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

OFFICE USE ONLY

APPLICATION #: OPM-0045-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

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

Manufacturer Information

Manufacturer: BD Diagnostics Systems

Manufacturer's Technical Representative: Dustin Diemert

Mailing Address: 7 Loveton Circle, MC 695, Sparks, MD 21152

Telephone: 410-316-4862 Email: ddiemert@bd.com

Product Information

Product Name: Viper LT

Product Type: Medical Diagnostic Automation Instrument

Product Model Number: 442839

General Description: The Viper LT is an instrument that automates the steps involved in molecular medical diagnostics. Rigid Floor mounted.

Applicant Information

Applicant Company Name: BD Diagnostics Systems

Contact Person: Dustin Diemert

Mailing Address: 7 Loveton Circle, MC 695, Sparks, MD 21152

Telephone: 410-316-4862 Email: ddiemert@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: 6/25/2013

Title: Senior Mechanical Engineer Company Name: BD Diagnostics Systems

OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

Registered Design Professional Preparing Engineering Recommendations

Company Name: CYS Structural Engineers, Inc.

Name: Kenneth A. Luttrell California License Number: SE #1418

Mailing Address: 2495 Natomas Park Drive, Suite 650, Sacramento, CA 95833

Telephone: 916-920-2020 Email: kenl@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: Bill Staehlin Date: August 27, 2013

Print Name: Bill Staehlin

Title: Senior Structural Engineer

Condition of Approval (if applicable):

VIPER LT
SEISMIC ANCHORAGE

NOTES:

1. THESE DRAWINGS ARE PREPARED FOR BD DIAGNOSTIC SYSTEMS, SPARKS, MARYLAND.
2. THE CONTRACTOR AND INSPECTOR OF RECORD SHALL OBTAIN A COPY OF THIS PRE-APPROVAL FROM THE OSHPD PRE-APPROVAL PROGRAMS WEBSITE.
3. THIS PRE-APPROVAL COVERS THE SUPPORTS AND ATTACHMENTS OF THE UNIT TO THE SUPPORTING STRUCTURE. THE UNIT, SEISMIC TABLE & ANCHORAGE HARDWARE ARE SUPPLIED BY BD. THROUGH BOLTS & EXPANSION BOLTS SHOWN ON PAGES 16 & 17 SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

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:	13029
Date:	8/22/2013
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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 STRUCTURAL ENGINEER OF RECORD FOR A SITE SPECIFIC PROJECT TO VERIFY:
   - A. THE ADEQUACY OF THE NEW OR EXISTING STRUCTURE TO RESIST THE FORCES AND WEIGHT SPECIFIED FOR EACH EQUIPMENT IN ADDITION TO ALL OTHER LOADS. PROVIDE AND 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 ½" DIAMETER ANCHOR BOLTS. THE REQUIRED SPACING FROM ANCHORS OF OTHER DIAMETERS AND EMBEDMENTS MAY VARY AND SHALL BE EVALUATED BY THE SEOR.
   - D. THAT THE INSTALLATION IS IN CONFORMANCE WITH THE CBC 2013 AND WITH THE DETAILS SHOWN IN THIS PRE-APPROVAL.
   - E. THAT THE ACTUAL EQUIPMENT'S WEIGHT, CENTER OF GRAVITY (CG) LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, AND THE MATERIAL AND GAGE OF THE EQUIPMENT WHERE ATTACHMENTS ARE MADE, AGREE WITH THE INFORMATION SHOWN ON THE PRE-APPROVAL DOCUMENTS.
3. A. 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 1, 2013.
   - B. INSTALLATION: INSTALL THE EXPANSION ANCHORS IN ACCORDANCE WITH THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR AND THE PARAMETERS GIVEN IN THE TABLE ON PAGE 3.
   - C. TESTING:
     - JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOB SITE TESTING IN ACCORDANCE WITH THE TENSION 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 TENSION IN THE ANCHOR SUCH AS DIRECT PULL WITH A HYDRAULIC JACK OR CALIBRATED SPRING LOADING DEVICES. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE INSPECTOR OF RECORD. 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".
     - FAILURE/ACCEPTANCE CRITERIA: THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
       - HYDRAULIC RAM METHOD: APPLY AND HOLD TEST LOAD FOR A MINIMUM OF 15 SECONDS. THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD WHERE WASHERS ARE USED. FOR WEDGE TYPE ANCHORS, SUCH AS HILTI KB-TZ, A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE.
       - TORQUE WRENCH METHOD: THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE: ONE-HALF (½) TURN OF THE NUT.

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STATE OF CALIFORNIA

SHEET TITLE: GENERAL NOTES

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2495 NATOMAS PARK DRIVE, SUITE 650
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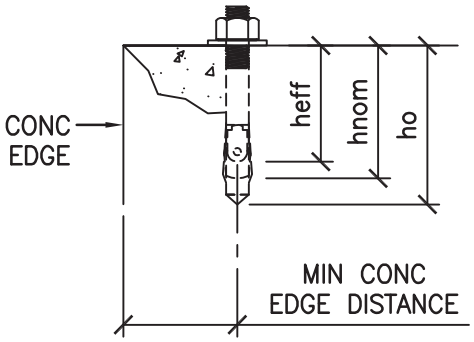
GENERAL NOTES CONTINUED:

3D. TEST VALUES: APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE, SEE TABLE BELOW.



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 AB SPACING (INCH)	TEST LOAD		CONDITION OF ANCHORAGE
							TENSION LOAD (LBS)	TORQUE (FT–LBS)	
½	2⅜	2	2⅝	4	12	4.25	1600	40	CASE 2

4. BOLTS THROUGH CONCRETE ON METAL DECK:
   A. BOLTS SHALL BE TORQUED BY ¾ TURN OF THE NUTS AFTER SNUG TIGHT (THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT) CONDITION IS ACHIEVED, UNLESS NOTED OTHERWISE.
   B. THROUGH BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16")
   C. THROUGH BOLTS IN CONCRETE SHALL RECEIVE SPECIAL INSPECTION & TESTING (THROUGH BOLTS WITH STEEL TO STEEL CONNECTION IN TENSION DO NOT REQUIRE TESTING) IN ACCORDANCE WITH REQUIREMENTS FOR POST–INSTALLED ANCHORS.

SHEET TITLE: GENERAL NOTES (CONTINUED)

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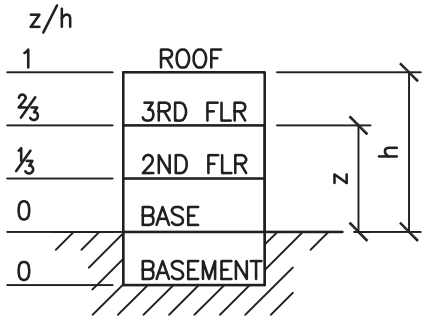
GENERAL NOTES CONTINUED:

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



BUILDING ELEVATION

CASE 1: ANCHORAGE DETAILS LOCATED AT UPPER FLOORS ABOVE THE BASE OF A BUILDING (z/h<=1.0), IT IS ASSUMED THAT THE FLOORS ARE BUILT OF A MINIMUM 3¼" SAND-LIGHTWEIGHT CONCRETE TOPPING OVER METAL DECK (f'c = 3000 PSI, MINIMUM).

CASE 2: ANCHORAGE DETAILS LOCATED AT OR BELOW THE BASE OF A BUILDING (z/h=0). THE FLOORS ARE ASSUMED TO BE BUILT OF A MINIMUM 4" NORMAL-WEIGHT CONCRETE SLAB. (f'c = 3000 PSI, MINIMUM).

6. THIS PRE-APPROVAL MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA. WHERE S_{DS} IS LESS THAN OR EQUAL TO 2.50.

SHEET TITLE: GENERAL NOTES (CONTINUED)

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ABBREVIATIONS:

@	AT
AB	ANCHOR BOLT
ABV	ABOVE
ALT	ALTERNATE
ASD	ALLOWABLE STRENGTH DESIGN
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
BD	BECTON, DICKINSON AND COMPANY
BLW	BELOW
BOTT	BOTTOM
BRCG	BRACING
BTW	BETWEEN
CBC	CALIFORNIA BUILDING CODE
CG	CENTER OF GRAVITY
CLSE	CALIFORNIA LICENSED STRUCTURAL ENGINEER
℄	CENTERLINE
CONC	CONCRETE
CONN	CONNECTION
CRS	COLD ROLLED STEEL
DTL(S)	DETAIL(S)
DIA (ø)	DIAMETER
(E)	EXISTING CONDITION
EA	EACH
ELEV	ELEVATION
EQUIP	EQUIPMENT
ES	EACH SIDE
FLR	FLOOR
Fp	HORIZONTAL SEISMIC FORCE PER ASCE 7-10 SEISMIC FORCE REQUIREMENTS
Fv	VERTICAL SEISMIC FORCE PER ASCE 7-10 SEISMIC FORCE REQUIREMENTS
Fy	SPECIFIED YIELD STRENGTH OF REINFORCING, PSI OR SPECIFIED MINIMUM YIELD STRESS OF STEEL, KSI
IN (")	INCH
KSI	KIPS PER SQUARE INCH
L	LENGTH
LRFD	LOAD & RESISTANCE FACTOR DESIGN
LWC	LIGHT WEIGHT CONCRETE
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MTL	METAL
NWC	NORMAL WEIGHT CONCRETE
OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT
PL	PLATE
R	RADIUS OF GYRATION
RDP	REGISTERED DESIGN PROFESSIONAL
REQ	REQUIRED
SEOR	STRUCTURAL ENGINEER OF RECORD
SIM	SIMILAR
STD	STANDARD
STL	STEEL
T	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
THRD	THREAD OR THREADED
TYP	TYPICAL
V	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
W/	WITH

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DIETER T SIEBALD
No. S4346
STRUCTURAL
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SHEET TITLE: ABBREVIATIONS

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DESIGN CRITERIA

ANCHORAGE DESIGN FOR ALL LABORATORY EQUIPMENT IS PER 2013 CBC AT LRFD LEVEL FORCES

a_p = 1.0 R_p = 2.5 S_{DS} = 2.50 I_p = 1.5 Ω_0= 2.5

VIPER LT: W_P = 480 LBS SEISMIC TABLE: W_P = 330 LBS

FOR CASE 1 – UPPER FLOORS ABOVE THE BASE, z/h <= 1.0
F_p = 1.80 W_p F_v = 0.50 W_p

FOR CASE 2 – SLAB AT OR BELOW BASE, z/h = 0
F_p = 1.13 W_p F_v = 0.50 W_p

SHEET TITLE: DESIGN CRITERIA

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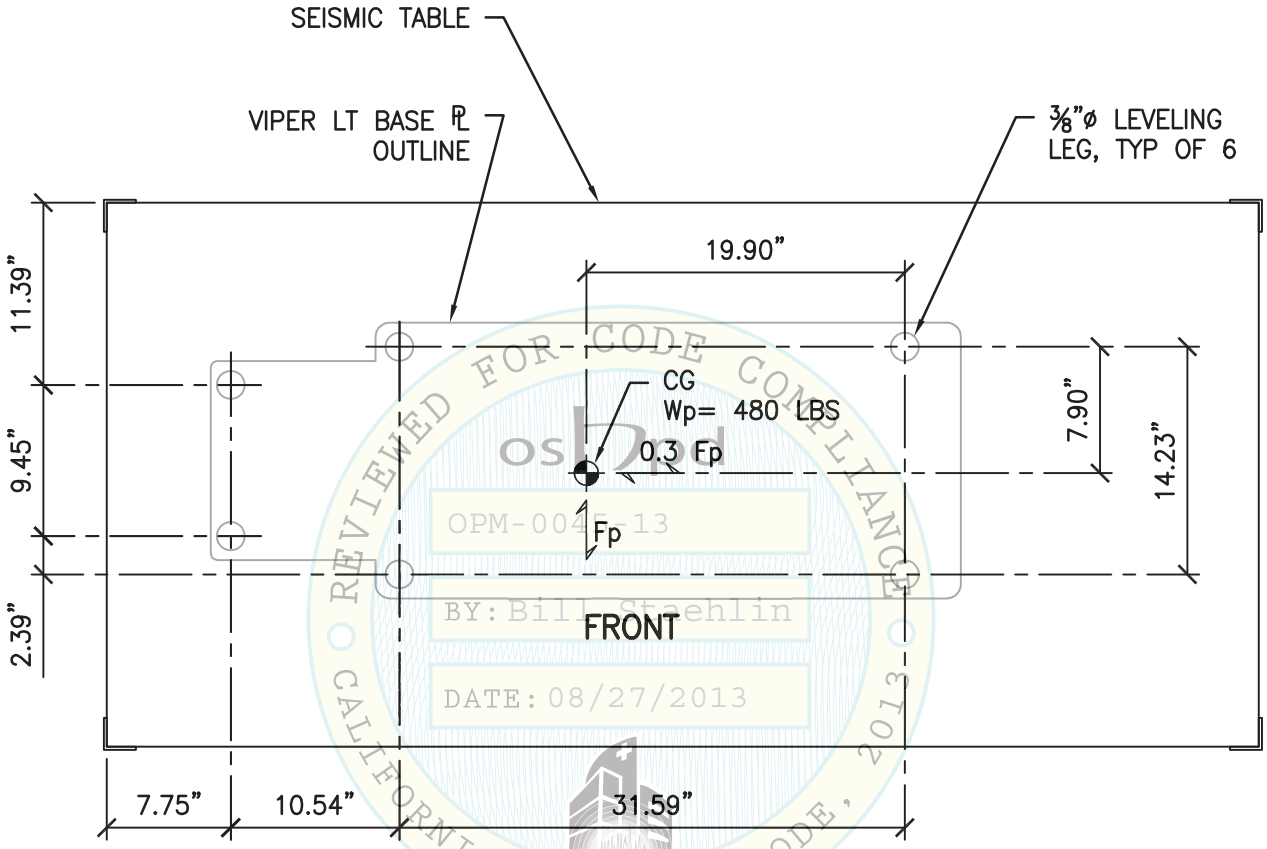
BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE



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SHEET TITLE: VIPER LT PLAN

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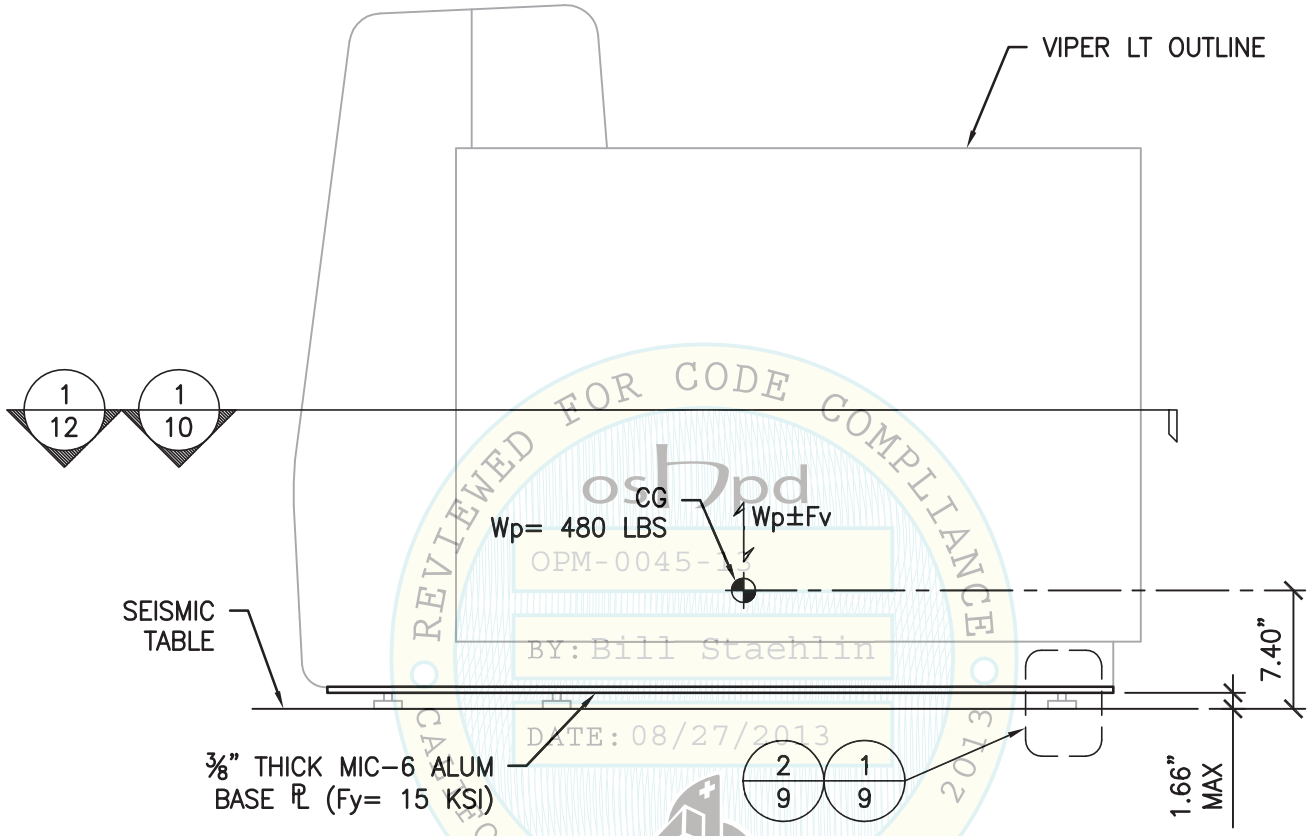
BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE



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SHEET TITLE: VIPER LT ELEVATION

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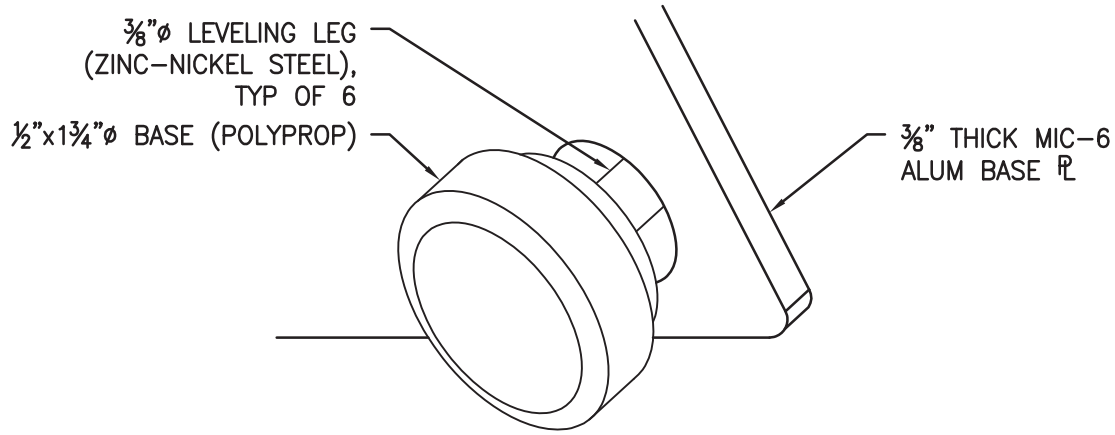
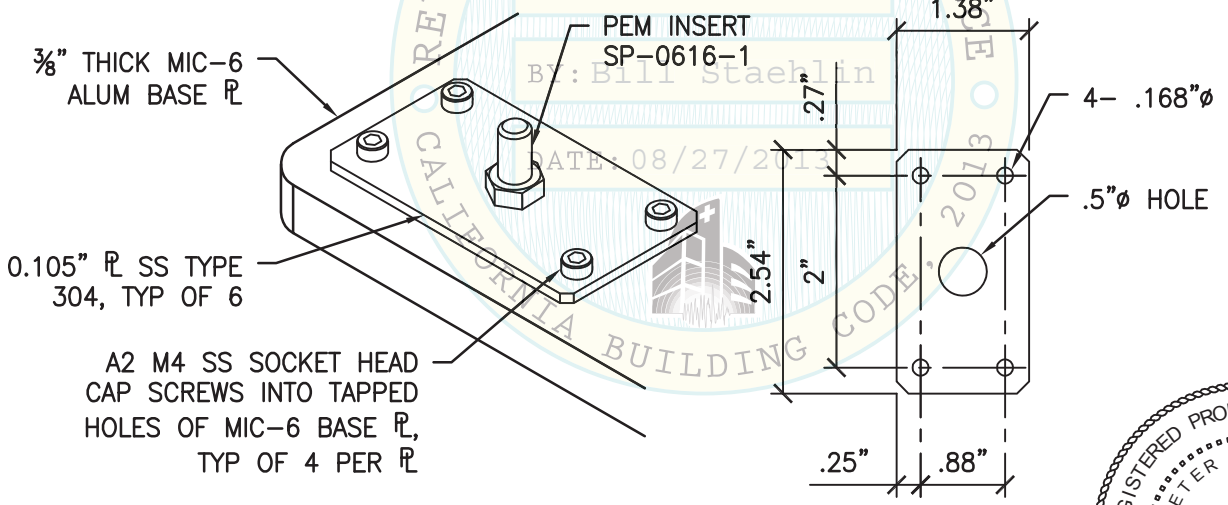
BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE





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SHEET TITLE: LEVELING LEGS DETAILS

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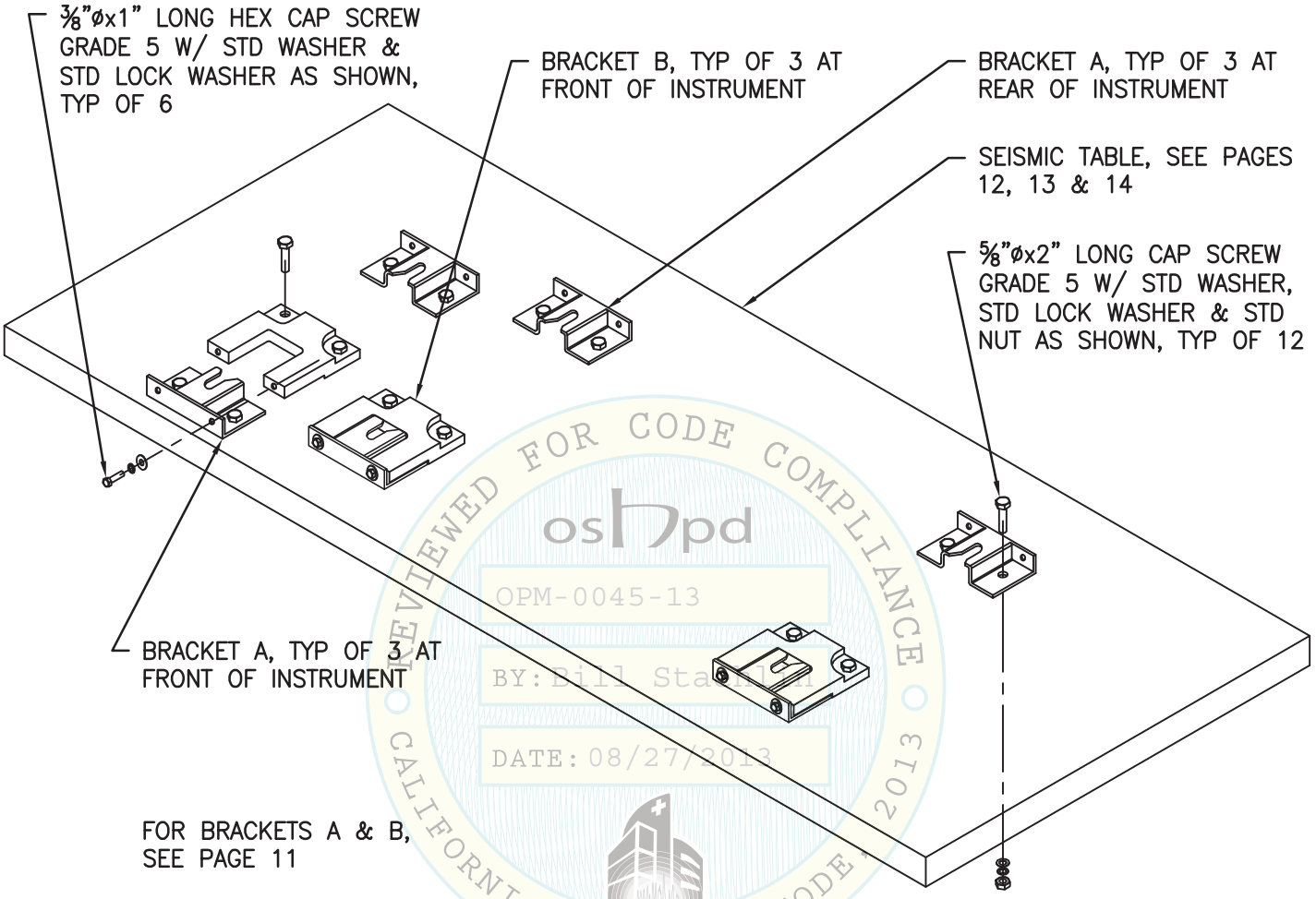
BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE



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SHEET TITLE: VIPER LT ANCHORAGE SCHEME

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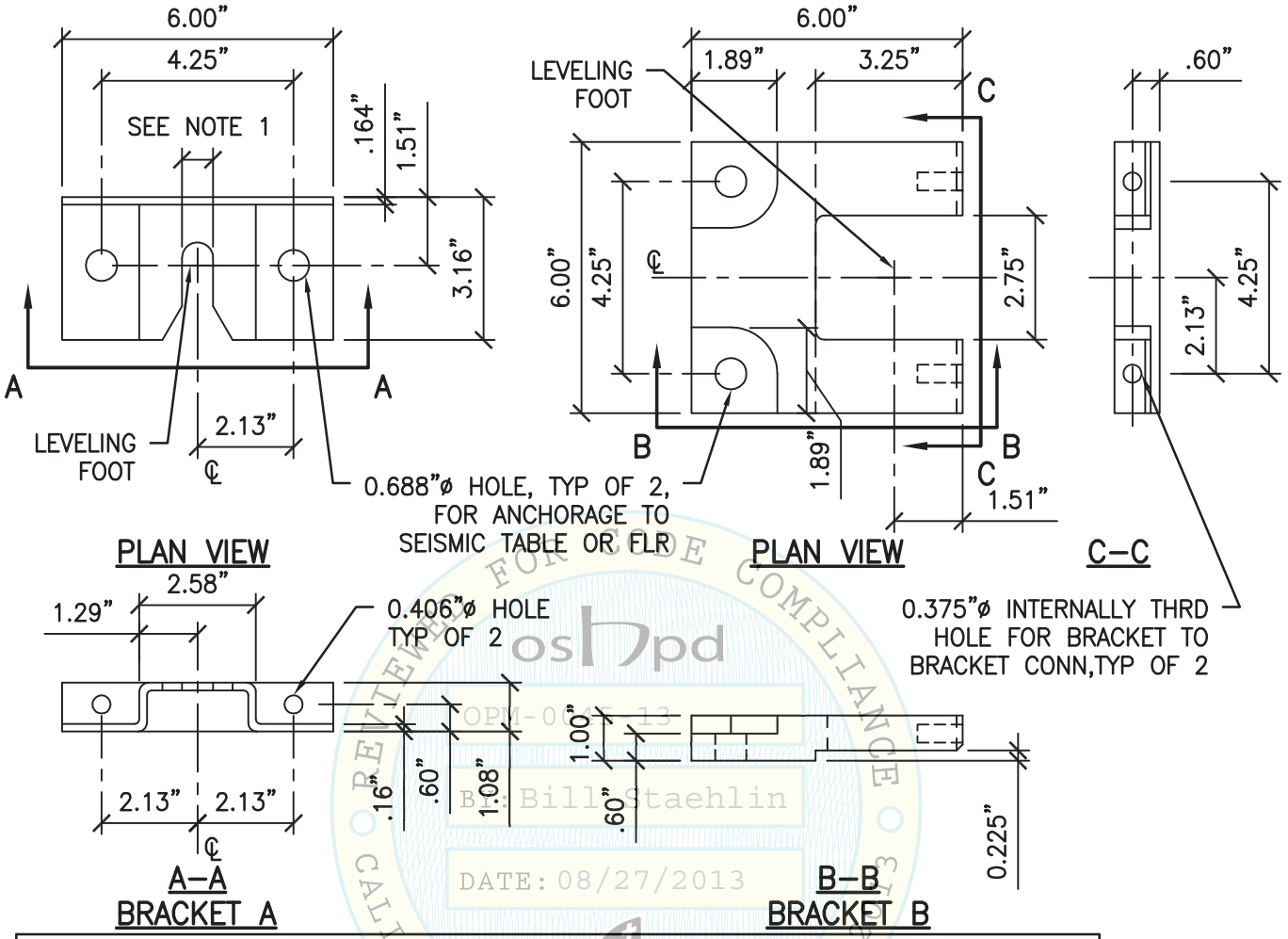
BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE



NOTES:
1. SLOT WIDTH IS 0.422" FOR ⅜"ø LEVELING FOOT & 0.562" FOR ½"ø LEVELING FOOT.
2. BRACKET MATERIAL IS ASTM A1011 CS GRADE 30.
3. BRACKET IS 8 GA STL, TYP

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DIETER T SIEBALD
No. S4346
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SHEET TITLE: ANCHORAGE BRACKETS

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2495 NATOMAS PARK DRIVE, SUITE 650
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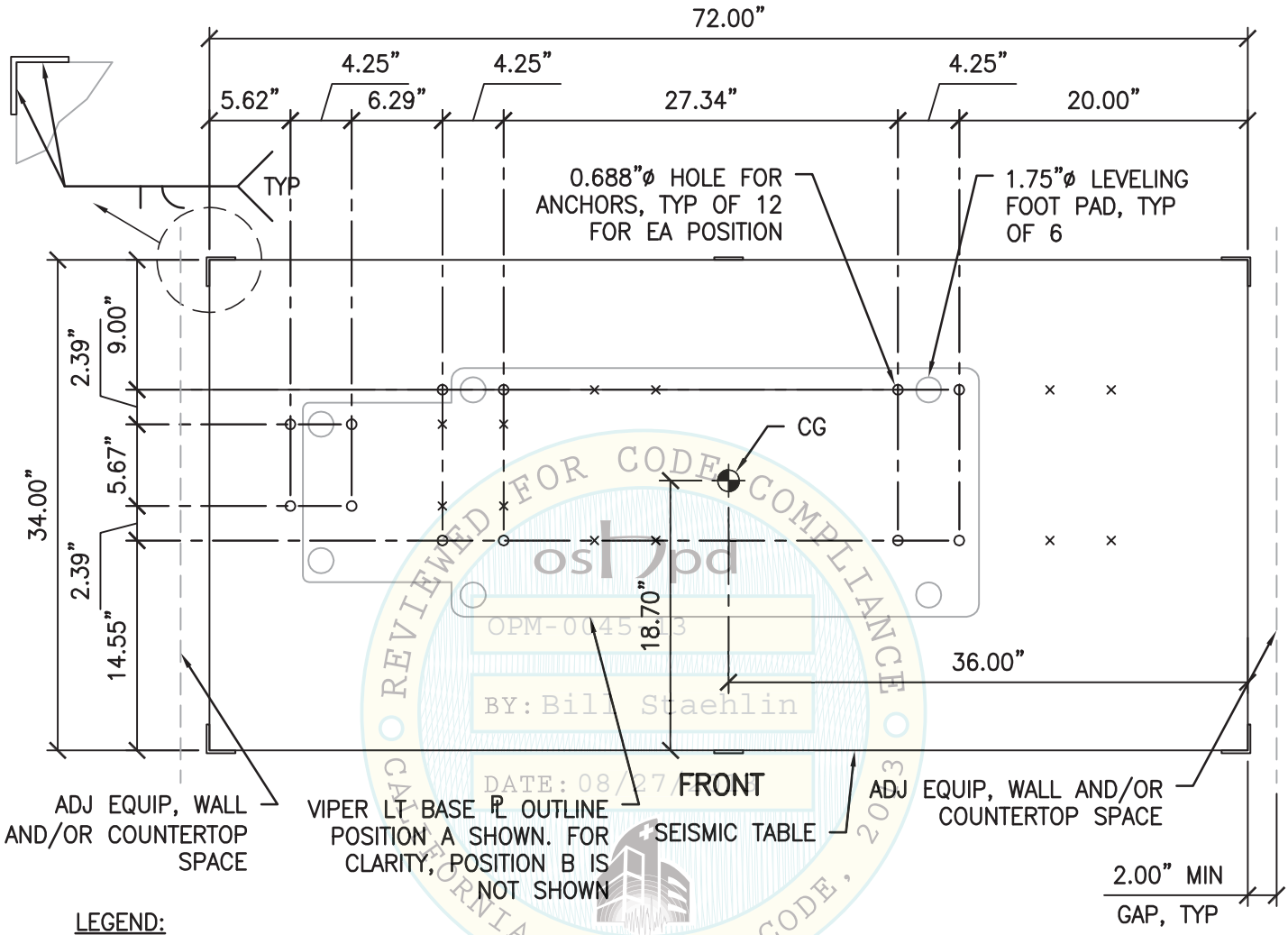
BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE



LEGEND:

o = BOLT HOLE LOCATIONS FOR VIPER LT AT POSITION A.

x = BOLT HOLE LOCATIONS FOR VIPER LT AT POSITION B.

NOTE: POSITION A BOLT HOLES ARE 10.54" TO THE LEFT OF POSITION B BOLT HOLES.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: SEISMIC TABLE PLAN

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
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TEL (916) 920-2020
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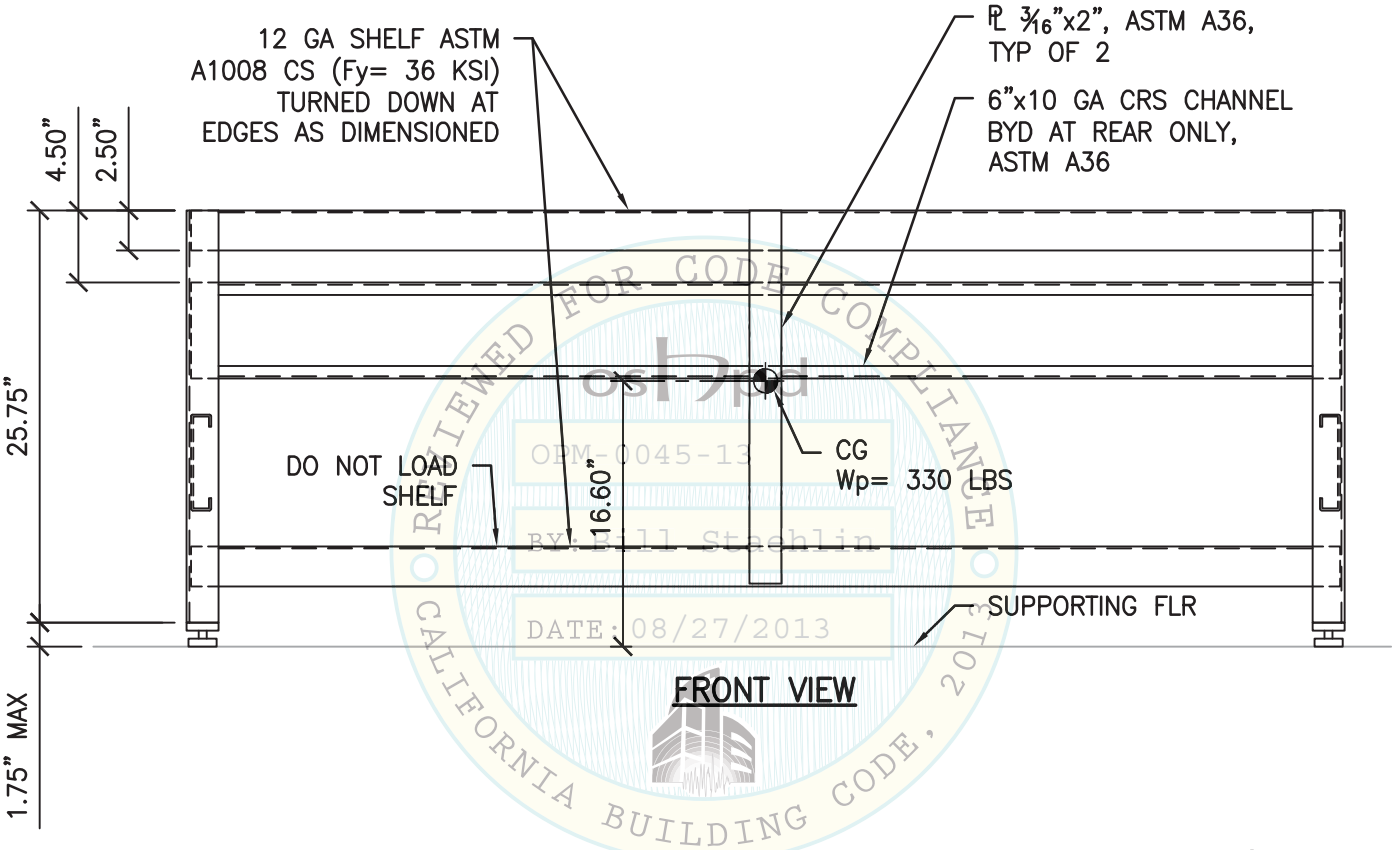
BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE

NOTE:
COMPLETE TABLE ASSEMBLY
IS PROVIDED BY BD



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SHEET TITLE: SEISMIC TABLE ELEVATIONS

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BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE

NOTE:
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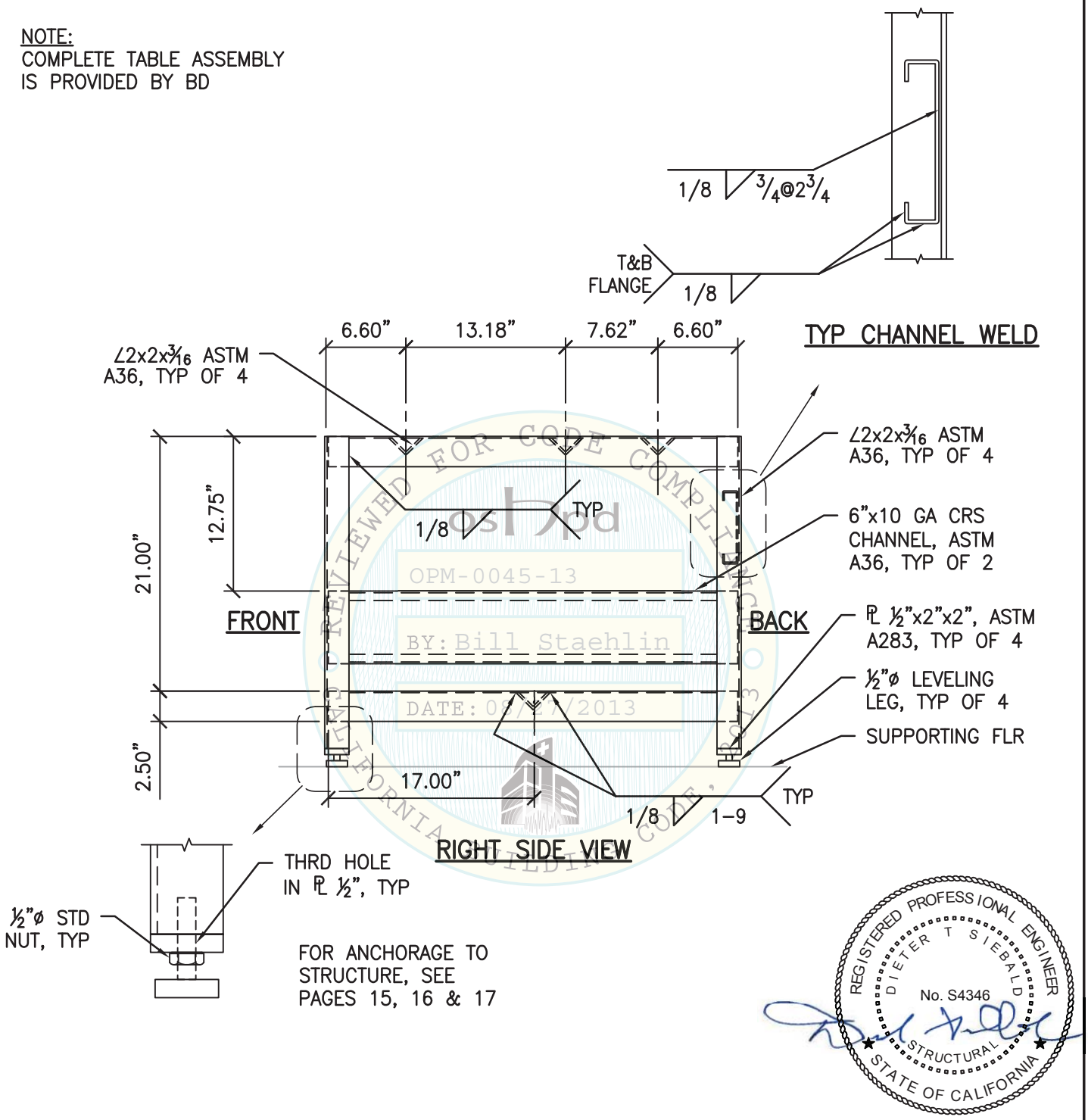

FOR ANCHORAGE TO STRUCTURE, SEE PAGES 15, 16 & 17

REVIEWED FOR CODE COMPLIANCE
OPM-0045-13
BY: Bill Staehlin
DATE: 08/27/2013
CALIFORNIA BUILDING CODE, 2010

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DIETER T SIEBALD
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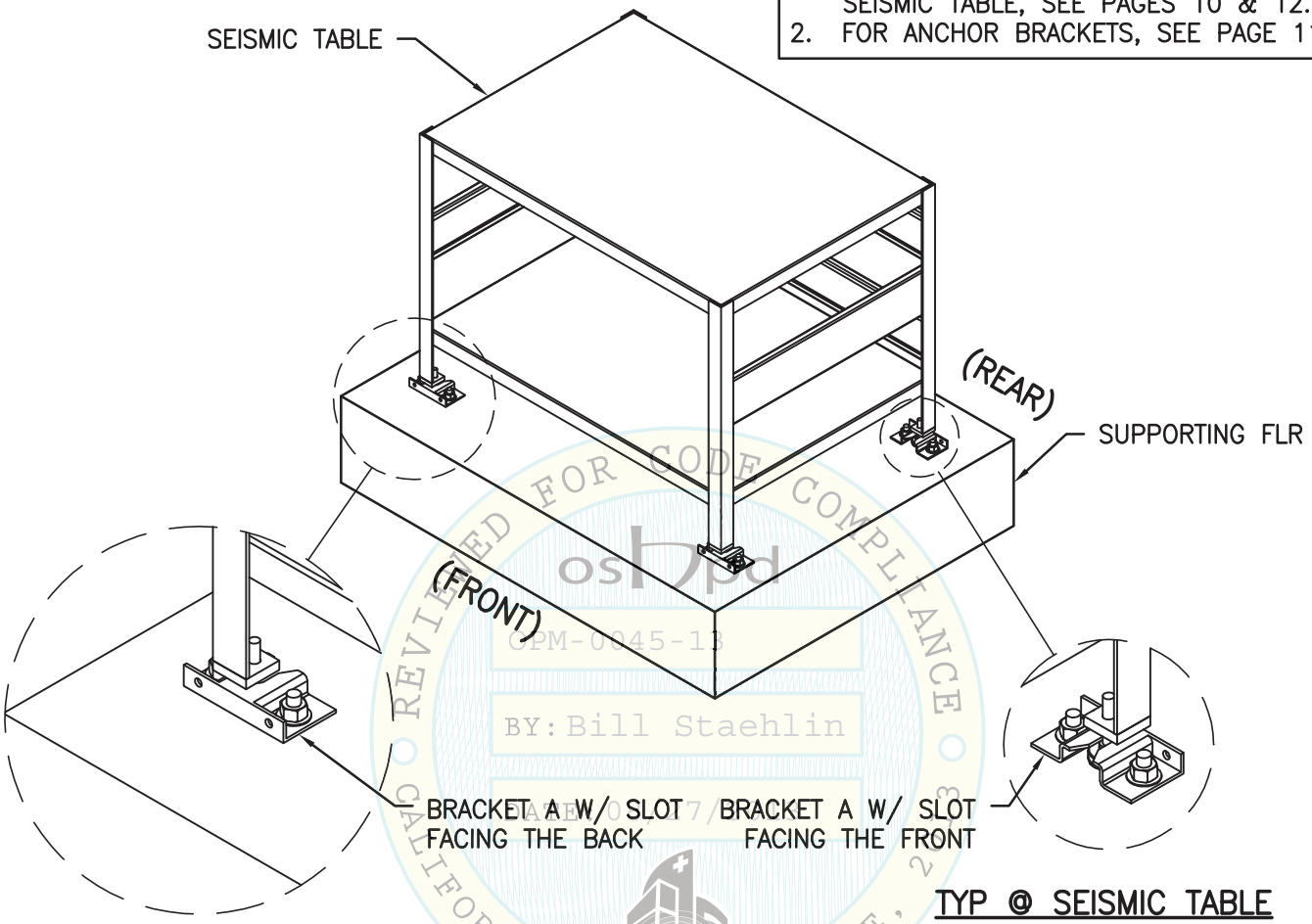
BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE

NOTES:
1. FOR VIPER LT & ANCHORAGE TO SEISMIC TABLE, SEE PAGES 10 & 12.
2. FOR ANCHOR BRACKETS, SEE PAGE 11.



TYP @ SEISMIC TABLE FRONT LEGS

TYP @ SEISMIC TABLE REAR LEGS

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SHEET TITLE: SEISMIC TABLE ANCHORAGE SCHEME

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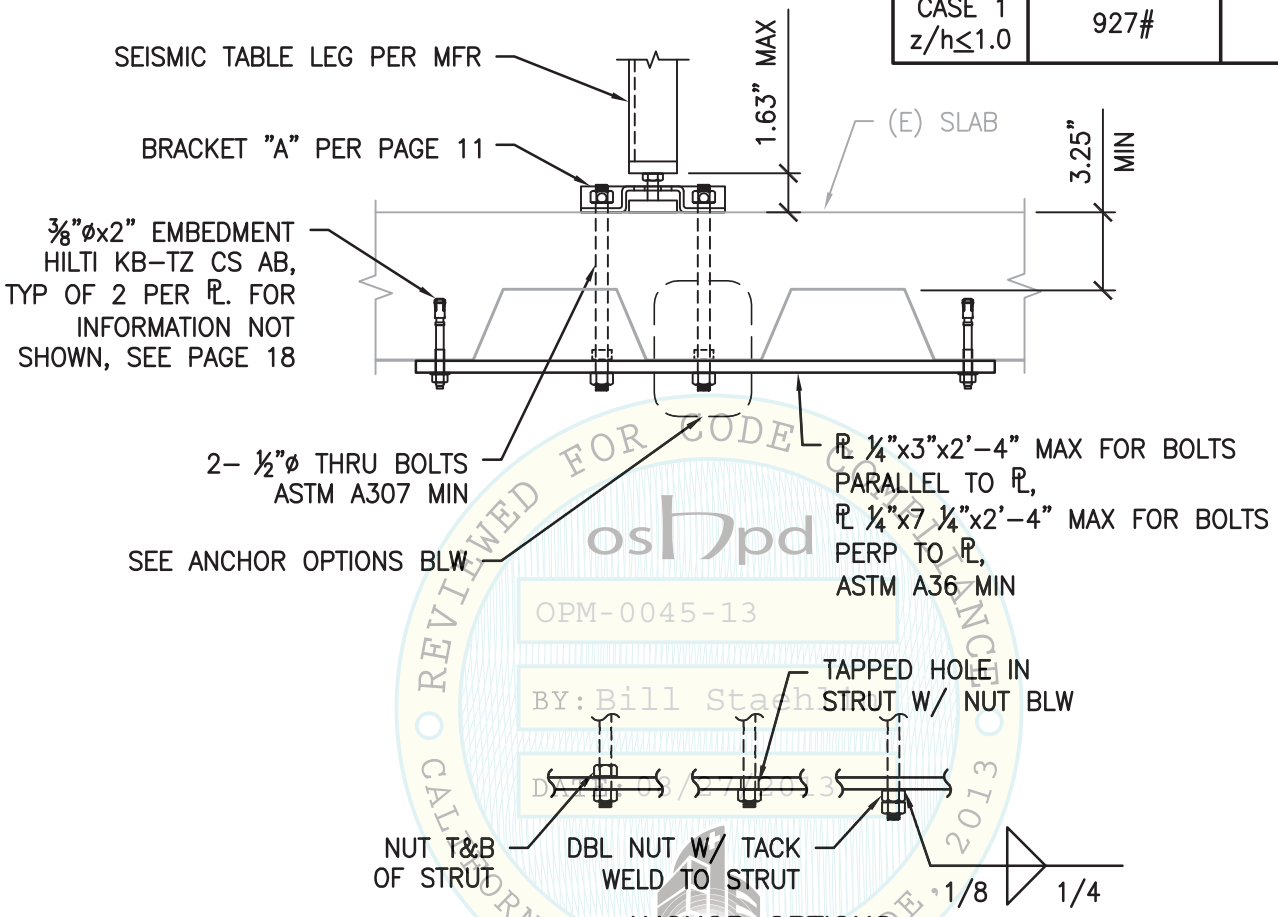
BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE

	MAXIMUM ANCHOR FORCES AT LRFD AT EACH ANCHOR BOLT (W/ Ω_0= 2.5)	
	Tu	Vu
CASE 1 z/h≤1.0	927#	1017#



ANCHOR OPTIONS

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: SEISMIC TABLE ANCHORAGE DETAIL - UPPER FLOORS

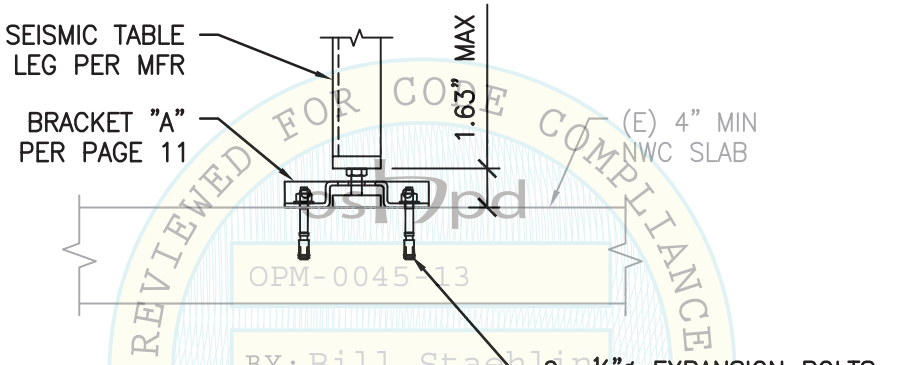
CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
www.cyseng.com

Job No:	13029
Date:	8/22/2013
Page:	16 of 18

L:\Jobs13\13029 BD - Viper LT OPM-0045-13\STRU\S1.dwg Time:Aug22,2013-01:34pm Login:camachom Dimscale:1 LTScale:6

BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE

	MAXIMUM ANCHOR FORCES AT LRFD AT EACH ANCHOR BOLT (W/ Ω_0= 2.5)	
	Tu	Vu
CASE 2 z/h=0	562#	634#



REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: SEISMIC TABLE ANCHORAGE DETAIL - AT OR BELOW BASE

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
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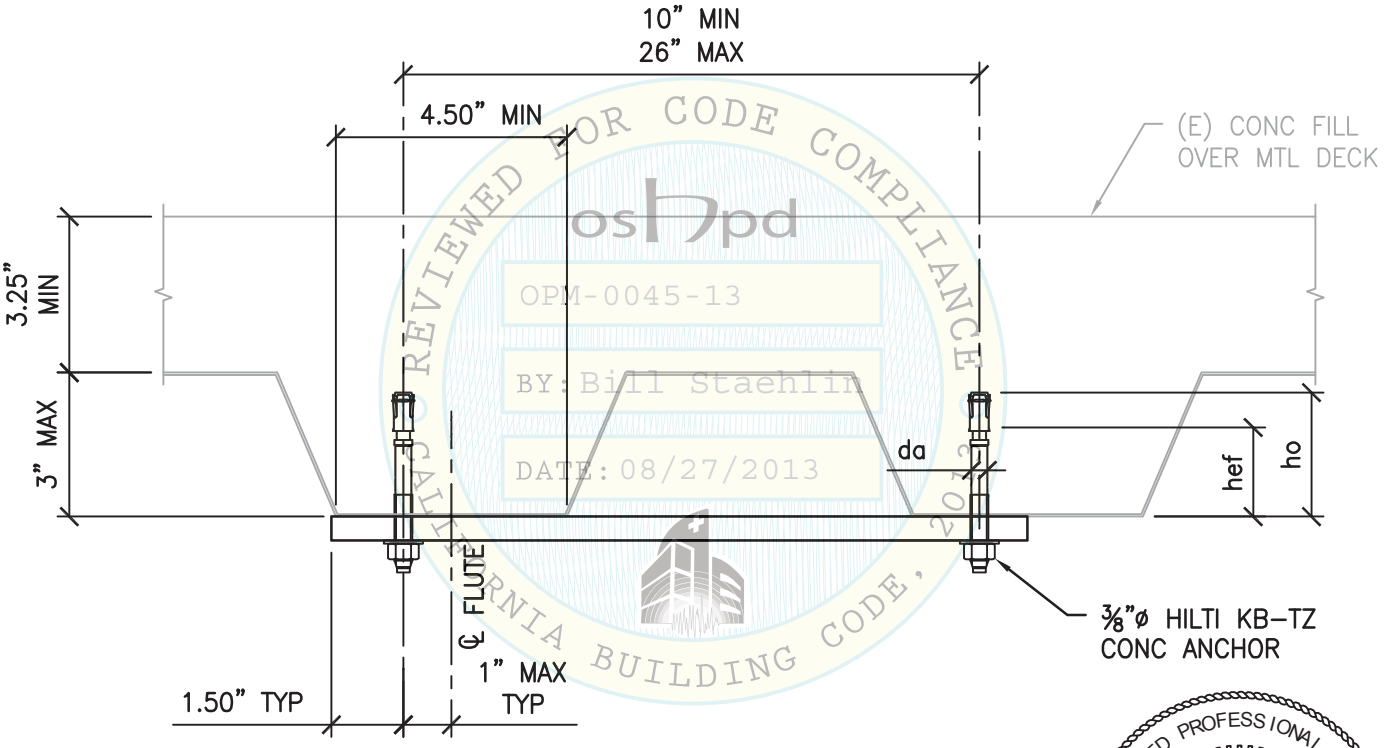
BD DIAGNOSTIC SYSTEMS
VIPER LT - SEISMIC ANCHORAGE

ALLOW VERT LOAD (LBS) Ta	ANCHOR DIA (INCH)	EFFECTIVE EMBED (INCH) hef	HOLE DEPTH (INCH) ho	MIN SPACING (INCH) Smin	MIN EDGE DISTANCE (INCH) Cmin	TORQUE (FT-LBS)
550	3/8	2	2 5/8	6 3/4	4 3/8	25

NOTES:
1. MIN SPACING REQUIREMENT IS ALONG FLUTE LGTH ONLY.
2. ALLOWABLE LOADS TAKEN FROM ICC ESR-1917.



REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: SEISMIC TABLE ANCHORAGE DETAIL

CYS STRUCTURAL ENGINEERS, INC.
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Job No:	13029
Date:	8/22/2013
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