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

OFFICE USE ONLY

APPLICATION #: OPM-0492

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: ☐ New ☒ Renewal/Update

Manufacturer Information

Manufacturer: Becton, Dickinson, and Company

Manufacturer's Technical Representative: Kelsey Graves

Mailing Address: 7 Loveton Circle, Sparks, MD 211529212

Telephone: () - Email: Kelsey.Graves@bd.com

Product Information

Product Name: BD CORTM SYSTEM

Product Type: High-Throughput Molecular Platform

Product Model Number: COR GX, COR MX, COR PX

General Description: An automated diagnostic instrument for use in clinical laboratories that supports a menu of clinically differentiated assays for women's health, sexually transmitted infections, and gastrointestinal (GI) applications.

Applicant Information

Applicant Company Name: CYS Structural Engineers, Inc.

Contact Person: Dieter Siebald

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

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

Title: Structural Engineer

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, 2019 (CBSC 2019) 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 2019 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: 5/5/2022

Name: Mohammad Aliaari Title: Senior Structural Engineer

Condition of Approval (if applicable):

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OPM–0492

NOTES:

1. THESE DRAWINGS ARE PREPARED FOR BD LIFE SCIENCES – DIAGNOSTIC SYSTEMS, SPARKS, MARYLAND.
2. THE CONTRACTOR & INSPECTOR OF RECORD SHALL OBTAIN A COPY OF THIS PRE–APPROVAL FROM THE DEPARTMENT OF HEALTH CARE ACCESS & INFORMATION (HCAI) PRE–APPROVAL PROGRAMS WEBSITE.
3. THIS PRE–APPROVAL COVERS THE SUPPORTS & ATTACHMENTS OF THE EQUIPMENT TO THE SUPPORTING STRUCTURE. THE EQUIPMENT & ATTACHMENT HARDWARE ARE SUPPLIED BY THE MANUFACTURER. THE EXPANSION ANCHORS, THRU–BOLTS & STRUT PLATES 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

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Job No:	21082
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BD COR™

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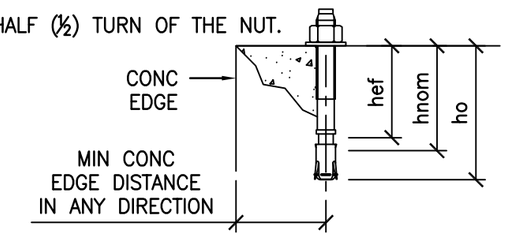
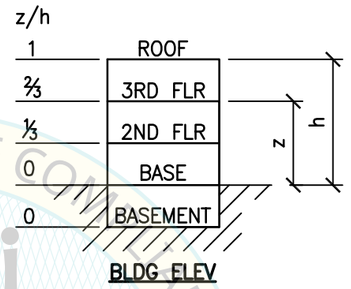
2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020
SACRAMENTO, CA 95833 www.cyseng.com

GENERAL NOTES:

1. THIS HCAI PRE–APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2019. THE DEMAND (DESIGN FORCES) FOR USE W/ THIS OPM SHALL BE BASED ON THE CBC 2019.
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 TEST LOADS TABLE ON PG 2 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 2019 & 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 & GAGE OF THE EQUIP WHERE ATTACHMENTS ARE MADE, AGREE W/ THE INFO SHOWN ON THE PRE–APPROVAL DOCUMENTS.
3. EXPANSION ANCHORS INSTALLED IN NWC OR SLWC SHALL BE CARBON STEEL HILTI KB–TZ2 EXPANSION ANCHORS COMPLYING W/ ESR–4266 REISSUED DECEMBER 2021. PROVIDE FULL THREAD ENGAGEMENT OF NUT & WASHER.
   A. INSTALLATION: INSTALL THE EXPANSION ANCHORS IN ACCORDANCE W/ THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR & THE PARAMETERS GIVEN IN THE TABLE ON PG 2.
   B. JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOBSITE TESTING IN ACCORDANCE W/ THE TEST LOAD TABLE PROVIDED IN THIS DOCUMENT. TEST 50% OF THE INSTALLED ANCHORS. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE SPECIAL INSPECTOR. TESTING & SPECIAL INSPECTION OF EXPANSION ANCHORS SHALL BE PERFORMED BY THE FACILITY OWNER PER CBC 1704A & 1910A.5 & CAC 7–149. ALL REPORTS SHALL BE SENT TO THE INSPECTOR OF RECORD, OWNER & ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE. 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, THE NUT SHALL BE RETORQUED TO INSTALLATION TORQUE AFTER EQUIP INSTALL. ALSO, REFER TO 2019 CBC 1910A.5 "TESTS FOR POST–INSTALLED ANCHORS IN CONCRETE".
   C. FAILURE/ACCEPTANCE CRITERIA: THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
      - TORQUE WRENCH METHOD: THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS:
        WEDGE TYPE: ONE–HALF (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 NUTS & 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 CONNECTION IN TENSION DO NOT REQUIRE TESTING.
5. THREE (3) 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). $z/h \leq 0.9$ & $S_{DS} \leq 2.1$

CASE 2: 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). $z/h = 0$ & $S_{DS} \leq 2.50$

CASE 3: 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). $z/h = 0$ & $S_{DS} \leq 1.5$

6. 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 ABV.**

CONDITION OF ANCHORAGE	ANCHOR DIA (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 STRUT PL	⅜	2½	2	2¾	3¼	18	8	30
CASE 2	½"	3¾	3¼	4¼	6	12	4	50
CASE 3	½"	2½	2	2¾	4	12	4	50

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

SHEET TITLE: GENERAL NOTES

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SACRAMENTO, CA 95833
TEL (916) 920-2020
www.cyseng.com

ABBREVIATIONS:

@	AT
∠	ANGLE
AB	ANCHOR BOLT
ABV	ABOVE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ADJ	ADJACENT
AISI	AMERICAN IRON & STEEL INSTITUTE
ALUM	ALUMINUM
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
BLDG	BUILDING
BLW	BELOW
BOTT	BOTTOM
CBC	CALIFORNIA BUILDING CODE
CG	CENTER OF GRAVITY
℄	CENTERLINE
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATE
CRS	COLD-ROLLED STEEL
DBL	DOUBLE
DEG	DEGREE
DIA (ø)	DIAMETER
DTL	DETAIL
(E)	EXISTING CONDITION
EA	EACH
EE	EACH END
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EXTR	EXTERIOR
f'c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE
FLG	FLANGE
FLR	FLOOR
FT (')	FOOT/FEET
F_P	HORIZONTAL SEISMIC FORCE PER ASCE 7-16 SEISMIC FORCE REQUIREMENTS
Fy	SPECIFIED MINIMUM YIELD STRESS OF STEEL
GA	GAUGE
GR	GRADE
HCAI	DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
HT	HEIGHT
ICC	INTERNATIONAL CODE COUNCIL
IN (")	INCH
INFO	INFORMATION
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
LRFD	LOAD AND RESISTANCE FACTOR DESIGN
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
mm	MILLIMETER
MTL	METAL
NO. (#)	NUMBER OR POUNDS
NWC	NORMAL WEIGHT CONCRETE
OP	OPERATING
OPG	OPENING
OPM	OSPHD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION
PERP	PERPENDICULAR
PG	PAGE
PL	PLATE
PSI	POUNDS PER SQUARE INCH
REQ	REQUIRED
SEOR	STRUCTURAL ENGINEER OF RECORD
SLWC	SAND-LIGHTWEIGHT CONCRETE
SPCG	SPACING
SPEC	SPECIFICATION
SS	STAINLESS STEEL
STL	STEEL
THK	THICK/THICKNESS
THRD	THREAD OR THREADED
T.O.	TOP OF
Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
TYP	TYPICAL
T&B	TOP & BOTTOM
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
W/	WITH
Wp	OPERATING WEIGHT
WT	WEIGHT

SYSTEM OVERVIEW & DESIGN CRITERIA:

1. THE COR UNIT INCLUDES THREE (3) MODULES THAT CAN BE INTERCONNECTED (COR PX, COR GX & COR MX). INSTALLATION CONFIGURATIONS ARE SHOWN IN TABLE BLW:

CONFIGURATION	LEFT MODULE	CENTER MODULE	RIGHT MODULE
1	COR GX	COR PX	COR GX
2	COR GX	COR PX	–
3	–	COR PX	COR GX
4	COR MX	COR PX	–
5	–	COR PX	COR MX
6	COR MX	COR PX	COR MX
7	COR GX	COR PX	COR MX
8	COR MX	COR PX	COR GX

2. SUPPORT & ATTACHMENT DESIGN IS PER 2019 CBC AT LRFD LEVEL FORCES.

   OTHER MECHANICAL OR ELECTRICAL COMPONENTS PER TABLE 13.6-1 OF ASCE 7-16 SUPPLEMENT #1:

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

   $W_P = 1573\#$ MAX PER MODULE

   UPPER FLRS ABV THE BASE OF BLDG, $z/h \leq 0.9$
   CASE 1: $S_{DS} = 2.10$ $F_p = 2.35\ W_p$

   FLRS AT OR BLW THE BASE OF BLDG, $z/h \leq 0$
   CASE 2: $S_{DS} = 2.50$ $F_p = 1.13\ W_p$
   CASE 3: $S_{DS} = 1.5$ $F_p = 0.675\ W_p$

   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)

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

SHEET TITLE: ABBREVIATIONS, SYSTEM OVERVIEW & DESIGN CRITERIA

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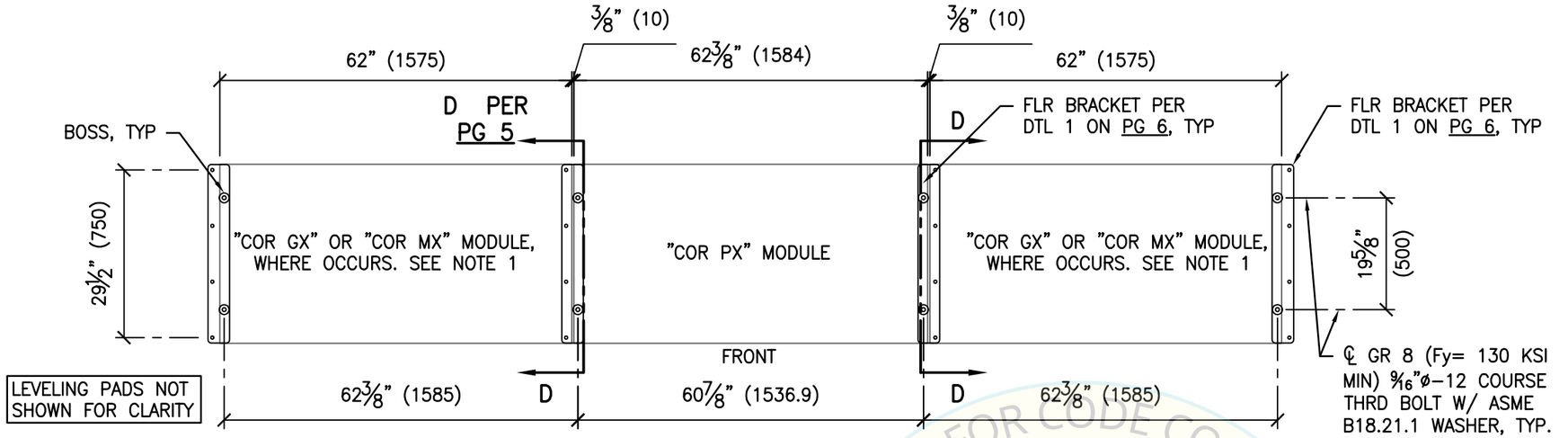
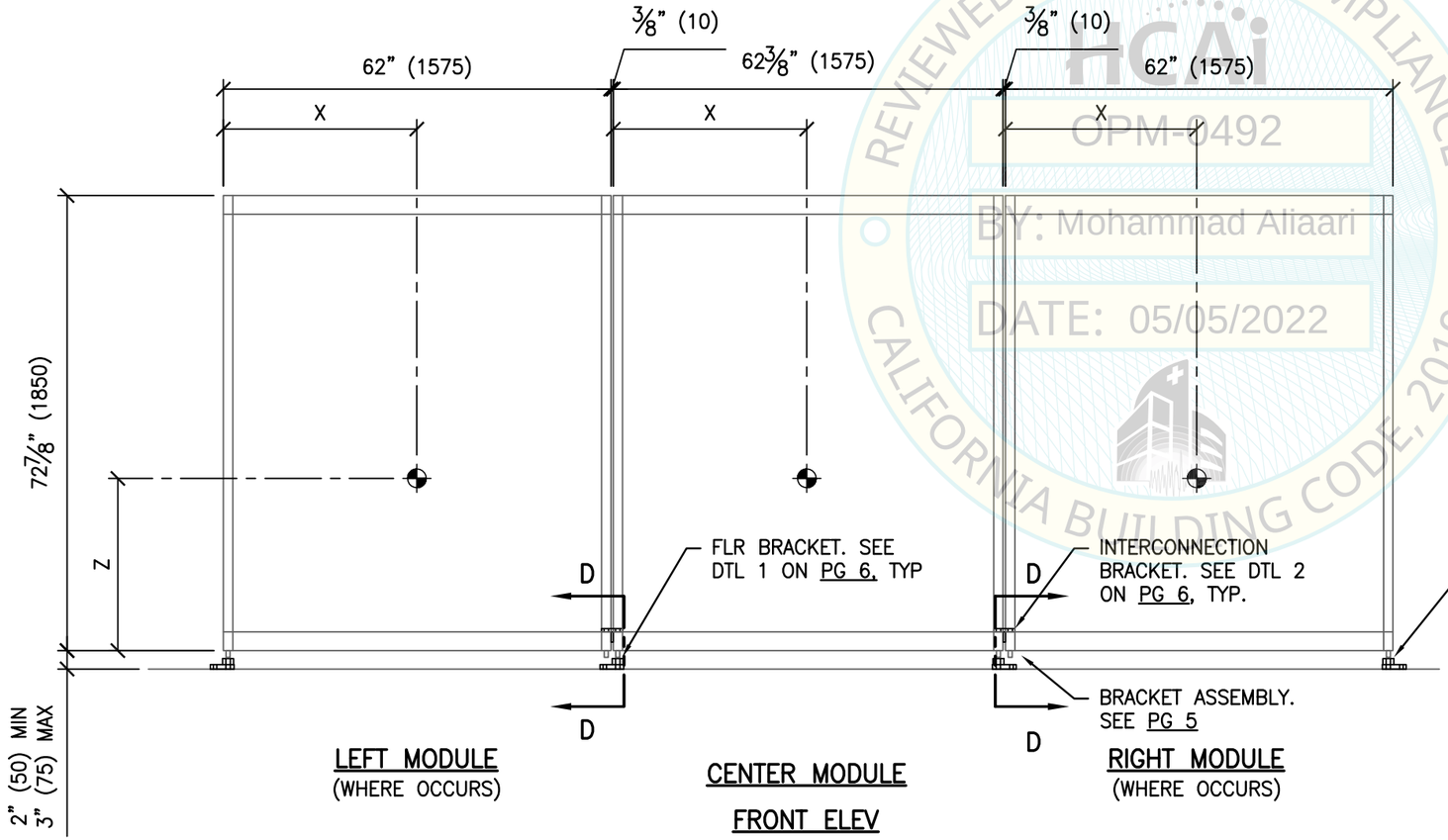


CG LOCATION & MAX OP WT				
INSTRUMENT	WT (LB)	X (mm)	Y (mm)	Z (mm)
CENTER MODULE	1405	30½" (776)	12⅝" (320)	23⅞" (607)
LEFT MODULE COR GX	1573	30⅜" (772)	13⅝" (347)	28⅛" (715)
RIGHT MODULE COR GX	1573	30⅜" (772)	13⅝" (347)	28⅛" (715)
LEFT MODULE COR MX	1416	31⅞" (810)	13⅝" (346)	26 15/16" (684)
RIGHT MODULE COR MX	1416	31⅞" (810)	13⅝" (346)	26 15/16" (684)

NOTE:
ONE "COR GX" OR "COR MX" MODULE SHALL OCCUR ON EITHER THE RIGHT, LEFT OR BOTH SIDES OF THE "COR PX" CENTER MODULE.

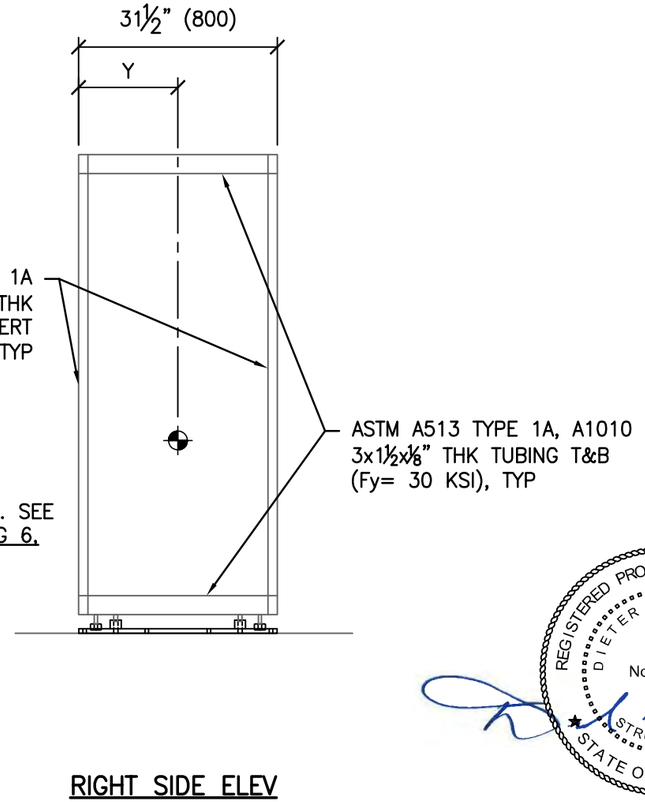
PLAN VIEW



LEFT MODULE (WHERE OCCURS)

CENTER MODULE

FRONT ELEV



RIGHT MODULE (WHERE OCCURS)

RIGHT SIDE ELEV

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

SHEET TITLE: COR CONFIGURATION PLAN & ELEVATIONS

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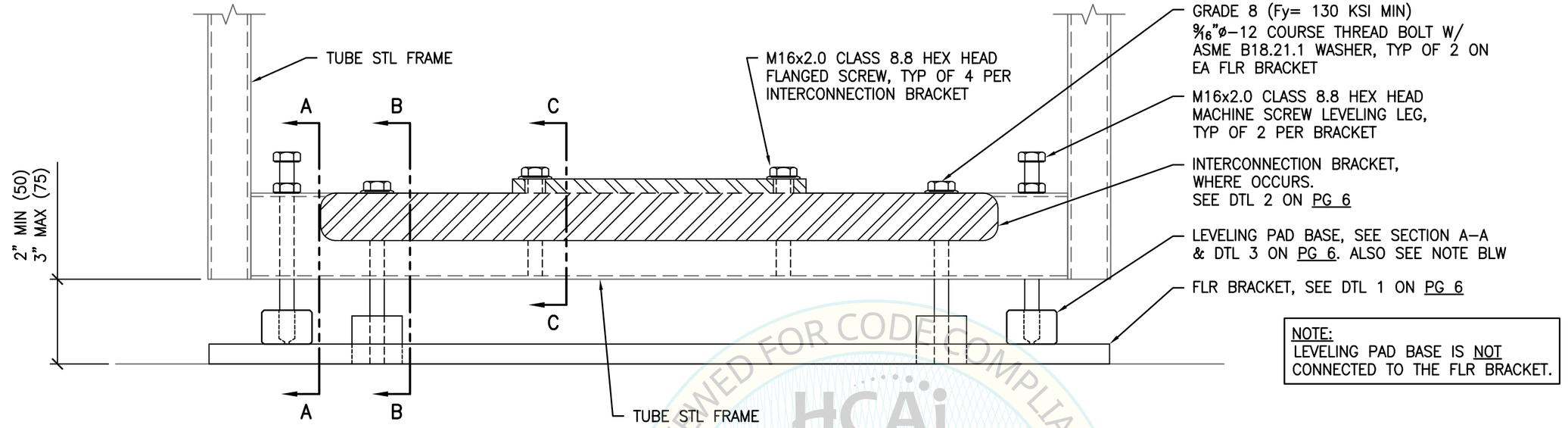
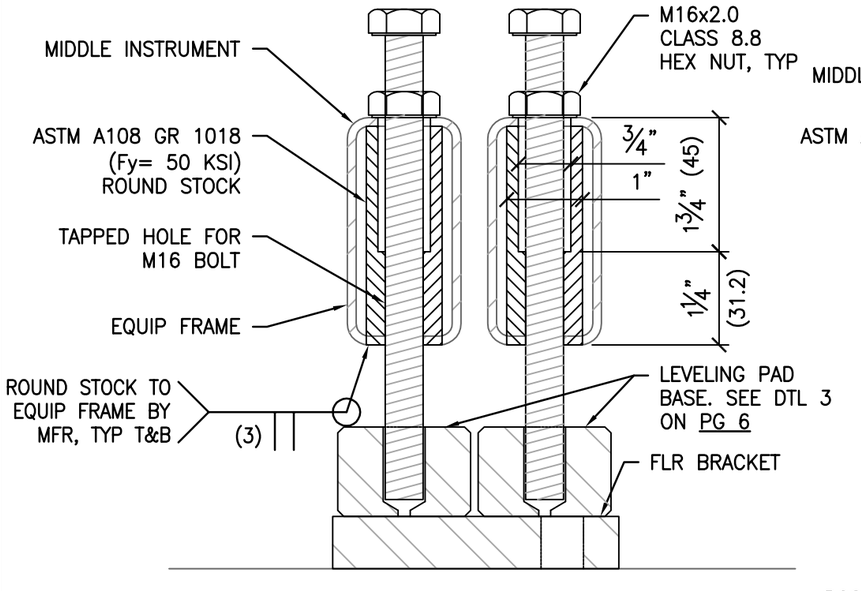
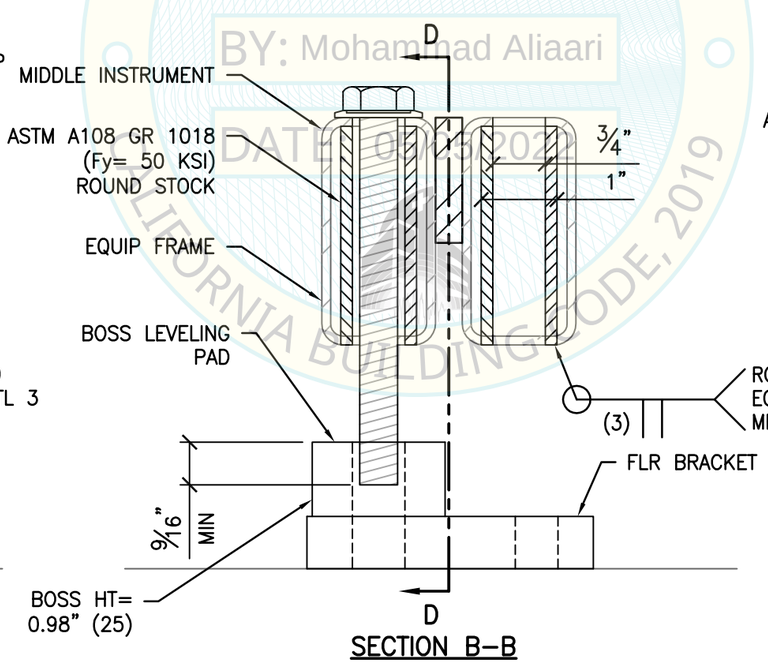


NOTE:
LEVELING PAD BASE IS NOT CONNECTED TO THE FLR BRACKET.

SECTION D–D



SECTION A–A



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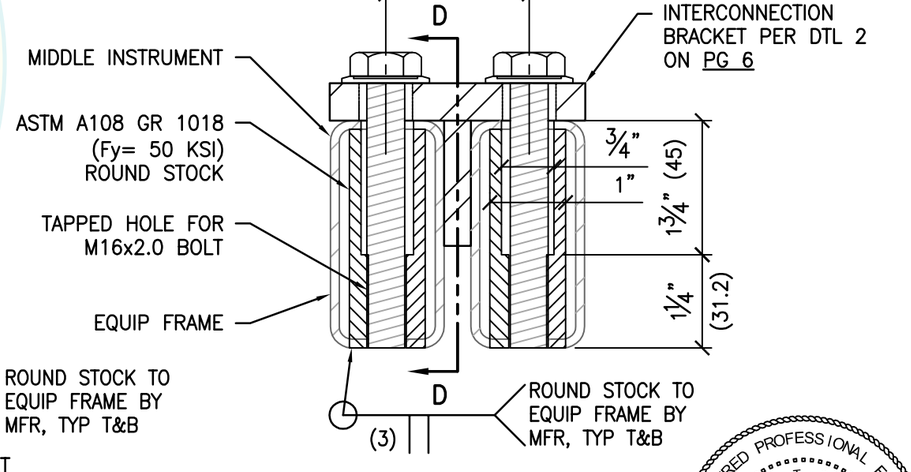

SECTION C–C

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

SHEET TITLE: SEISMIC BRACKET ASSEMBLIES

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TEL (916) 920-2020
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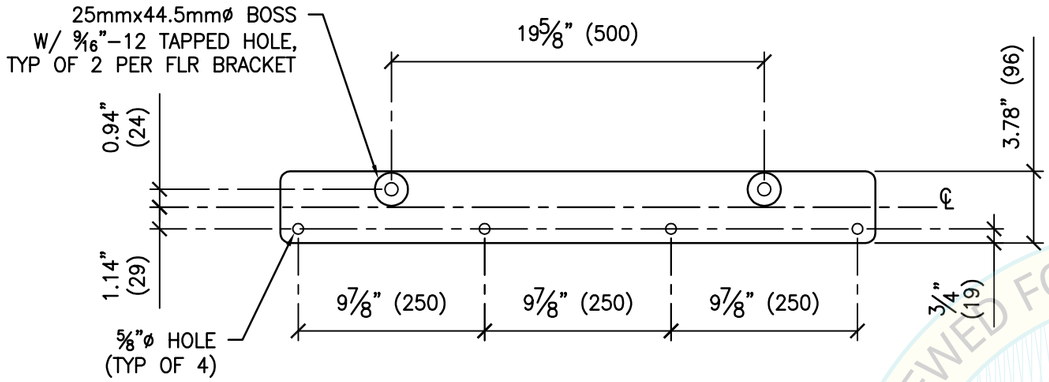
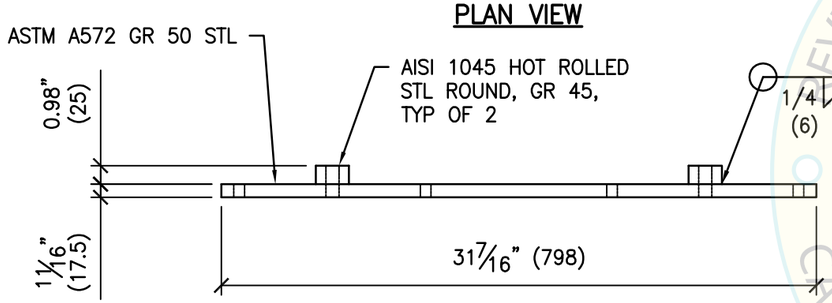
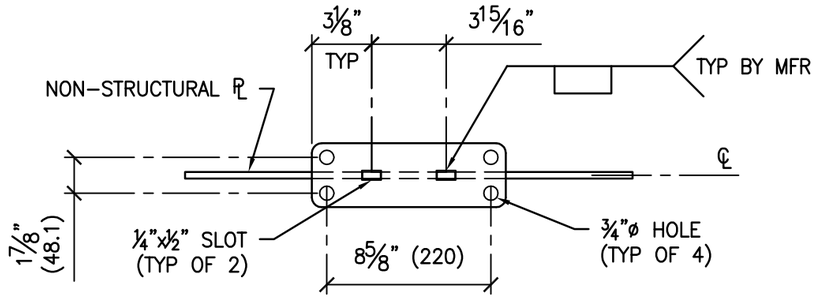


PLAN VIEW

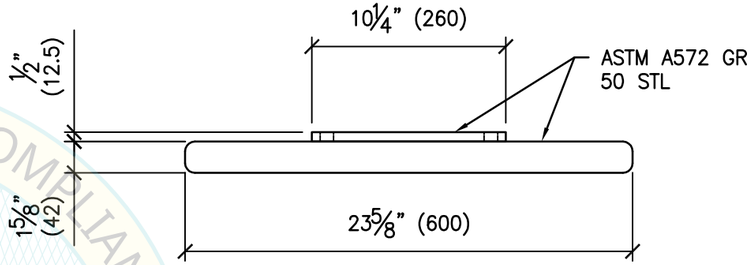


ELEV VIEW

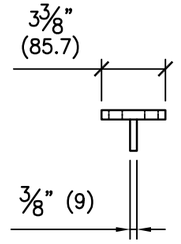
FLOOR BRACKET
DETAIL
1 / –
1 1/2" = 1'–0"



PLAN VIEW

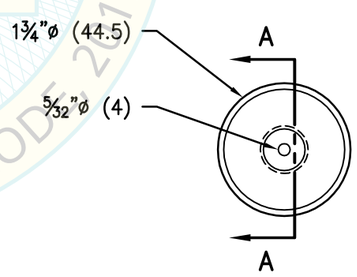


ELEV VIEW

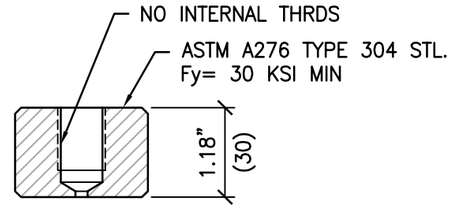


SIDE ELEV

INTERCONNECTION BRACKET
DETAIL
2 / –
1 1/2" = 1'–0"



PLAN VIEW



SECTION A–A

LEVELING PAD BASE
DETAIL
3 / –
6" = 1'–0"

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

SHEET TITLE: SEISMIC BRACKET DETAILS

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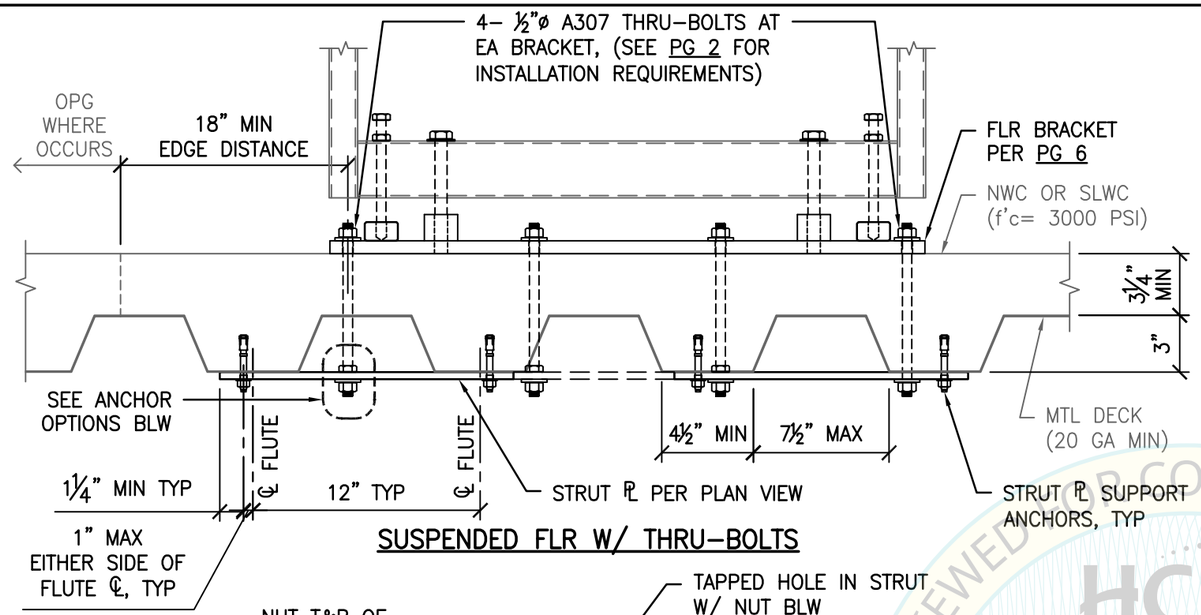
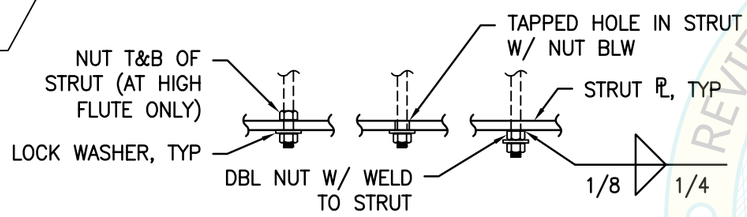
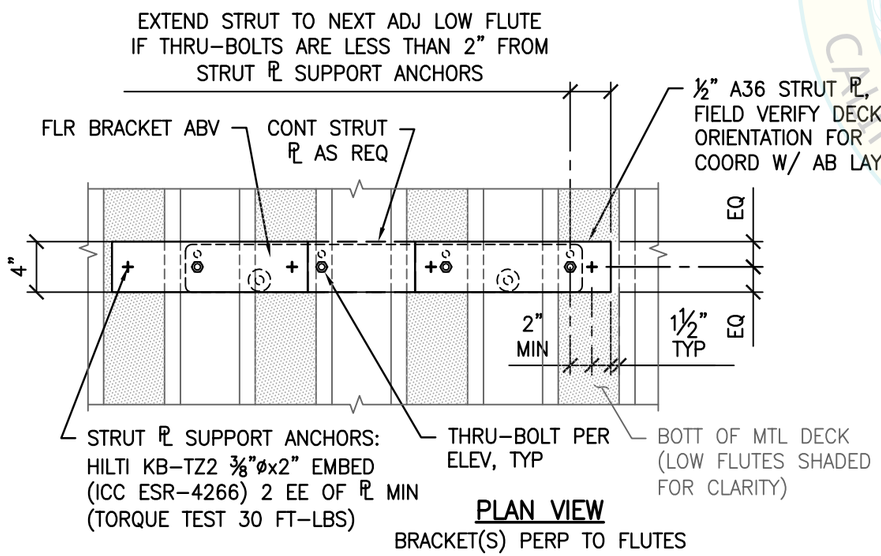


SUSPENDED FLR W/ THRU–BOLTS

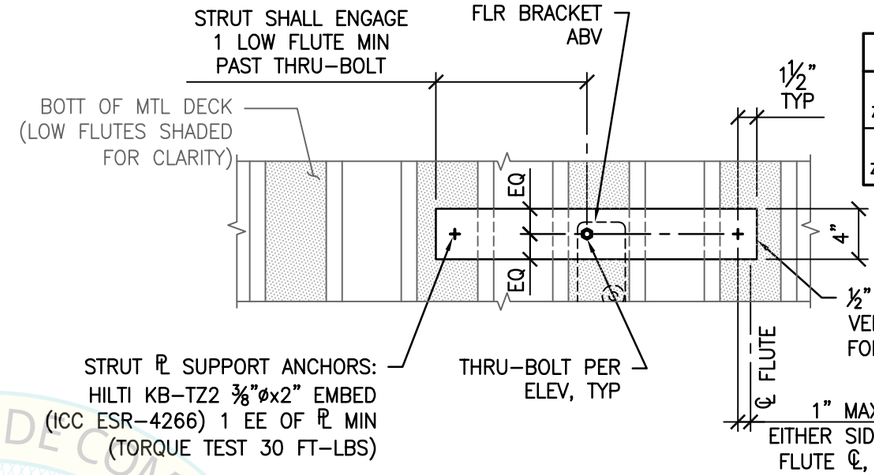


ANCHOR OPTIONS



PLAN VIEW

BRACKET(S) PERP TO FLUTES



	MAX LRFD FORCES AT EA ANCHOR	
$S_{DS} \leq 2.1$	T_u	V_u
CASE 1 z/h<0.9 W/O Ω_o	3167#	1218#
CASE 1 z/h<0.9 W/ Ω_o	N/A	1827#

OVERSTRENGTH FACTOR (Ω_o) INCLUDED ONLY IN SHEAR VALUE.

NOTE:
USE PL IF THERE IS ONLY ONE BRACKET ABV.

PLAN VIEW

BRACKET(S) PARALLEL TO FLUTES

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

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

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SACRAMENTO, CA 95833
TEL (916) 920-2020
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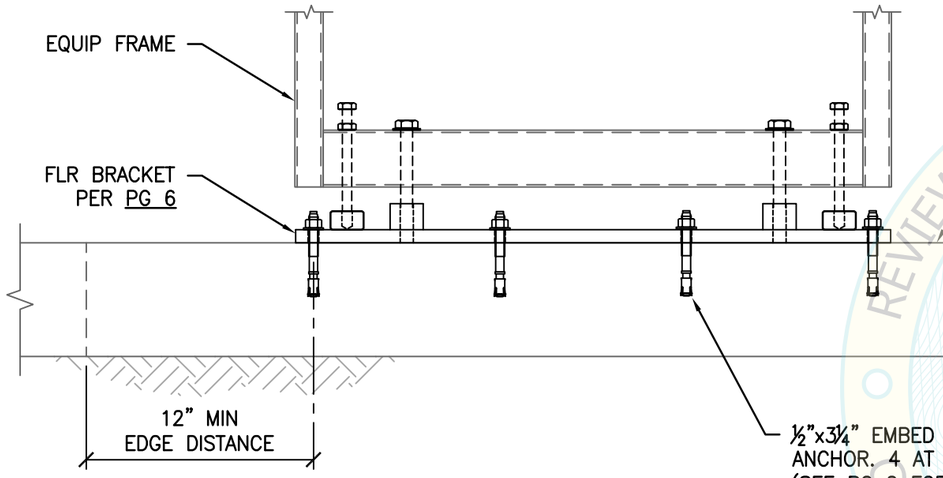
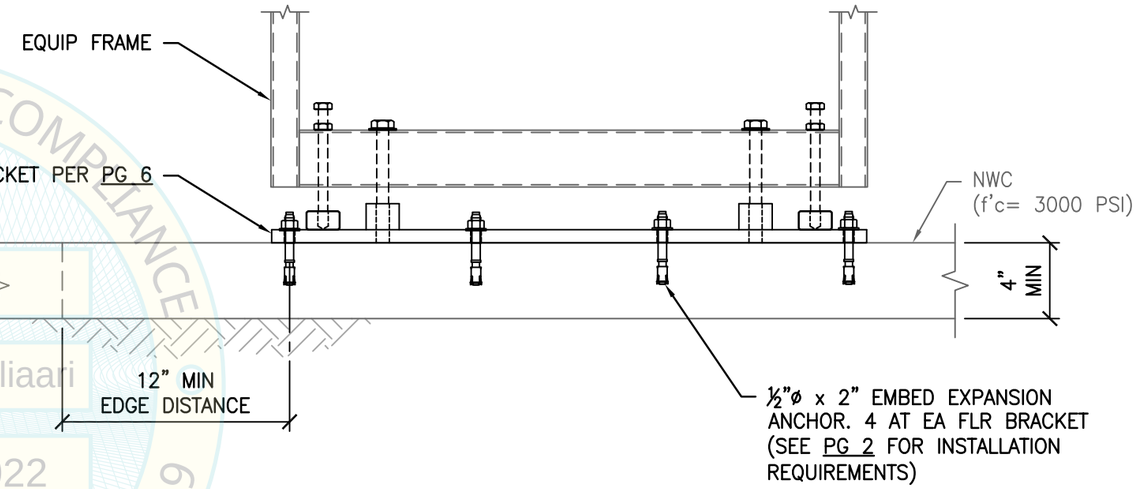
	MAX LRFD FORCES AT EA ANCHOR	
z/h = 0	T_u	V_u
CASE 2 $S_{DS} \leq 2.5$	2582#	884#
CASE 3 $S_{DS} \leq 1.5$	1430#	530#

OVERSTRENGTH FACTOR (Ω_o) INCLUDED



6" SLAB ON GRADE
CASE 2
$S_{DS} \leq 2.5$



4" SLAB ON GRADE
CASE 3
$S_{DS} \leq 1.5$

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STRUCTURAL
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SHEET TITLE: ATTACHMENT DETAILS
6" CONCRETE SLAB ON GRADE (CASE 2) & 4" CONCRETE SLAB ON GRADE (CASE 3)

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SACRAMENTO, CA 95833
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