



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OPM-0297-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: ☐ New ☐ Renewal ☒ Update to Pre-CBC 2013 OPA Number: 1810

Manufacturer Information

Manufacturer: BD Life Sciences – Diagnostic Systems

Manufacturer's Technical Representative: David Lentz

Mailing Address: 7 Loveton Circle – mc 622, Sparks, MD 21152

Telephone: 410-316-4779 Email: Dave.lentz@bd.com

Product Information

Product Name: BD BACTEC™ FX

Product Type: Blood Analyzer Unit mounted on stand or stacked on second unit

Product Model Number: BACTEC™ FX

General Description: Blood Culture Instrumentation

Applicant Information

Applicant Company Name: BD Life Sciences – Diagnostic Systems

Contact Person: David Lentz

Mailing Address: 7 Loveton Circle – mc 622, Sparks, MD 21152

Telephone: 410-316-4779 Email: Dave.lentz@bd.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: 01/04/2016

Title: Director, R&D Hardware
Engineering

Company Name: BD Life Sciences – Diagnostic Systems

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

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY
OSH-FD-700 (REV 03/30/15)



OSHPD

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**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
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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, Sacramento, CA 95833

Telephone: 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 1950-10
- ☐ 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: 02-29-2016

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"



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- NOTES:**
1. THESE DRAWINGS ARE PREPARED FOR BD LIFE SCIENCES – DIAGNOSTIC SYSTEMS, SPARKS, MARYLAND.
 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, STAND & 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



CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

TEL (916) 920-2020
www.cyseng.com

Job No:	15117.02
Date:	2-22-2016
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GENERAL NOTES:

1. 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 CBC 2013.
2. IT IS THE RESPONSIBILITY OF THE SEOR FOR A SITE SPECIFIC PROJECT TO VERIFY:
 - A. THE ADEQUACY OF THE NEW OR EXISTING STRUCTURE TO RESIST THE FORCES & WEIGHT SPECIFIED FOR EACH EQUIPMENT IN ADDITION TO ALL OTHER LOADS. PROVIDE & DESIGN SUPPLEMENTARY MEMBERS AS REQUIRED.
 - B. THAT THE FLOOR ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS.
 - C. THAT THE FLOOR ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY NEW OR EXISTING ANCHORS. THE SPACING SHOWN IN THE TEST LOADS TABLE ON PAGE 3 IS THE REQUIRED MINIMUM SPACING OF THE GIVEN DIAMETER ANCHORS. THE REQUIRED SPACING FROM ANCHORS OF OTHER DIAMETERS & EMBEDMENTS MAY VARY & SHALL BE EVALUATED BY THE SEOR.
 - D. THAT THE INSTALLATION IS IN CONFORMANCE WITH THE CBC 2013 & WITH THE DETAILS SHOWN IN THIS PRE-APPROVAL.
 - E. THAT THE ACTUAL EQUIPMENT'S WEIGHT, CENTER OF GRAVITY (CG) LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, & THE MATERIAL & GAGE OF THE EQUIPMENT WHERE ATTACHMENTS ARE MADE, AGREE WITH THE INFORMATION SHOWN ON THE PRE-APPROVAL DOCUMENTS.
3. EXPANSION ANCHORS INSTALLED IN NORMAL WEIGHT OR SAND-LIGHTWEIGHT CONCRETE SHALL BE CARBON STEEL HILTI KB-TZ EXPANSION ANCHORS COMPLYING WITH ESR-1917 REISSUED MAY 2015.
 - A. INSTALLATION: INSTALL THE EXPANSION ANCHORS IN ACCORDANCE WITH THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR & THE PARAMETERS GIVEN IN THE TABLE ON PAGE 3.
 - B. JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOB SITE TESTING IN ACCORDANCE WITH THE TEST LOAD TABLE PROVIDED IN THIS DOCUMENT. TEST 50% OF THE INSTALLED ANCHORS. THE TEST LOAD MAY BE APPLIED BY ANY METHOD THAT WILL EFFECTIVELY MEASURE THE TORQUE IN THE ANCHOR SUCH AS CALIBRATED TORQUE WRENCH METHOD. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE INSPECTOR OF RECORD (IOR). 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 EQUIPMENT INSTALLATION. ALSO REFER TO CBC 1913A.7 "FIELD 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 (½) TURN OF THE NUT.



SHEET TITLE: GENERAL NOTES



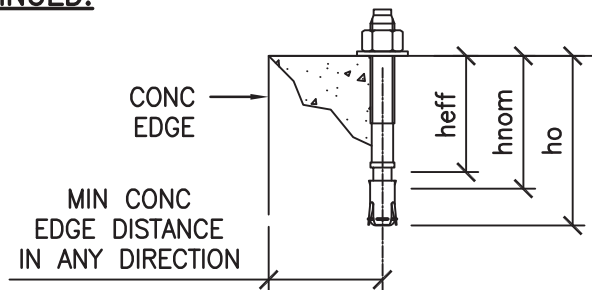
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GENERAL NOTES CONTINUED:



ANCHOR DIA (INCH)	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) heff	HOLE DEPTH (INCH) ho	MIN CONC THICKNESS (INCH) h	MIN CONC EDGE DISTANCE (INCH)	MIN ANCHOR SPACING (INCH)	TEST TORQUE (FT-LBS)	CONDITION OF ANCHORAGE
1/2	3 5/8	3 1/4	4	6	12	5.66	40	CASE 2
1/2	2 3/8	2	2 5/8	4	12	5.66	40	CASE 3

4. BOLTS THROUGH CONCRETE ON METAL DECK:

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

DATE: 02/29/2016



SHEET TITLE: GENERAL NOTES (CONTINUED)



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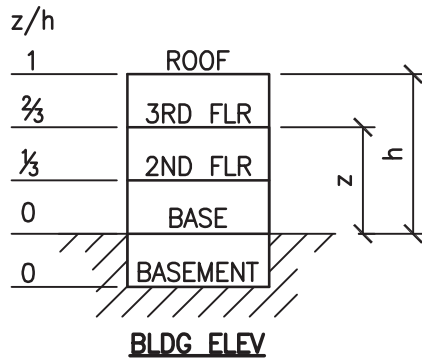
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GENERAL NOTES CONTINUED:

5. THREE (3) CASES OF ATTACHMENT ARE SPECIFIED AND PRESENTED IN THIS PRE-APPROVAL:



CASE 1: ATTACHMENT DETAILS LOCATED AT UPPER FLOORS ABOVE THE BASE OF A BLDG. THE FLOORS ARE ASSUMED TO BE BUILT OF A MIN 3/4" SLWC TOPPING OVER MIN 20 GA MTL DECK ($f'_c = 3000$ PSI, MIN).

FOR CASE 1A (STAND): $z/h \leq 1$ & $S_{ps} \leq 2.50$
FOR CASE 1B (STACKED): $z/h \leq 1$ & $S_{ps} \leq 1.90$
OR $z/h \leq 0.75$ & $S_{ps} \leq 2.20$
OR $z/h \leq 0.60$ & $S_{ps} \leq 2.50$

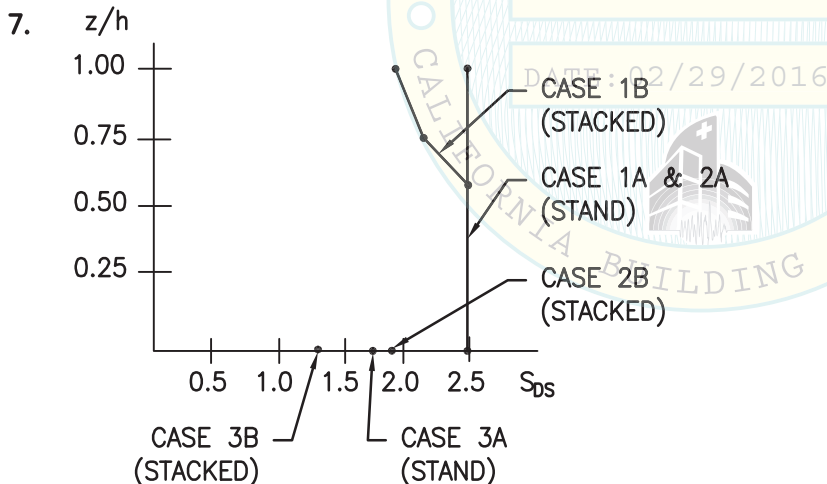
CASE 2: ATTACHMENT DETAILS LOCATED AT OR BELOW THE BASE OF A BLDG. THE FLOORS ARE ASSUMED TO BE BUILT OF A MIN 6" NWC SLAB ($f'_c = 3000$ PSI, MIN).

FOR CASE 2A (STAND): $z/h = 0$ & $S_{ps} \leq 2.50$
FOR CASE 2B (STACKED): $z/h = 0$ & $S_{ps} \leq 1.90$

CASE 3: ATTACHMENT DETAILS LOCATED AT OR BELOW THE BASE OF A BLDG. THE FLOORS ARE ASSUMED TO BE BUILT OF A MIN 4" NWC SLAB ($f'_c = 3000$ PSI, MIN).

FOR CASE 3A (STAND): $z/h = 0$ & $S_{ps} \leq 1.75$
FOR CASE 3B (STACKED): $z/h = 0$ & $S_{ps} \leq 1.30$

6. THIS PRE-APPROVAL MAY BE USED ONLY AT GEOGRAPHICAL LOCATIONS IN THE STATE OF CALIFORNIA WHERE S_{ps} IS LESS THAN OR EQUAL TO THE VALUES NOTED ABOVE.



SHEET TITLE: GENERAL NOTES (CONTINUED)



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ABBREVIATIONS:

@	AT	f'c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE	OPG	OPENING
AB	ANCHOR BOLT			PERP	PERPENDICULAR
ABV	ABOVE	FLR	FLOOR	PG(S)	PAGE(S)
ADJ	ADJACENT	FT (')	FOOT/FEET	PL	PLATE
ALUM	ALUMINUM	F _p	HORIZONTAL SEISMIC FORCE PER ASCE 7-10 SEISMIC FORCE REQUIREMENTS	PSI	POUNDS PER SQUARE INCH
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS			RECT	RECTANGULAR
		F _y	SPECIFIED MINIMUM YIELD STRESS OF STEEL	SEOR	STRUCTURAL ENGINEER OF RECORD
BLDG	BUILDING	GA	GAUGE	SLWC	SAND-LIGHTWEIGHT CONCRETE
BLW	BELOW	ICC	INTERNATIONAL CODE COUNCIL	SS	STAINLESS STEEL
BOTT	BOTTOM			STL	STEEL
CBC	CALIFORNIA BUILDING CODE	IN (")	INCH	THRD	THREAD OR THREADED
CG	CENTER OF GRAVITY	KSI	KIPS PER SQUARE INCH	Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
CL	CENTERLINE	L	ANGLE	TYP	TYPICAL
CONC	CONCRETE	LBS	POUNDS	T&B	TOP & BOTTOM
COORD	COORDINATE	LRFD	LOAD AND RESISTANCE FACTOR DESIGN	Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
CRS	COLD ROLLED STEEL	MAX	MAXIMUM	W/	WITH
DIA (ø)	DIAMETER	MFR	MANUFACTURER	Wp	OPERATING WEIGHT
(E)	EXISTING CONDITION	MIN	MINIMUM	WT	WEIGHT
EA	EACH	MTL	METAL		
EE	EACH END	NO. (#)	NUMBER OR POUNDS		
ELEV	ELEVATION	NWC	NORMAL WEIGHT CONCRETE		
EQ	EQUAL				
EQUIP	EQUIPMENT				
ES	EACH SIDE				

BY: William Staehlin

DATE: 02/29/2016



SHEET TITLE: ABBREVIATIONS



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SYSTEM OVERVIEW & DESIGN CRITERIA:

1. TWO (2) INSTALLATION CONFIGURATIONS OF THE BACTEC FX INSTRUMENT ARE COVERED BY THIS OPM, THE STAND CONFIGURATION AND THE STACKED CONFIGURATION. PLEASE NOTE, THE MAX S_{DS} AND MAX z/h RATIO IS DIFFERENT FOR EACH CONFIGURATION DUE TO THE DIFFERENCE IN TOTAL EQUIPMENT WEIGHT.

2. SUPPORT & ATTACHMENT DESIGN IS PER 2013 CBC AT LRFD LEVEL FORCES.

OTHER MECHANICAL OR ELECTRICAL COMPONENTS PER TABLE 13.6-1 OF ASCE 7-10 SUPPLEMENT #1:

$$a_p = 1.0 \quad R_p = 1.5 \quad I_p = 1.5 \quad \Omega_0 = 1.5 \text{ (FOR CONC ANCHORS ONLY)}$$

W_p AS NOTED ON DRAWINGS ON PGS 7 & 8

UPPER FLOORS ABOVE THE BASE OF BUILDING, $z/h = 1$

$$\begin{array}{ll} \text{CASE 1A:} & S_{DS} = 2.50 \quad F_p = 3.00 W_p \\ \text{CASE 1B:} & S_{DS} = 1.90 \quad F_p = 2.28 W_p \end{array}$$

OTHER POSSIBLE z/h AND S_{DS} COMBINATIONS FOR CASE 1B:

$$\begin{array}{ll} z/h = 0.75 & S_{DS} = 2.20 \quad F_p = 2.20 W_p \\ z/h = 0.60 & S_{DS} = 2.50 \quad F_p = 2.20 W_p \end{array}$$

FLOORS AT OR BELOW THE BASE OF BUILDING, $z/h = 0$

$$\begin{array}{ll} \text{CASE 2A:} & S_{DS} = 2.50 \quad F_p = 1.13 W_p \\ \text{CASE 2B:} & S_{DS} = 1.90 \quad F_p = 0.86 W_p \\ \text{CASE 3A:} & S_{DS} = 1.75 \quad F_p = 0.79 W_p \\ \text{CASE 3B:} & S_{DS} = 1.30 \quad F_p = 0.59 W_p \end{array}$$

LOAD COMBINATIONS

$$\begin{array}{l} (0.9 - 0.2 S_{DS}) D - \Omega_0 F_p \text{ (FOR MAXIMUM TENSION)} \\ (1.2 + 0.2 S_{DS}) D + \Omega_0 F_p \text{ (FOR MAXIMUM COMPRESSION)} \end{array}$$



SHEET TITLE: SYSTEM OVERVIEW & DESIGN CRITERIA

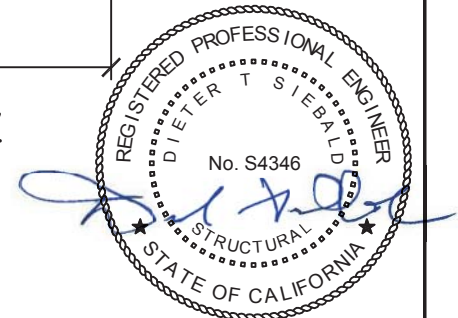


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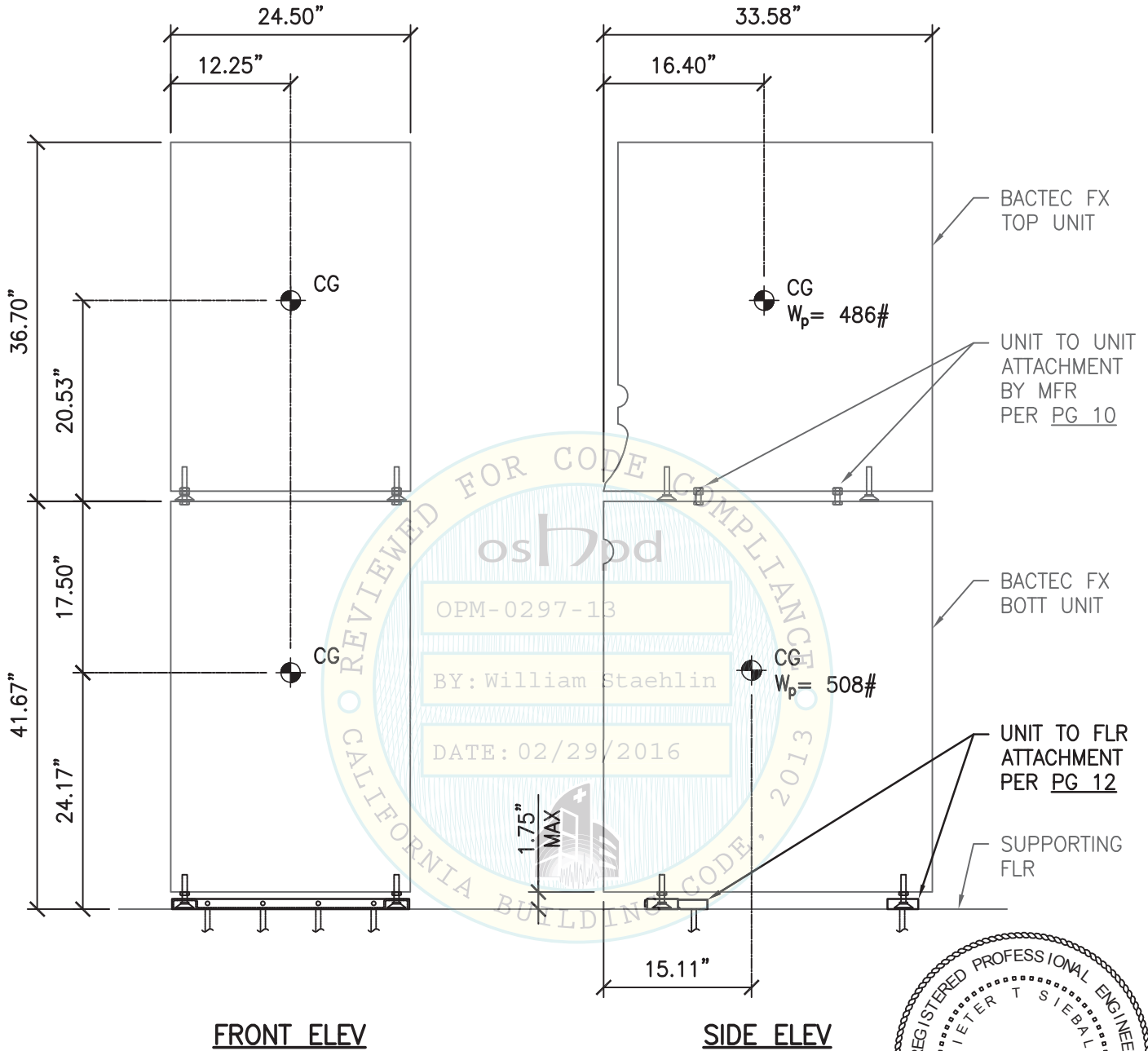
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BD BACTEC™ FX



SHEET TITLE: STACKED CONFIGURATION
ELEVATIONS



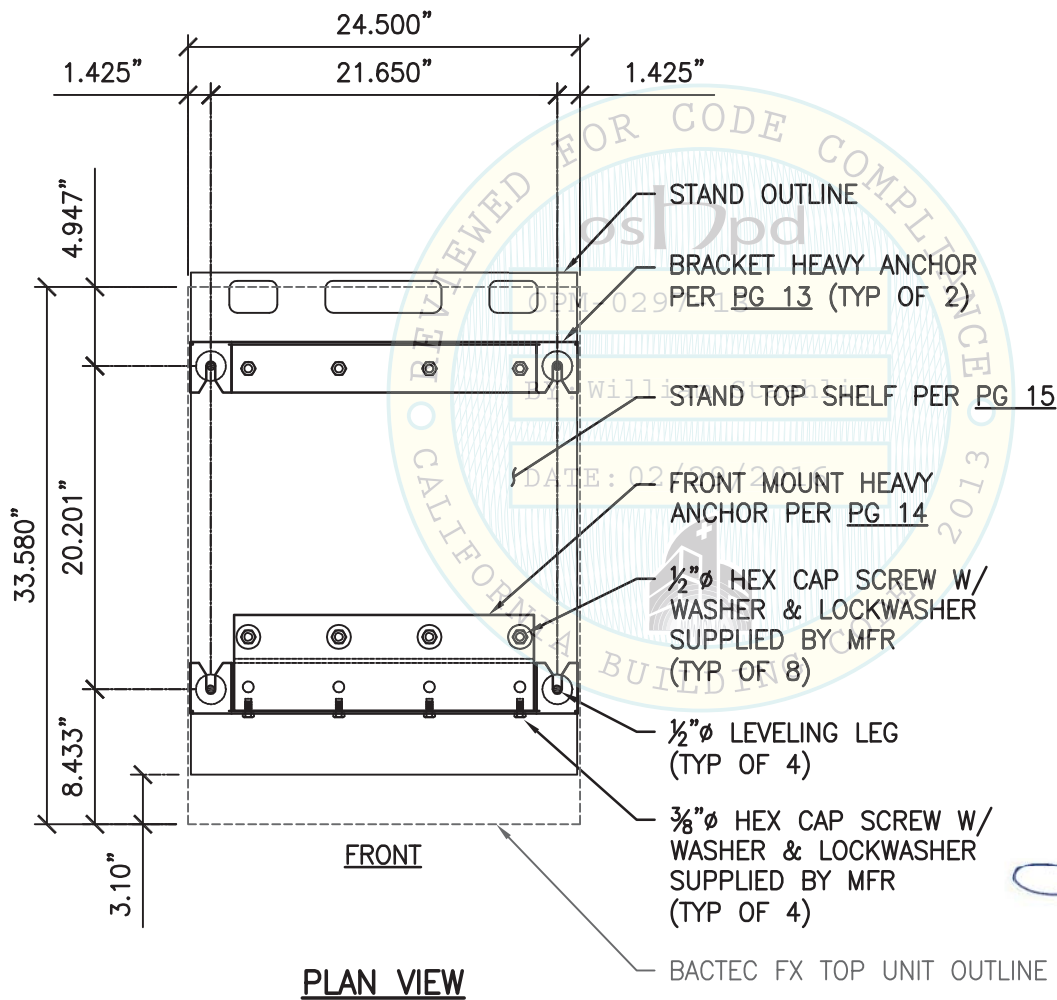
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SHEET TITLE: ATTACHMENT PLAN
UNIT TO STAND



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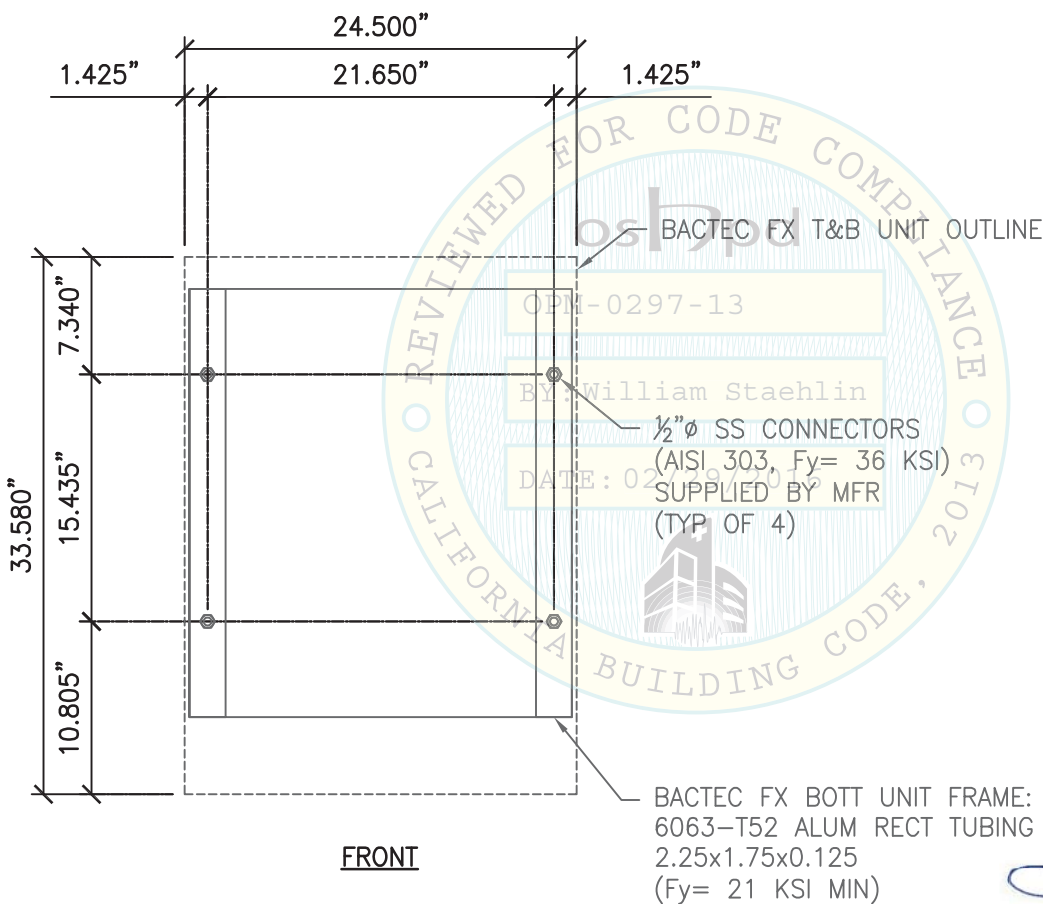
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BD Life Sciences - Diagnostic Systems
BD BACTEC™ FX



NOTE:
FOR REFERENCE ONLY.
NOT PART OF OPM.



PLAN VIEW



SHEET TITLE: ATTACHMENT PLAN
UNIT TO UNIT



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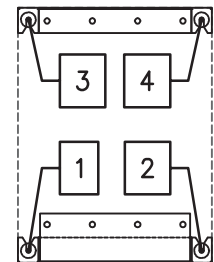
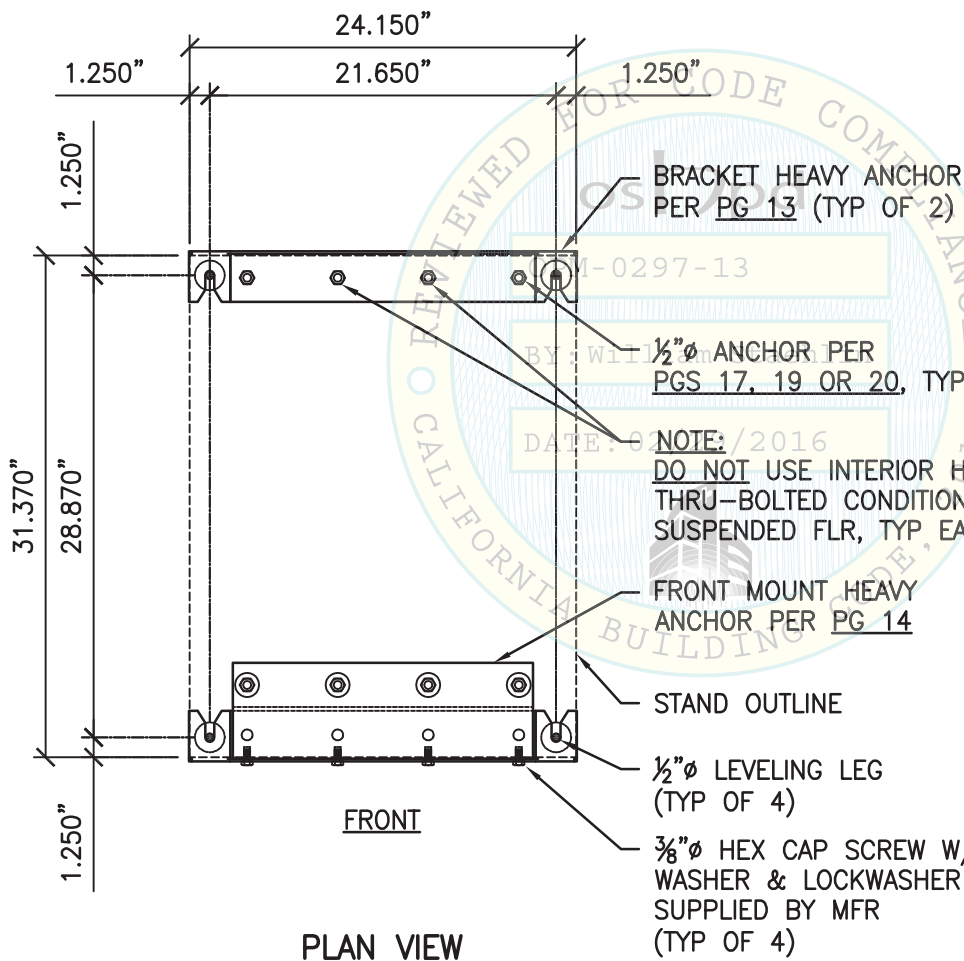
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MAX LRFD FORCES AT LEVELING LEGS¹ (LBS)

	FRONT BRACKET				REAR BRACKET			
	LEG 1		LEG 2		LEG 3		LEG 4	
	T_u	$\Omega_o V_{ux}$	T_u	$\Omega_o V_{ux}$	T_u	$\Omega_o V_{ux}$	T_u	$\Omega_o V_{ux}$
CASE 1A	1480	180	1240	310	0	270	4030	1020
	$\Omega_o T_u$	$\Omega_o V_{ux}$	$\Omega_o T_u$	$\Omega_o V_{ux}$	$\Omega_o T_u$	$\Omega_o V_{ux}$	$\Omega_o T_u$	$\Omega_o V_{ux}$
CASE 2A	800	70	660	120	0	100	2230	380
CASE 3A	500	50	410	80	0	70	1520	270

1. ECCENTRICITY & PRYING ACTION MUST BE CONSIDERED BASED ON THE BRACKET CONFIGURATION.
2. OVERSTRENGTH FACTOR (Ω_o) INCLUDED WHERE NOTED.



LEG KEY PLAN

NOTE:
SEE PG 7 FOR CG
LOCATION & WT.



SHEET TITLE: ATTACHMENT PLAN
STAND TO FLOOR



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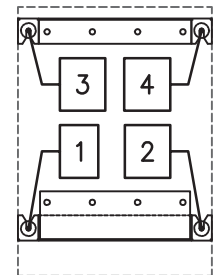
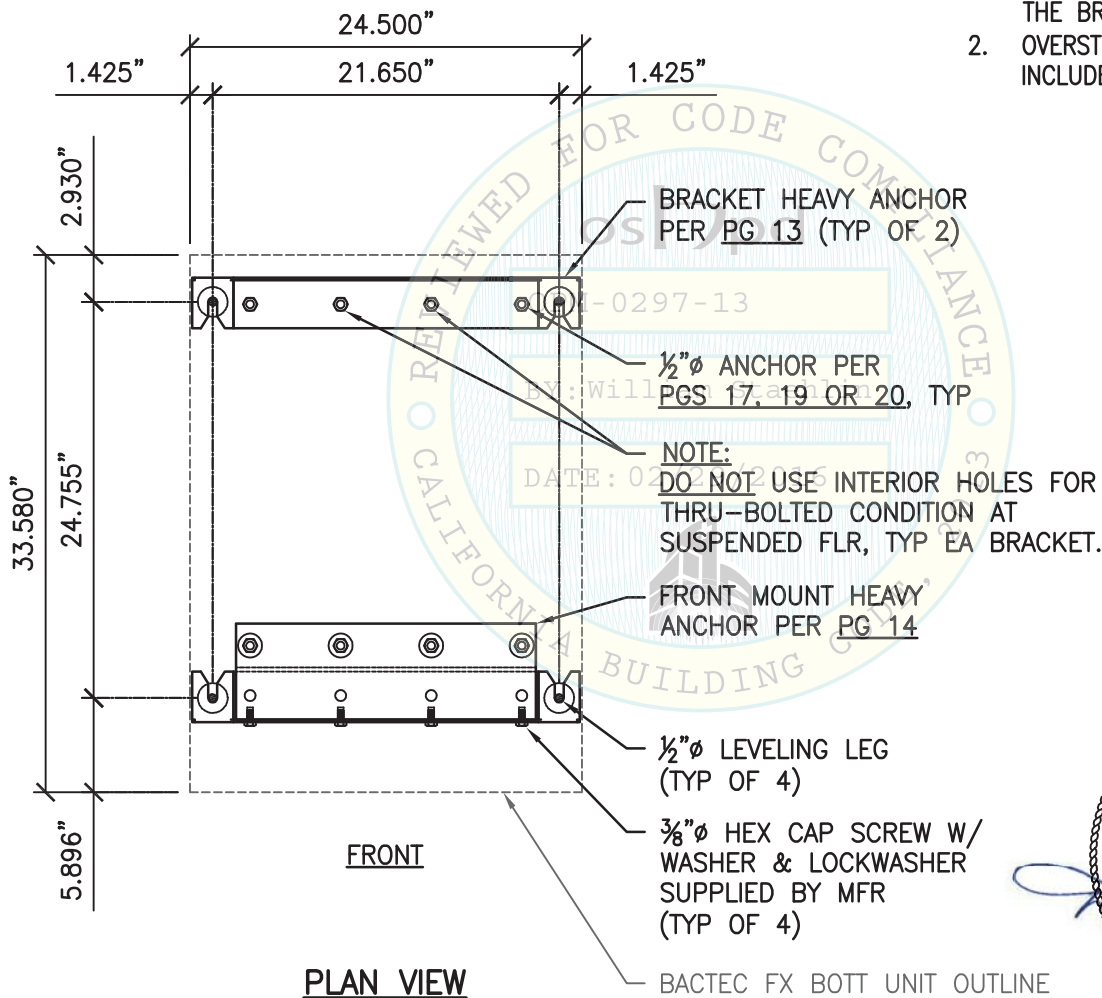
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	MAX LRFD FORCES AT LEVELING LEGS ¹ (LBS)							
	FRONT BRACKET				REAR BRACKET			
	LEG 1		LEG 2		LEG 3		LEG 4	
	T _u	Ω _o V _{ux}	T _u	Ω _o V _{ux}	T _u	Ω _o V _{ux}	T _u	Ω _o V _{ux}
CASE 1B	2470	290	1130	220	2720	730	0	980
	Ω _o T _u	Ω _o V _{ux}	Ω _o T _u	Ω _o V _{ux}	Ω _o T _u	Ω _o V _{ux}	Ω _o T _u	Ω _o V _{ux}
CASE 2B	1320	110	570	80	1490	280	0	370
CASE 3B	820	80	300	60	960	190	0	250

1. ECCENTRICITY & PRYING ACTION MUST BE CONSIDERED BASED ON THE BRACKET CONFIGURATION.
2. OVERSTRENGTH FACTOR (Ω_o) INCLUDED WHERE NOTED.



LEG KEY PLAN

NOTE:
SEE PG 8 FOR CG
LOCATION & WT.



SHEET TITLE: ATTACHMENT PLAN
UNIT TO FLOOR

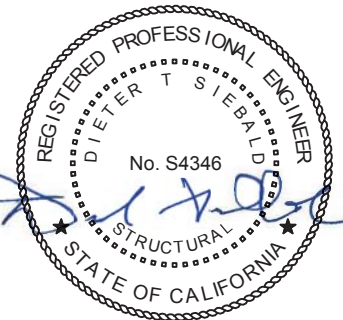
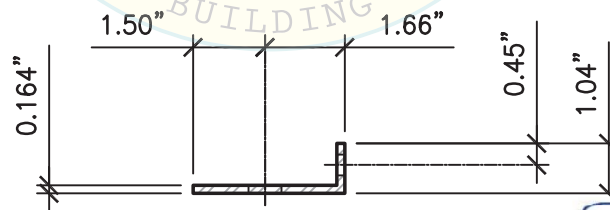
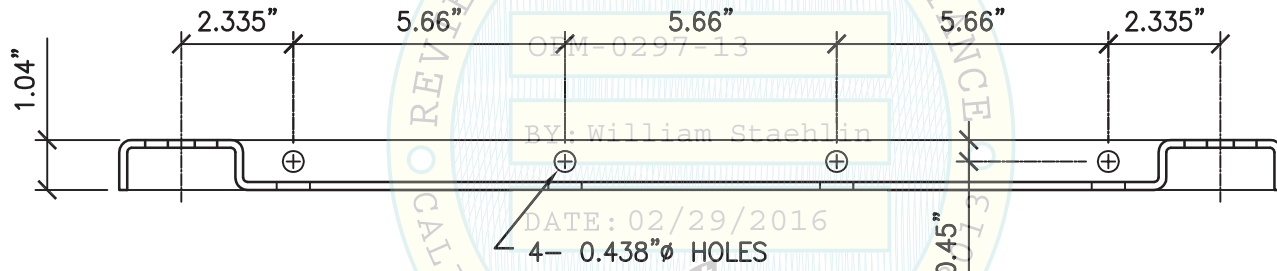
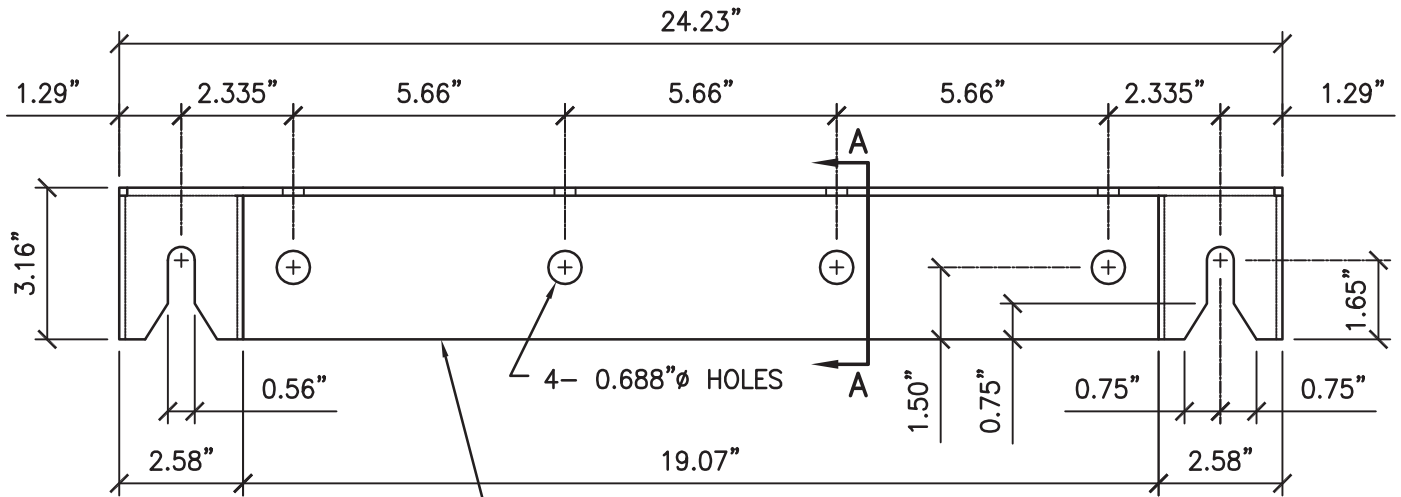


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SHEET TITLE: BRACKET HEAVY ANCHOR DETAIL

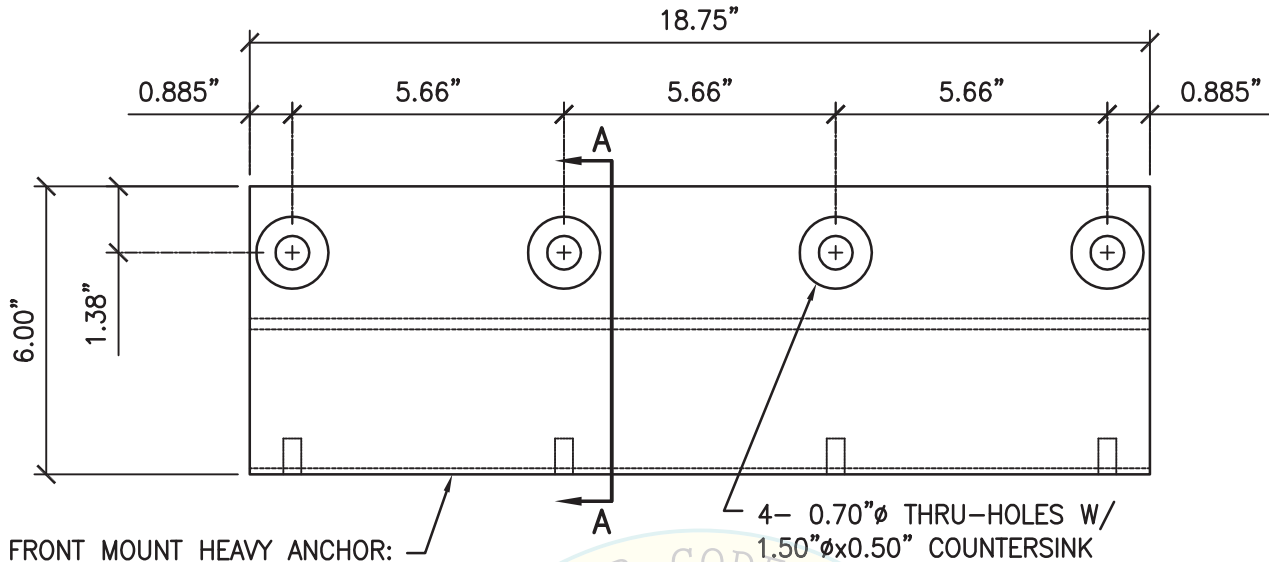


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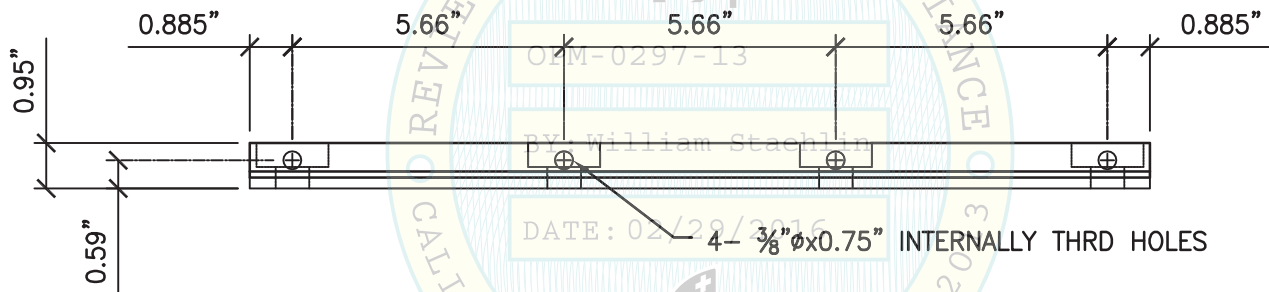
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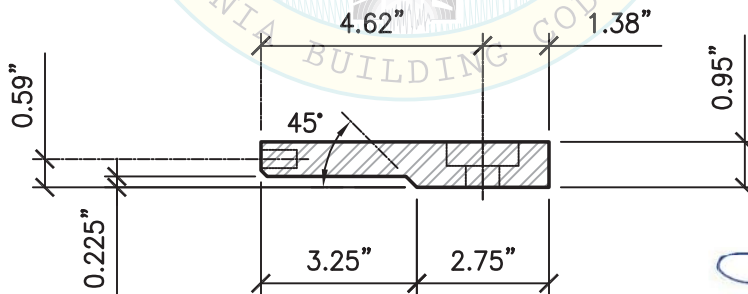


FRONT MOUNT HEAVY ANCHOR:
HOT ROLLED STL ASTM A36
($F_y = 36$ KSI MIN)

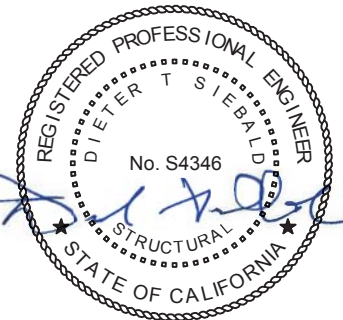
PLAN VIEW



ELEVATION



SECTION A-A



SHEET TITLE: FRONT MOUNT HEAVY ANCHOR DETAIL

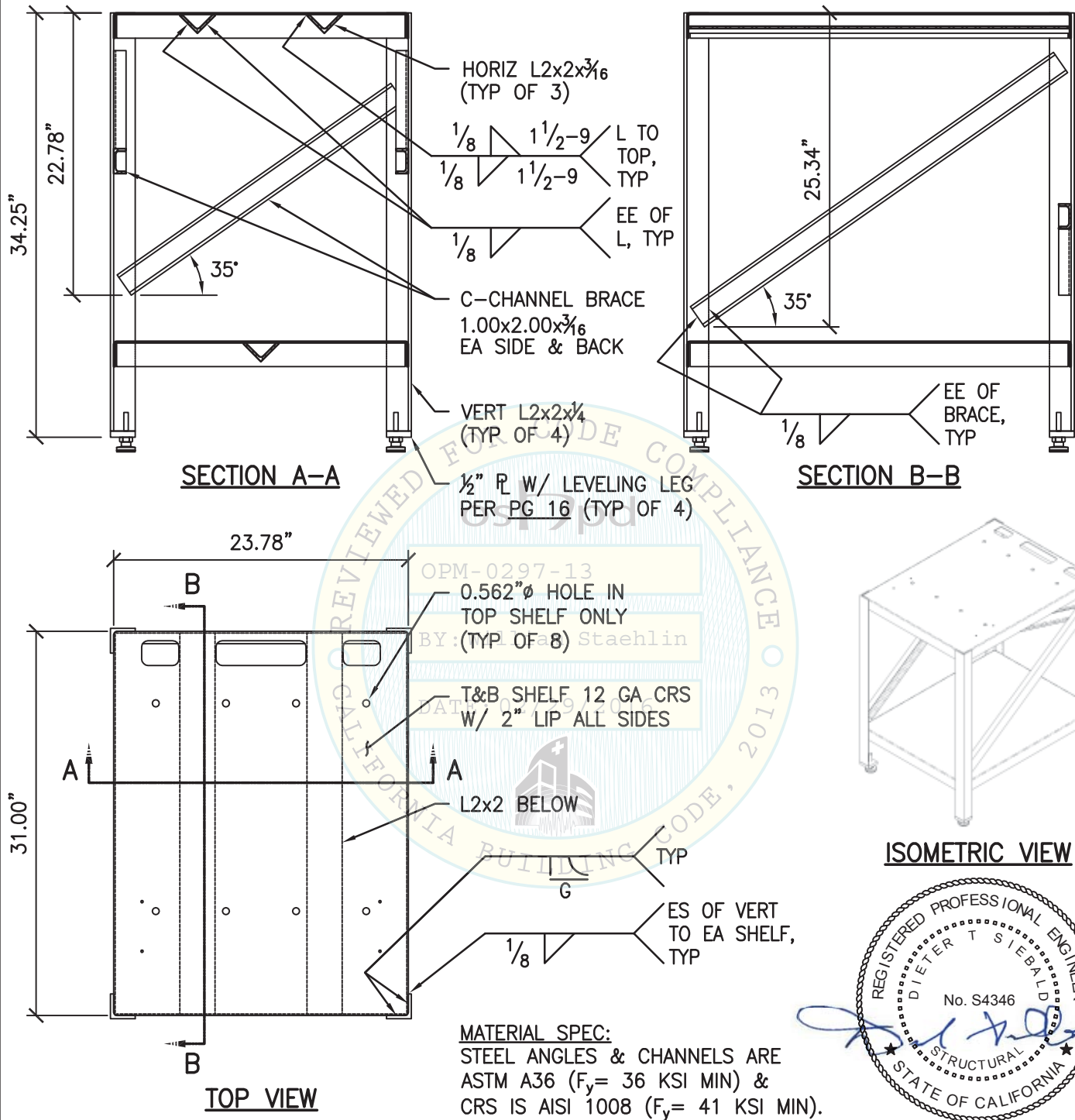


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SHEET TITLE: STAND ASSEMBLY DETAIL



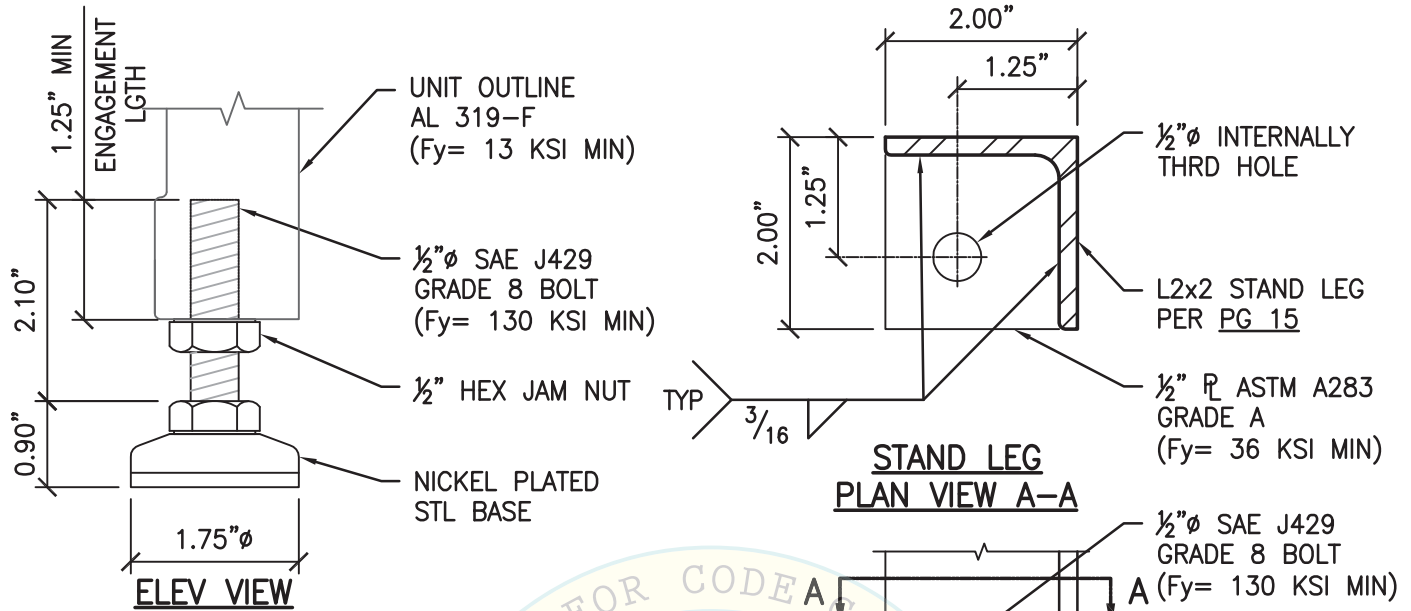
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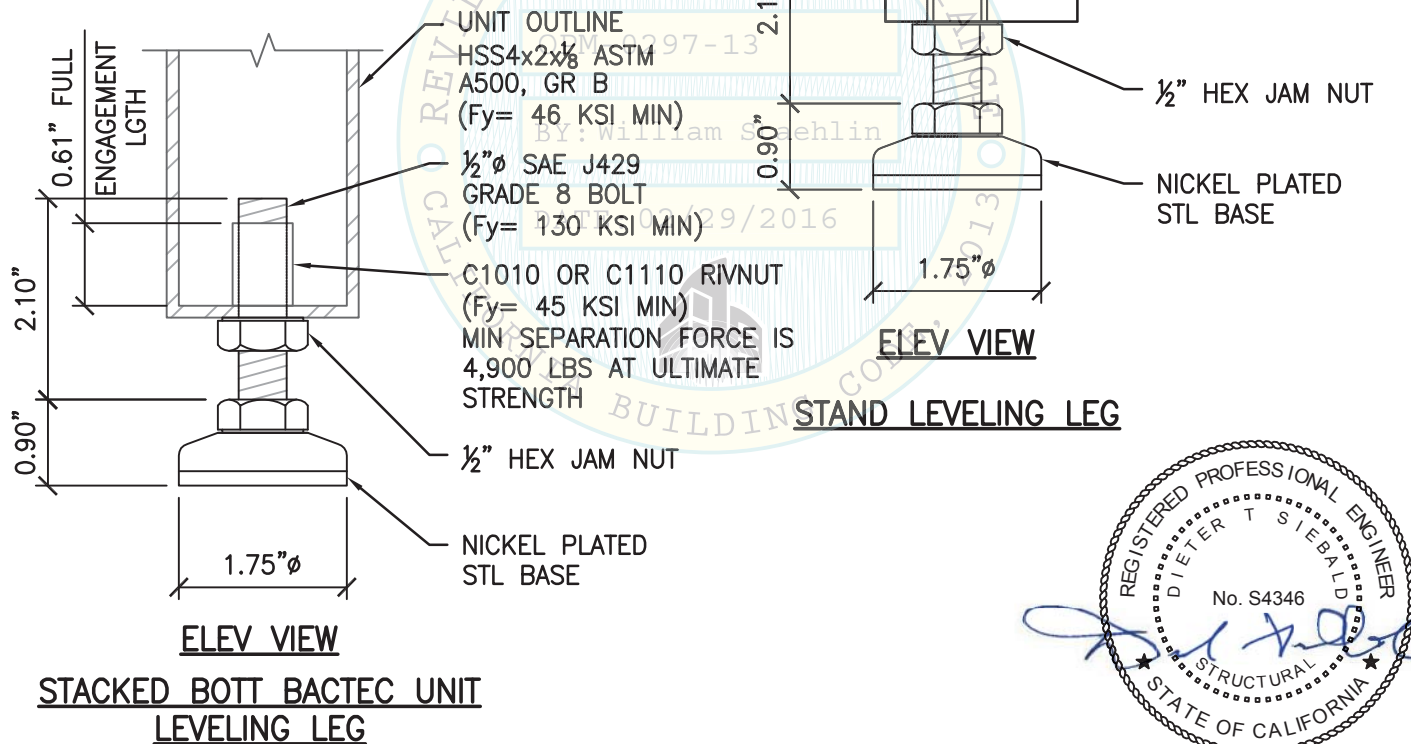
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TOP BACTEC UNIT LEVELING LEG



SHEET TITLE: LEVELING LEG DETAILS



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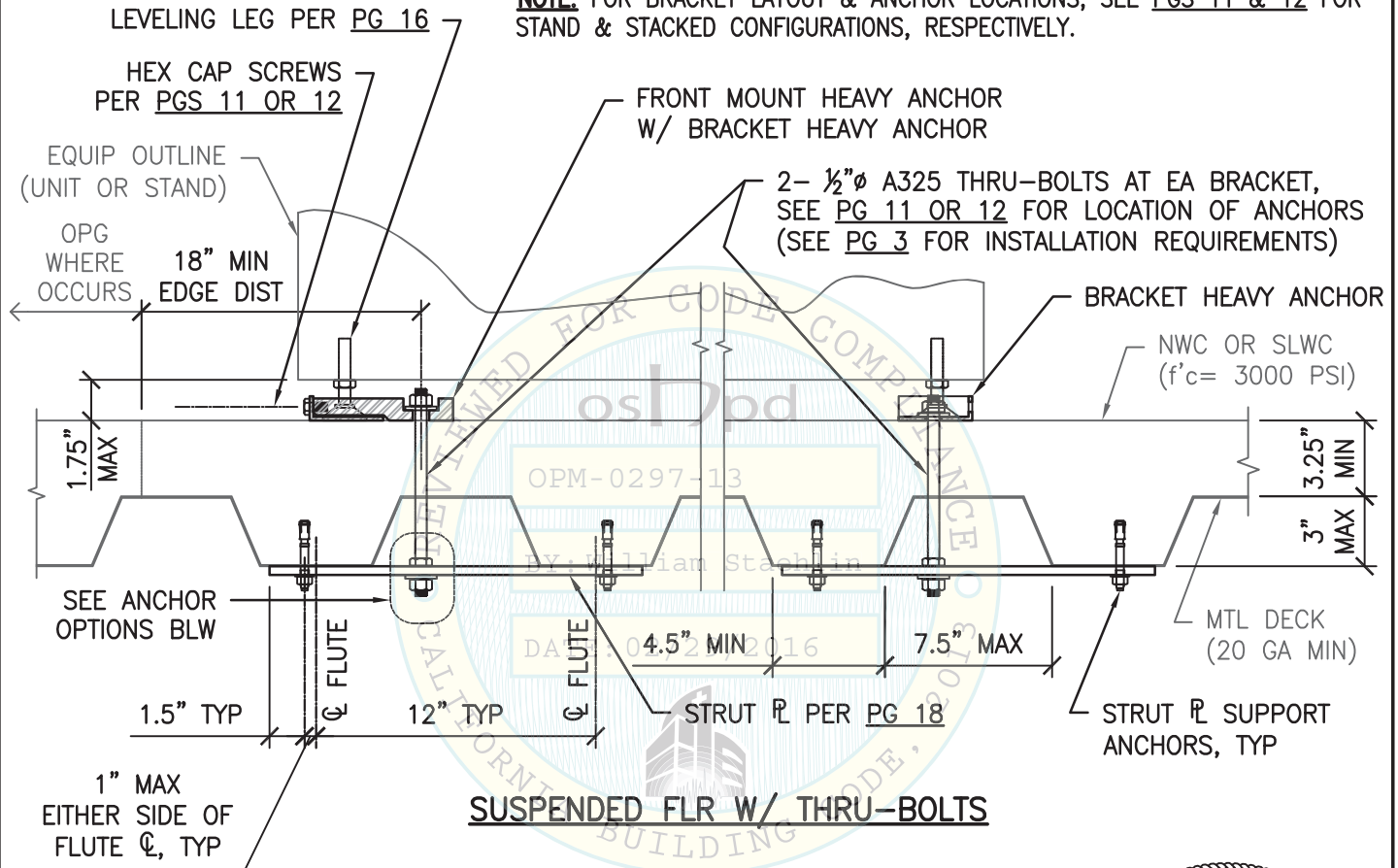
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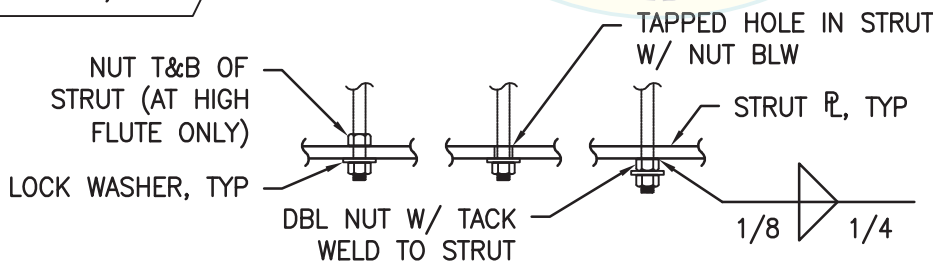
DETAIL APPLICABILITY

CASE 1A	STAND CONFIGURATION	$S_{DS} \leq 2.50$	$z/h \leq 1$
CASE 1B	STACKED CONFIGURATION	$S_{DS} \leq 1.90$ $S_{DS} \leq 2.20$ $S_{DS} \leq 2.50$	$z/h \leq 1$ $z/h \leq 0.75$ $z/h \leq 0.60$

NOTE: FOR BRACKET LAYOUT & ANCHOR LOCATIONS, SEE PGS 11 & 12 FOR STAND & STACKED CONFIGURATIONS, RESPECTIVELY.



SUSPENDED FLR W/ THRU-BOLTS



ANCHOR OPTIONS



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

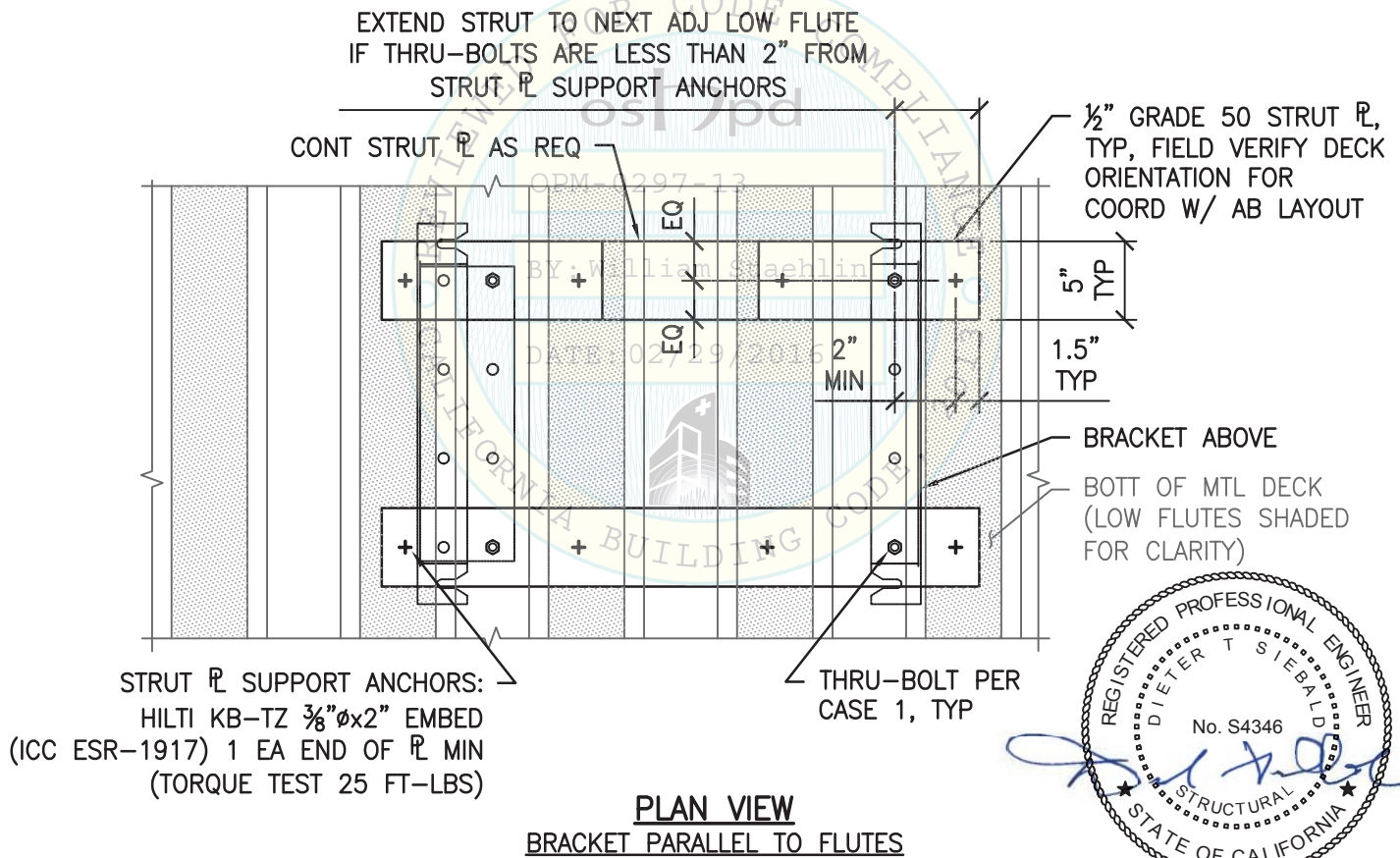
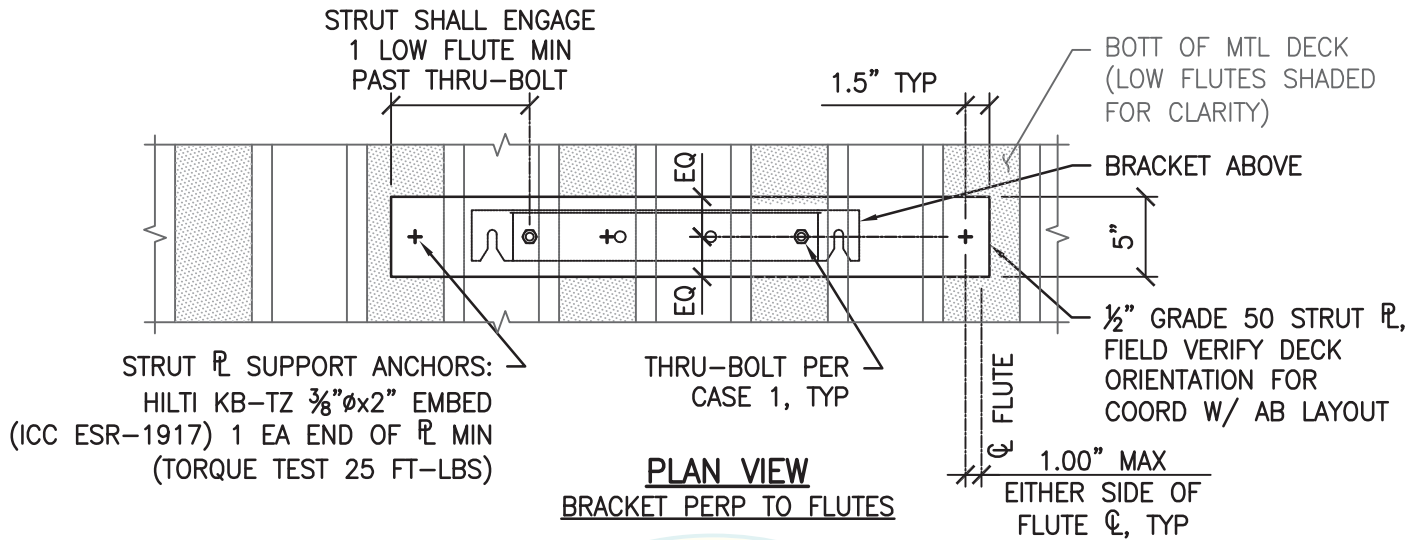


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SHEET TITLE: STRUT PLATE DETAIL



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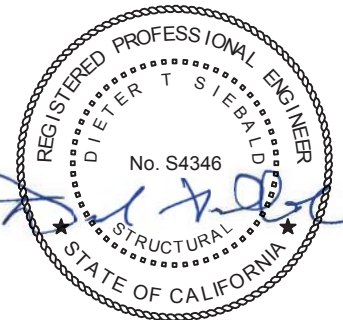
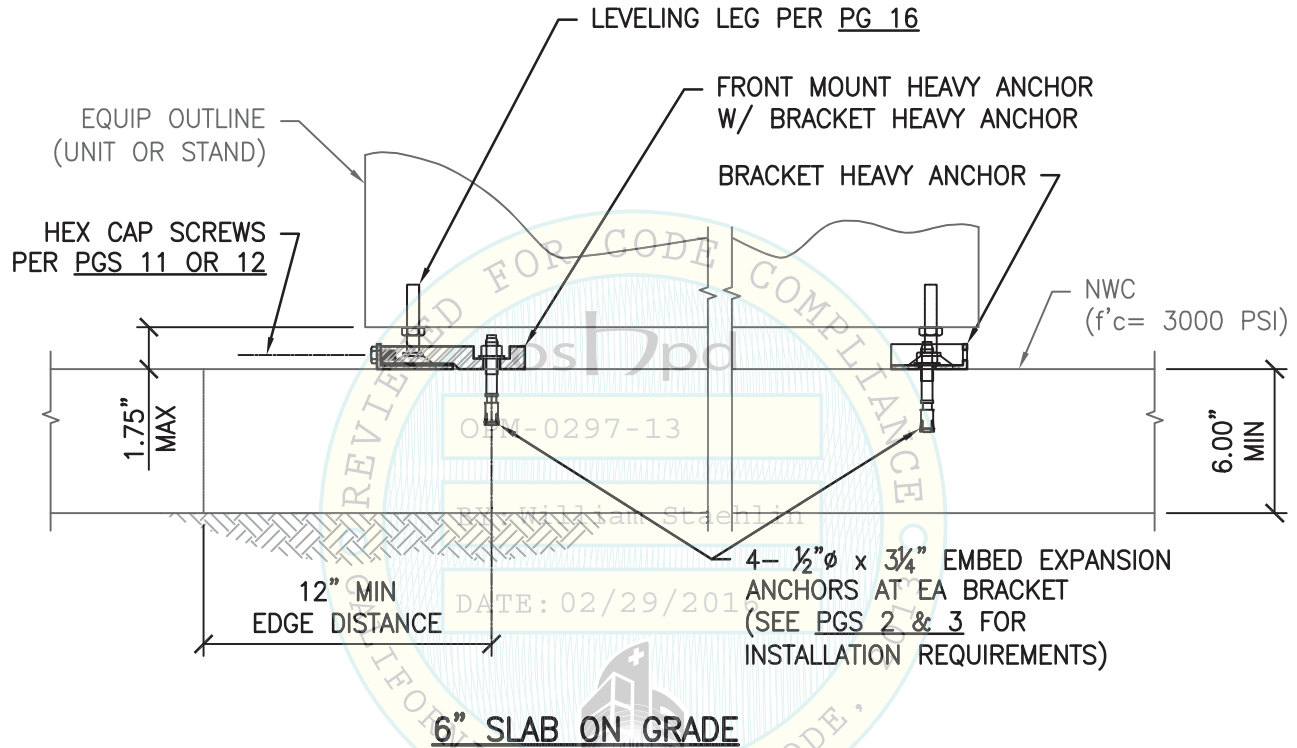
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DETAIL APPLICABILITY

CASE 2A	STAND CONFIGURATION	$S_{DS} \leq 2.50$	$z/h = 0$
CASE 2B	STACKED CONFIGURATION	$S_{DS} \leq 1.90$	$z/h = 0$

NOTE: FOR BRACKET LAYOUT & ANCHOR LOCATIONS, SEE PGS 11 & 12 FOR STAND & STACKED CONFIGURATIONS, RESPECTIVELY.



SHEET TITLE: ATTACHMENT DETAIL
STAND OR UNIT TO 6" SLAB ON GRADE (CASE 2)



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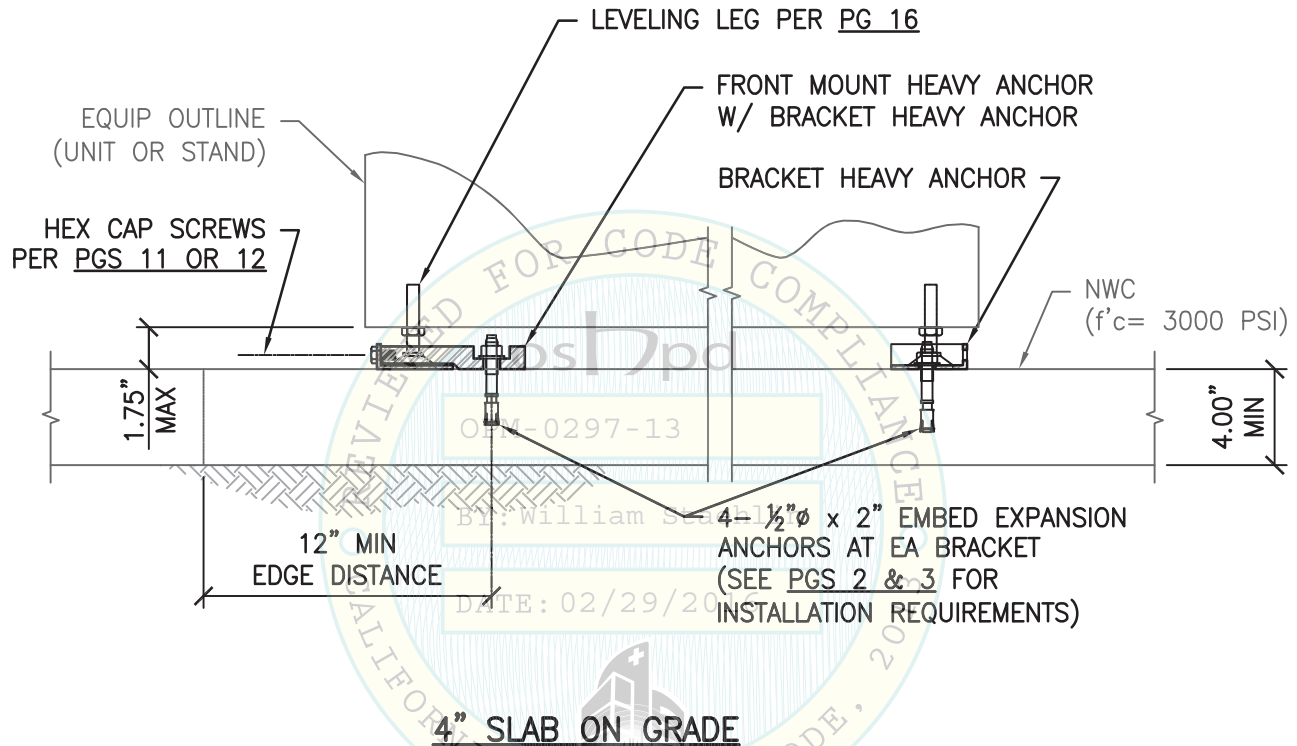
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DETAIL APPLICABILITY

CASE 3A	STAND CONFIGURATION	$S_{DS} \leq 1.75$	$z/h = 0$
CASE 3B	STACKED CONFIGURATION	$S_{DS} \leq 1.30$	$z/h = 0$

NOTE: FOR BRACKET LAYOUT & ANCHOR LOCATIONS, SEE PGS 11 & 12 FOR STAND & STACKED CONFIGURATIONS, RESPECTIVELY.



SHEET TITLE: ATTACHMENT DETAIL
STAND OR UNIT TO 4" SLAB ON GRADE (CASE 3)



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