



**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION**

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

OFFICE USE ONLY	
APPLICATION #:	OPM-0106-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: New Renewal Update to Pre-CBC 2013 OPA Number: OPA-0627-10

Manufacturer Information

Manufacturer: Ortho Clinical Diagnostics Part of the Johnson & Johnson Family of Companies

Manufacturer's Technical Representative: Frank Koetter

Mailing Address: 100 Indigo Creek Drive, MC00891, Rochester, NY 14626-5101

Telephone: 1-585-453-4003 Email: FKoetter@its.jnj.com

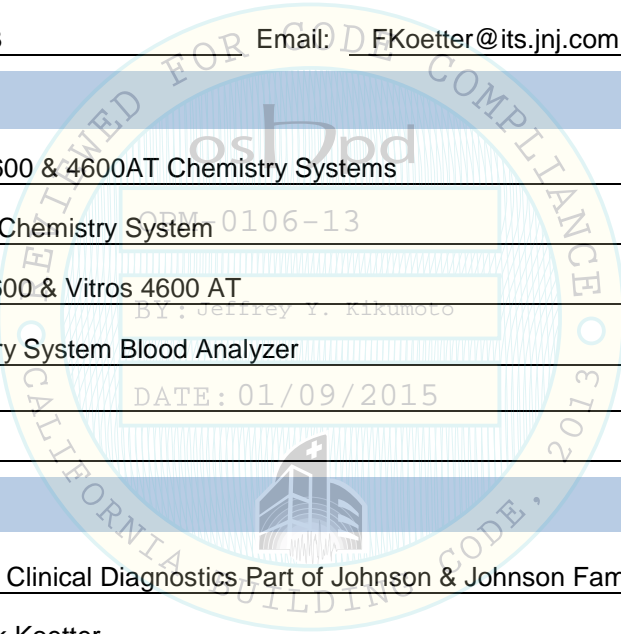
Product Information

Product Name: Vitros 4600 & 4600AT Chemistry Systems

Product Type: Clinical Chemistry System

Product Model Number: Vitros 4600 & Vitros 4600 AT

General Description: Chemistry System Blood Analyzer



Applicant Information

Applicant Company Name: Ortho Clinical Diagnostics Part of Johnson & Johnson Family of Companies

Contact Person: Frank Koetter

Mailing Address: 100 Indigo Creek Drive, MC00891, Rochester, NY 14626-5101

Telephone: 1-585-453-4003 Email: FKoetter@its.jnj.com

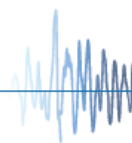
I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:  Date: 5/9/14

Title: Group Director, Systems Development & LCM Company Name: Ortho Clinical Diagnostics

"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 3/13/14)





**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: S.E. #4346

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): _____

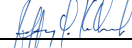
*Use of criteria other than those adopted by the California Building Standards Code, 2013 (CBSC 2013) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test criteria other than those adopted in the CBSC 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): _____

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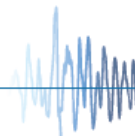
Signature:  Date: 01/09/2015

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"

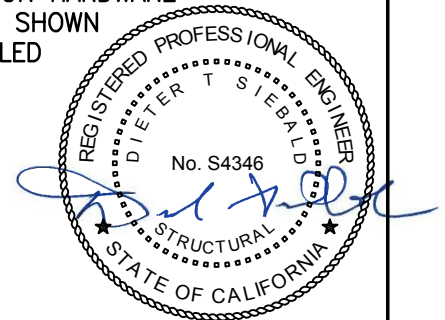


OPM-0106-13
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NOTES:

1. THESE DRAWINGS ARE PREPARED FOR ORTHO CLINICAL DIAGNOSTICS, ROCHESTER, NEW YORK.
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 COMPONENT (EQUIPMENT) TO THE SUPPORTING STRUCTURE. THE UNIT AND ANCHORAGE HARDWARE ARE SUPPLIED BY ORTHO CLINICAL DIAGNOSTICS. THROUGH BOLTS, UNDER FLOOR HARDWARE AND ATTACHMENTS AT SOFFIT UNDER METAL DECK AND EXPANSION BOLTS SHOWN ON PAGES 11 THRU 13 & 22 THRU 27 SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.
4. THE VITROS 4600 UTILIZES FOUR BRACKET A/B ASSEMBLIES FOR ATTACHMENT. THE VITROS 4600 AT UTILIZES TWO DIFFERENT ASSEMBLIES. BRACKET ASSEMBLY C/D IS USED AT THE FRONT OF THE EQUIPMENT & THE CLAMP ASSEMBLY E/F IS USED AT THE REAR OF THE EQUIPMENT. IT IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO DETERMINE WHICH MODEL IS BEING INSTALLED.



SHEET TITLE: TABLE OF CONTENTS



CYS STRUCTURAL ENGINEERS, INC.

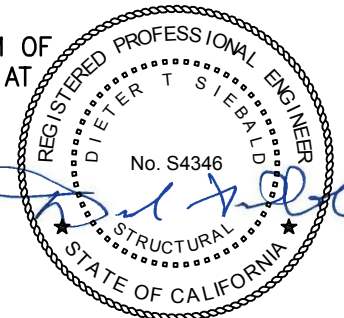
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

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

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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 1/2" AND 5/8" 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.
 - 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. 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. 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 OR CALIBRATED TORQUE WRENCH METHOD. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE INSPECTOR OF RECORD. REPORT OF TEST RESULTS TO 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 EQUIPMENT INSTALLATION. ALSO REFER TO CBC 1913A.7 "FIELD TESTS FOR POST-INSTALLED ANCHORS IN CONCRETE".
 - D. 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 (1/2) TURN OF THE NUT.



SHEET TITLE: GENERAL NOTES



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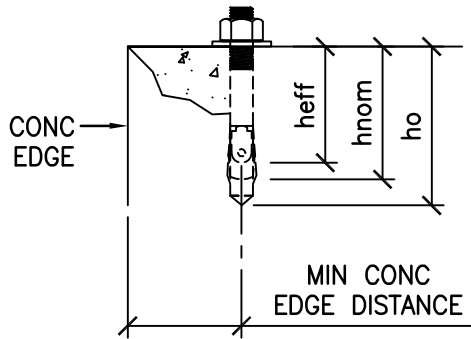
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GENERAL NOTES CONTINUED:

3E. 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)	
5/8	3 9/16	3 3/8	3 3/4	5	12	6	2613	60	CASE 2
1/2	2 3/8	2	2 5/8	4	12	4	1432	40	CASE 2

4. BOLTS THROUGH CONCRETE ON METAL 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 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.

5. SCREW ANCHORS TO BOTTOM OF CONCRETE FILL OVER METAL DECK:

- A. HILTI KH-EZ (ICC ESR-3027) TENSION TEST LOAD FOR CASE 1.

ANCHOR DIA (INCH) da	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) hef	HOLE DEPTH (INCH) ho	MIN CONC THICKNESS (INCH) h _{min}	MIN CONC EDGE DISTANCE (INCH)	MIN AB SPACING (INCH)	TENSION TEST LOAD (LBS)
1/4	1 5/8	1.18	2	3/4	1 1/4*	10*	400

* SEE PAGES 11, 22 & 23 OF 27 IN THIS OPM.



SHEET TITLE: GENERAL NOTES (CONTINUED)



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GENERAL NOTES CONTINUED:

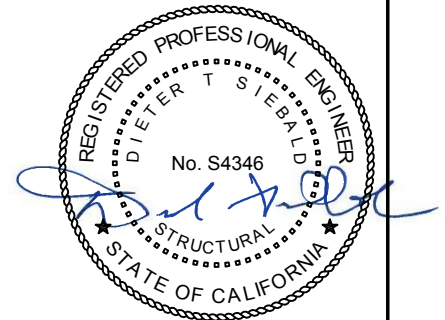
6. **VITROS 4600:** TWO (2) CASES OF ANCHORAGE ARE SPECIFIED AND PRESENTED IN THIS PRE-APPROVAL:
- | | | |
|-----|----------|--|
| z/h | | |
| 1 | ROOF | |
| 2/3 | 3RD FLR | |
| 1/3 | 2ND FLR | |
| 0 | BASE | |
| 0 | BASEMENT | |
- CASE 1:** ANCHORAGE DETAILS LOCATED AT UPPER FLOORS ABOVE THE BASE OF A BUILDING ($z/h \leq 0.75$), IT IS ASSUMED THAT THE FLOORS ARE BUILT OF A MINIMUM 3/4" 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).

BUILDING ELEVATION

- VITROS 4600 AT:** TWO (2) CASES OF ANCHORAGE ARE SPECIFIED AND PRESENTED IN THIS PRE-APPROVAL:
- CASE 1:** ANCHORAGE DETAILS LOCATED AT UPPER FLOORS ABOVE THE BASE OF A BUILDING ($z/h \leq 0.667$), IT IS ASSUMED THAT THE FLOORS ARE BUILT OF A MINIMUM 3/4" SAND-LIGHTWEIGHT CONCRETE TOPPING OVER METAL DECK ($f'c = 3000$ PSI, MINIMUM). **FOR THIS CASE THE MAXIMUM S_{ps} IS LIMITED TO 1.80**
- 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 5" NORMAL-WEIGHT CONCRETE SLAB. ($f'c = 3000$ PSI, MINIMUM).

7. THIS PRE-APPROVAL MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA WHERE S_{ps} IS LESS THAN OR EQUAL TO 2.50. **EXCEPT FOR VITROS 4600 AT CASE 1 ANCHORAGE WHERE S_{ps} MUST BE LESS THAN OR EQUAL TO 1.80.**

DATE: 01/09/2015



SHEET TITLE: GENERAL NOTES (CONTINUED)



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DESIGN CRITERIA

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

$\alpha_p = 1.0$ $R_p = 1.5$ $I_p = 1.5$ $\Omega_0 = 1.5$ (CONCRETE ANCHORS)

VITROS 4600: $W_p = 1350\#$

FOR CASE 1 – UPPER FLOORS ABOVE THE BASE, $z/h \leq 0.75$

$S_{DS} = 2.50$ $F_p = 2.5 W_p$ $F_v = 0.50 W_p$

FOR CASE 2 – SLAB AT OR BELOW BASE, $z/h = 0$

$S_{DS} = 2.50$ $F_p = 1.13 W_p$ $F_v = 0.50 W_p$

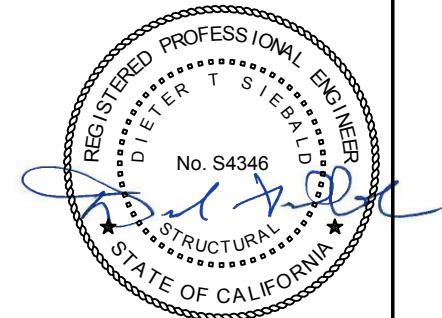
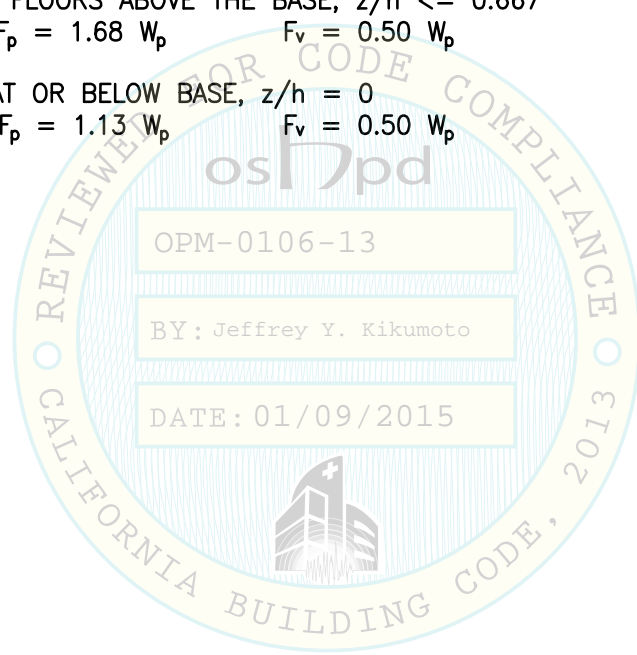
VITROS 4600 AT: $W_p = 1354\#$

FOR CASE 1 – UPPER FLOORS ABOVE THE BASE, $z/h \leq 0.667$

$S_{DS} = 1.80$ $F_p = 1.68 W_p$ $F_v = 0.50 W_p$

FOR CASE 2 – SLAB AT OR BELOW BASE, $z/h = 0$

$S_{DS} = 2.50$ $F_p = 1.13 W_p$ $F_v = 0.50 W_p$



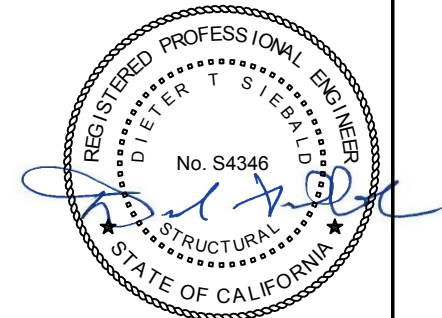
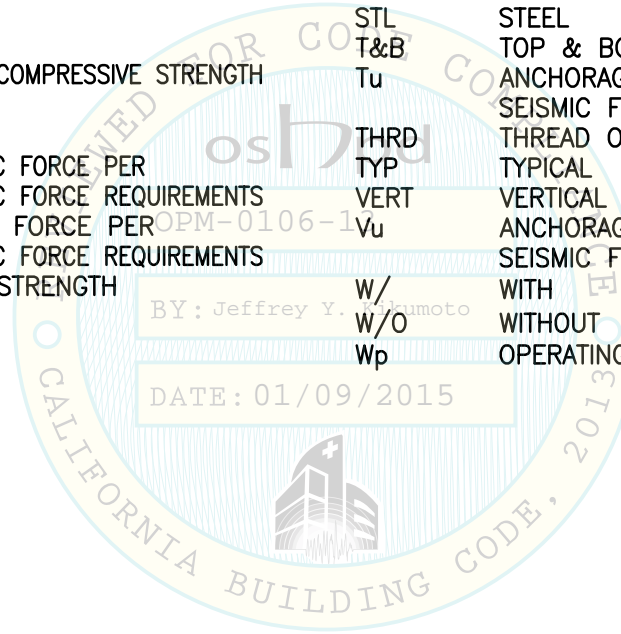
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ABBREVIATIONS:

AB	ANCHOR BOLTS	IN (")	INCH
ABV	ABOVE	KSI	KIPS PER SQUARE INCH
ADJ	ADJACENT	LRFD	LOAD AND RESISTANCE FACTOR DESIGN
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	LWC	LIGHT WEIGHT CONCRETE
BLW	BELOW	MAX	MAXIMUM
BOTT	BOTTOM	MFR	MANUFACTURER
CBC	CALIFORNIA BUILDING CODE	MIN	MINIMUM
CG	CENTER OF GRAVITY	MTL	METAL
☐	CENTERLINE	NO. (#)	NUMBER OR POUNDS
COORD	COORDINATE	NWC	NORMAL WEIGHT CONCRETE
CONC	CONCRETE	OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT
DBL	DOUBLE	PG(S)	PAGE(S)
DIA (φ)	DIAMETER	☐	PLATE
(E)	EXISTING CONDITION	PSI	POUNDS PER SQUARE INCH
EA	EACH	SEOR	STRUCTURAL ENGINEER OF RECORD
ELEV	ELEVATION	STL	STEEL
EMBED	EMBEDMENT	T&B	TOP & BOTTOM
EQUIP	EQUIPMENT	Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE AT LRFD
f'c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE	THRD	THREAD OR THREADED
FLR	FLOOR	TYP	TYPICAL
Fp	HORIZONTAL SEISMIC FORCE PER ASCE 7-10 SEISMIC FORCE REQUIREMENTS	VERT	VERTICAL
Fv	VERTICAL SEISMIC FORCE PER ASCE 7-10 SEISMIC FORCE REQUIREMENTS	Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE AT LRFD
Fy	SPECIFIED YIELD STRENGTH OF STEEL, KSI	W/	WITH
GA	GAUGE	W/O	WITHOUT
		Wp	OPERATING WEIGHT



SHEET TITLE: ABBREVIATIONS

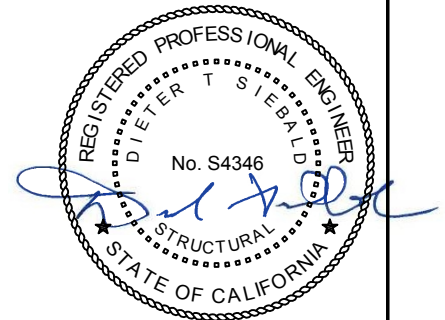
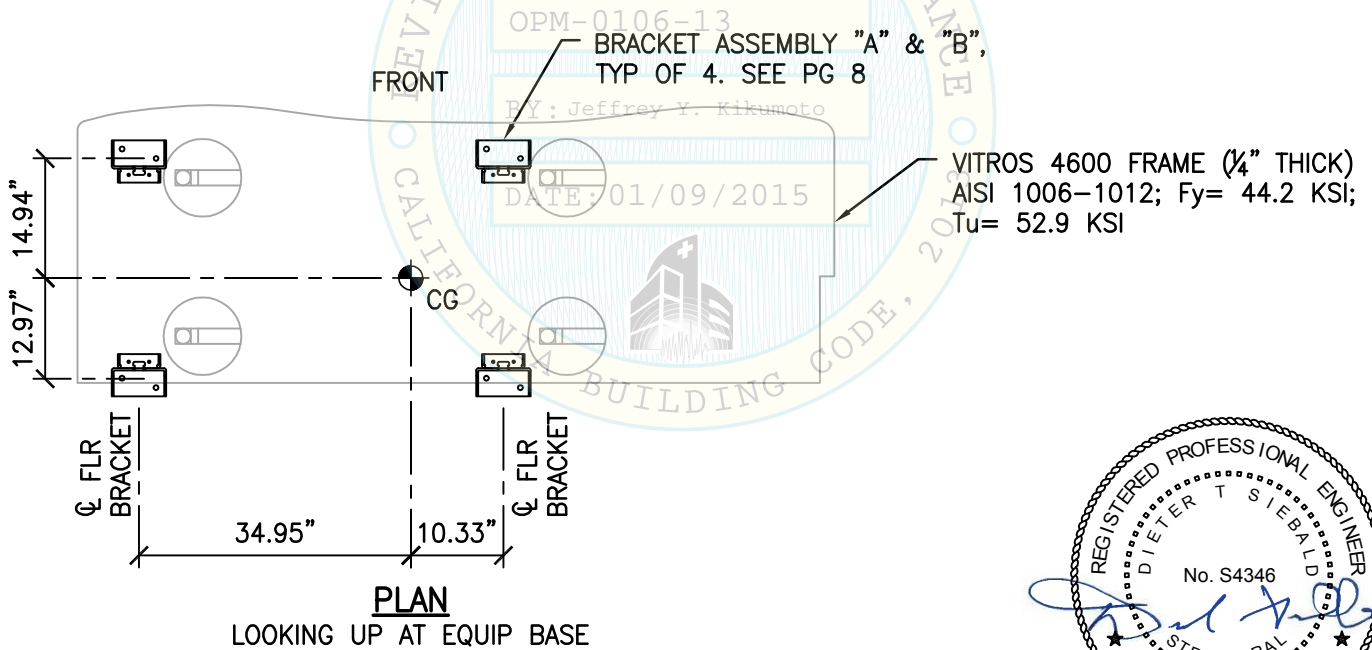
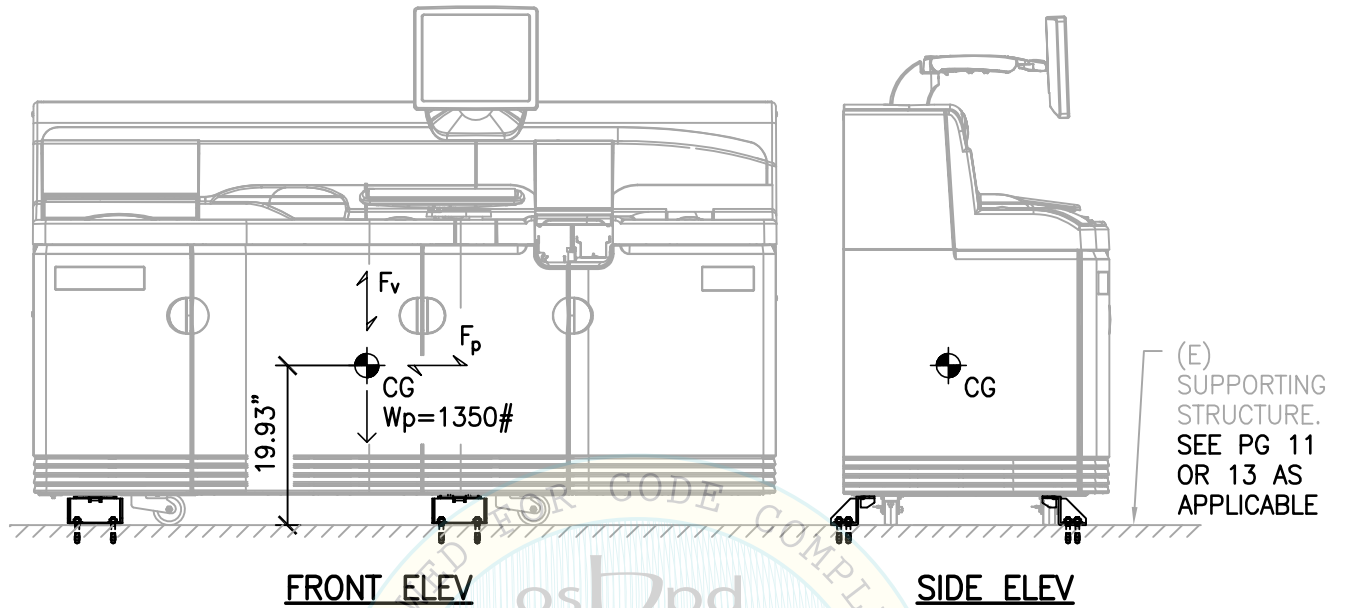
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VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

Ortho Clinical Diagnostics

PART OF THE *Johnson & Johnson* FAMILY OF COMPANIES



SHEET TITLE: VITROS 4600
PLAN & ELEVATIONS



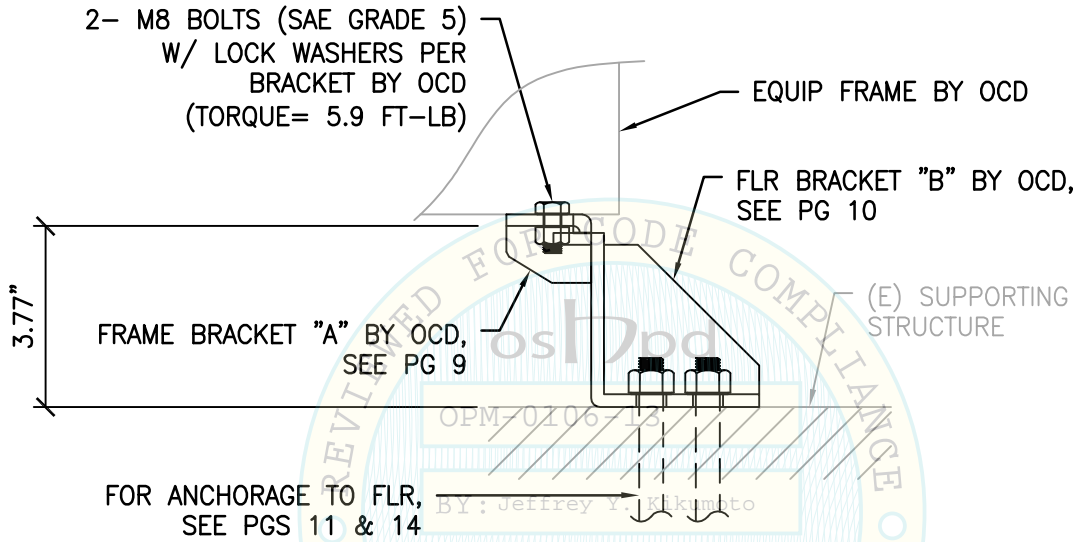
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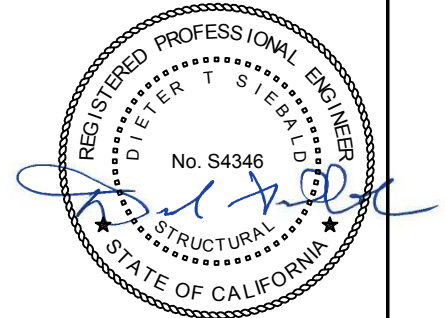
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NOTE:
BRACKET MATERIAL IS AISI 1006/1012
LOW CARBON STL (Fy=44 KSI), TYP



SHEET TITLE: VITROS 4600
BRACKET ASSEMBLY DETAIL



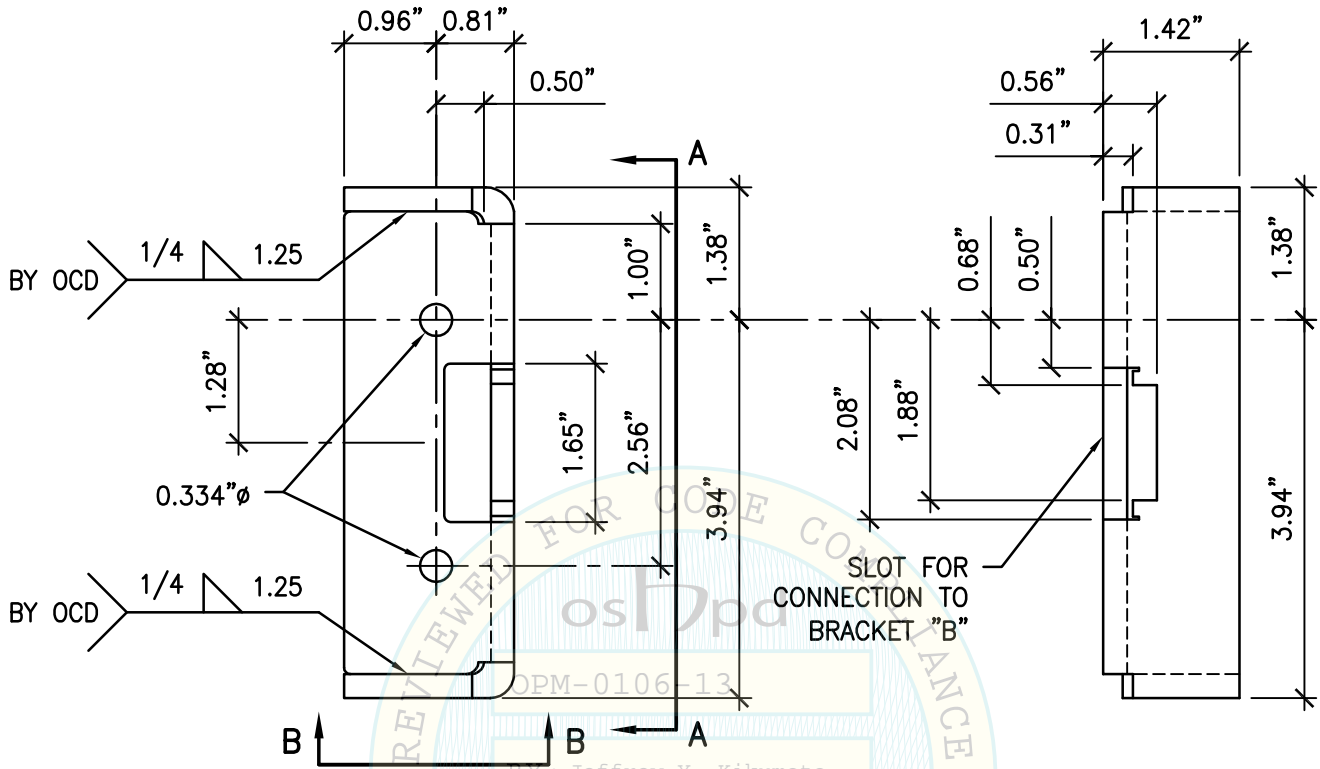
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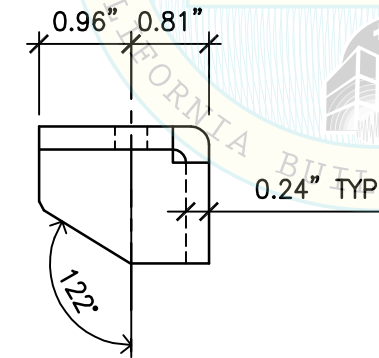
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PLAN VIEW

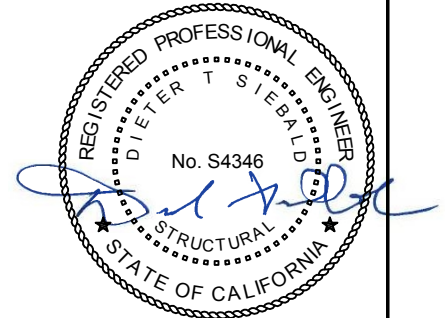
ELEVATION A-A



ELEVATION B-B

BY: Jeffrey Y. Kikumoto

DATE: 01/09/2015



SHEET TITLE: VITROS 4600
FRAME BRACKET "A" DETAIL



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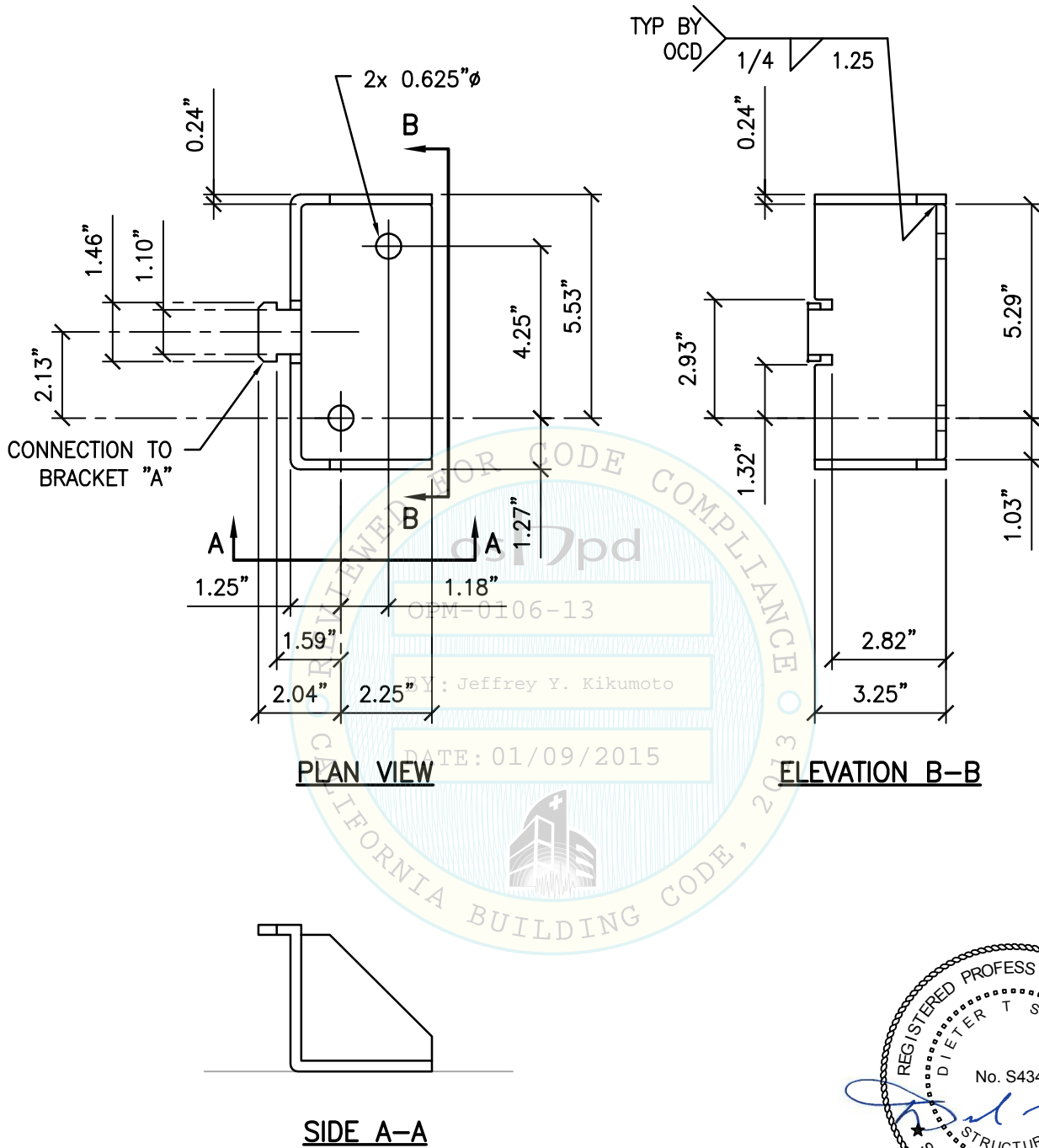
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L:\Jobs\13\13072 OCDUS - Six OPMs\Task 03 - OPM-0106-13 Vitros 4600\STRU\S1_TASK 03.dwg Time:Jan09,2015-01:09pm Login:cmachom Dimstyle:1 LTScale:6

L:\Jobs\13072 OCDUS - Six OPMs\Task 03 - OPM-0106-13 Vitros 4600\STRU\S1_TASK 03.dwg Time:Jan09,2015-01:09pm Login:cmachom Dimstyle:1 LTScale:6



SHEET TITLE: VITROS 4600
FLOOR BRACKET "B" DETAIL

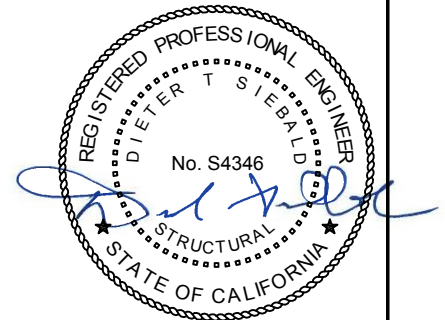


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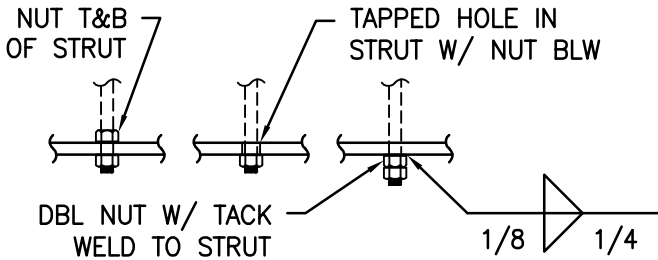
Job No:	13072.03
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VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

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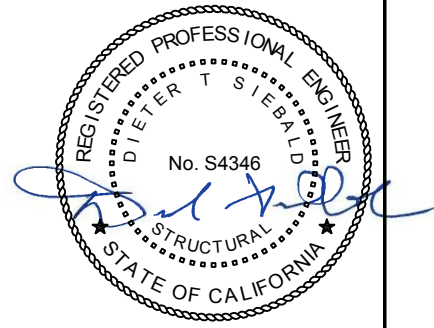
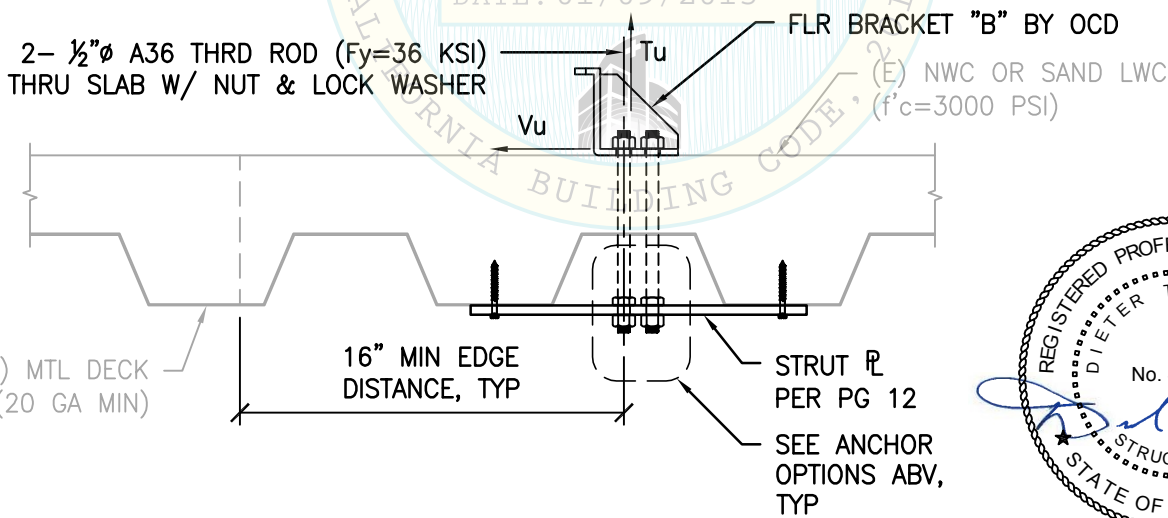
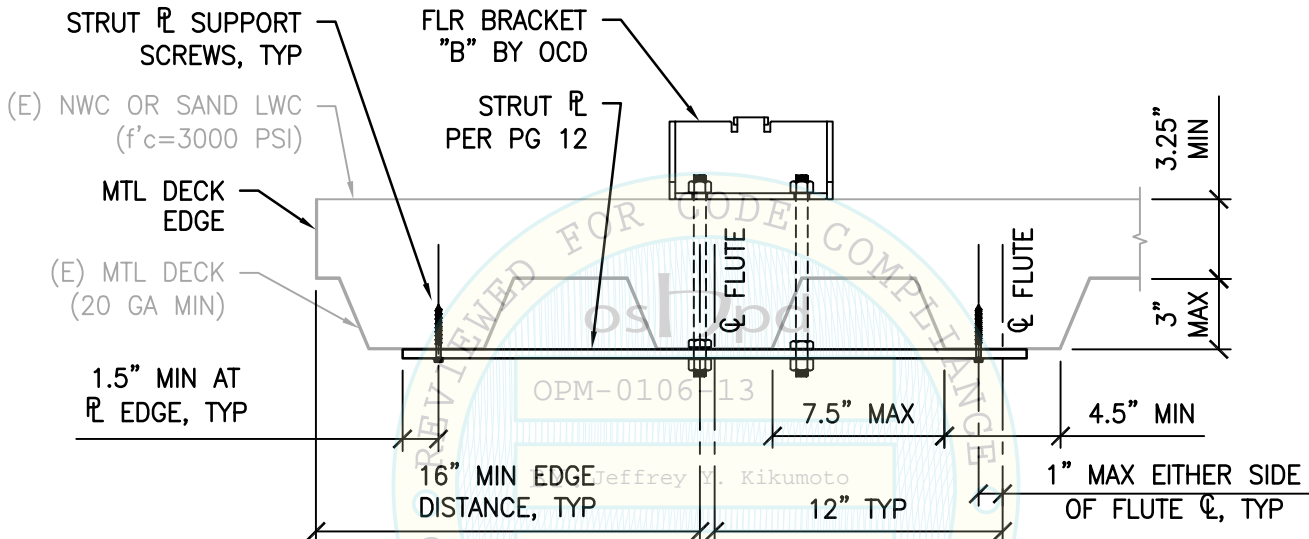


ANCHOR OPTIONS

MAX ANCHOR FORCES AT LRFD AT EA ANCHOR BOLT

	Tu	Vu
CASE 1 z/h ≤ 0.75 W/O Ω ₀	2450#	765#
CASE 1 z/h ≤ 0.75 W/ Ω ₀	2450#	1148#

(Ω₀ = 1.5) OVERSTRENGTH FACTOR MUST BE APPLIED TO SHEAR FORCE ONLY



SHEET TITLE: VITROS 4600
ATTACHMENT DETAIL TO CONC FILL OVER METAL DECK

<p>CYS STRUCTURAL ENGINEERS, INC. 2495 NATOMAS PARK DRIVE, SUITE 650 SACRAMENTO, CA 95833</p>	TEL (916) 920-2020 www.cyseng.com	Job No: 13072.03 Date: 1/9/2015 Page: 11 of 27
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VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

Ortho Clinical Diagnostics

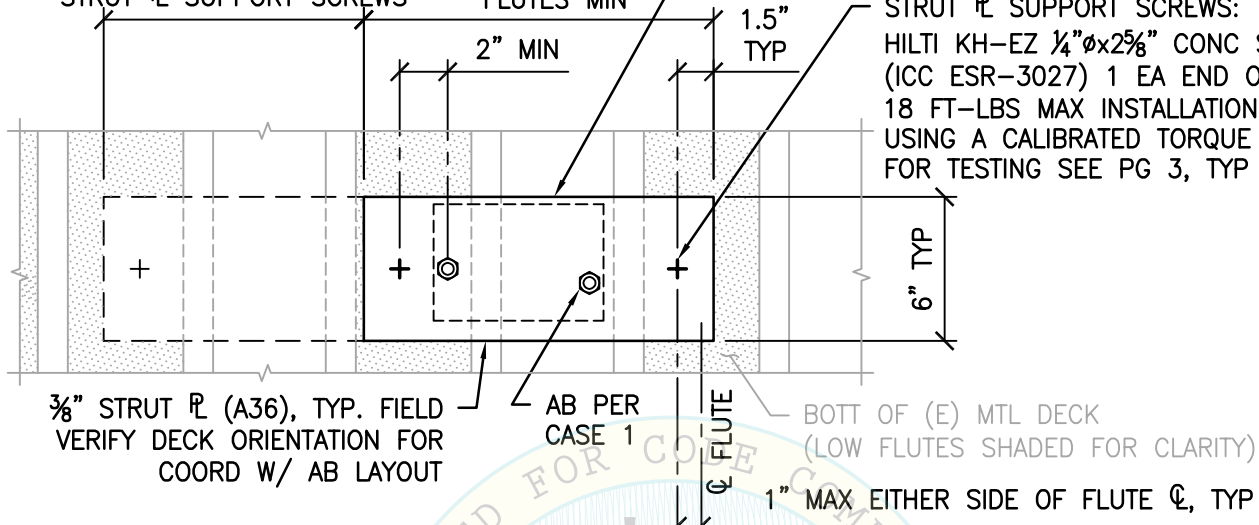
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EXTEND STRUT LENGTH TO
NEXT ADJ LOW FLUTE IF AB'S
ARE LESS THAN 2" FROM
STRUT \bar{r} SUPPORT SCREWS

LENGTH SHALL
ENGAGE 2 LOW
FLUTES MIN

FRONT BRACKET
ASSEMBLY ABV

STRUT \bar{r} SUPPORT SCREWS:
HILTI KH-EZ $\frac{1}{4}" \times 2\frac{5}{8}"$ CONC SCREWS
(ICC ESR-3027) 1 EA END OF \bar{r} . USE
18 FT-LBS MAX INSTALLATION TORQUE
USING A CALIBRATED TORQUE WRENCH,
FOR TESTING SEE PG 3, TYP



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

AB PER
CASE 1

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

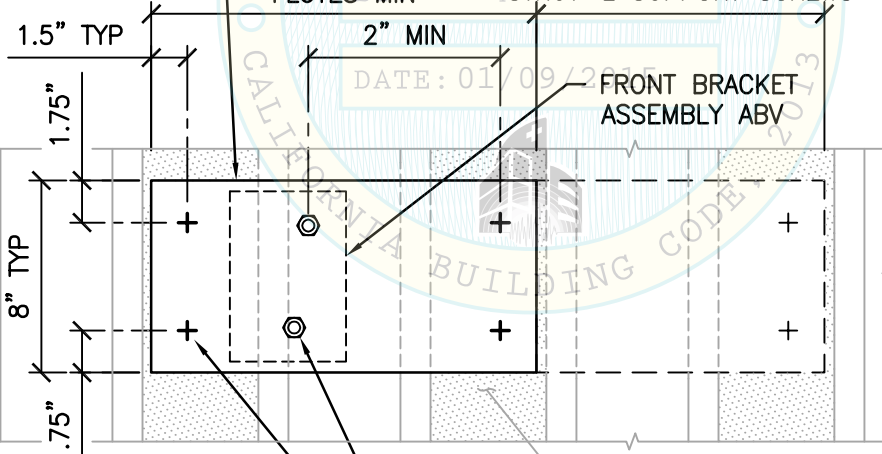
1" MAX EITHER SIDE OF FLUTE \bar{c} , TYP

PLAN VIEW

ANCHORS PERPENDICULAR TO FLUTES

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

EXTEND STRUT LENGTH TO
NEXT ADJ LOW FLUTE IF AB'S
ARE LESS THAN 2" FROM
STRUT \bar{r} SUPPORT SCREWS



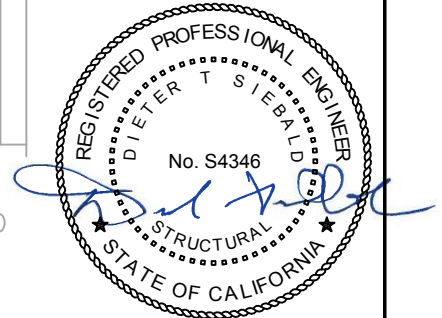
STRUT \bar{r} SUPPORT SCREWS:
HILTI KH-EZ $\frac{1}{4}" \times 2\frac{5}{8}"$ CONC SCREWS
(ICC ESR-3027) 2 EA END OF \bar{r}

AB PER
CASE 1

BOTT OF MTL DECK
(LOW FLUTES SHADED
FOR CLARITY)

PLAN VIEW

ANCHORS PARALLEL TO FLUTES



SHEET TITLE: VITROS 4600

ATTACHMENT DETAIL TO CONC FILL OVER METAL DECK



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L:\Jobs\13\13072 OCDUS - Six OPMs\Task 03 - OPM-0106-13 Vitros 4600\STRUS1_TASK 03.dwg Time:Jan09,2015-01:09pm Login:ccmacthom Dimscale:1 LTScale:6

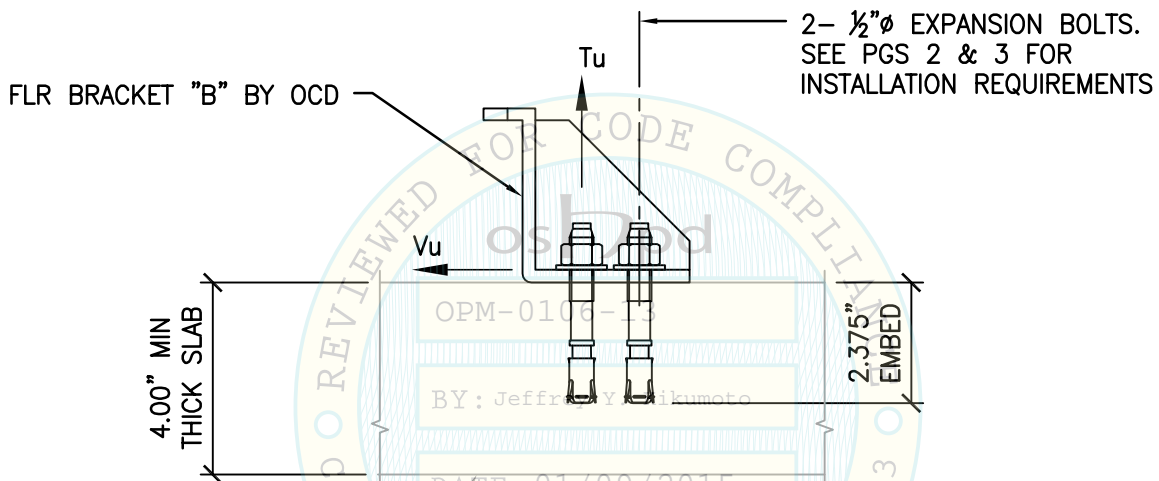
VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

Ortho Clinical Diagnostics

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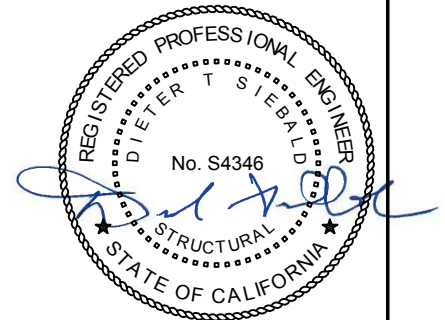
MAX ANCHOR FORCES AT LRFD AT EA ANCHOR BOLT		
	Tu	Vu
CASE 2 z/h=0	1016#	516#

INCLUDES OVERSTRENGTH FACTOR ($\Omega_0=1.5$)



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

VITROS 4600
CASE 2



SHEET TITLE: VITROS 4600
ATTACHMENT DETAIL TO CONC SLAB



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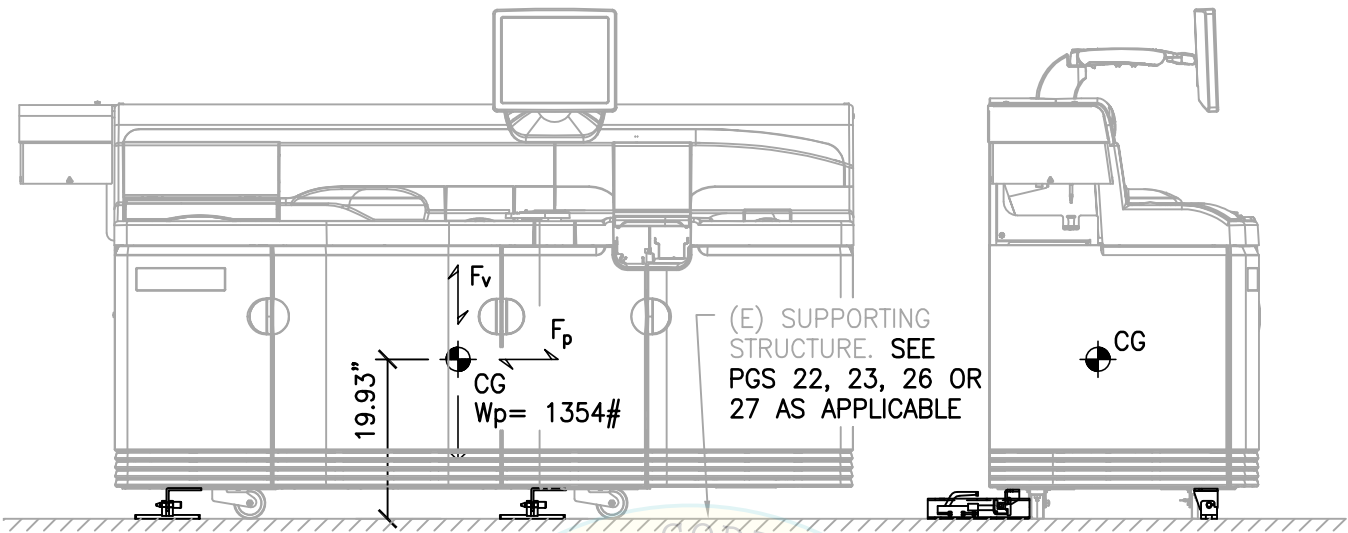
Job No:	13072.03
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VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

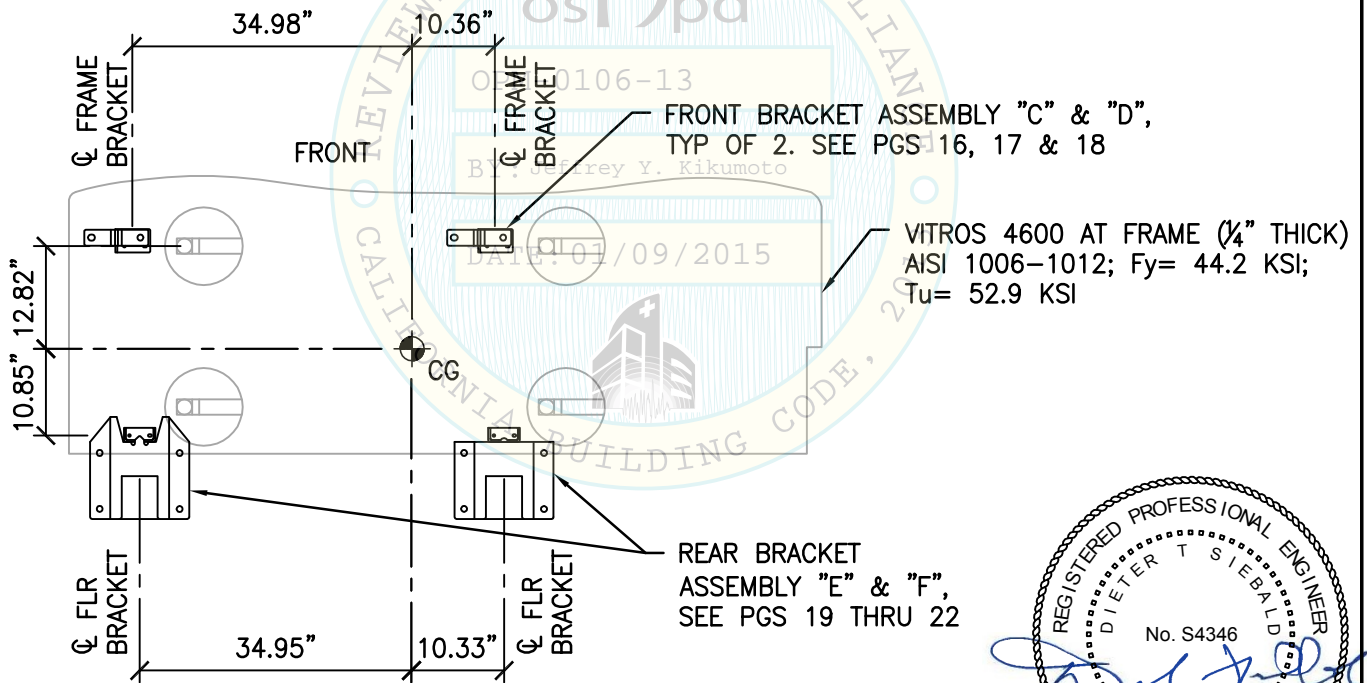
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FRONT ELEV

SIDE ELEV



PLAN

LOOKING UP AT EQUIP BASE



SHEET TITLE: VITROS 4600 AT
PLAN AND ELEVATIONS



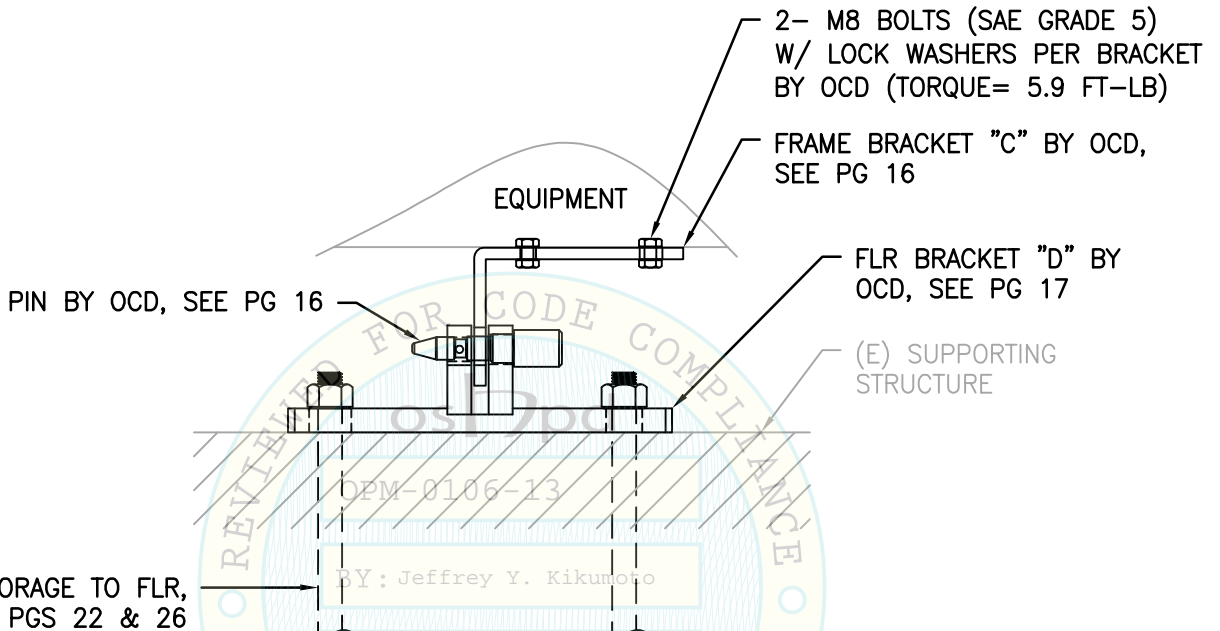
CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833

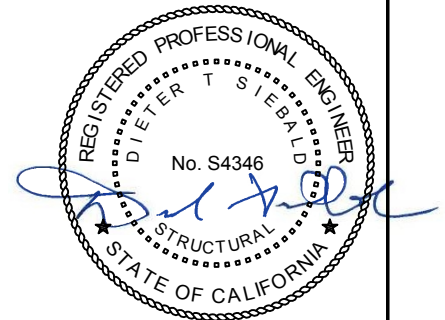
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NOTE:
BRACKET MATERIAL IS AISI 1006/1012
LOW CARBON STL (Fy=44 KSI), TYP



SHEET TITLE: VITROS 4600 AT
FRONT BRACKET ASSEMBLY DETAIL



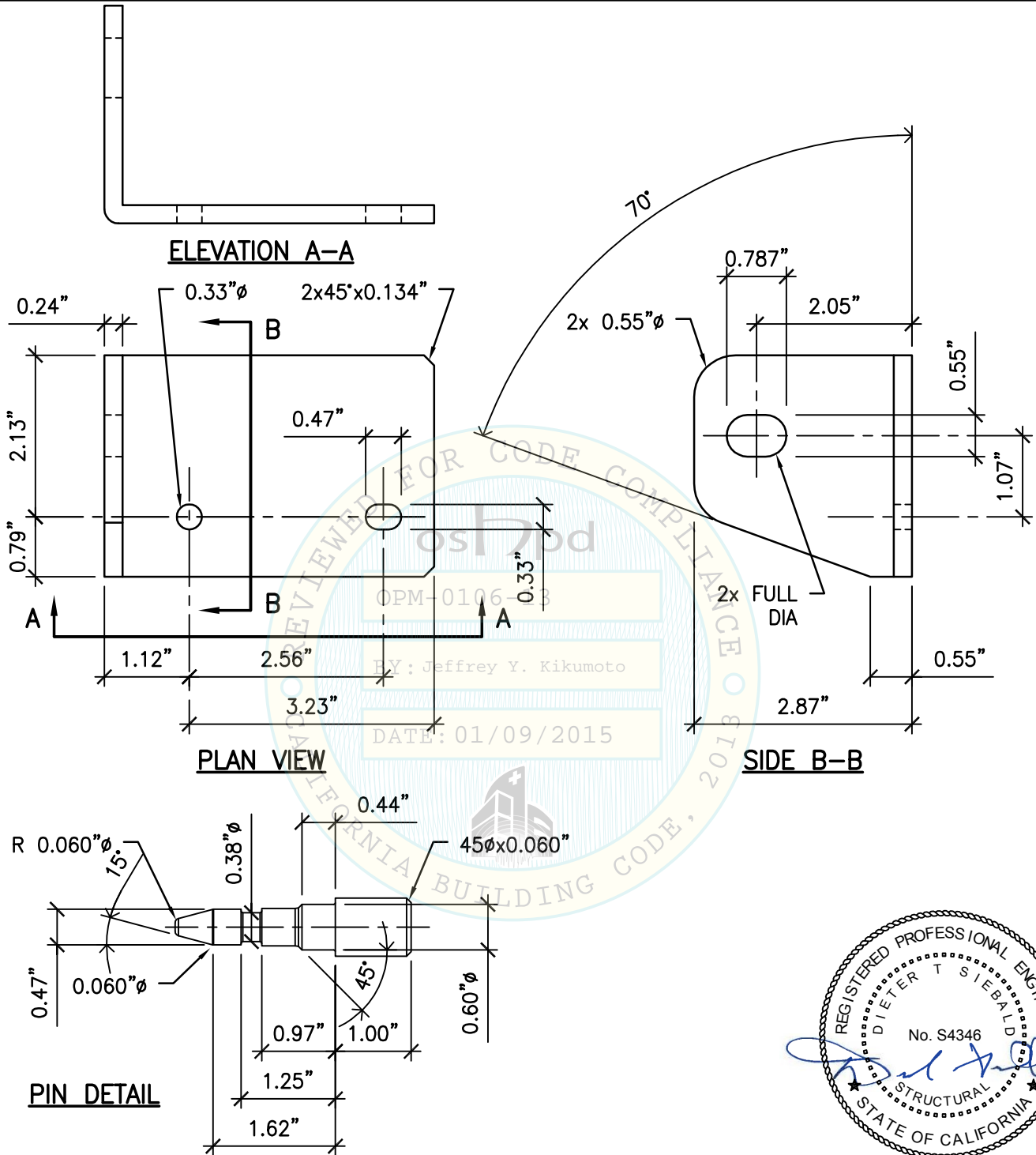
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SHEET TITLE: VITROS 4600 AT
FRONT FRAME BRACKET "C" DETAIL

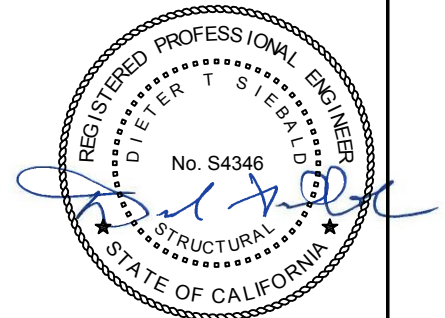


CYS STRUCTURAL ENGINEERS, INC.

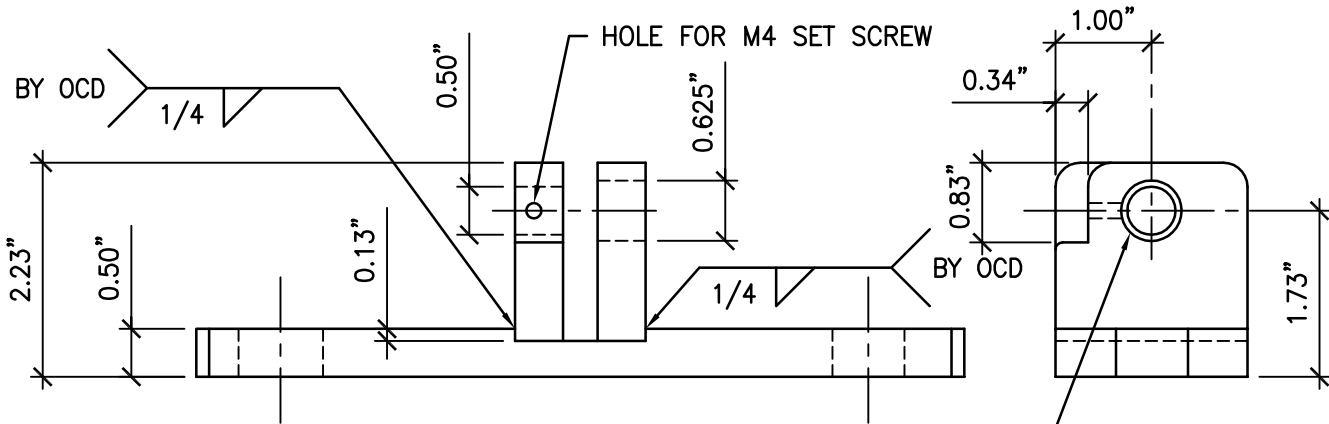
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TEL (916) 920-2020
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Date:	1/9/2015
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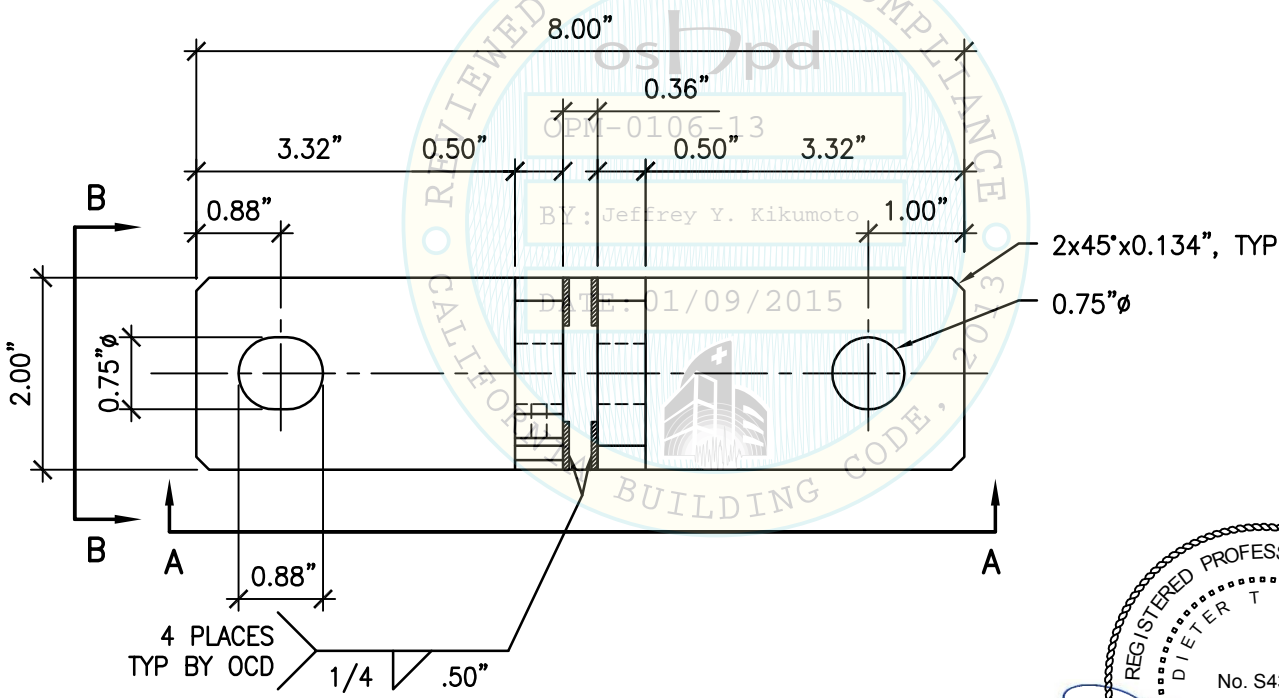


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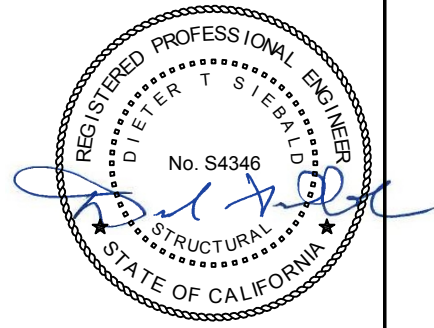


ELEVATION A-A
0.625" ϕ (OUTER)
0.50" ϕ (INNER)

SIDE B-B



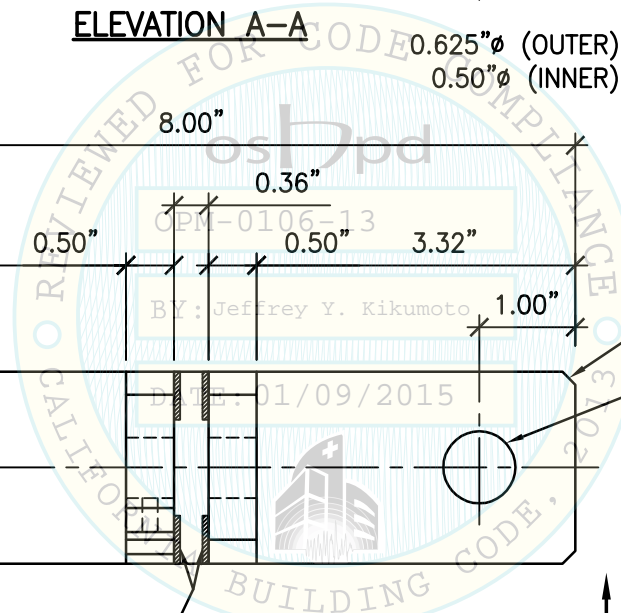
PLAN VIEW

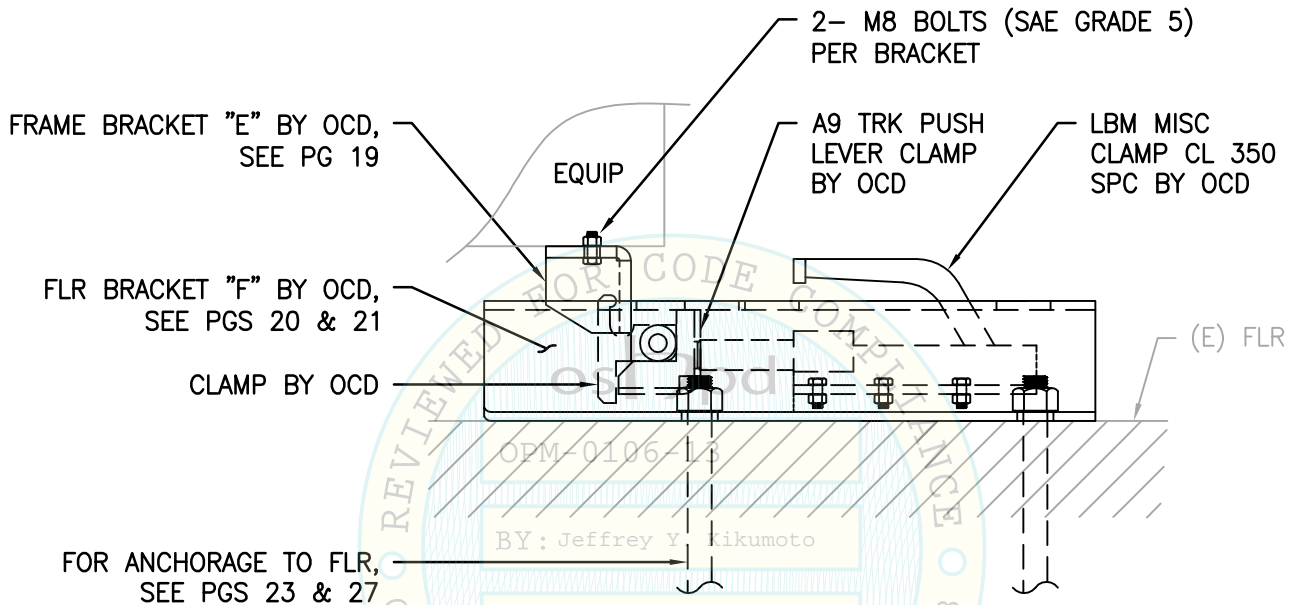


SHEET TITLE: VITROS 4600 AT
FRONT FLOOR BRACKET "D"

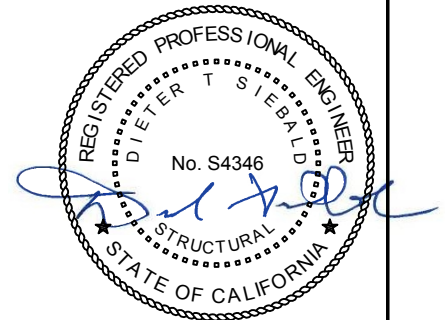
 CYS STRUCTURAL ENGINEERS, INC. 2495 NATOMAS PARK DRIVE, SUITE 650 SACRAMENTO, CA 95833	TEL (916) 920-2020 www.cyseng.com	Job No: 13072.03 Date: 1/9/2015 Page: 17 of 27
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NOTE:
BRACKET MATERIAL IS AISI 1006/1012
LOW CARBON STL (Fy=44 KSI).



SHEET TITLE: VITROS 4600 AT
REAR BRACKET ASSEMBLY DETAIL



CYS STRUCTURAL ENGINEERS, INC.

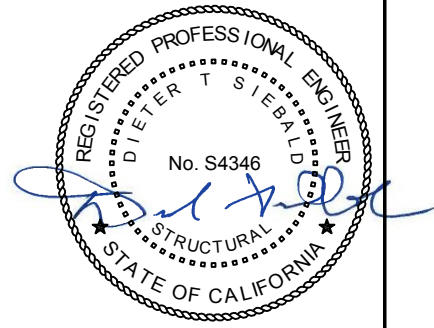
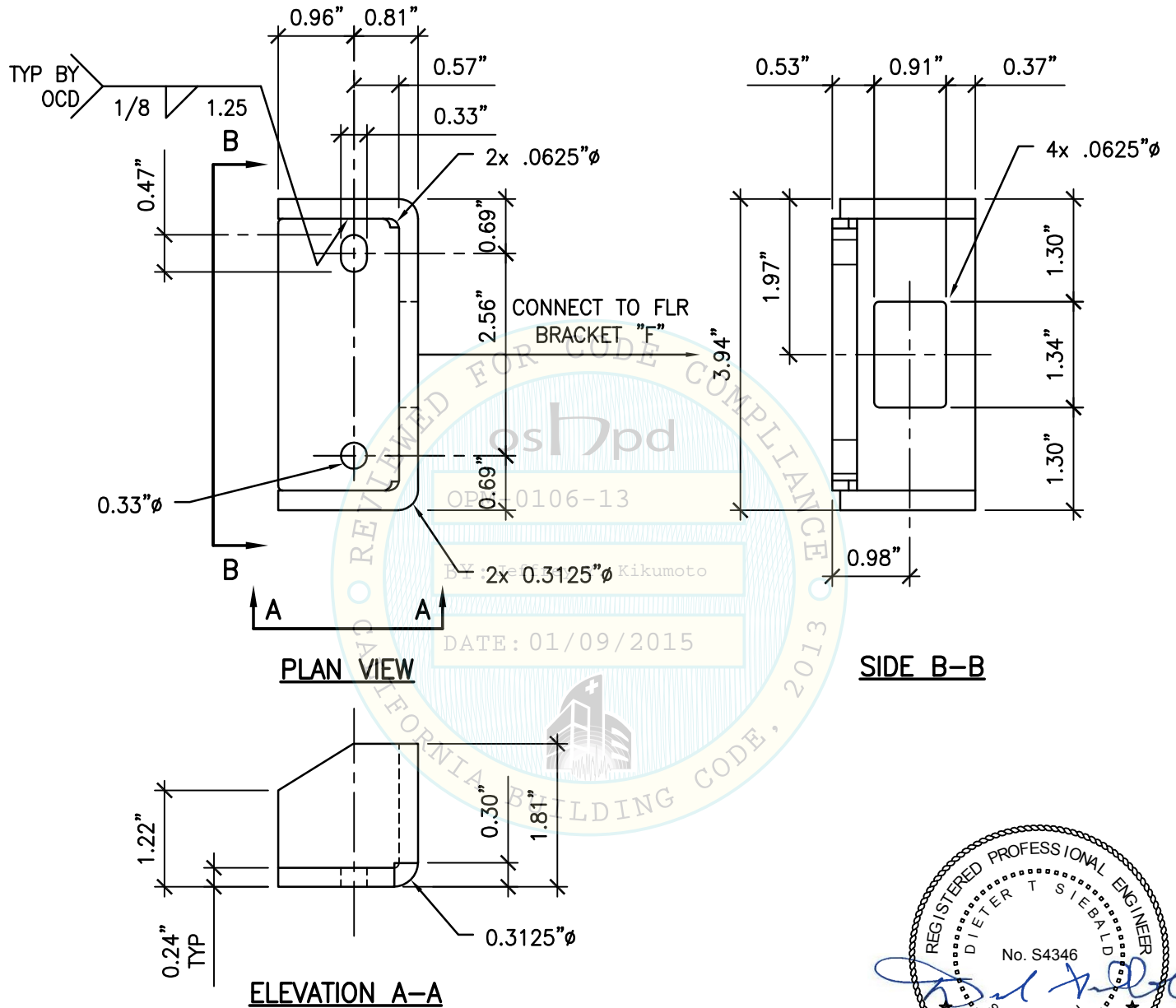
2495 NATOMAS PARK DRIVE, SUITE 650
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L:\Jobs\13\13072 OCDUS - Six OPMs\Task 03 - OPM-0106-13 Vitros 4600\STRU\S1_TASK 03.dwg Time:Jan09,2015-01:10pm Login:carnachom Dimstyle:1 LTScale:6

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SHEET TITLE: VITROS 4600 AT
REAR FRAME BRACKET "E" DETAIL

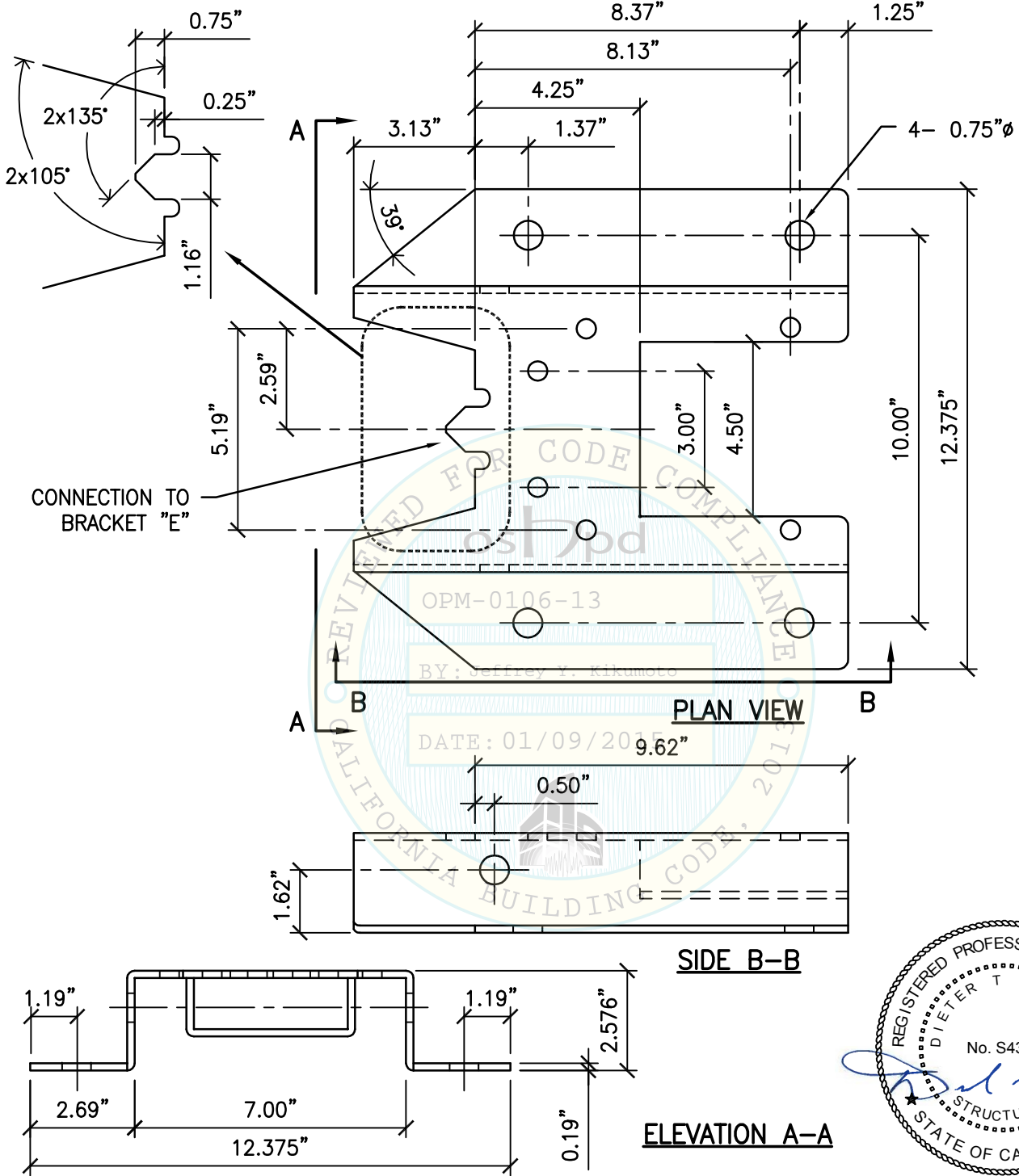


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SHEET TITLE: VITROS 4600 AT
FLOOR BRACKET "F" DETAIL



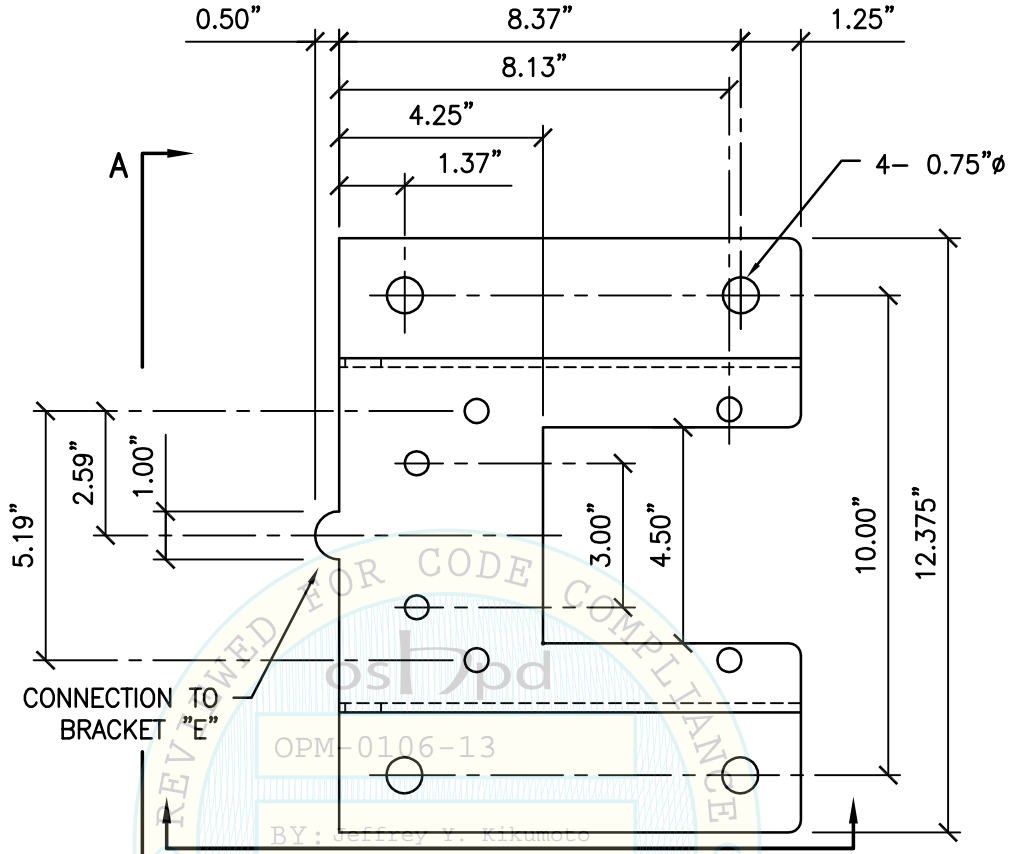
CYS STRUCTURAL ENGINEERS, INC.

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L:\Jobs\13072 OCDUS - Six OPMs\Task 03 - OPM-0106-13 Vitros 4600\STRU\S1_TASK 03.dwg Time:Jan09,2015-01:10pm Login:camachom DimScale:1 L1Scale:6



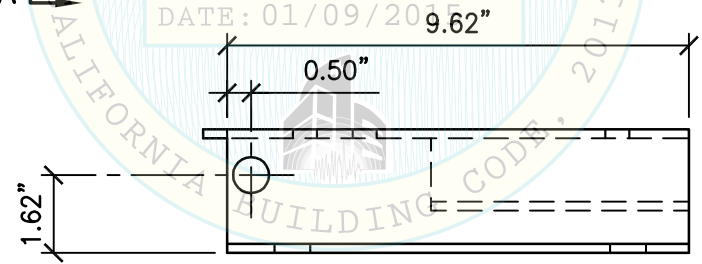
CONNECTION TO
BRACKET "E"

OPM-0106-13

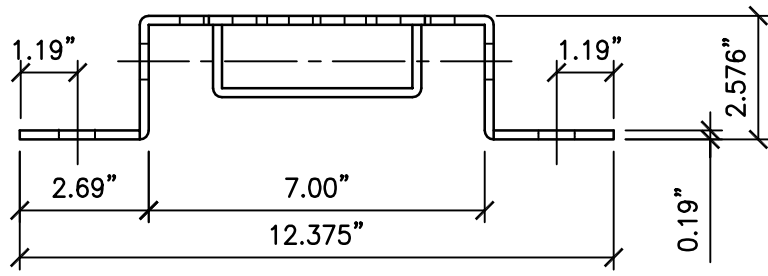
BY: Jeffrey Y. Kikumoto

DATE: 01/09/2015

PLAN VIEW



SIDE B-B



ELEVATION A-A



SHEET TITLE: VITROS 4600 AT
FLOOR BRACKET "F" DETAIL

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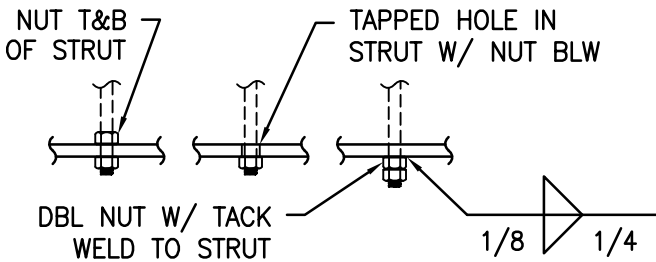
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VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

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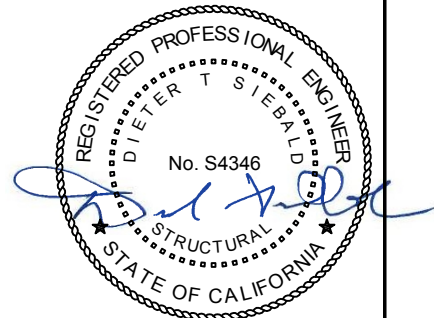
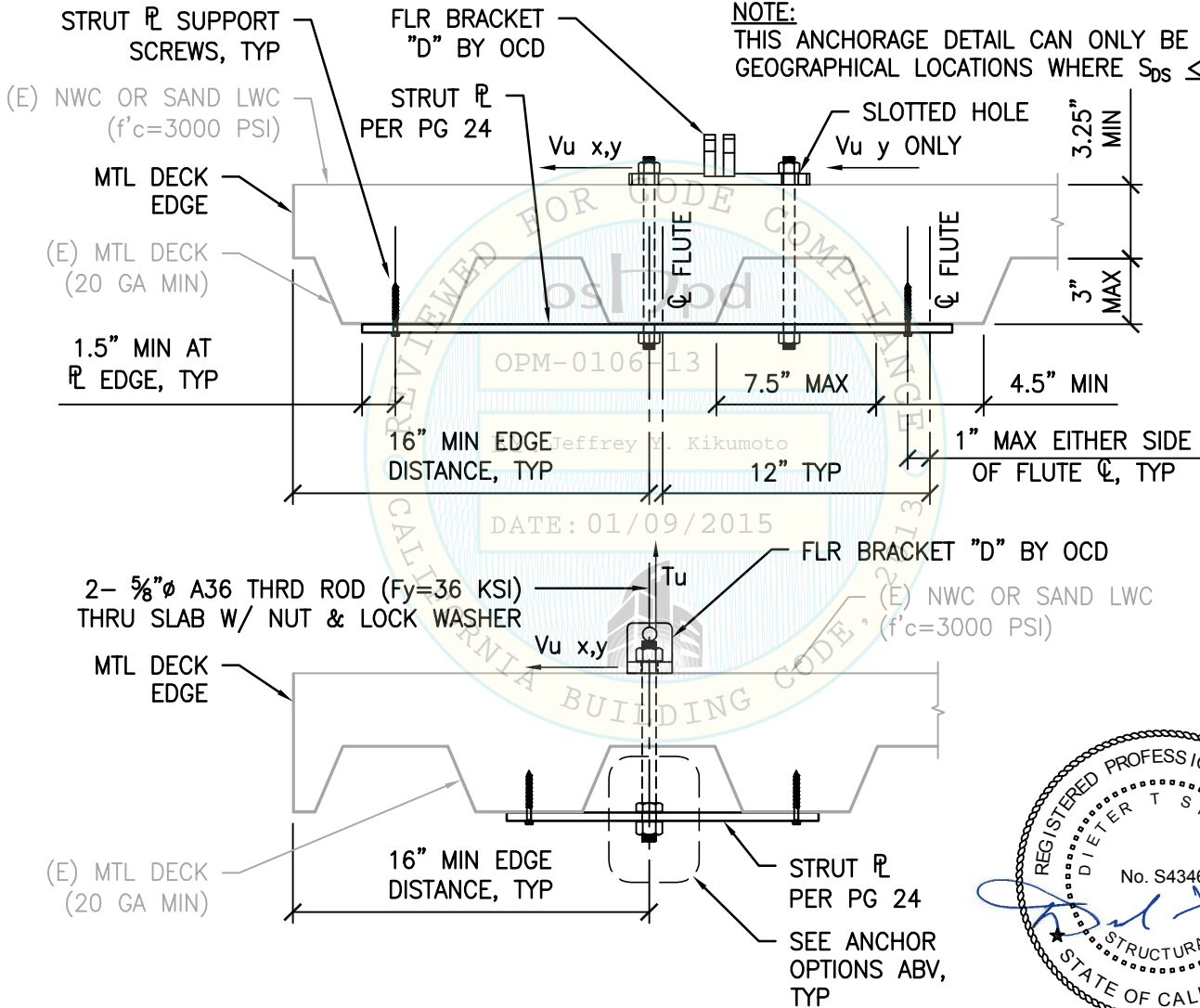
ANCHOR OPTIONS

MAX ANCHOR FORCES AT LRFD AT EA ANCHOR BOLT

	Tu	Vu x,y
CASE 1 z/h ≤ 0.667 W/O Ω ₀	1557#	509#
CASE 1 z/h ≤ 0.667 W/ Ω ₀	1557#	764#

(Ω₀ = 1.5) OVERSTRENGTH FACTOR MUST BE APPLIED TO SHEAR FORCE ONLY

NOTE:
THIS ANCHORAGE DETAIL CAN ONLY BE USED AT GEOGRAPHICAL LOCATIONS WHERE S_{DS} ≤ 1.80.



SHEET TITLE: VITROS 4600 AT
ATTACHMENT DETAIL TO CONCRETE FILL OVER METAL DECK



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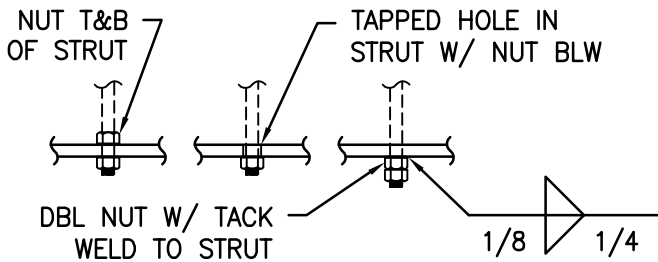
Job No: 13072.03
Date: 1/9/2015
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VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

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ANCHOR OPTIONS

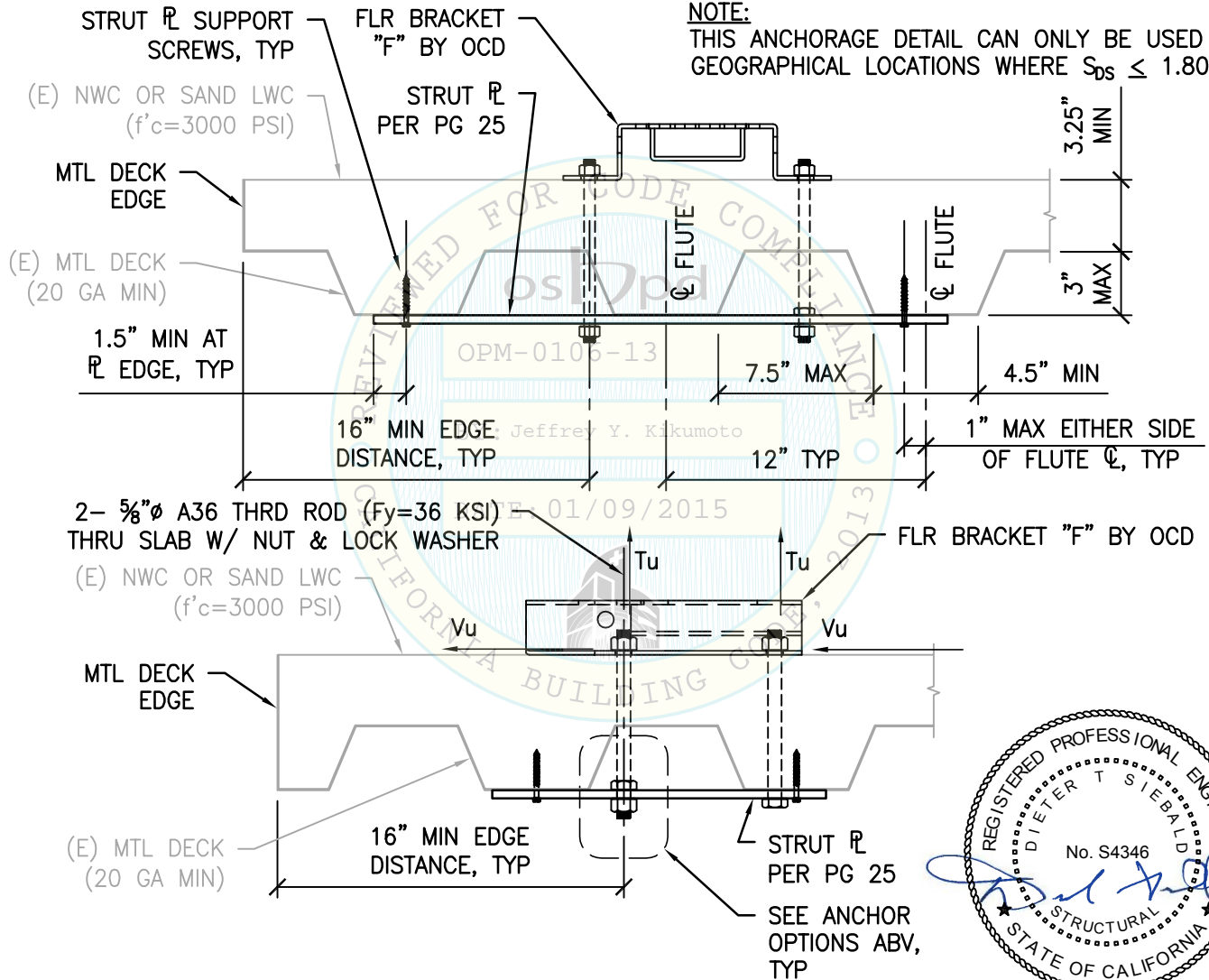
MAX ANCHOR FORCES AT LRFD AT EA ANCHOR BOLT

	Tu	Vu
CASE 1 z/h ≤ 0.667 W/O Ω _o	717#	278#
CASE 1 z/h ≤ 0.667 W/Ω _o	717#	417#

(Ω_o = 1.5) OVERSTRENGTH FACTOR MUST BE APPLIED TO SHEAR FORCE ONLY

NOTE:

THIS ANCHORAGE DETAIL CAN ONLY BE USED AT GEOGRAPHICAL LOCATIONS WHERE S_{DS} ≤ 1.80.



SHEET TITLE: VITROS 4600 AT
ATTACHMENT DETAIL TO CONCRETE FILL OVER METAL DECK



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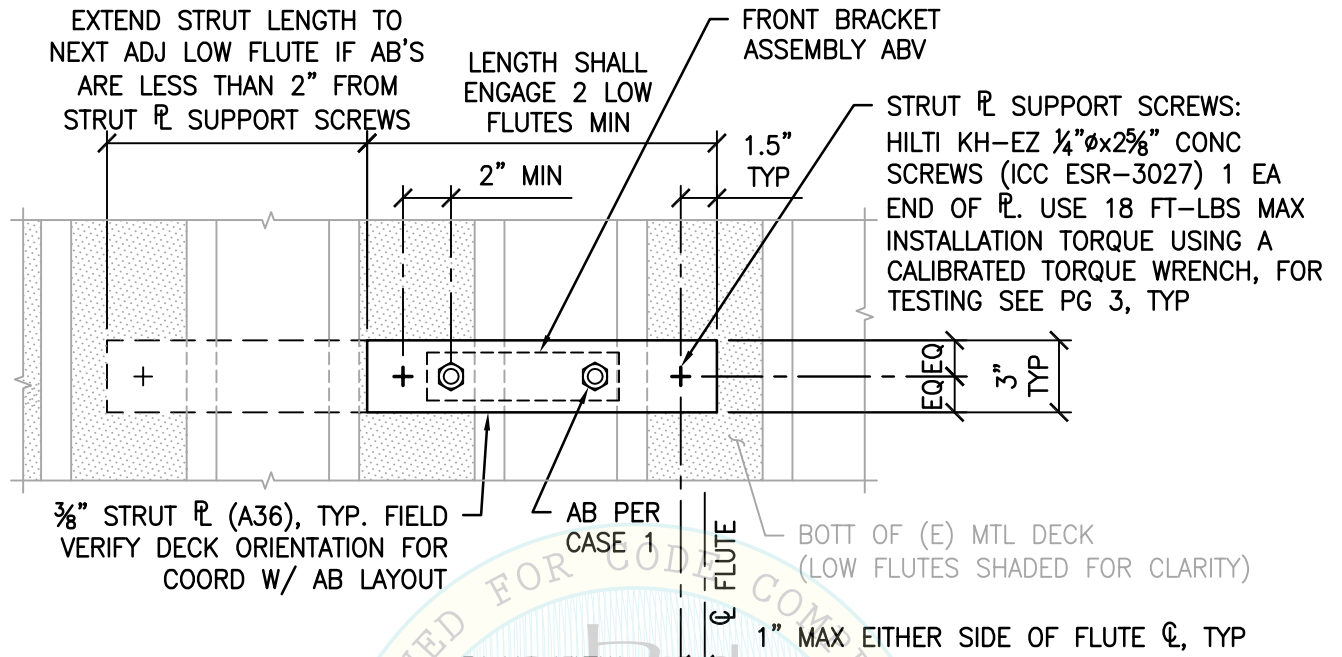
Job No: 13072.03
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VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

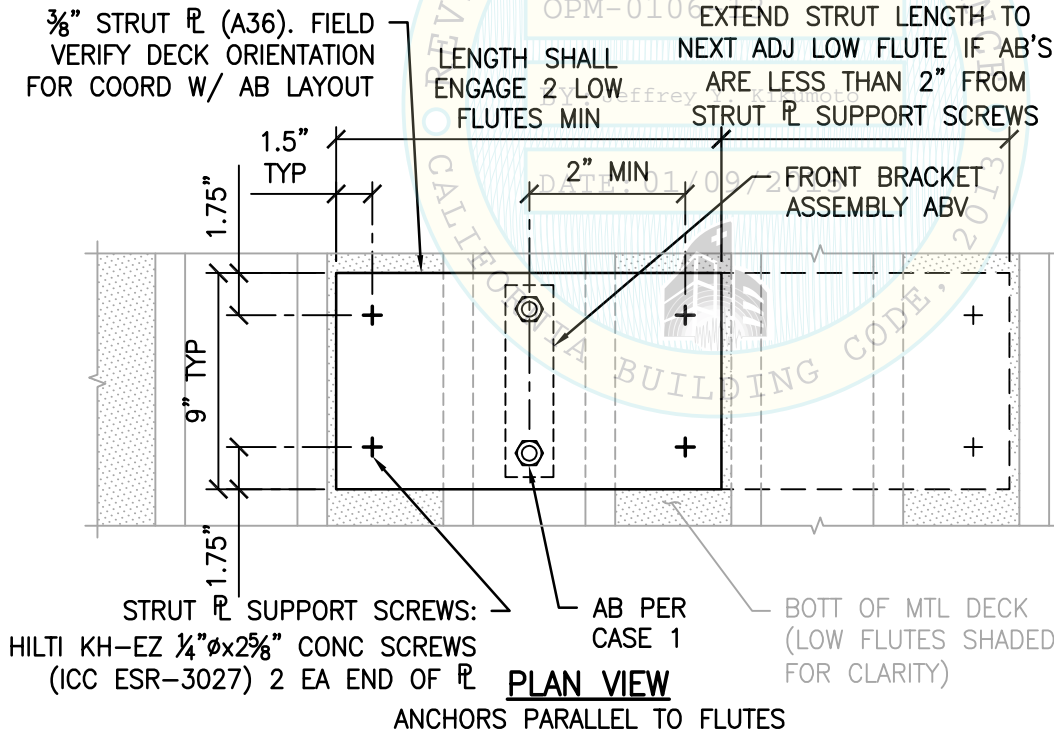
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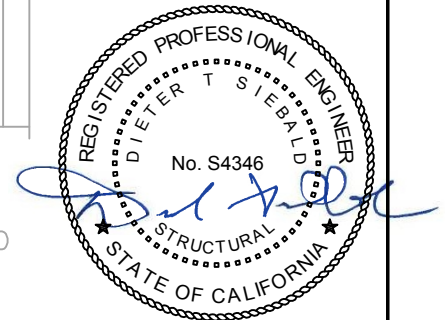
PLAN VIEW

ANCHORS PERPENDICULAR TO FLUTES



PLAN VIEW

ANCHORS PARALLEL TO FLUTES



SHEET TITLE: VITROS 4600 AT
ATTACHMENT DETAIL TO CONCRETE FILL OVER METAL DECK



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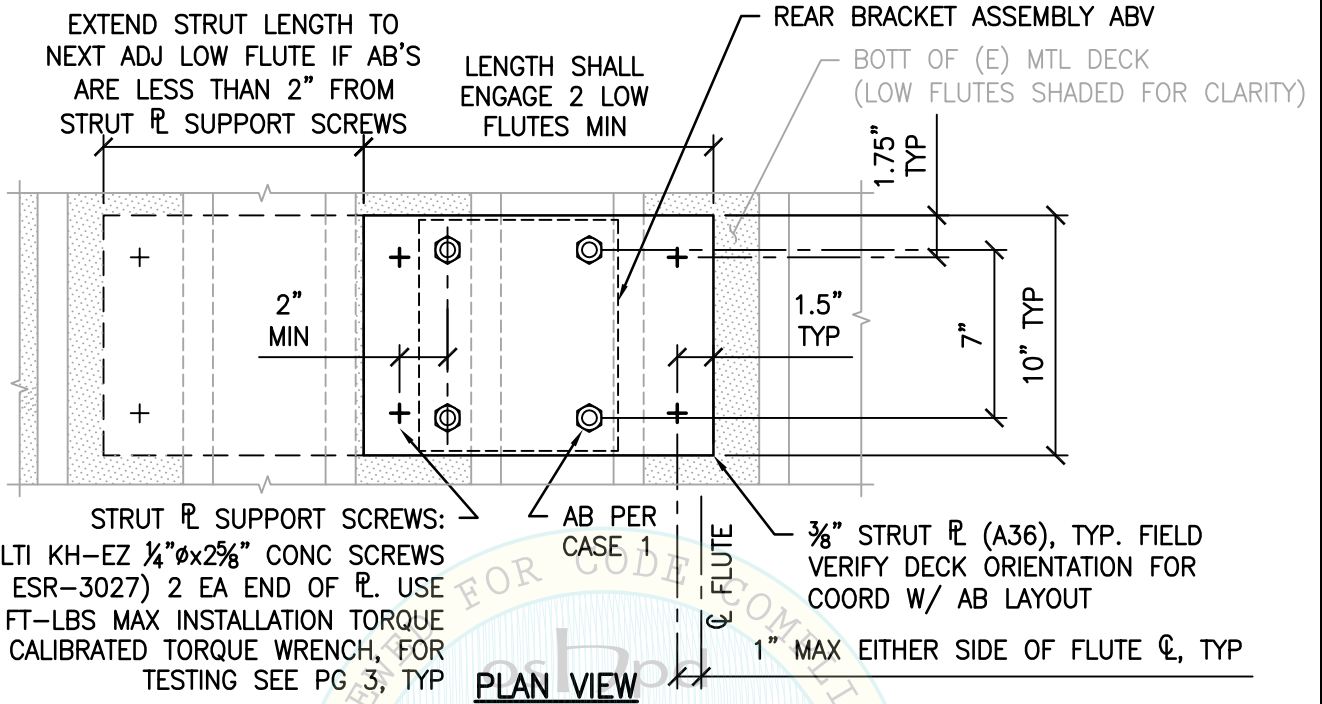
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VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

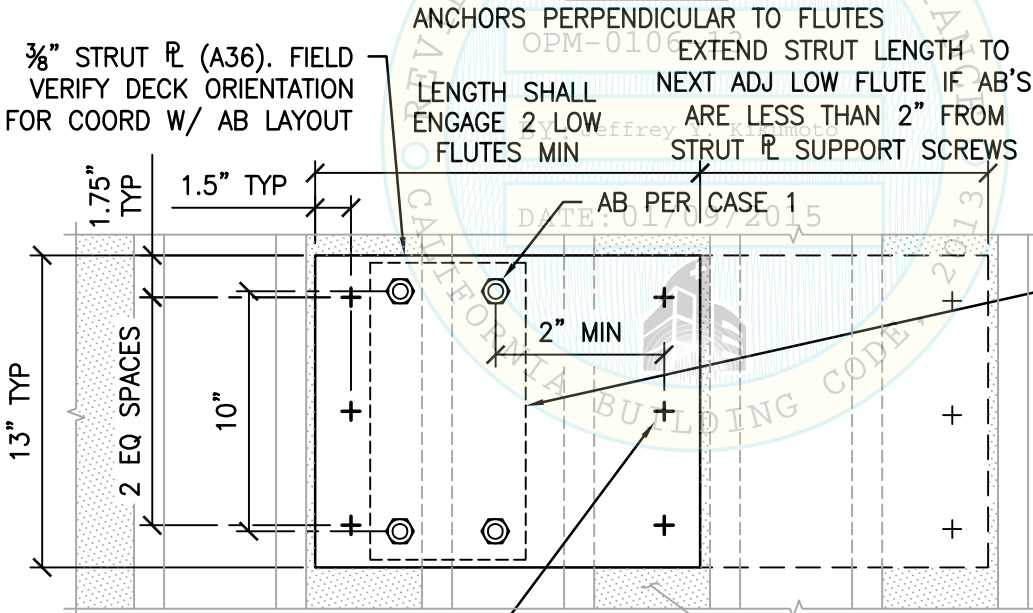
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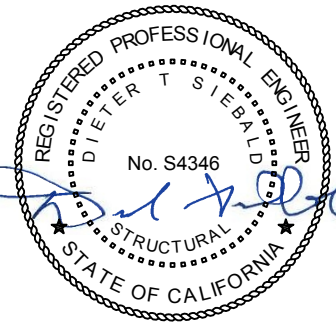
STRUT R SUPPORT SCREWS:
HILTI KH-EZ 1/4"Øx2 5/8" CONC SCREWS
(ICC ESR-3027) 2 EA END OF R. USE
18 FT-LBS MAX INSTALLATION TORQUE
USING A CALIBRATED TORQUE WRENCH, FOR
TESTING SEE PG 3, TYP

PLAN VIEW



STRUT R SUPPORT SCREWS:
HILTI KH-EZ 1/4"Øx2 5/8" CONC SCREWS
(ICC ESR-3027) 3 EA END OF R

PLAN VIEW



SHEET TITLE: VITROS 4600 AT
ATTACHMENT DETAIL TO CONCRETE FILL OVER METAL DECK



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L:\Jobs\13\13072 OCDUS - Six OPMs\Task 03 - OPM-0106-13 Vitros 4600\STRU\S1_TASK 03.dwg Time:Jan09,2015-01:10pm Login:camachom Dimstyle:1 LTScale:6

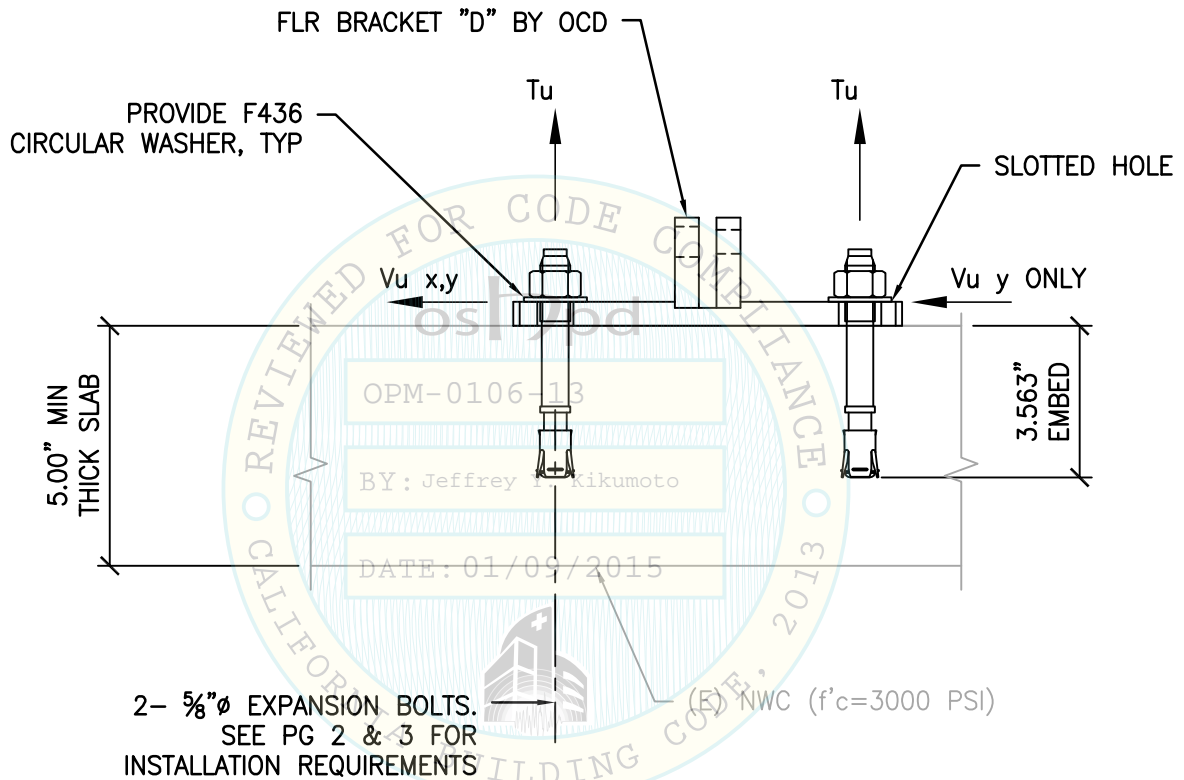
VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

Ortho Clinical Diagnostics

PART OF THE *Johnson & Johnson* FAMILY OF COMPANIES

MAX ANCHOR FORCES AT LRFD AT EA ANCHOR BOLT	
Tu	Vu x,y
CASE 2 z/h=0	1456#
	477#

INCLUDES OVERSTRENGTH FACTOR ($\Omega_0=1.5$)



SHEET TITLE: VITROS 4600 AT
ATTACHMENT TO CONCRETE SLAB



CYS STRUCTURAL ENGINEERS, INC.

2495 NATOMAS PARK DRIVE, SUITE 650
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TEL (916) 920-2020
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Date: 1/9/2015
Page: 26 of 27

L:\Jobs\13\13072 OCDUS - Six OPMs\Task 03 - OPM-0106-13 Vitros 4600\STRU\S1_TASK 03.dwg Time:Jan09,2015-01:10pm Login:carnachom Dimstyle:1 LTScale:6

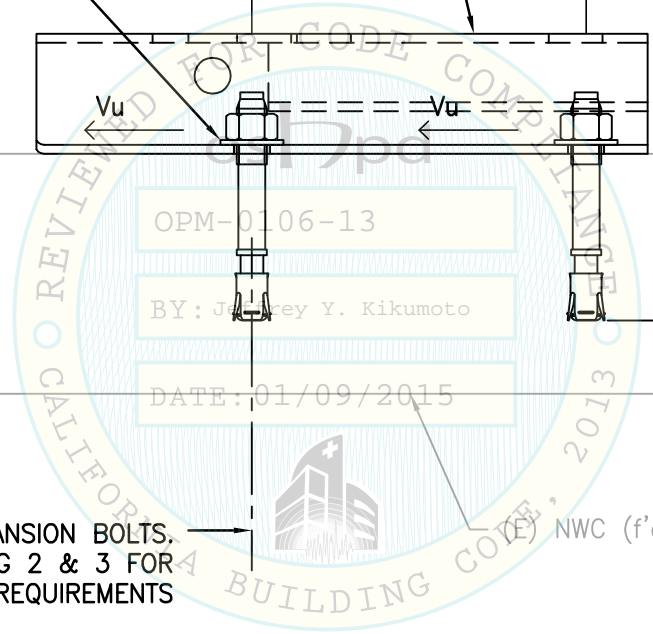
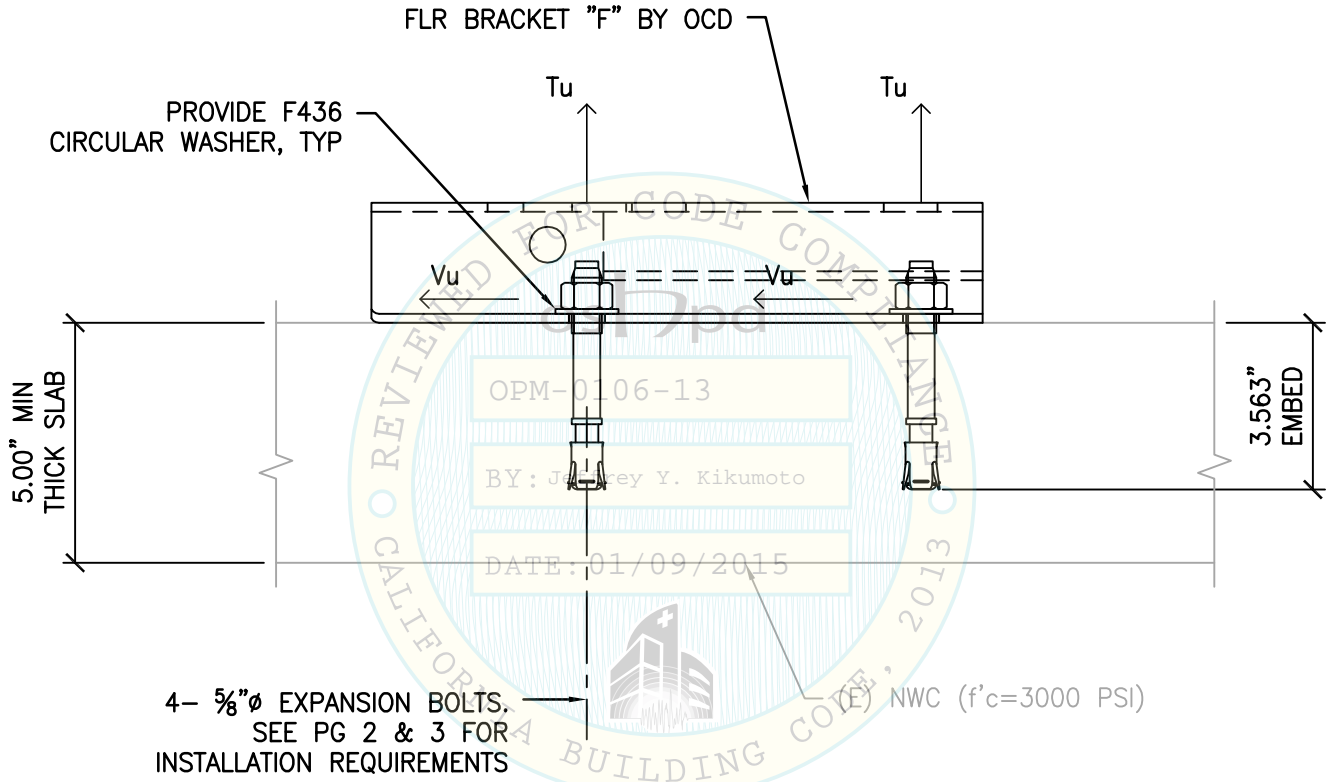
VITROS 4600 & 4600 AT CHEMISTRY SYSTEMS
EQUIPMENT ATTACHMENT

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MAX ANCHOR FORCES AT LRFD AT EA ANCHOR BOLT	
Tu	Vu
CASE 2 z/h=0	665#
	261#

INCLUDES OVERSTRENGTH FACTOR ($\Omega_0=1.5$)



SHEET TITLE: VITROS 4600 AT
ATTACHMENT DETAIL TO CONCRETE SLAB

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Page:	27 of 27

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