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

OFFICE USE ONLY

APPLICATION #: OPM-0661

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: ☐ New ☒ Renewal/Update

Manufacturer Information

Manufacturer: Roche Tissue Diagnostics

Manufacturer's Technical Representative: Jaspal Rawat

Mailing Address: 1901 E. Innovation Park Drive, Tuscon, AZ 85755

Telephone: (520) 878-6442 Email: jaspal.rawat@roche.com

Product Information

Product Name: Benchmark Ultra Plus

Product Type: Tissue Diagnostic

Product Model Number: PN# 0831439001

General Description: The Ultra Benchmark Plus is an instrument that stains tissue for immunohistochemistry (IHC), in-situ hybridization (ISH) and Immunocytochemistry (ICC).

Applicant Information

Applicant Company Name: Roche Tissue Diagnostics

Contact Person: Jaspal Rawat

Mailing Address: 1901 E. Innovation Park Drive, Tuscon, AZ 85755

Telephone: (520) 878-6442 Email: jaspal.rawat@roche.com

Title: Senior ME Manager

Registered Design Professonal Preparing Engineering Recommendations

Company Name: CYS STRUCTURAL ENGINEERS, INC.

Name: Dieter Siebald California License Number: S4346

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

Telephone: (916) 920-2020 Email: dieters@cyseng.com

HCAI Special Seismic Certification Preapproval (OSP)

☐ Special Seismic Certification is preapproved under OSP OSP Number:

Certification Method

Testing in accordance with: ☐ ICC-ES AC156 ☐ FM 1950-16

☐ Other(s) (Please Specify):

*Use of criteria other than those adopted by the California Building Standards Code, 2022 (CBSC 2022) 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 2022 may be used when approved by HCAI prior to testing.

☒ Analysis

☐ Experience Data

☐ Combination of Testing, Analysis, and/or Experience Data (Please Specify):

HCAI Approval

Date: 6/2/2023

Name: Jeffrey Kikumoto Title: Senior Structural Engineer

Condition of Approval (if applicable):

TABLE OF CONTENTS
OPM–0661

	PAGE
GENERAL NOTES	2
DESIGN CRITERIA	4
ABBREVIATIONS	5
COMPONENT PLANS & ELEVATIONS	6
COMPONENT BASE FRAME DETAILS	7
SEISMIC BRACKET DETAILS	8
ATTACHMENT DETAIL	
THRU CONCRETE FILL OVER METAL DECK (CASE 1)	12
4" CONCRETE SLAB ON GRADE (CASE 2A)	14
6" CONCRETE SLAB ON GRADE (CASE 2B)	15

NOTES:

1. THESE DRAWINGS ARE PREPARED FOR ROCHE TISSUE DIAGNOSTICS, TUCSON, ARIZONA.

2. THE CONTRACTOR & INSPECTOR OF RECORD SHALL OBTAIN A COPY OF THIS PRE–APPROVAL FROM THE CALIFORNIA DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION (HCAI) PRE–APPROVAL PROGRAMS WEBSITE.

3. THIS PRE–APPROVAL COVERS THE SUPPORTS & ATTACHMENTS OF THE UNIT TO THE SUPPORTING STRUCTURE. THE EQUIPMENT UNITS INCLUDING LEVELING LEGS ARE SUPPLIED BY ROCHE. THE SEISMIC BRACKETS, THRU–BOLTS & EXPANSION ANCHORS SHOWN IN THIS OPM SHALL BE SUPPLIED & 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:	23026
Date:	06/01/2023
Page:	1 of 15

ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS

GENERAL NOTES:

1. THIS HCAI PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2022. THE DEMAND (DESIGN FORCES) FOR USE W/ THIS OPM SHALL BE BASED ON THE CBC 2022.
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 & 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 EXPANSION ANCHOR TABLE ON PG 3 IS THE REQ MIN SPCG OF THE GIVEN DIA ANCHORS. 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 2022 & 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 & GAUGE OF THE EQUIP WHERE ATTACHMENTS ARE MADE, AGREE W/ THE INFO SHOWN ON THE PRE-APPROVAL DOCUMENTS.
   - F. THAT THE CONC SLAB TO WHICH THE EQUIP IS ANCHORED SHALL MEET THE REQUIREMENTS OF THE APPLICABLE ICC REPORT & THIS OPM.
3. EXPANSION ANCHORS INSTALLED IN NWC OR SLWC SHALL BE CARBON STEEL HILTI KB-TZ2 EXPANSION ANCHORS AS NOTED COMPLYING W/ ESR-4266 REISSUED DECEMBER 2021 SUBJECT TO RENEWAL DECEMBER 2023.
   - 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 EXPANSION ANCHOR TABLE ON PG 3.
   - B. JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOBSITE TESTING IN ACCORDANCE W/ THE EXPANSION ANCHOR TABLE PROVIDED IN THIS DOCUMENT. TORQUE TEST 50% OF THE INSTALLED ANCHORS. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE SPECIAL INSPECTOR & REPORT OF TEST RESULTS SHALL BE SUBMITTED TO HCAI. 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, HOWEVER NUT SHALL BE RETORQUED TO INSTALLATION TORQUE AFTER EQUIPMENT INSTALL. ALSO REFER TO 2022 CBC 1910A.5 "TESTS FOR POST-INSTALLED ANCHORS IN CONCRETE". REPORT OF TEST RESULTS SHALL BE SUBMITTED TO HCAI.
   - 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.
   - D. AVOID DAMAGING (E) STL REINF IN CONC SLAB WHEN INSTALLING CONC EXPANSION ANCHORS.
   - E. PROVIDE FOR FULL THRD ENGAGEMENT OF NUT & WASHER.
4. BOLTS THRU CONC ON MTL DECK:
   - A. BOLTS SHALL BE TORQUED BY ¾ TURN OF THE NUT AFTER SNUG TIGHT CONDITION IS ACHIEVED, UNO. THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQ TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
   - 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 IN ACCORDANCE W/ REQUIREMENTS FOR POST-INSTALLED ANCHORS. THRU-BOLTS W/ STL TO STL CONN IN TENSION DO NOT REQUIRE TESTING.

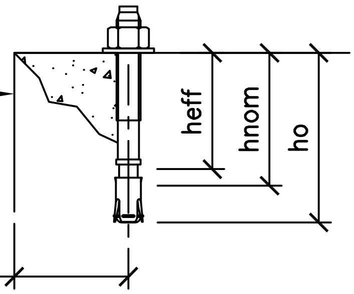
REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: GENERAL NOTES

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

Job No:	23026
Date:	06/01/2023
Page:	2 of 15

GENERAL NOTES CONTINUED:

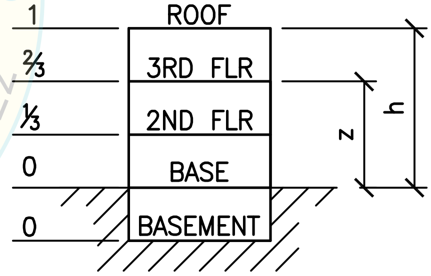


EXPANSION ANCHOR TABLE

CONDITION OF ANCHORAGE	ANCHOR DIA & TYPE (INCH)	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) hef	HOLE DEPTH (INCH) ho	MIN CONC THK (INCH) h	MIN CONC EDGE DISTANCE (INCH)	MIN ANCHOR SPCG (INCH)	TEST TORQUE (FT-LBS)
CASE 1	3/8 KB-TZ2	1 7/8	1½	2	3¼	8	PER PGS 12-13	30
CASE 2A	½ KB-TZ2	2 1/2	2	2¾	4	12	4	50
CASE 2B	½ KB-TZ2	3 3/4	3¼	4¼	6	12	4	50

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

CASE 1: ATTACHMENT DETAILS LOCATED AT UPPER FLRS ABV THE BASE OF A BLDG. THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 3¼" SLWC TOPPING OVER 3" DEEP MIN 20 GA MTL DECK (f'c = 3000 PSI, MIN). ANCHORS SHALL BE CARBON STEEL THRD ROD THRU CONC FILL & MTL DECK.



BLDG ELEV

CASE 2A: ATTACHMENT DETAILS LOCATED AT OR BLW THE BASE OF A BLDG. THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 4" NWC SLAB (f'c = 3000 PSI, MIN). ANCHORS SHALL BE CARBON STEEL.

CASE 2B: ATTACHMENT DETAILS LOCATED AT OR BLW THE BASE OF A BLDG. THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 6" NWC SLAB (f'c = 3000 PSI, MIN). ANCHORS SHALL BE CARBON STEEL.

SHEET TITLE: GENERAL NOTES (CONTINUED)

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

Job No:	23026
Date:	06/01/2023
Page:	3 of 15

DESIGN CRITERIA:

1. SUPPORT & ATTACHMENT DESIGN IS PER 2022 CBC AT LRFD LEVEL FORCES.

   OTHER MECHANICAL OR ELECTRICAL COMPONENTS PER TABLE 13.6-1 OF ASCE 7-16 INCL SUPPLEMENT #1 & ERRATA& CBC SECTION 1604A.5:

   $a_p = 1.0$ $R_p = 1.5$ $I_p = 1.5$ $\Omega_0 = 1.5$ (FOR CONC ANCHORS ONLY)

   W_p AS NOTED ON DRAWINGS

   LOAD COMBINATIONS
   $(0.9 - 0.2\ S_{DS})\ D - \Omega_0\ F_p$ (FOR MAX TENSION)
   $(1.2 + 0.2\ S_{DS})\ D + \Omega_0\ F_p$ (FOR MAX COMPRESSION)

2. THIS PRE-APPROVAL MAY BE USED ONLY AT GEOGRAPHICAL LOCATIONS IN THE STATE OF CALIFORNIA WHERE S_{DS} & z/h IS LESS THAN OR EQ TO THE VALUES NOTED BLW. SEOR SHALL VERIFY THAT OTHER COMBINATIONS OF S_{DS} & z/h MUST RESULT IN AN Fp VALUE THAT IS EQ TO OR LESS THAN Fp FORCE FOR CASE UNDER CONSIDERATION.

   UPPER FLRS ABV THE BASE OF BLDG, CASE 1:

$S_{DS} \leq$	$F_p \leq$	z/h ≤
2.50	1.80	0.4
2.25	1.80	0.5
2.04	1.80	0.6
1.87	1.80	0.7
1.73	1.80	0.8
1.61	1.80	0.9
1.50	1.80	1.0

   FLRS AT OR BLW THE BASE OF BLDG, CASE 2A:
   $S_{DS} \leq 1.60$ $F_p \leq 0.72\ W_p$ $z/h \leq 0$

   FLRS AT OR BLW THE BASE OF BLDG, CASE 2B:
   $S_{DS} \leq 2.30$ $F_p \leq 1.04\ W_p$ $z/h \leq 0$

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

SHEET TITLE: DESIGN CRITERIA

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

Job No:	23026
Date:	06/01/2023
Page:	4 of 15

ABBREVIATIONS:

@	AT
AB	ANCHOR BOLT
ABV	ABOVE
ADJ	ADJACENT
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
BLDG	BUILDING
BLW	BELOW
BOTT	BOTTOM
CBC	CALIFORNIA BUILDING CODE
CG	CENTER OF GRAVITY
℄	CENTERLINE
CONC	CONCRETE
CONN	CONNECTION
COORD	COORDINATE
DBL	DOUBLE
DIA (ø)	DIAMETER
DIM	DIMENSION
(E)	EXISTING CONDITION
EA	EACH
EE	EACH END
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
f'c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE
FLR	FLOOR
FT (')	FOOT/FEET
F_p	HORIZONTAL SEISMIC FORCE PER ASCE 7-16 SEISMIC FORCE REQUIREMENTS
F_v	VERTICAL SEISMIC FORCE PER ASCE 7-16 SEISMIC FORCE REQUIREMENTS
F_y	SPECIFIED MINIMUM YIELD STRESS OF STEEL
GA	GAUGE
HCAI	CALIFORNIA DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
ICC	INTERNATIONAL CODE COUNCIL
IN (")	INCH
INFO	INFORMATION
IOR	INSPECTOR OF RECORD
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MTL	METAL
(N)	NEW
NO. (#)	NUMBER OR POUNDS
NWC	NORMAL WEIGHT CONCRETE
OPG	OPENING
PERP	PERPENDICULAR
PG	PAGE
PL	PLATE
PSI	POUNDS PER SQUARE INCH
REQ	REQUIRED
SLWC	SAND-LIGHTWEIGHT CONCRETE
SPCG	SPACING
STL	STEEL
Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
THK	THICK/THICKNESS
THRD	THREAD OR THREADED
TYP	TYPICAL
T&B	TOP & BOTTOM
UNO	UNLESS NOTED OTHERWISE
Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
W/	WITH
W/O	WITHOUT
Wp	OPERATING WEIGHT
WT	WEIGHT

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

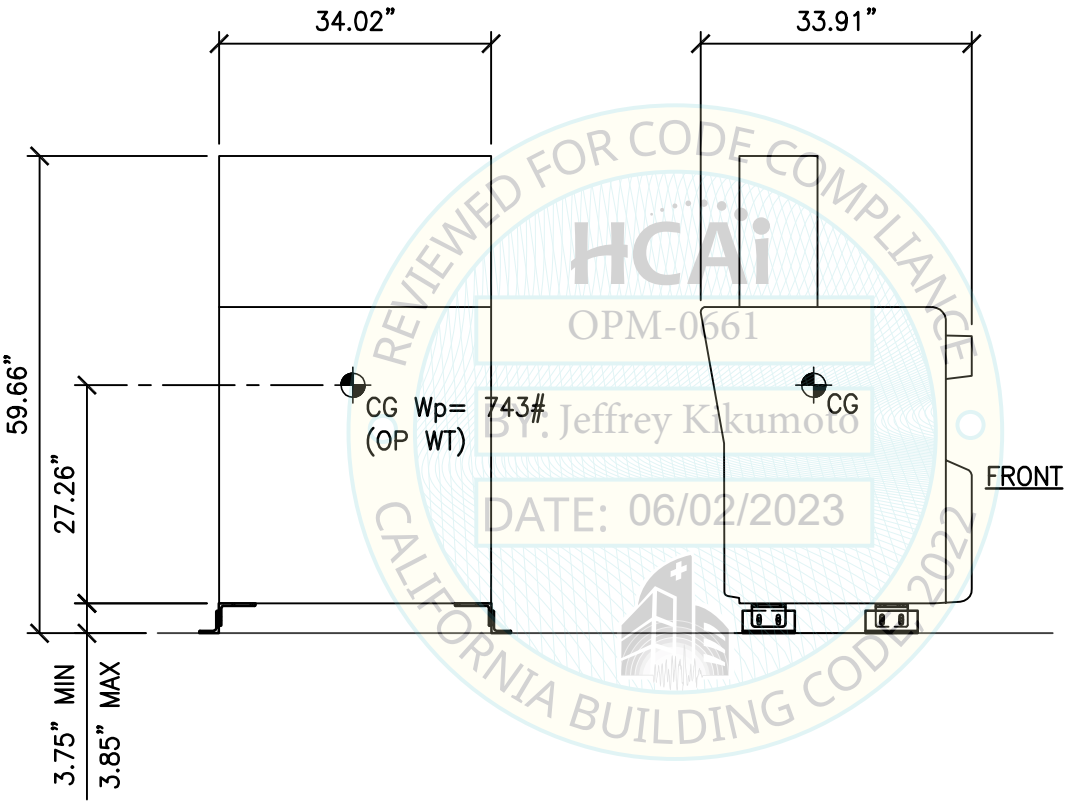
SHEET TITLE: ABBREVIATIONS

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

Job No:	23026
Date:	06/01/2023
Page:	5 of 15

ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS

NOTES:
1. FOR SEISMIC BRACKET LOCATIONS & ORIENTATION SEE COMPONENT BASE FRAME DTLS ON PG 7.
2. WHEELS NOT SHOWN FOR CLARITY.
3. SEE COMPONENT BASE FRAME DTLS FOR FRAME MATERIAL PROPERTIES ON PG 7.



FRONT ELEV

SIDE ELEV

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

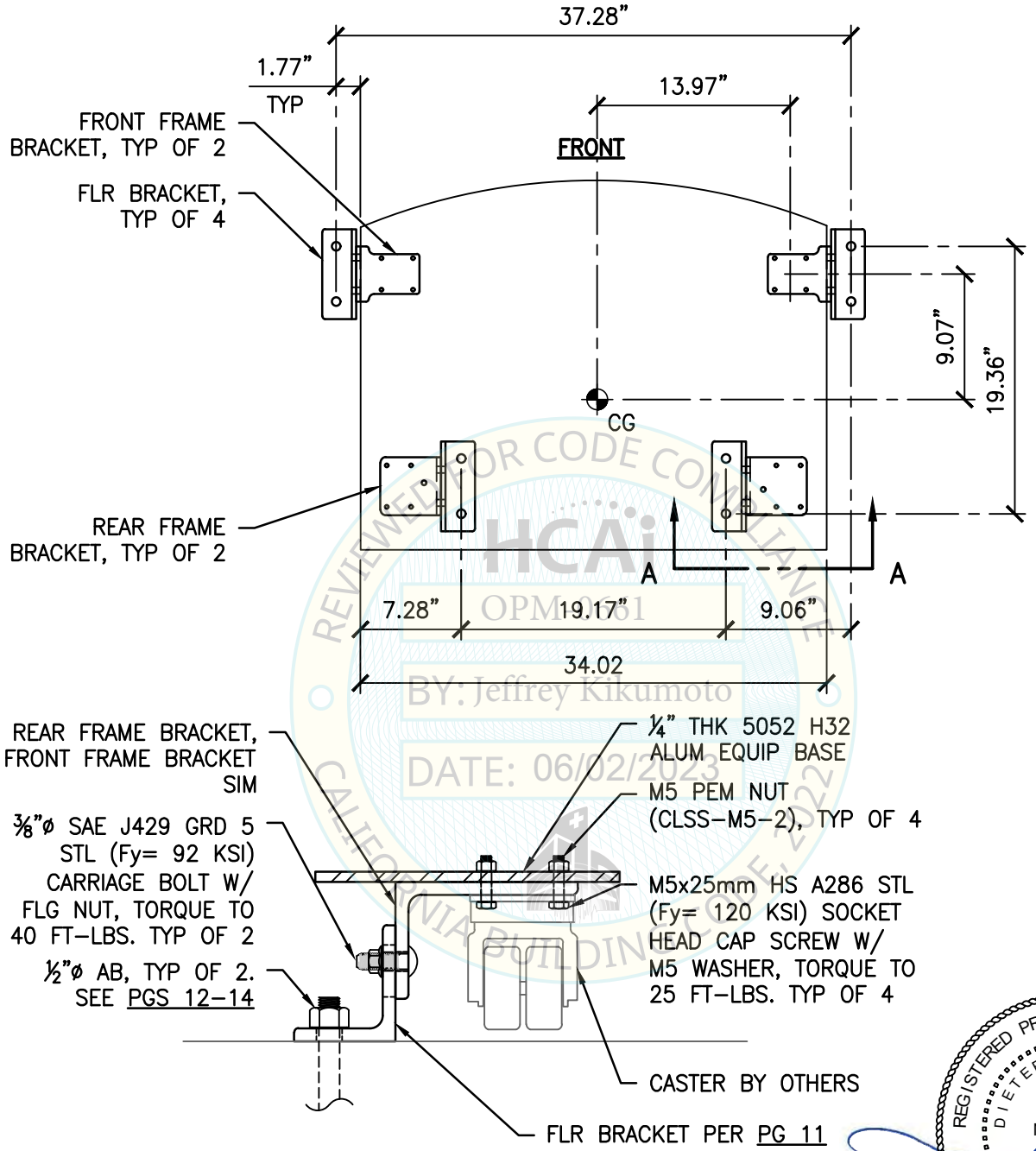
SHEET TITLE: COMPONENT ELEVATIONS

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

Job No:	23026
Date:	06/01/2023
Page:	6 of 15

C:\Users\camachom\appdata\local\temp\AcPublish_48240\S1.dwg Time:Jun01,2023-10:10am Login:camachom Dimscale:2 LTScale:6

ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS



DETAIL A-A

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

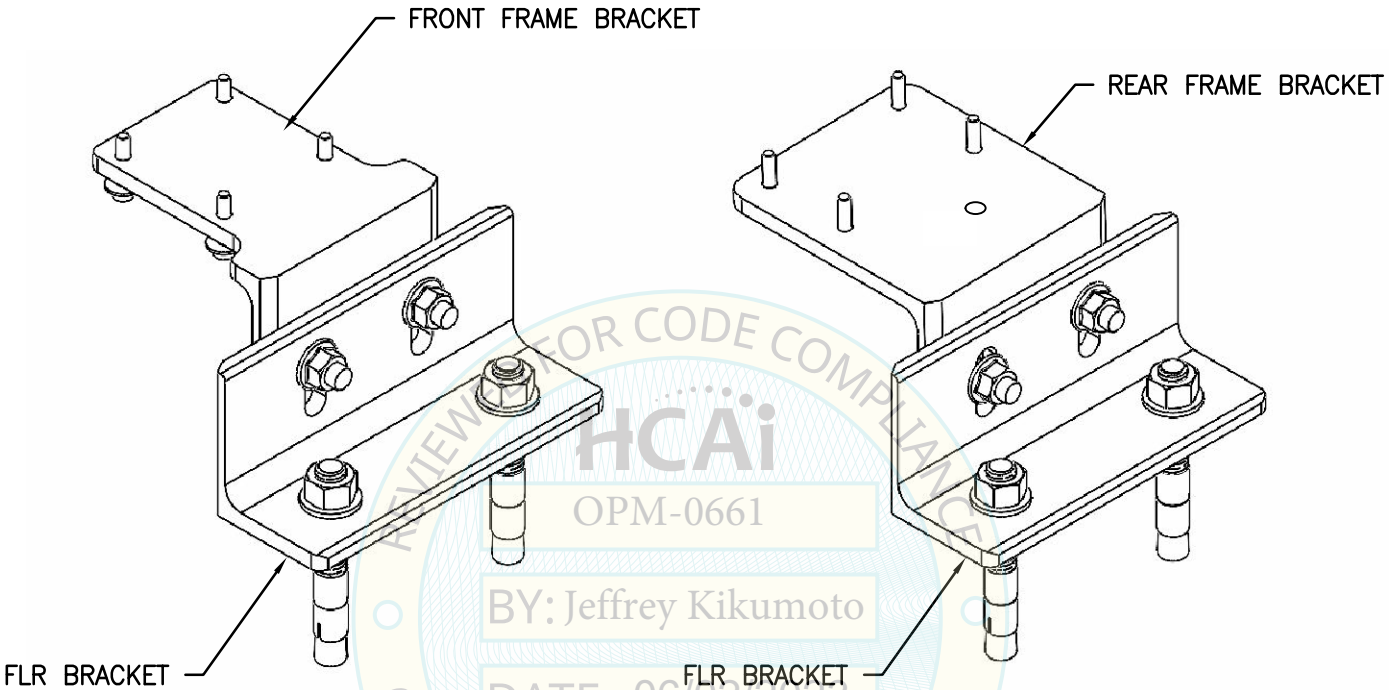
SHEET TITLE: COMPONENT BASE FRAME DETAIL

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

Job No:	23026
Date:	06/01/2023
Page:	7 of 15

ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS

NOTES:
1. FOR ATTACHMENT TO FLR, SEE PGS 12–14.
2. BRACKET & SLOT DIRECTIONS SHALL BE FOLLOWED AS SHOWN ON PLANS & ELEVS.



FRONT BRACKET ASSEMBLY

REAR BRACKET ASSEMBLY

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

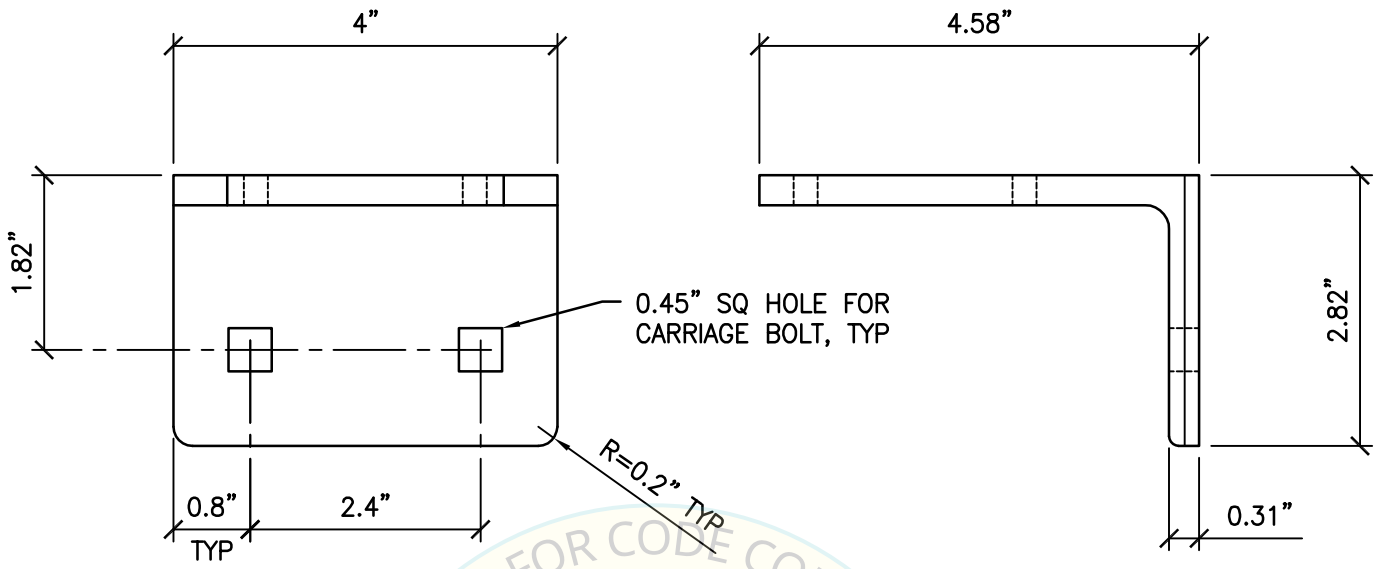
SHEET TITLE: SEISMIC BRACKET DETAILS
FRONT & REAR BRACKET ASSEMBLY

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

Job No:	23026
Date:	06/01/2023
Page:	8 of 15

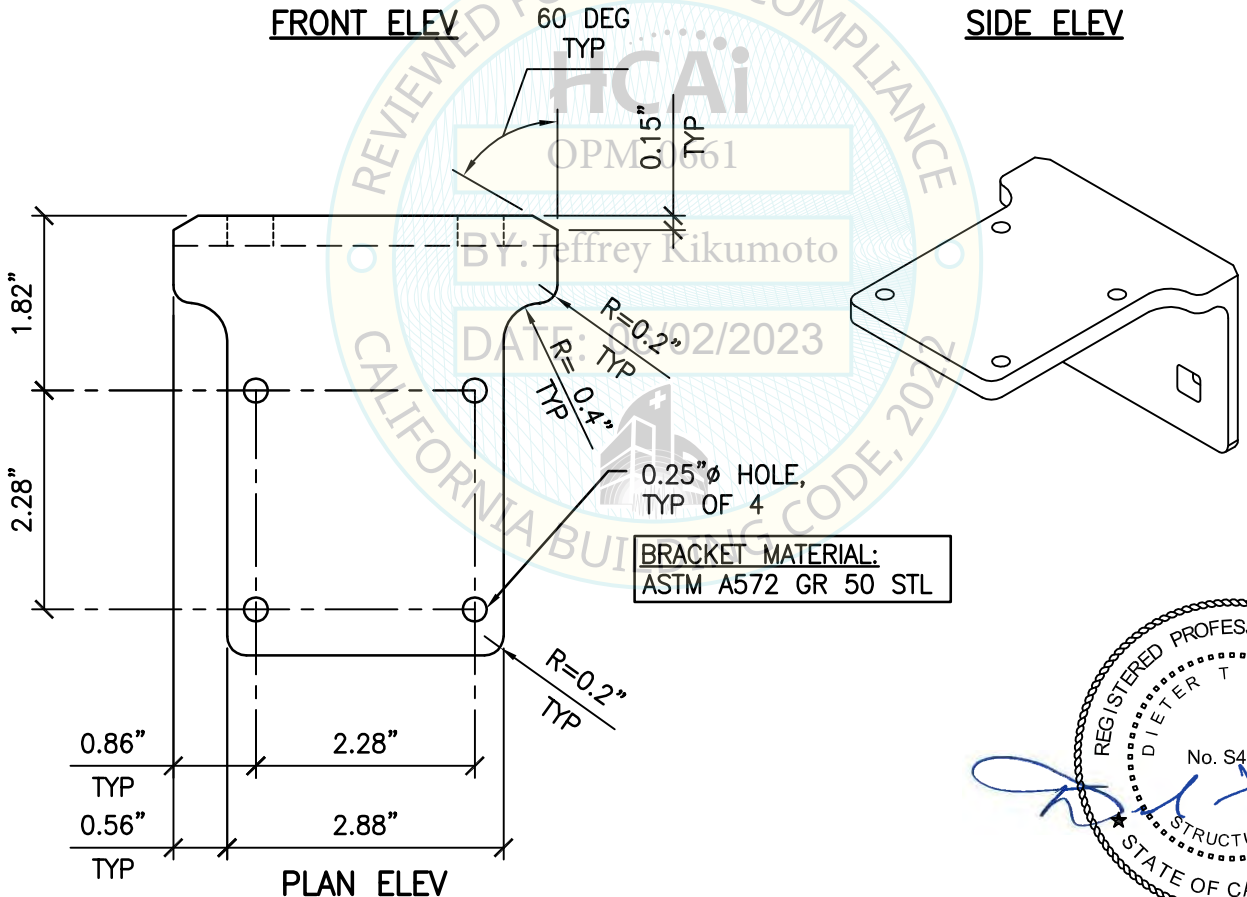
L:\Jobs23\23026 Roche - OPM-0661 Benchmark Plus Amendment\ACAD\STRU\S1.dwg Time:Jul20,2023-01:16pm Login:FalkR Dimscale:2 LTScale:6

ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS



FRONT ELEV

SIDE ELEV



PLAN ELEV

BRACKET MATERIAL:
ASTM A572 GR 50 STL

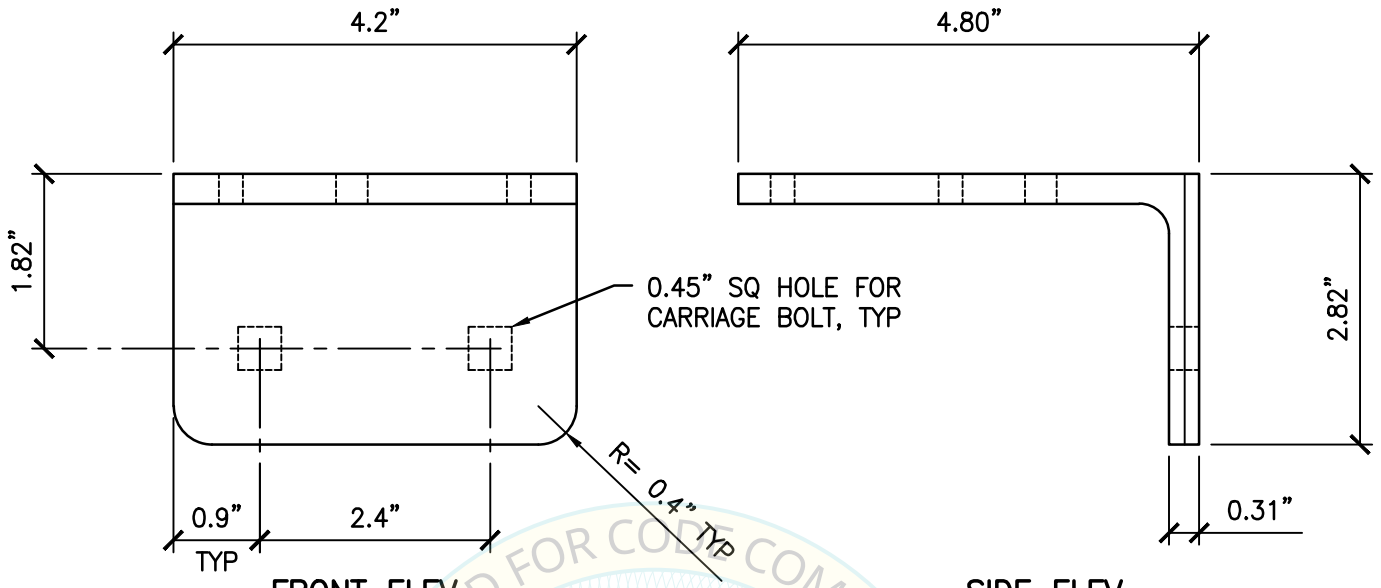
REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: SEISMIC BRACKET DETAILS
FRONT FRAME BRACKET

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

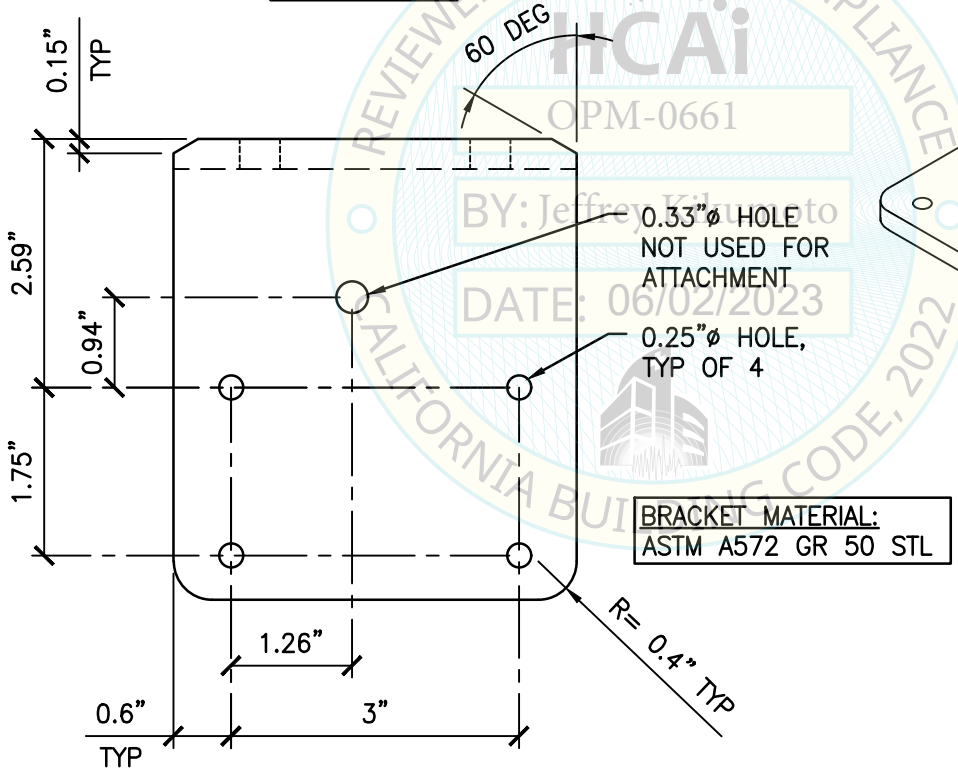
Job No:	23026
Date:	06/01/2023
Page:	9 of 15

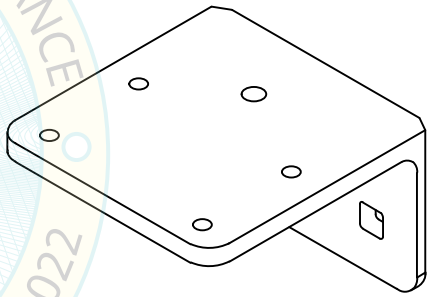
ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS



FRONT ELEV

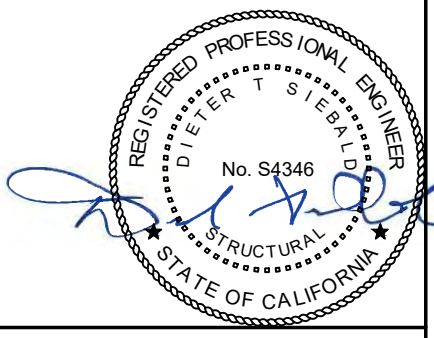
SIDE ELEV





BRACKET MATERIAL:
ASTM A572 GR 50 STL

PLAN ELEV



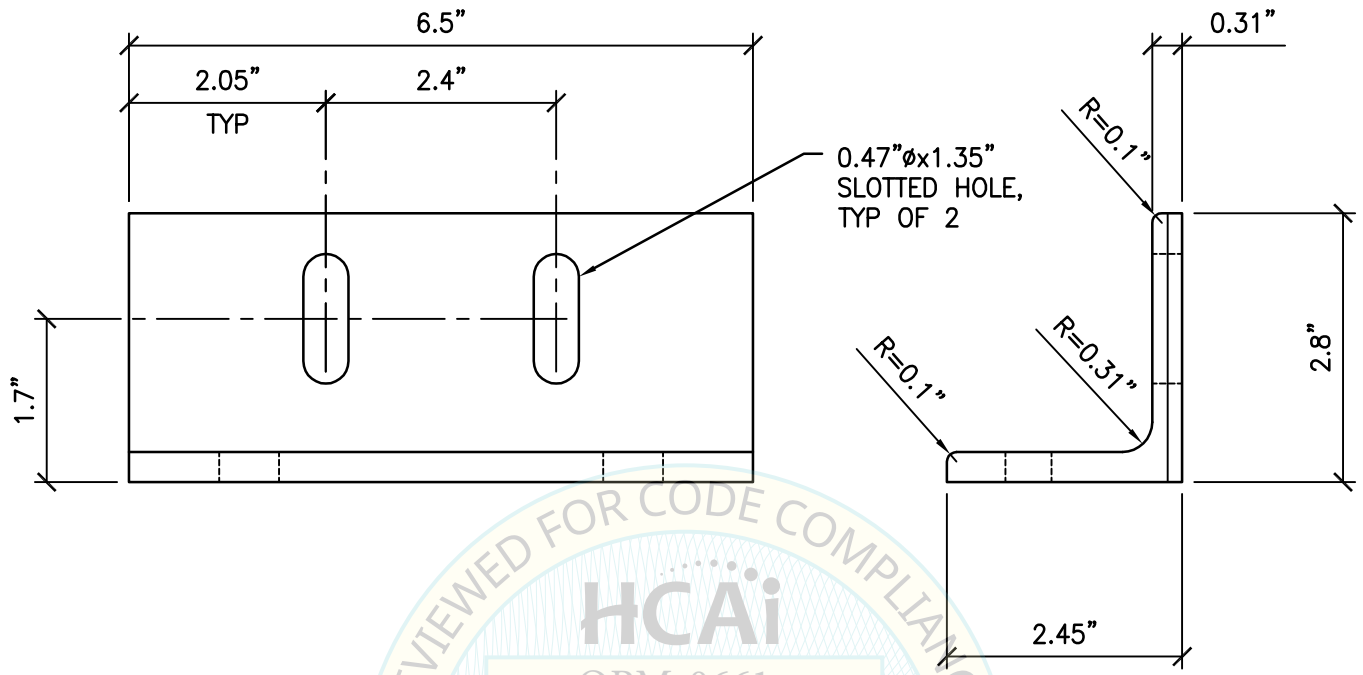
SHEET TITLE: SEISMIC BRACKET DETAILS
REAR FRAME BRACKET

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

Job No:	23026
Date:	06/01/2023
Page:	10 of 15

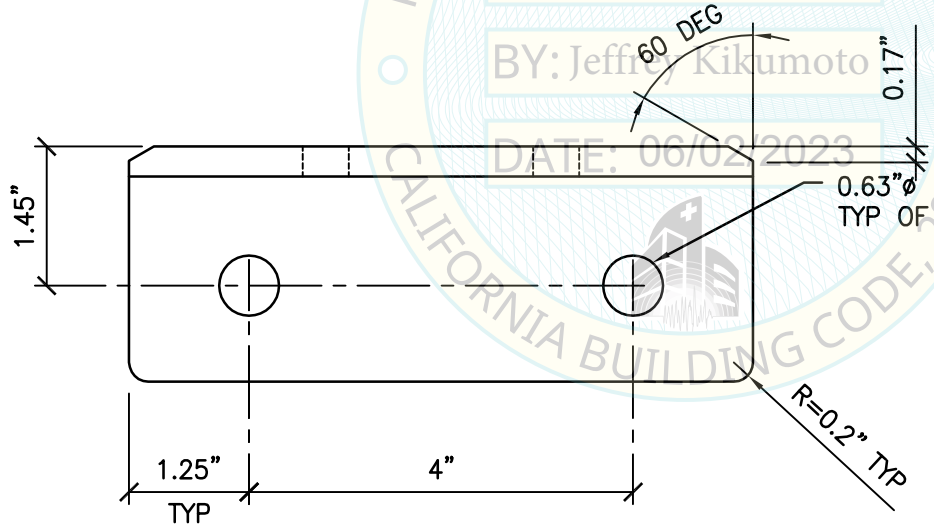
L:\Jobs23\23026 Roche - OPM-0661 Benchmark Plus Amendment\ACAD\STRU\S1.dwg Time:Jul20,2023-01:16pm Login:FalkR Dimscale:2 LTScale:6

ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS



FRONT ELEV

SIDE ELEV



PLAN VIEW

BRACKET MATERIAL:
ASTM A572 GR 50 STL

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

SHEET TITLE: SEISMIC BRACKET DETAILS
FLOOR BRACKET

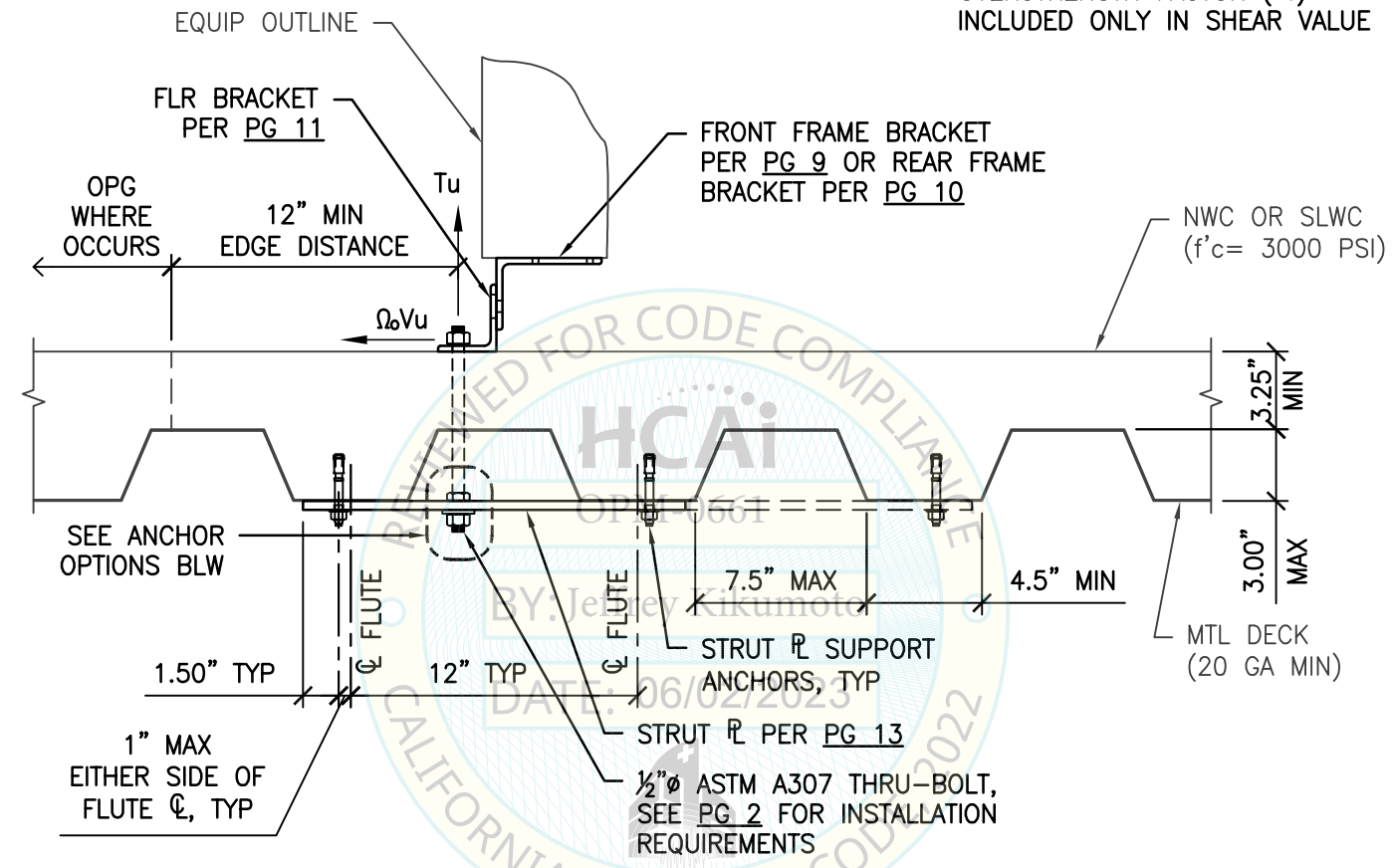
CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
www.cyseng.com

Job No:	23026
Date:	06/01/2023
Page:	11 of 15

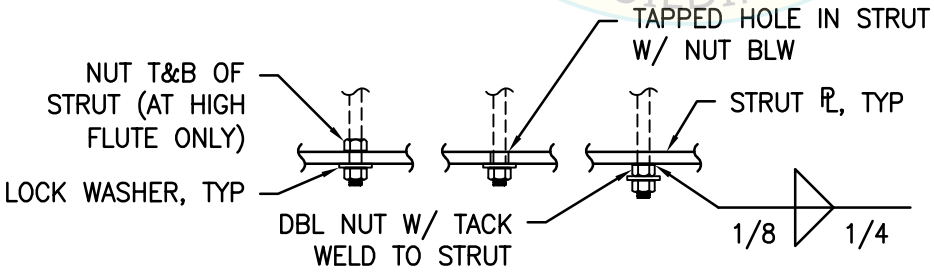
ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS

	MAX LRFD FORCES AT EA BOLT	
	T_u	$\Omega_o V_u$
CASE 1	2646#	416#

OVERSTRENGTH FACTOR (Ω_o) INCLUDED ONLY IN SHEAR VALUE



SUSPENDED FLOOR (CASE 1)



ANCHOR OPTIONS

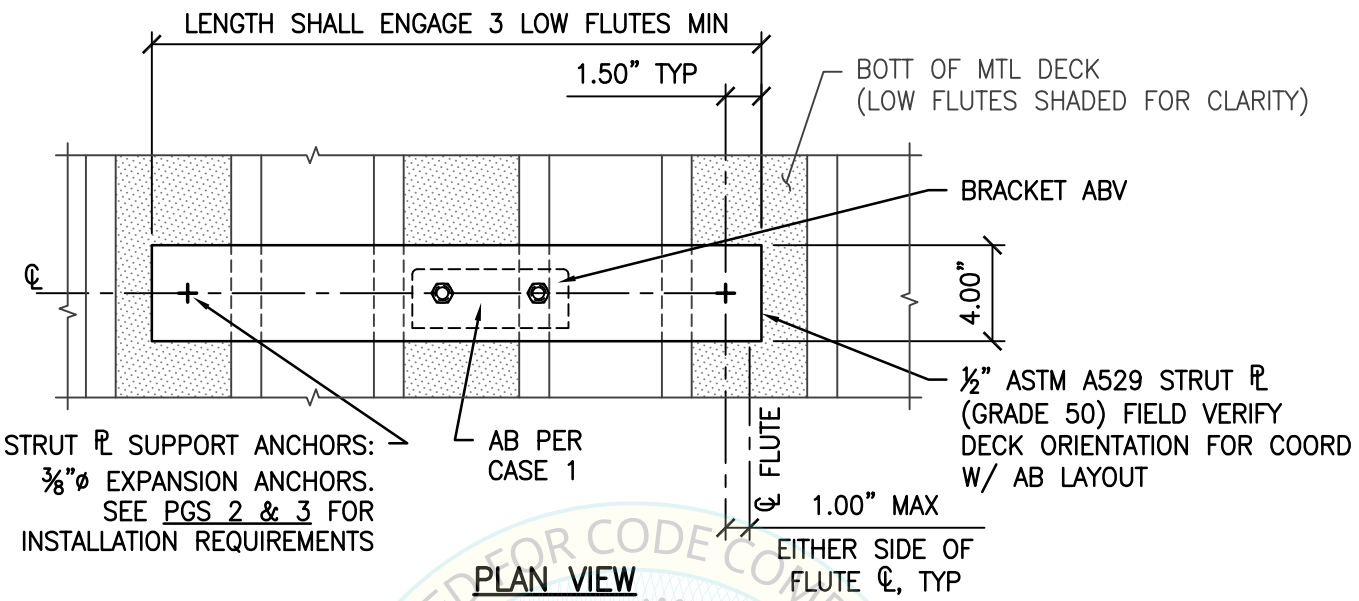
REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

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

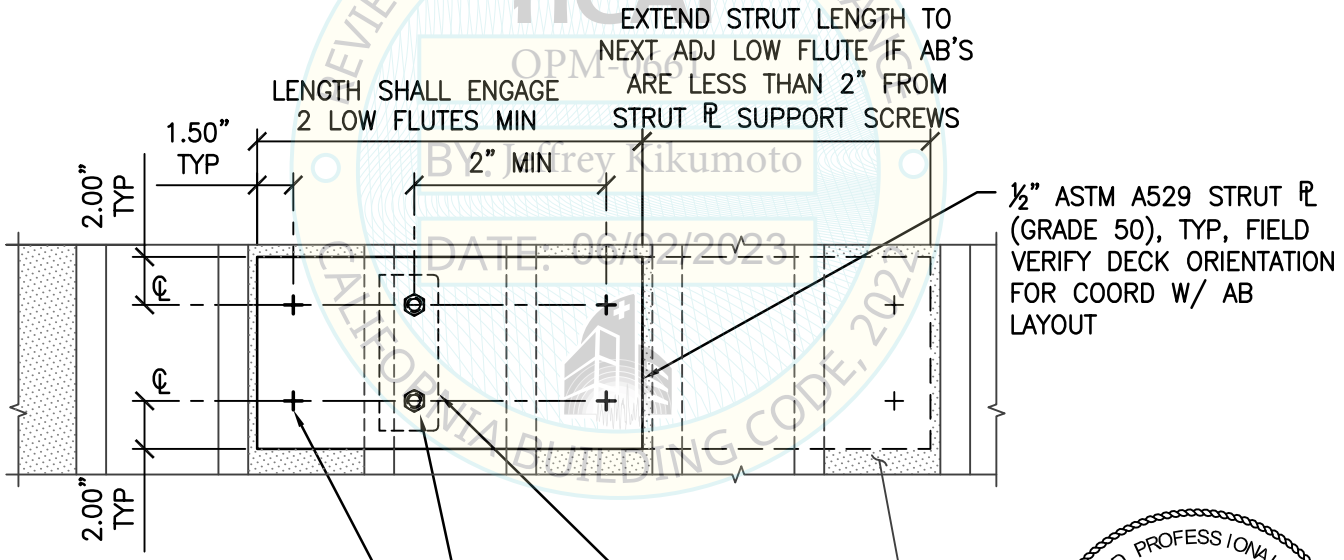
CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
www.cyseng.com

Job No:	23026
Date:	06/01/2023
Page:	12 of 15

ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS



PLAN VIEW
BRACKET PERP TO FLUTES



PLAN VIEW
BRACKET PARALLEL TO FLUTES

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

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

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

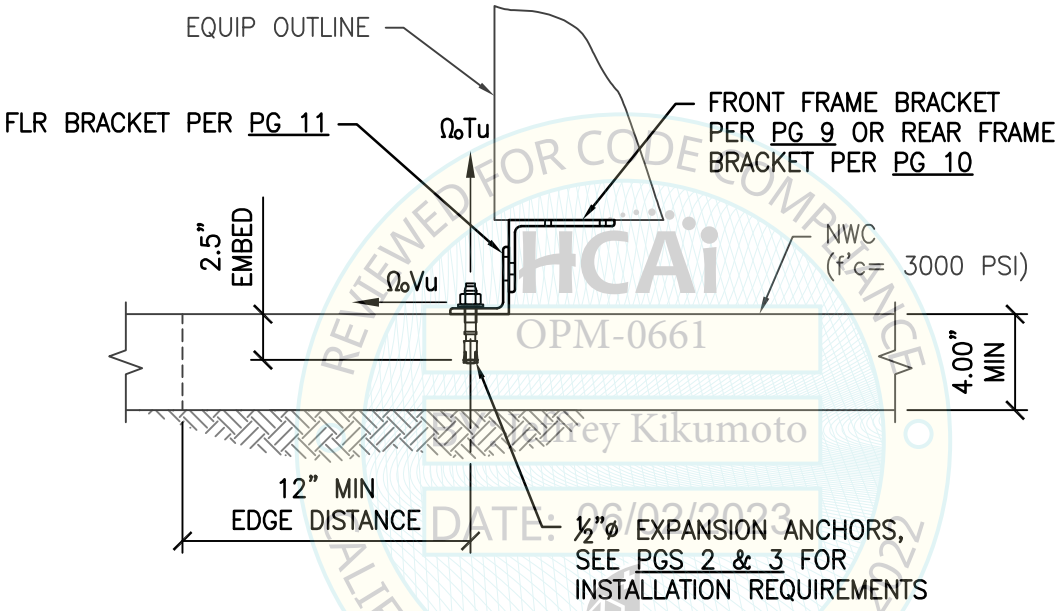
Job No:	23026
Date:	06/01/2023
Page:	13 of 15

C:\Users\camachom\appdata\local\temp\AcPublish_48240\S1.dwg Time:Jun01,2023-10:10am Login:camachom Dimscale:2 LTScale:6

ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS

	MAX LRFD FORCES AT EA BOLT	
	$\Omega_o T_u$	$\Omega_o V_u$
CASE 2A	1235#	167#

OVERSTRENGTH FACTOR (Ω_o) INCLUDED.



SLAB ON GRADE (CASE 2A)

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

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

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

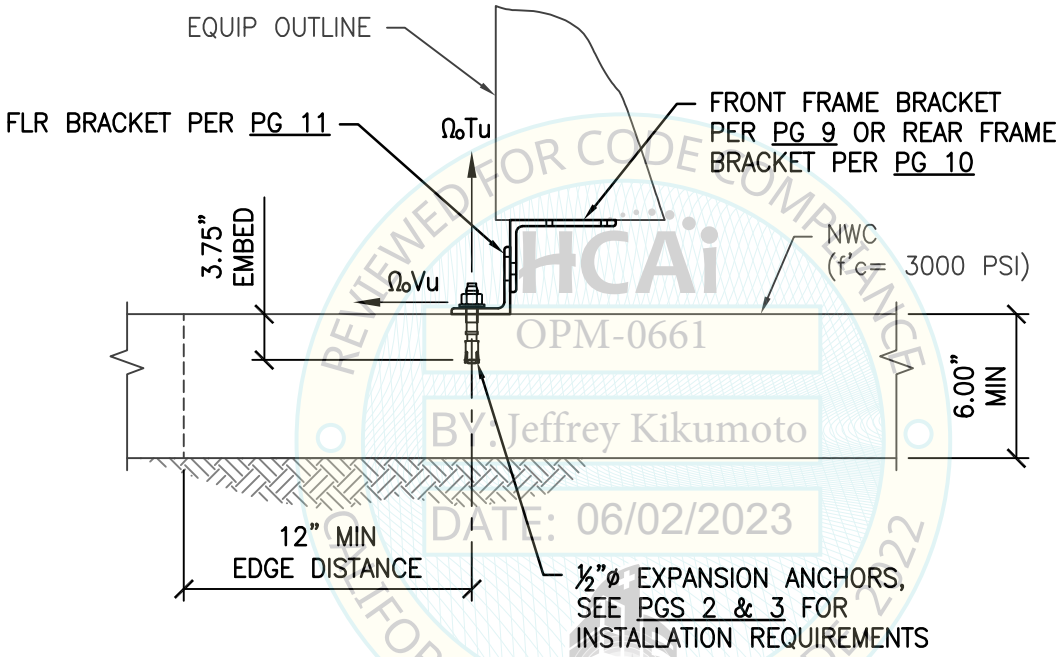
Job No:	23026
Date:	06/01/2023
Page:	14 of 15

C:\Users\camachom\appdata\local\temp\AcPublish_48240\S1.dwg Time:Jun01,2023-10:10am Login:camachom Dimscale:2 LTScale:6

ROCHE DIAGNOSTICS CORPORATION
BENCHMARK ULTRA PLUS

	MAX LRFD FORCES AT EA BOLT	
	$\Omega_o T_u$	$\Omega_o V_u$
CASE 2B	1857#	240#

OVERSTRENGTH FACTOR (Ω_o) INCLUDED.



SLAB ON GRADE (CASE 2B)

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

SHEET TITLE: ATTACHMENT DETAIL
6" CONCRETE SLAB ON GRADE (CASE 2B)

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

Job No:	23026
Date:	06/01/2023
Page:	15 of 15