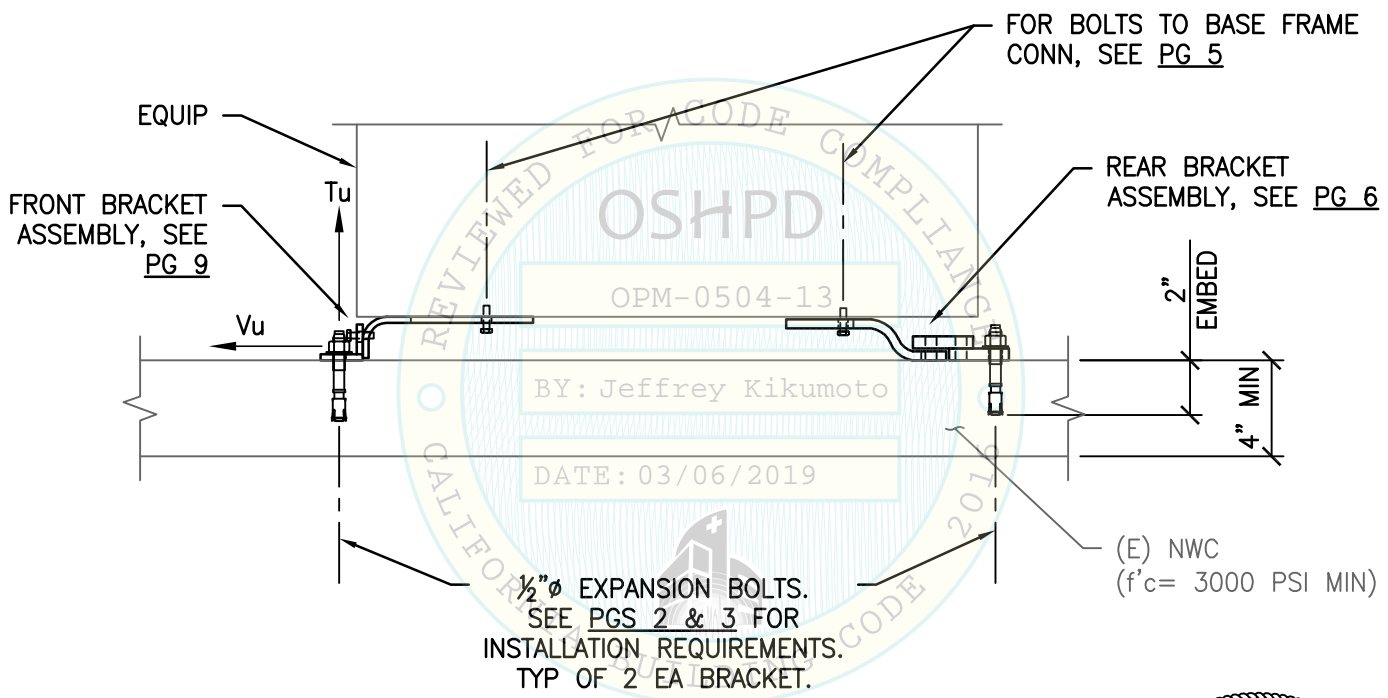
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MAX ANCHOR FORCES AT LRFD AT EA AB				
CASE 2 z/h=0	FRONT BRACKET		REAR BRACKET	
	Tu	Vu	Tu	Vu
	425	272	171	626

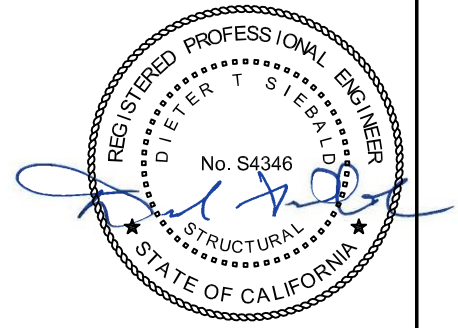
INCLUDES OVERSTRENGTH FACTOR ( $\Omega_o$ )



$\frac{1}{2}$ "  $\phi$  EXPANSION BOLTS.  
SEE PGS 2 & 3 FOR  
INSTALLATION REQUIREMENTS.  
TYP OF 2 EA BRACKET.

(E) NWC  
( $f'_c = 3000$  PSI MIN)

**CASE 2**  
( $f'_c = 3000$  PSI)



SHEET TITLE: ATTACHMENT DETAIL  
TO 4" SLAB ON GRADE (CASE 2)

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