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

OFFICE USE ONLY

APPLICATION #: OPM-0463

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: [X] New [ ] Renewal/Update

Manufacturer Information

Manufacturer: bioMérieux, Inc.

Manufacturer's Technical Representative: Mehrdad Kianian

Mailing Address: 595 Anglum Road, Hazelwood, MO 63042

Telephone: (314) 731-8326 Email: mehrdad.kianian@biomerieux.com

Product Information

Product Name: VIRTUO® - INSTRUMENT FOR BLOOD CULTURE DETECTION

Product Type: Clinical instrument classified as other mechanical or electrical components per ASCE 7-10 Table 13.6-1.

Product Model Number: None provided

General Description: Automated clinical instrument for blood culture detection used in a hospital microbiology laboratory.

Applicant Information

Applicant Company Name: bioMérieux, Inc.

Contact Person: Mehrdad Kianian

Mailing Address: 595 Anglum Road, Hazelwood, MO 63042

Telephone: (314) 731-8326 Email: mehrdad.kianian@biomerieux.com

Title:

Registered Design Professonal Preparing Engineering Recommendations

Company Name: CYS STRUCTURAL ENGINEERS, INC.

Name: David Calia California License Number: S5614

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

Telephone: () - Email: davidc@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): Calculations in accordance with the 2016 CBC.

*Use of criteria other than those adopted by the California Building Standards Code, 2016 (CBSC 2016) 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 2016 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: 6/24/2019

Name: Jeffrey Kikumoto Title: Senior Structural Engineer

Condition of Approval (if applicable):

bioMérieux
VIRTUO
OPM–0463–13

PAGE

NOTES: THESE DRAWINGS ARE PREPARED FOR bioMérieux, INC., A COMPANY DULY ORGANIZED UNDER THE LAWS OF MISSOURI, HAVING ITS PRINCIPAL PLACE OF BUSINESS AT 100 RODOLPHE STREET, DURHAM, NC 27712

1. THE CONTRACTOR & THE INSPECTOR SHALL OBTAIN A COPY OF THIS PRE–APPROVAL FROM THE OSHPD WEBSITE.
2. THIS PRE–APPROVAL COVERS THE SUPPORTS & ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.

2019-06-05 NOT SEOR

SHEET TITLE: SHEET INDEX

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bioMérieux
VIRTUO
EQUIPMENT SUPPORTS & ATTACHMENTS

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

GENERAL NOTES:

1. THIS OSHPD PRE–APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2016. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2016.
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 & WEIGHT SPECIFIED FOR EA COMPONENT IN ADDITION TO ALL OTHER LOADS. PROVIDE & DESIGN SUPPLEMENTARY MEMBERS AS REQ.
   - B. THAT THE ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPGS.
   - C. THAT THE ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY NEW OR EXISTING ANCHORS. THE SPACING SHOWN IN THE TEST VALUES TABLE ON THIS PAGE IS THE REQ SPACING FROM ANCHORS OF OTHER DIAMETERS & EMBEDMENTS WILL VARY.
   - D. THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2016 CBC & WITH THE DETAILS SHOWN IN THIS PRE–APPROVAL.
   - E. THAT THE ACTUAL EQUIPMENT'S WEIGHT, CENTER OF GRAVITY (CG) LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, & THE MATERIAL & GAGE OF THE EQUIP WHERE ATTACHMENTS ARE MADE, AGREE WITH THE INFORMATION SHOWN ON THE PRE–APPROVAL DOCUMENTS.

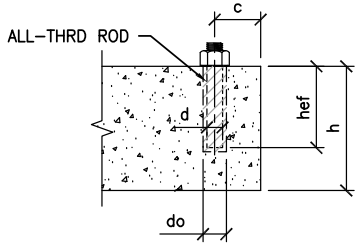
3A. EXPANSION ANCHORS INSTALLED IN NORMAL WEIGHT OR SAND–LIGHTWEIGHT CONC SHALL BE STAINLESS STEEL HILTI KB–TZ EXPANSION ANCHORS COMPLYING WITH ICC–ES ESR–1917 REISSUED MAY 2017. ADHESIVE ANCHORS INSTALLED IN NORMAL WEIGHT CONC SHALL BE ASTM F593 CW1 (316) INSTALLED USING HILTI HIT–RE 500 V3 ADHESIVE COMPLYING WITH ICC–ES ESR–3814 RE–ISSUED JANUARY 2017.

B. INSTALLATION: INSTALL THE POST–INSTALLED DRILLED–IN CONC ANCHORS IN ACCORDANCE WITH THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR & THE PARAMETERS GIVEN IN THE TABLES ON THIS PAGE.

C. TESTING:

- JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOB SITE TESTING IN ACCORDANCE WITH THE TEST LOAD TABLE PROVIDED IN THIS DOCUMENT. TEST 50% OF THE INSTALLED ANCHORS. FOR TENSION TESTING, 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. FOR TORQUE TESTING, THE TEST LOAD SHALL BE APPLIED WITH A CALIBRATED TORQUE WRENCH. 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 EQUIP INSTALLATION. ALSO REFER TO CBC 1910A.5.5 "TESTS FOR POST–INSTALLED ANCHORS IN CONCRETE".
- FAILURE/ACCEPTANCE CRITERIA: THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
  - HYDRAULIC RAM METHOD: APPLY & HOLD TEST LOAD FOR A MIN OF 15 SECONDS. THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD WHERE WASHERS ARE USED. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE OR BY A CONTINUOUS LOSS OF JACKING PRESSURE.
  - TORQUE WRENCH METHOD (EXPANSION ANCHORS ONLY): THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE: ONE–HALF (½) TURN OF THE NUT.

3D. TEST VALUES: APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT.



ADHESIVE ANCHOR
(THRD ROD / REINFORCING BAR)

POST–INSTALLED ADHESIVE ANCHOR SCHEDULE

ANCHOR TYPE & DIA (INCH) d	HOLE DIA (INCH) do	EFFECTIVE EMBED (INCH) hef	MIN CONC THICKNESS (INCH) h	MIN CONC EDGE DISTANCE (INCH) c	MIN AB SPACING UNO (INCH)	TENSION TEST LOAD (LBS)	CONDITION OF ANCHORAGE
½"ø HILTI HAS–R (ASTM F593 CW1 316 SS) ALL THRD ROD	0.5625	2.75	4	12	6.75	2550	CASE 2

POST–INSTALLED MECHANICAL ANCHOR SCHEDULE

ANCHOR TYPE & 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 UNO (INCH)	TEST LOAD		CONDITION OF ANCHORAGE
							TENSION LOAD (LBS)	TORQUE (FT–LBS)	
KB–TZ 304 SS 0.375"ø	2.3125	2.00	2.625	SEE DTLS	12	6.75 PARALLEL TO MTL DECK FLUTES	1190	25	CASE 1
KB–TZ CS 0.5"ø	2.375	2.00	2.625	SEE DTLS	12	6.75 PARALLEL TO MTL DECK FLUTES	–	40	CASE 1 & CASE 2

REGISTERED PROFESSIONAL ENGINEER
DAVID MATTHEW CALIA
No. S5614
STRUCTURAL
STATE OF CALIFORNIA

2019-06-05 NOT SEOR

SHEET TITLE: GENERAL NOTES

bioMérieux
VIRTUO
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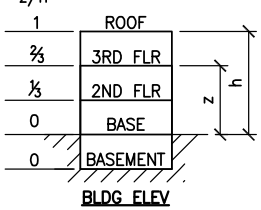
GENERAL NOTES CONTINUED:

4. TWO (2) CONDITIONS OF SUPPORTS & ATTACHMENTS ARE SPECIFIED & PRESENTED IN THIS PRE-APPROVAL:



CASE 1: SUPPORTS & ATTACHMENTS DTLS LOCATED AT UPPER FLRS ABV THE BASE OF A BLDG (z/h <= 1.0), IT IS ASSUMED THAT THE FLRS ARE BUILT OF A MIN 3¼" NWC OR SLWC TOPPING OVER MTL DECK (f'c = 3000 PSI, MIN).

CASE 2: SUPPORTS & ATTACHMENTS DTLS LOCATED AT OR BLW THE BASE OF A BLDG (z/h = 0). THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 4" NWC SLAB (f'c = 3000 PSI, MIN).

5. THIS PRE-APPROVAL MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA WHERE S_{DS} IS LESS THAN OR EQ TO 2.50.
6. COORDINATE THE ANCHOR BOLT LAYOUT WITH THE COMPONENT IN THE FIELD PRIOR TO SETTING ANCHOR BOLTS.
7. ANCHOR BRACKETS SHALL BE PAINTED WITH A RUST INHIBITIVE PRIMER FOLLOWED BY A COLOR COAT SELECTED BY THE HOSPITAL FACILITY OR MATCH THE COLOR OF THE BASE OF THE EQUIP IF A COLOR IS NOT SPECIFIED BY THE HOSPITAL.
8. FASTENERS AND ASSOCIATED HARDWARE SHALL BE FIELD PAINTED TO MATCH BRACKETS AFTER INSTALLATION IS COMPLETE.
9. STRUCTURAL STEEL SHAPES & CONNECTORS SHALL CONFORM TO THE FOLLOWING, UNO:
   A. PLATES, ANGLES, BARS & MISCELLANEOUS SHAPES ..... ASTM A36
   B. PLATES AS NOTED ..... ASTM A572 GR 50
   C. MACHINE BOLTS ..... ASTM A307
10. THE SEISMIC SUPPORTS SHALL BE FURNISHED BY BIOMERIEUX OR THE CONTRACTOR AS DIRECTED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE OF THE PROJECT. CONTRACTOR SHALL INSTALL THE SEISMIC SUPPORTS & ATTACHMENTS (INCLUDING SEISMIC BRACKETS, EXPANSION ANCHORS, THRU-BOLTS, STRUT PLATES BLW SLABS, HIGH STRENGTH BOLTS, ETC.) IN CONJUNCTION WITH COMPONENT SETTING INSTRUCTIONS FROM bioMérieux FIELD INSTALLATION PERSONNEL.
11. DRAWING SCALES ARE NOT PROVIDED. DO NOT SCALE OFF OF THESE DRAWINGS. THE INTENT OF THESE DRAWINGS IS TO SHOW HOW TO FABRICATE THE SEISMIC BRACKET TO ANCHOR THE EQUIP SPECIFIED. THE REPRESENTATIONS OF THE EQUIP ARE ONLY INTENDED TO SHOW THE COORDINATION WITH THE SEISMIC BRACKETS.
12. BOLTS THRU CONC ON MTL DECK:
   A. BOLTS SHALL BE TORQUED BY ¾ TURN OF THE NUTS AFTER SNUG TIGHT (THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQ TO BRING THE CONNECTED PLIES INTO FIRM CONTACT) CONDITION IS ACHIEVED, UNO.
   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 (THRU BOLTS WITH STEEL TO STEEL CONN IN TENSION DO NOT REQUIRE TESTING) IN ACCORDANCE WITH REQUIREMENTS FOR POST-INSTALLED ANCHORS.
13. TAKE CARE TO AVOID DAMAGING REBAR OR POST-TENSIONING TENDONS WHEN INSTALLING ANCHORS TO CONC.

WELDING NOTES:

1. WELDING OF SEISMIC BRACKETS SHALL BE PERFORMED BY CERTIFIED WELDERS USING E70XX ELECTRODES (UNO). THE USE OF E70-T4 WELDING WIRE IS NOT ALLOWED FOR ANY APPLICATION. WELDS SHALL BE IN CONFORMITY WITH THE PROJECT SPECIFICATIONS AND STRUCTURAL WELDING CODE-STEEL OF THE AMERICAN WELDING SOCIETY (AWS D1.1-10). SEE SPECIAL INSPECTIONS SECTION FOR WELDING INSPECTION REQUIREMENT. SUBMIT WELDING PROCEDURES AND SPECIFICATIONS TO OWNER'S TESTING LABORATORY FOR REVIEW & APPROVAL PRIOR TO BEGINNING SEISMIC BRACKET FABRICATION.
2. WELD LENGTHS CALLED FOR ON PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM SIZE WELDS AS SPECIFIED IN AISC 360-10, SECTION J2.2b.

DESIGN CRITERIA

DESIGN OF SUPPORTS & ATTACHMENTS FOR ALL EQUIP COMPONENTS IS PER 2016 CBC

ASCE 7-10 TABLE 13.6-1
OTHER MECHANICAL OR ELECTRICAL COMPONENTS

S_{DS} = 2.5

I_p = 1.5

a_p = 1.0

R_p = 1.5

Ω_o = 1.5

W_p AS NOTED ON COMPONENT BASE PLAN & ELEV. SEE PG 7.

SEISMIC LOADS FOR CASE 1 - UPPER FLRS ABV THE BASE, z/h <= 1.0 (LRFD)

F_p = 3.00 W_p

F_v = 0.50 W_p

SEISMIC LOADS FOR CASE 2 - SLAB AT OR BLW BASE, z/h = 0 (LRFD)

F_p = 1.12 W_p

F_v = 0.50 W_p

REGISTERED PROFESSIONAL ENGINEER DAVID MATTHEW CALIA No. S5614 STRUCTURAL STATE OF CALIFORNIA

2019-06-05 NOT SEOR

SHEET TITLE: GENERAL NOTES & DESIGN CRITERIA	Rev	Description	Date	Job No: 17136
				Date: 5/31/2019
bioMérieux VIRTUO EQUIPMENT SUPPORTS & ATTACHMENTS				By: MTC
CYS STRUCTURAL ENGINEERS, INC. 2495 NATOMAS PARK DRIVE, SUITE 650 TEL (916) 920-2020 SACRAMENTO, CA 95833 www.cyseng.com				Page: 3 of 10

ABBREVIATIONS:

@	AT
AB	ANCHOR BOLT
ABV	ABOVE
ADJ	ADJACENT
AISC	AMERICAN INSTITUTE FOR STEEL CONSTRUCTION
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASD	ALLOWABLE STRENGTH DESIGN
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWS	AMERICAN WELDING SOCIETY
BLDG	BUILDING
BLK	BLOCK
BLW	BELOW
BOTT	BOTTOM
BTW	BETWEEN
CBC	CALIFORNIA BUILDING CODE
CG	CENTER OF GRAVITY
CJP	COMPLETE JOINT PENETRATION
CLR	CLEAR OR CLEARANCE
CLSE	CALIFORNIA LICENSED STRUCTURAL ENGINEER
℄	CENTERLINE
CONC	CONCRETE
CONN	CONNECTION
COORD	COORDINATE
CTR	CENTER
DBL	DOUBLE
DIA (ø)	DIAMETER
DIM	DIMENSION
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING CONDITION
EA	EACH
EE	EACH END
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
f'_c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE
FF	FINISHED FLOOR
FLG	FLANGE
FLR	FLOOR
FRMG	FRAMING
FT (')	FOOT/FEET
F_y	SPECIFIED YIELD STRENGTH OF REINFORCING, PSI OR SPECIFIED MINIMUM YIELD STRESS OF STEEL, KSI
GA	GAUGE
HEIGHT	HT
ICC	INTERNATIONAL CODE COUNCIL
IN (")	INCH
KSI	KIPS PER SQUARE INCH
L	LENGTH
LBS	POUNDS
LRFD	LOAD & RESISTANCE FACTOR DESIGN
LFRS	LATERAL FORCE RESISTING SYSTEM
MAX	MAXIMUM
MB	MACHINE BOLT
MFR	MANUFACTURER
MIN	MINIMUM
MTL	METAL
NO. (#)	NUMBER OR POUNDS
NTS	NOT TO SCALE
NS&FS	NEAR SIDE & FAR SIDE
NWC	NORMAL WEIGHT CONCRETE
OPG	OPENING
OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT
PG	PAGE
PL	PLATE
PSI	POUNDS PER SQUARE INCH
R	RADIUS
REQ	REQUIRED
SEOR	STRUCTURAL ENGINEER OF RECORD
SIM	SIMILAR
SLWC	SAND-LIGHTWEIGHT CONCRETE
SOG	SLAB ON GRADE
SQ	SQUARE
SS	STAINLESS STEEL
STL	STEEL
T&B	TOP & BOTTOM
TEMP	TEMPORARY
THRD	THREAD OR THREADED
TOC	TOP OF CONCRETE
Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V	ANCHORAGE SHEAR REAC
VERT	VERTICAL
Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
W/	WITH
W_p	COMPONENT SELF-WEIGHT

REGISTERED PROFESSIONAL ENGINEER
DAVID MATTHEW CALIA
No. S5614
STRUCTURAL
STATE OF CALIFORNIA

2019-06-05 NOT SEOR

SHEET TITLE: ABBREVIATIONS

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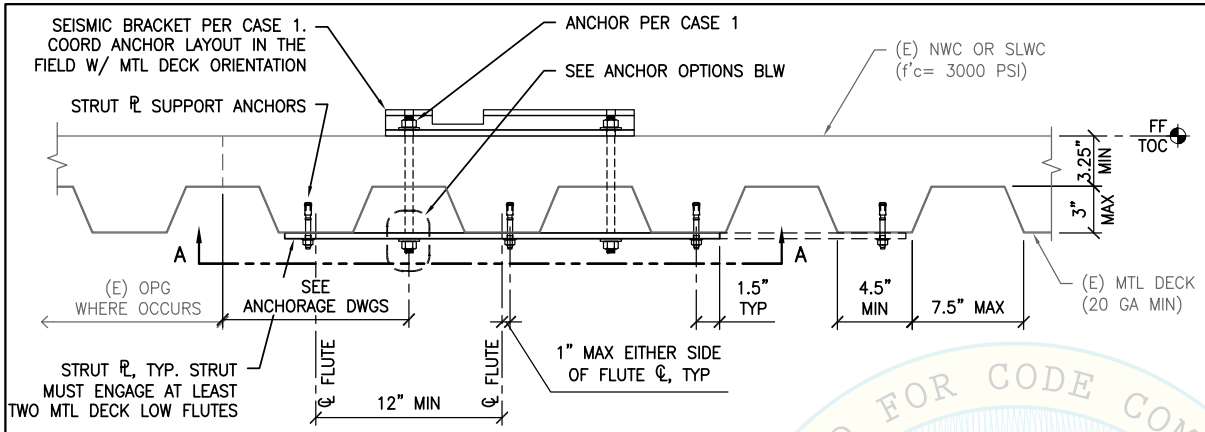
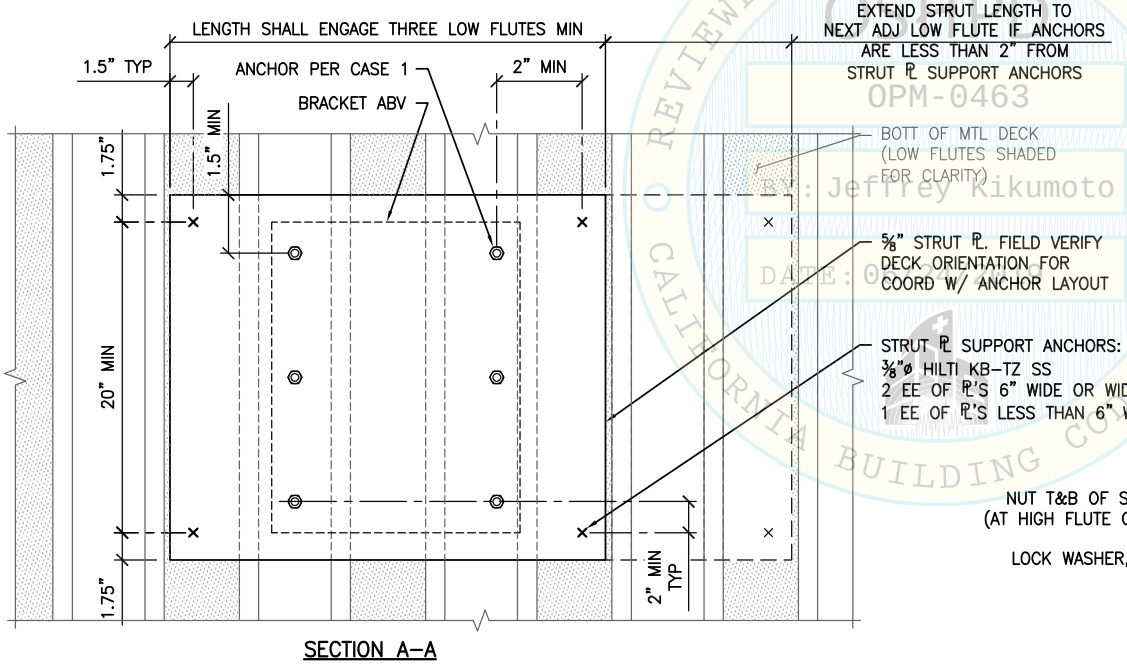
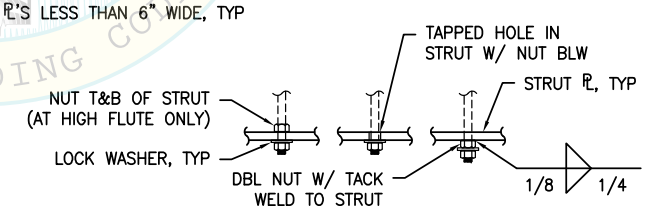




SECTION A–A



ANCHOR OPTIONS

NOTE:
GENERAL CONTRACTOR TO PROVIDE & INSTALL THE FOLLOWING:
- STRUT PLATE
- ANCHORS

REGISTERED PROFESSIONAL ENGINEER
DAVID MATTHEW CALIA
No. S5614
STRUCTURAL
STATE OF CALIFORNIA

2019-06-05 NOT SEOR

SHEET TITLE: TYPICAL STRUT DETAILS

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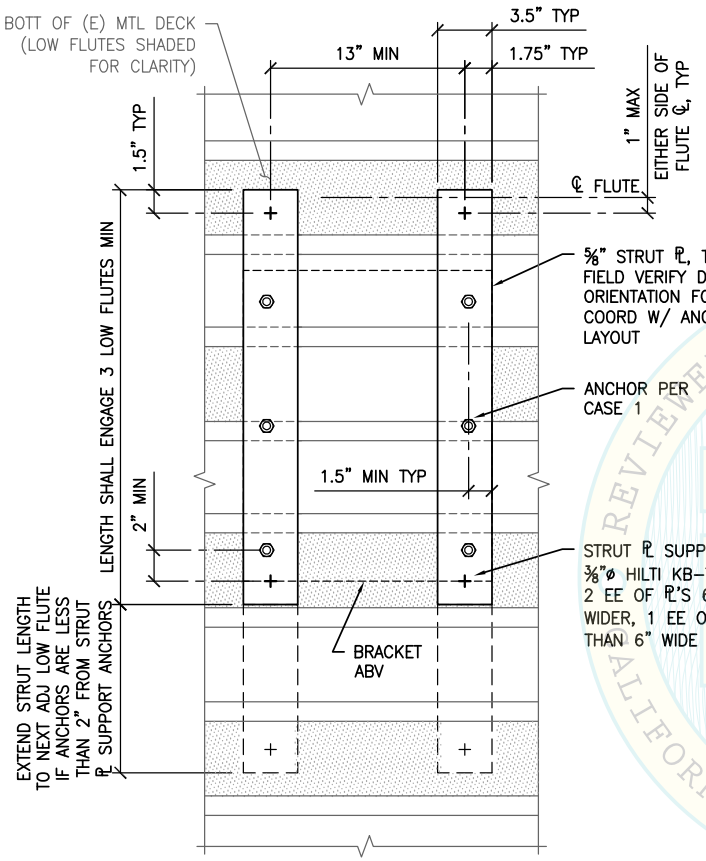

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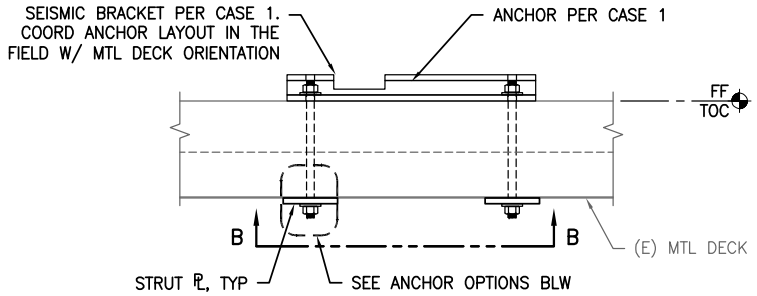

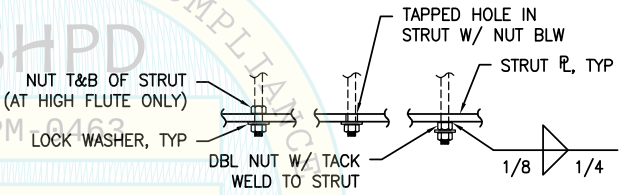

ANCHOR OPTIONS

NOTE:
GENERAL CONTRACTOR TO PROVIDE & INSTALL THE FOLLOWING:
- STRUT PLATE
- ANCHORS

REGISTERED PROFESSIONAL ENGINEER
DAVID MATTHEW CALIA
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SHEET TITLE: TYPICAL STRUT DETAILS

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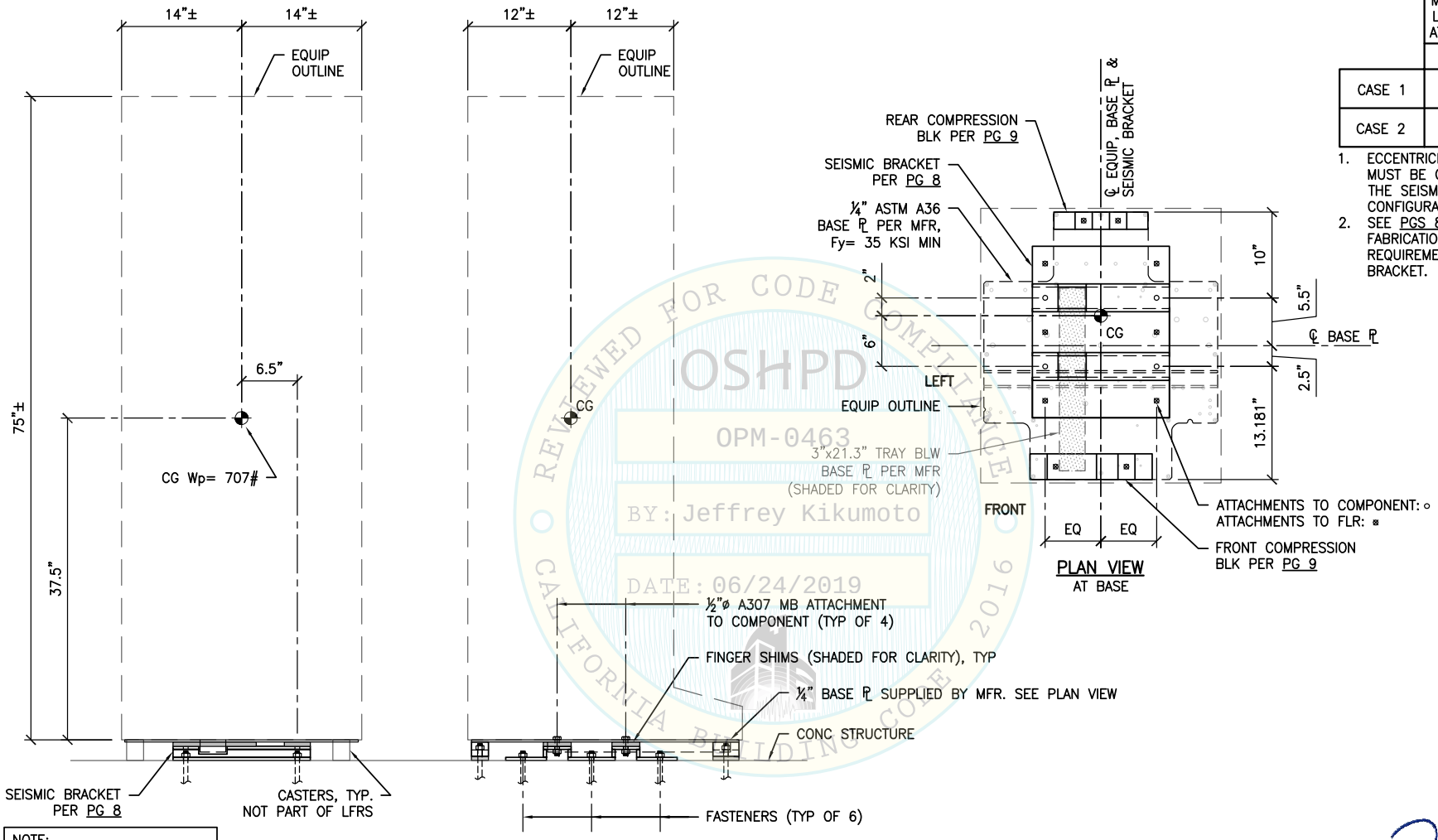

	MAX ANCHOR FORCES AT LRFD AT EA COMPONENT ATTACHMENT TO SUPPORT	
	T_{max}	V_{max}
CASE 1	4715#	957#
CASE 2	2639#	539#

1. ECCENTRICITY & PRYING ACTION MUST BE CONSIDERED BASED ON THE SEISMIC BRACKET CONFIGURATION.
2. SEE PGS 8 & 9 FOR THE FABRICATION & INSTALLATION REQUIREMENTS OF THE SEISMIC BRACKET.

NOTE:
CUT BEHIND THE FRONT COMPRESSION BLK & IN FRONT OF SEISMIC BRACKET.

REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

2019-06-05 NOT SEOR

SHEET TITLE: VIRTUO
BASE PLAN & ELEVATIONS

bioMérieux
VIRTUO
EQUIPMENT SUPPORTS & ATTACHMENTS

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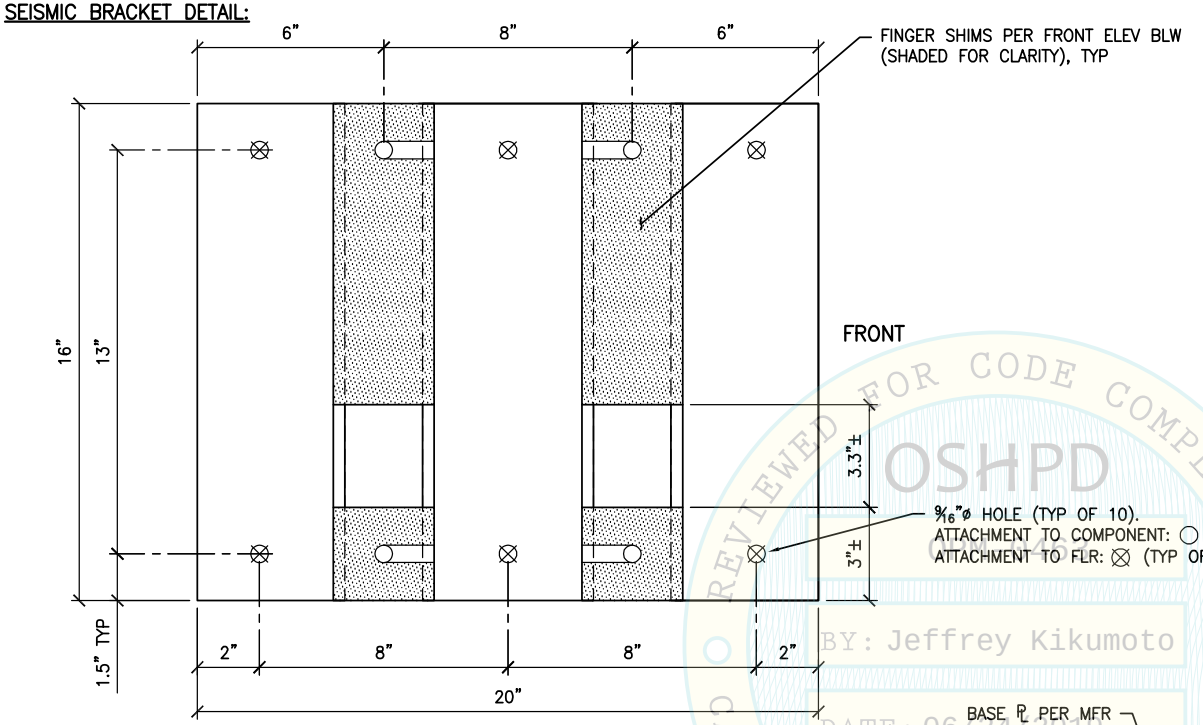
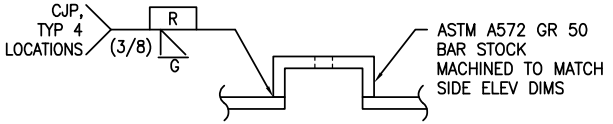
SEISMIC BRACKET DETAIL:

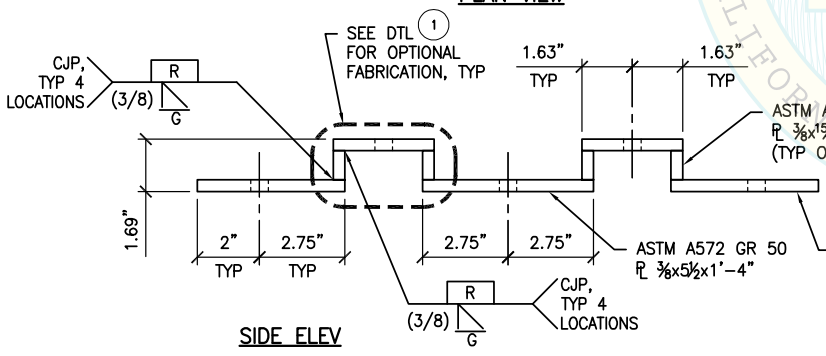


PLAN VIEW

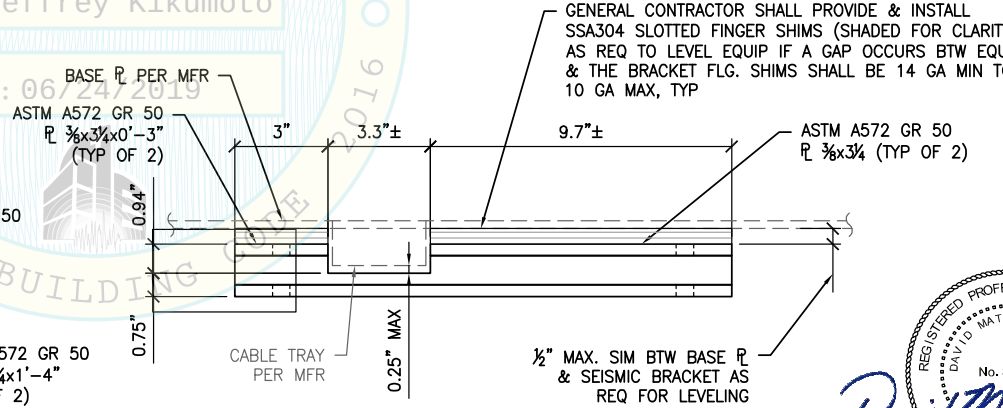
NOTE:
GENERAL CONTRACTOR TO PROVIDE & INSTALL THE FOLLOWING:
- SEISMIC BRACKETS
- SHIMS
- ANCHORS



1 OPTIONAL FABRICATION



SIDE ELEV



FRONT ELEV

REGISTERED PROFESSIONAL ENGINEER DAVID MATTHEW CALIA No. S5614 STRUCTURAL STATE OF CALIFORNIA

2019-06-05 NOT SEOR

SHEET TITLE: VIRTUO SEISMIC BRACKET DETAIL	Rev	Description	Date
bioMérieux VIRTUO EQUIPMENT SUPPORTS & ATTACHMENTS			
CYS STRUCTURAL ENGINEERS, INC. 2495 NATOMAS PARK DRIVE, SUITE 650 SACRAMENTO, CA 95833 TEL (916) 920-2020 www.cyseng.com			

Job No:	17136
Date:	5/31/2019
By:	MTC
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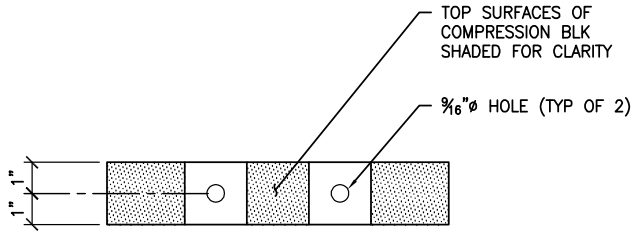
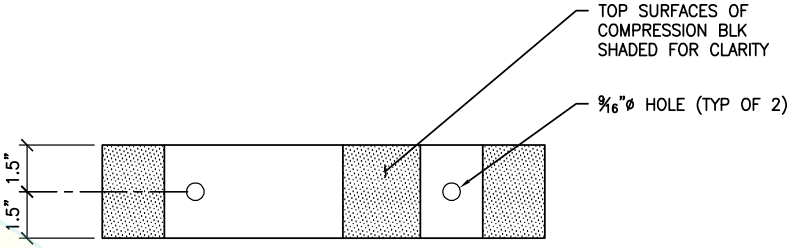
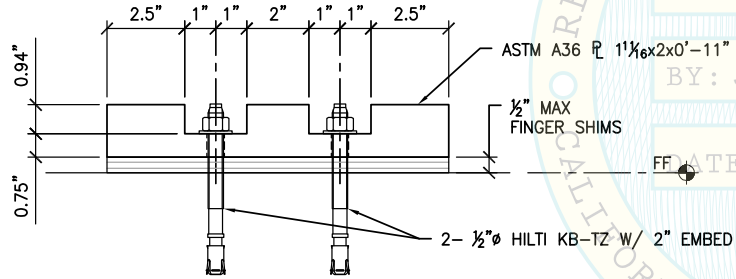
L:\Jobs17\17136 bioMerieux - Virtuo OPM\ACAD\STRU\S1.dwg Time:Jun03,2019-09:52am Login:mayerhoferm Dimscale:1 LTScale:6



PLAN VIEW

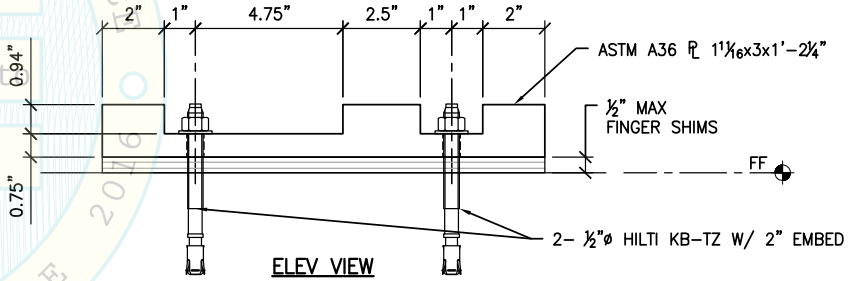


PLAN VIEW



ELEV VIEW

REAR COMPRESSION BLOCK



ELEV VIEW

FRONT COMPRESSION BLOCK

NOTE:
GENERAL CONTRACTOR TO PROVIDE & INSTALL THE FOLLOWING:
- COMPRESSION BLKS
- SHIMS
- ANCHORS

REGISTERED PROFESSIONAL ENGINEER
DAVID MATTHEW CALIA
No. S5614
STRUCTURAL
STATE OF CALIFORNIA

2019-06-05 NOT SEOR

SHEET TITLE: VIRTUO
REAR COMPRESSION BLOCK & FRONT COMPRESSION BLOCK DETAILS

bioMérieux
VIRTUO
EQUIPMENT SUPPORTS & ATTACHMENTS

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
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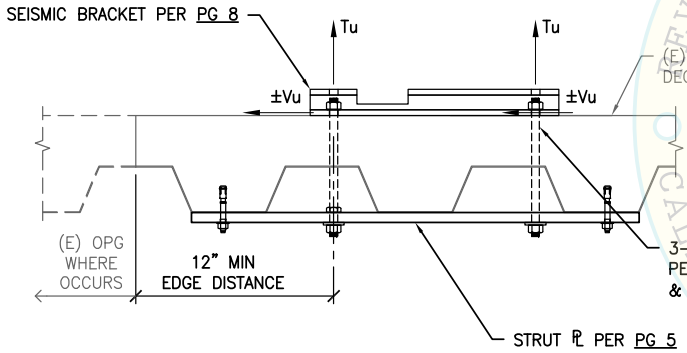
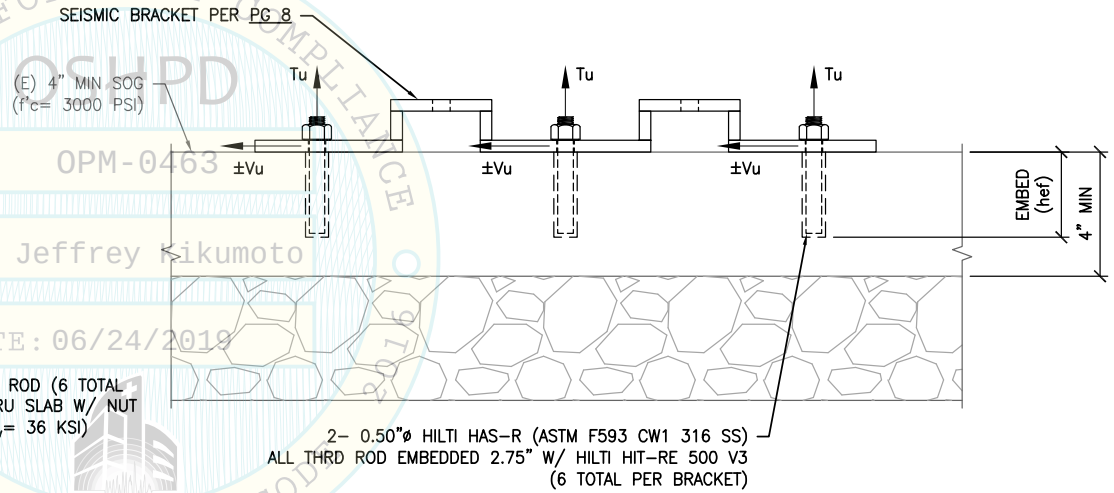
	MAX ANCHOR FORCES AT LRFD AT EA ANCHOR TO CONC FLR	
	Tu	Vu
CASE 1 $z/h \leq 1.0$	5599#	750#[1]
CASE 2 $z/h = 0$	3134#[1]	423#[1]

1. INCLUDES MATERIAL OVERSTRENGTH FACTOR (Ω_o) IN ACCORDANCE W/ ACI 318–14 SECTION 17.2.3.4.3(d) FOR TENSION OR SECTION 17.2.3.5.3(c) FOR SHEAR.



CASE 1 – SUSPENDED FLR W/ THRU BOLTS



CASE 2 – SLAB ON GRADE
(SLAB AT OR BLW GRADE)

NOTE:
ANCHORAGE INSTALLATION BY CONTRACTOR.

REGISTERED PROFESSIONAL ENGINEER
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SHEET TITLE: VITEK MASS SPECTROMETER SUPPORT & ATTACHMENT DETAILS

bioMérieux
VIRTUO
EQUIPMENT SUPPORTS & ATTACHMENTS

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