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

OFFICE USE ONLY
APPLICATION #: OPM-0545-19

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: ☐ New ☐ Renewal ☒ Update to Pre-CBC 2013 OPA Number: OPA-2407-07

Manufacturer Information

Manufacturer: Siemens Healthcare Diagnostics Inc.

Manufacturer's Technical Representative: Robert Wiedenmann

Mailing Address: 600 GBC Drive, Newark, DE 19702

Telephone: 302-631-7539 Email: Robert.k.wiedenmann@siemens-healthineers.com

Product Information

Product Name: Dimension EXL

Product Type: Integrated Chemistry System

Product Model Number: Dimension EXL

General Description: Assay of Body Fluids

Applicant Information

Applicant Company Name: Siemens Healthcare Diagnostics Inc.

Contact Person: Robert Wiedenmann

Mailing Address: 600 GBC Drive, Newark, DE 19702

Telephone: 302-631-7539 Email: Robert.k.wiedenmann@siemens-healthineers.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: [signature] Date: 8/1/2019

Title: Sr. Manager Company Name: Siemens Healthineers

Registered Design Professional Preparing Engineering Recommendations

Company Name: CYS Structural Engineers, Inc.

Name: Dieter T. Siebald California License Number: SE 4346

Mailing Address: 2495 Natomas Park Drive, 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 1950-16

☐ Other* (Please Specify):

*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 OSHPD prior to testing.

☒ Analysis

☐ Experience Data

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

List of Attachments Supporting the Manufacturer's Certification

☐ Test Report ☒ Drawings ☒ Calculations ☐ Manufacturer's Catalog

☐ Other(s) (Please Specify):

OFFICE USE ONLY – OSHPD APPROVAL VALID FOR CBC 2016 & ALL PRE-2016 CODE BASED PROJECTS

Signature: Haeseong Lim Date: 3/5/2020

Print Name: Haeseong Lim

Title: Structural Engineer

Condition of Approval (if applicable):

SIEMENS

TABLE OF CONTENTS
OPM–0545–19

NOTES:

1. THESE DRAWINGS ARE PREPARED FOR SIEMENS HEALTHCARE DIAGNOSTICS, NEWARK, DELAWARE.

2. THE CONTRACTOR & INSPECTOR OF RECORD SHALL OBTAIN A COPY OF THIS PRE–APPROVAL FROM THE OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT (OSHPD) 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. 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

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

Job No:	19073
Date:	01-17-2020
Page:	1 of 15

GENERAL NOTES:

1. THIS OSHPD 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. EQUIP ANCHORAGES SUCH AS EXPANSION ANCHORS, BOLTS, SCREWS & FITTINGS SHALL BE DESIGNED IN COMPLIANCE W/ THE FORCE LEVEL REQUIREMENTS OF THE 2019 CBC, TITLE 24, PART 2, VOL. 2. LOAD COMBINATION FOR LOAD & RESISTANCE FACTOR DESIGN (LRFD) SHALL BE USED.
3. IT IS THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD (SEOR) FOR A SITE SPECIFIC PROJECT TO VERIFY:
   A. THE ADEQUACY OF THE NEW OR (E) STRUCTURE TO RESIST THE FORCES & WEIGHT SPECIFIED FOR EA EQUIP IN ADDITION TO ALL OTHER LOADS. PROVIDE & DESIGN SUPPLEMENTARY MEMBERS AS REQ.
   B. THE NEW ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPGS. SEE TABLE 1 ON PG 3.
   C. THE NEW ANCHORS ARE LOCATED AT LEAST 18" AWAY FROM ADJ (E) ANCHORS OR THE SEOR SHALL EVALUATE THE ANCHORAGES FOR THE EQUIP IN THIS OPM FOR ADVERSE AFFECTS OF ADJ ANCHORAGES. THE SPACING SHOWN IN TABLE 1 ON PG 3, IS THE REQ MIN SPACING OF THE ⅜"ø AND ½"ø AB'S. THE REQ SPACING FROM ANCHORS OF OTHER DIAMETERS & EMBEDMENTS WILL VARY & SHALL BE EVALUATED BY THE SEOR.
   D. THAT THE INSTALLATION IS IN CONFORMANCE W/ THE 2019 CBC & W/ THE DTLS SHOWN IN THIS PRE–APPROVAL.
   E. THAT THE ACTUAL EQUIP'S WT, CENTER OF GRAVITY (CG) LOCATION, ANCHOR LOCATIONS, ANCHOR DTLS, & THE MATERIAL & GA OF THE EQUIP WHERE ATTACHMENTS ARE MADE, AGREE W/ THE INFORMATION 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.

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SHEET TITLE: GENERAL NOTES

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Date:	01-17-2020
Page:	2 of 15

GENERAL NOTES (CONTINUED):

4. A. EXPANSION ANCHORS INSTALLED IN NORMAL WT OR SAND LIGHTWEIGHT CONC SHALL BE CARBON STL HILTI KB-TZ EXPANSION ANCHORS COMPLYING W/ ESR-1917 ISSUED MAY 2019.
   B. INSTALLATION: INSTALL THE EXPANSION ANCHORS IN ACCORDANCE W/ THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR.
   C. JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOB SITE TESTING IN ACCORDANCE W/ THE TENSION LOAD TABLE PROVIDED IN THIS DOCUMENT. TEST 50% OF THE INSTALLED ANCHORS. THE TEST LOAD SHALL BE BY THE CALIBRATED TORQUE WRENCH METHOD. REPORT OF TEST RESULTS SHALL BE SUBMITTED TO OSHPD. 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 2019 CBC 1910A.5 "TESTS FOR POST-INSTALLED ANCHORS IN CONCRETE".
   D. 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 (1/2) TURN OF THE NUT.
5. 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.

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SHEET TITLE: GENERAL NOTES (CONTINUED)

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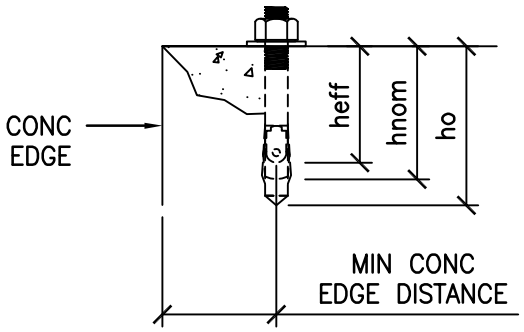
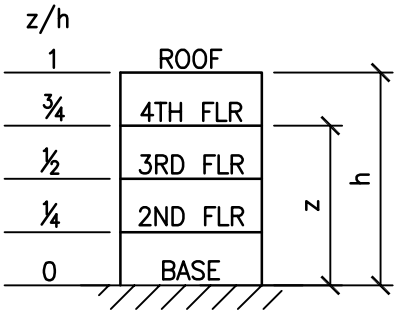
Job No:	19073
Date:	01-17-2020
Page:	3 of 15

GENERAL NOTES (CONTINUED):

6. ANCHOR REQUIREMENTS:



ANCHOR DIMENSIONS

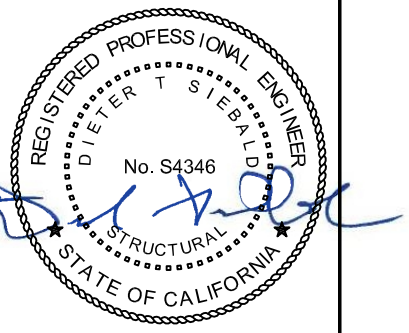


BLDG ELEV

TABLE 1 – HILTI KB–TZ CARBON STEEL ANCHOR INSTALLATION

CONDITION OF ANCHORAGE	ANCHOR DIA (INCH)	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) heff	HOLE DEPTH (INCH) ho	MIN CONC THICKNESS (INCH)	MIN CONC EDGE DISTANCE (INCH)	MIN AB SPACING (INCH)	TEST TORQUE (FT–LBS)
CASE 1	⅜	2 5/16	2	2 5/8	3¼	12	6	25
CASE 2	½	2⅜	2	2 5/8	3¼	12	6	40
CASE 3	½	2⅜	2	2 5/8	4	12	6	40

7. THREE (3) CONDITIONS OF ANCHORAGE ARE SPECIFIED AND PRESENTED IN THIS PRE–APPROVAL:
   - A. CASE 1: THRU–BOLTS– ANCHORAGE DTLS LOCATED AT UPPER SUSPENDED FLR OF A BLDG. AT THIS LEVEL THE FLR IS CONSTRUCTED OF 3.5" MIN LWC TOPPING OVER MTL DECK (f'c=3000 PSI, MIN.) FOR THIS CASE, z/h RATIO IS LIMITED TO ≤0.50
   - B. CASE 2: HILTI KB–TZ– ANCHORAGE DTLS LOCATED AT UPPER SUSPENDED FLR OF A BLDG. AT THIS LEVEL THE FLR IS CONSTRUCTED OF 3.25" MIN LWC TOPPING OVER MTL DECK (f'c=3000 PSI, MIN.). SEE PG 13. FOR THIS CASE, z/h RATIO IS LIMITED TO ≤0.50
   - C. CASE 3: HILTI KB–TZ– ANCHORAGE DTLS LOCATED AT SOG OR BLW THE BASE OF A BLDG (z/h=0). AT THIS LEVEL, THE FLR IS CONSTRUCTED OF 4" MIN NWC THK REQ (f'c=3000 PSI MIN.).
8. 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 ON PG 6.



SHEET TITLE: ABBREVIATIONS

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Job No:	19073
Date:	01-17-2020
Page:	4 of 15

ABBREVIATIONS:

AB	ANCHOR BOLT
ABV	ABOVE
ADJ	ADJACENT
a_p	COMPONENT AMPLIFICATION FACTOR
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
BLDG	BUILDING
BLW	BELOW
CBC	CALIFORNIA BUILDING CODE
CG	CENTER OF GRAVITY
℄	CENTERLINE
CONC	CONCRETE
CONN	CONNECTION
DTL	DETAIL
DIA (ø)	DIAMETER
(E)	EXISTING CONDITION
EA	EACH
ELEV	ELEVATION
EMBED	EMBEDMENT
EQ	EQUAL
EQUIP	EQUIPMENT
E_v	VERTICAL SEISMIC DESIGN FORCE PER ASCE 7-16 SECTION 12.4-4 SEISMIC DESIGN FORCE REQUIREMENTS
FLR	FLOOR
FT (')	FOOT/FEET
f'c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE
Fp	HORIZONTAL SEISMIC FORCE PER ASCE 7-16 SECTION 13.3.1 SEISMIC DESIGN FORCE REQUIREMENTS
F_v	VERTICAL SEISMIC DESIGN FORCE PER ASCE 7-16 SECTION 12.4-4 SEISMIC DESIGN FORCE REQUIREMENTS
F_y	SPECIFIED YIELD STRENGTH OF REINFORCING, PSI OR SPECIFIED MINIMUM YIELD STRESS OF STEEL, KSI
GA	GAUGE
GC	GENERAL CONTRACTOR
GR	GRADE
h	AVERAGE ROOF HEIGHT OF STRUCTURE WITH RESPECT TO THE BASE
ICC	INTERNATIONAL CODE COUNCIL
IN (")	INCH
I_p	COMPONENT IMPORTANCE FACTOR
KSI	KIP PER SQUARE INCH
LBS	POUNDS
LRFD	LOAD & RESISTANCE FACTOR DESIGN
LWC	LIGHT WEIGHT CONCRETE
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MTL	METAL
NO. (#)	NUMBER OR POUNDS
NWC	NORMAL WEIGHT CONCRETE
OPG	OPENING
OPM	OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION
OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT
PG	PAGE
ℙ	PLATE
PSI	POUNDS PER SQUARE INCH
REQ	REQUIRED
R_p	COMPONENT RESPONSE MODIFICATION FACTOR
S_{DS}	5% DAMPED SPECTRAL RESPONSE ACCELERATION PARAMETER AT SHORT PERIODS
SEOR	STRUCTURAL ENGINEER OF RECORD
SOG	SLAB ON GRADE
SS	STAINLESS STEEL
STL	STEEL
Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC DESIGN FORCE
THK	THICK
THRD	THREAD/THREADED
TYP	TYPICAL
VOLUME	VOL
Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
W/	WITH
WT	WEIGHT
W_p	COMPONENT OPERATING WEIGHT
z	HEIGHT IN THE STRUCTURE OF POINT OF ATTACHMENT OF COMPONENT WITH RESPECT TO BASE

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SHEET TITLE: DESIGN CRITERIA & SEISMIC DESIGN FORCES

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Job No:	19073
Date:	01-17-2020
Page:	5 of 15

DESIGN CRITERIA & SEISMIC DESIGN FORCES (LRFD)

$F_p = \frac{0.4 a_p S_{DS} W_p (1+2\ z/h)}{(R_p/I_p)}$ ASCE 7-16 (13.3-1)

F_p (MAX) $= 1.6\ S_{DS}\ I_p\ W_p$ ASCE 7-16 (13.3-2)

F_p (MIN) $= 0.3\ S_{DS}\ I_p\ W_p$ ASCE 7-16 (13.3-3)

$E_v = F_v = \pm 0.2\ S_{DS}\ W_p$ ASCE 7-16 (12.4-4)

SUPPORT & ATTACHMENT DESIGN IS PER 2019 CBC AT LRFD LEVEL FORCES PER TABLE 13.6-1 OF ASCE 7-16 SUPPLEMENT #1. "OTHER MECHANICAL OR ELECTRICAL COMPONENTS"

$a_p = 1.0$
$Rp = 1.5$
$Ip = 1.5$
$\Omega o = 1.5$
$Wp = 950\#$

TABLE 2

	S_{DS}	z/h	F_p COEFFICIENT	F_p (LBS)	F_v COEFFICIENT	F_v (LBS)
CASE 1	1.80	0.5	1.440 Wp	1368	0.360 Wp	342
CASE 2	1.10	0.5	0.880 Wp	836	0.220 Wp	295
CASE 3	2.50	0	1.125 Wp	1069	0.500 Wp	475

LOAD COMBINATIONS

1. $(1.2 + 0.2\ S_{DS})$ D+1.0E

2. $(0.9-0.2\ S_{DS})$ D+1.0E

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SHEET TITLE: DIMENSION EXL
PLAN & ELEVATIONS

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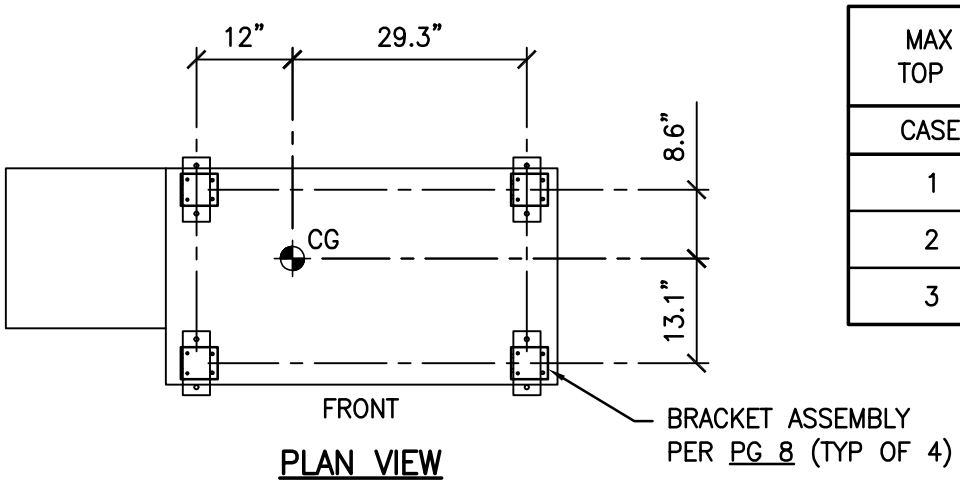
Date:	01-17-2020
Page:	6 of 15

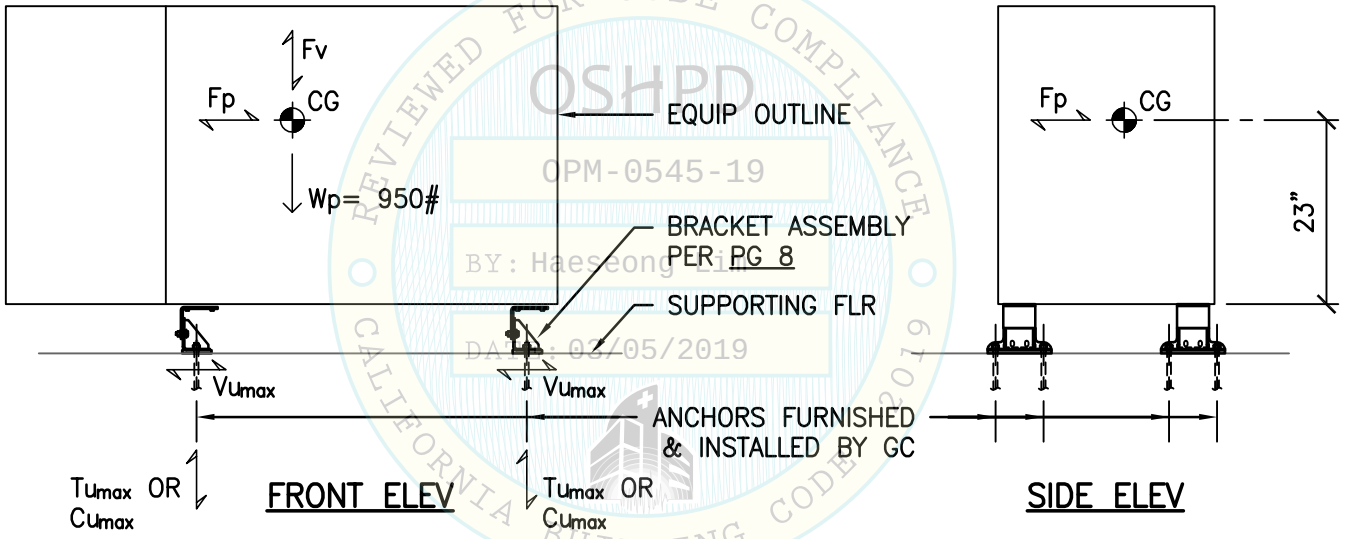
SIEMENS HEALTHCARE DIAGNOSTICS
DIMENSION EXL

SIEMENS



PLAN VIEW

MAX LRFD LEVEL FORCES TO TOP BRACKET AT 23" BLW CG				
CASE	S_{DS}	z/h	Tu	Vu
1	1.80	0.50	771	439
2	1.10	0.50	448	268
3	2.50	0	604	343



FRONT ELEV

SIDE ELEV

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SHEET TITLE: SEISMIC BRACKET DETAILS
ASSEMBLY DETAIL

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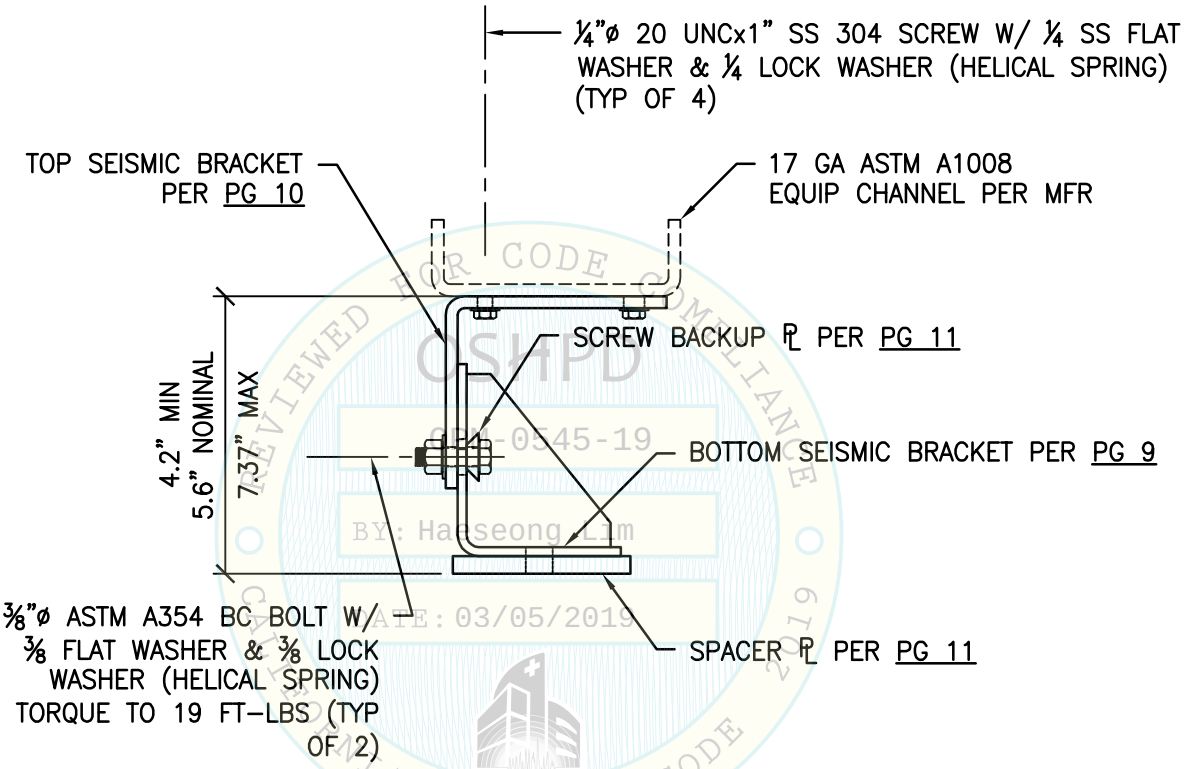
Date:	01-17-2020
Page:	7 of 15

SIEMENS



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SHEET TITLE: SEISMIC BRACKET DETAILS
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Date:	01-17-2020
Page:	8 of 15

SIEMENS HEALTHCARE DIAGNOSTICS
DIMENSION EXL

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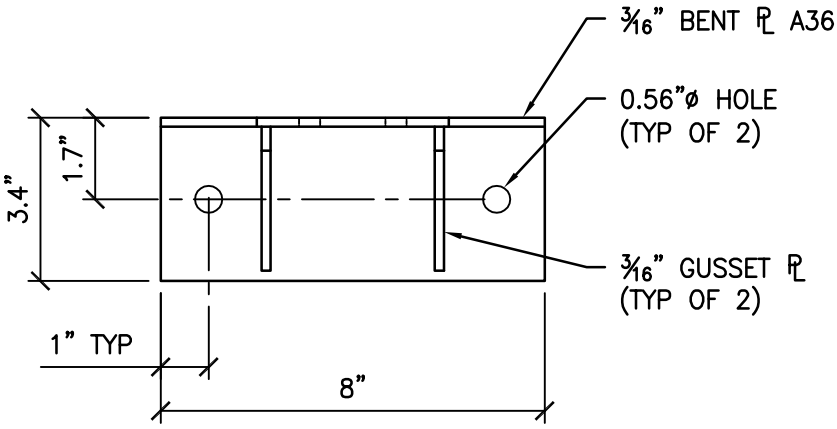
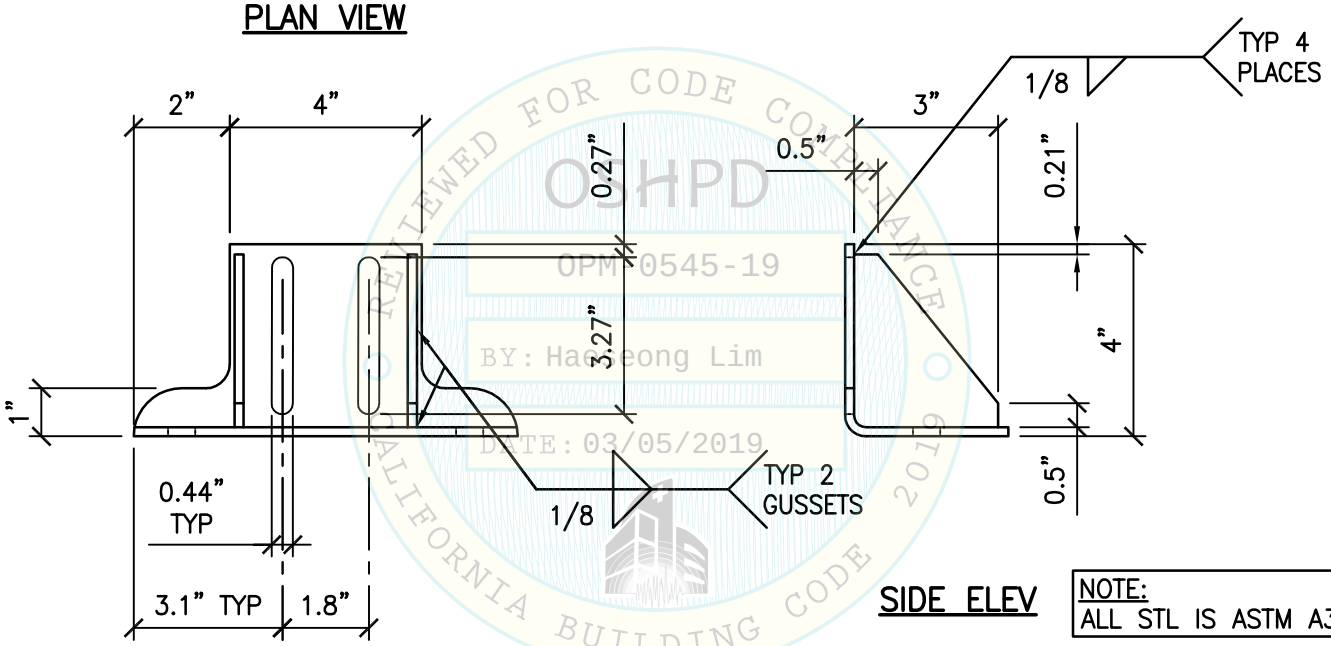


PLAN VIEW



FRONT ELEV

SIDE ELEV

NOTE:
ALL STL IS ASTM A36

SHEET TITLE: SEISMIC BRACKET DETAILS
BOTTOM BRACKET

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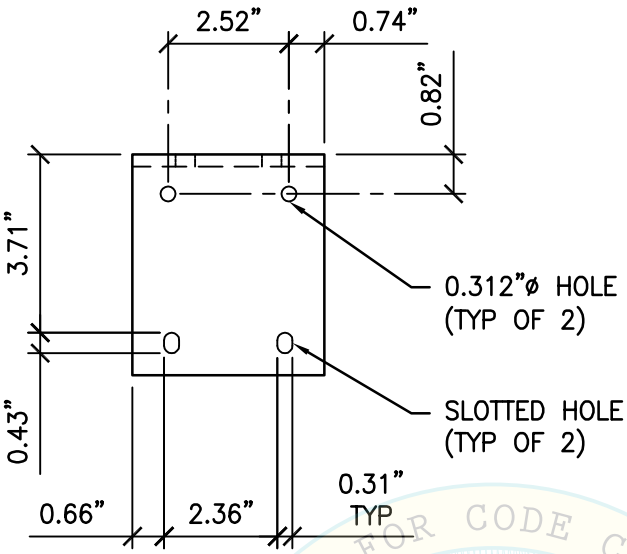
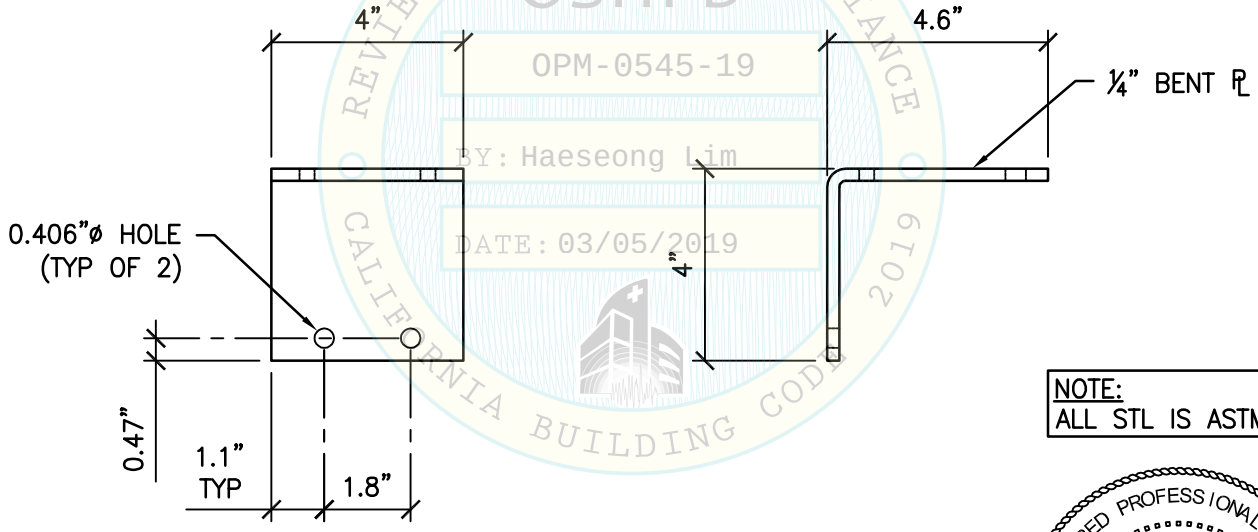
Date:	01-17-2020
Page:	9 of 15

SIEMENS HEALTHCARE DIAGNOSTICS
DIMENSION EXL

SIEMENS



PLAN VIEW



FRONT ELEV

SIDE ELEV

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SHEET TITLE: SEISMIC BRACKET DETAILS
TOP BRACKET

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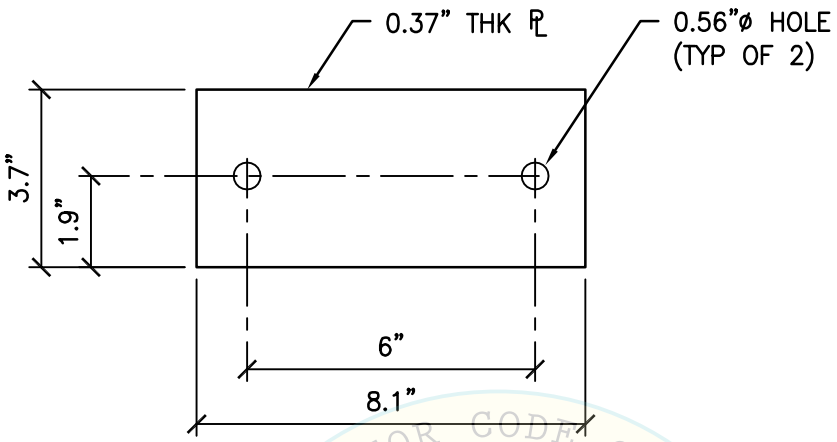
Date:	01-17-2020
Page:	10 of 15

SIEMENS HEALTHCARE DIAGNOSTICS
DIMENSION EXL

SIEMENS

SPACER PLATE DETAIL:



NOTE:
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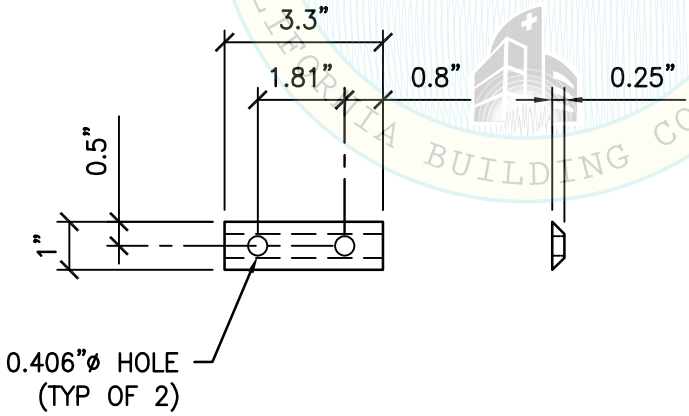
SCREW BACK PLATE DETAIL:



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SHEET TITLE: SEISMIC BRACKET DETAILS
PLATE DETAILS

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Date:	01-17-2020
Page:	11 of 15

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DIMENSION EXL

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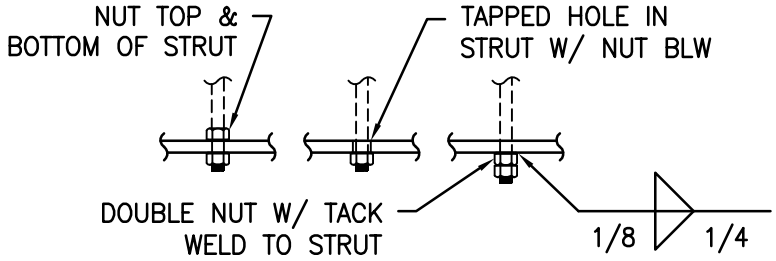
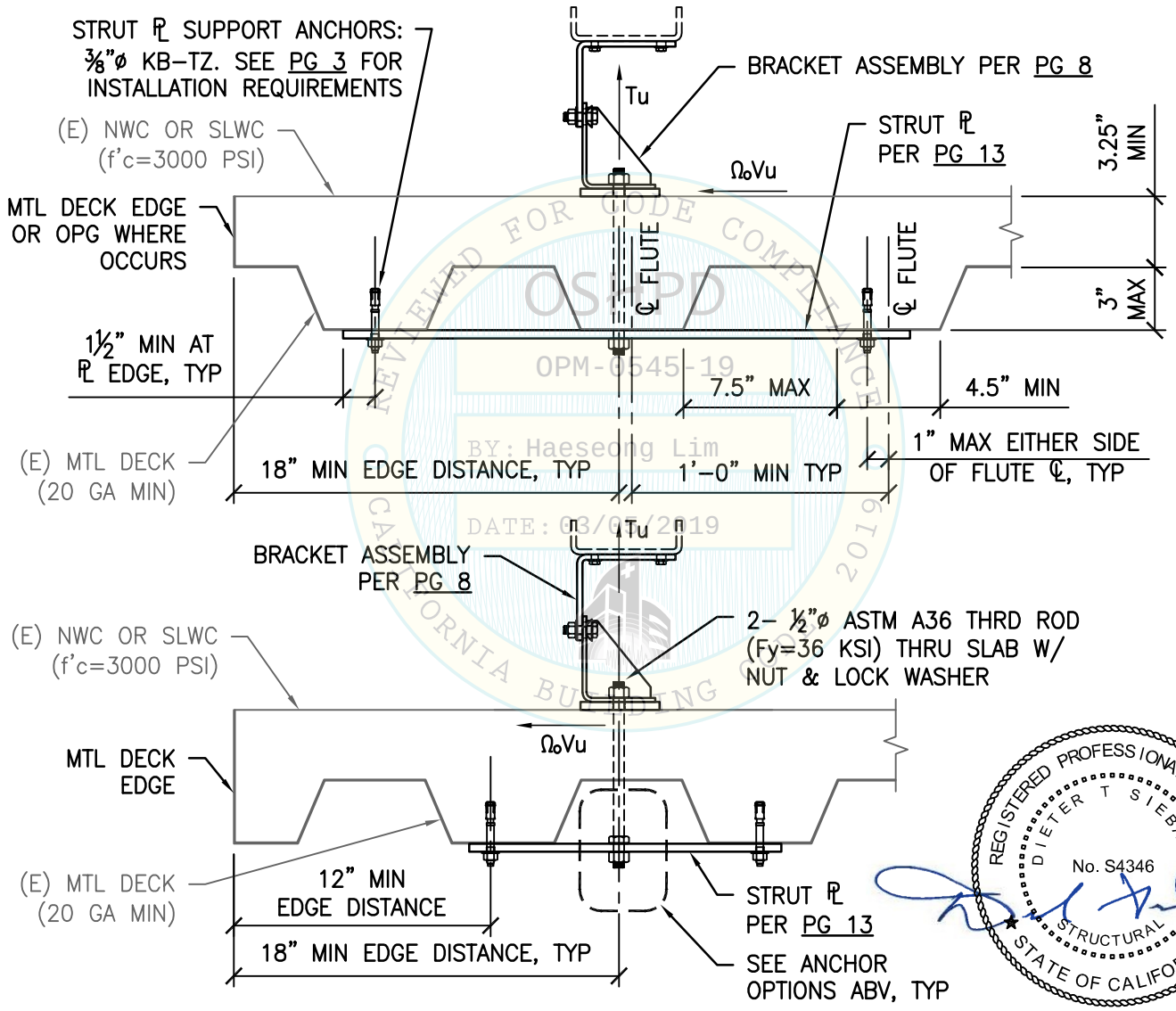


	MAX ANCHOR FORCES AT LRFD AT EA AB (LBS)	
	Tu	Ω_oVu
CASE 1 z/h≤0.50	836#	347#

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

ANCHOR OPTIONS



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

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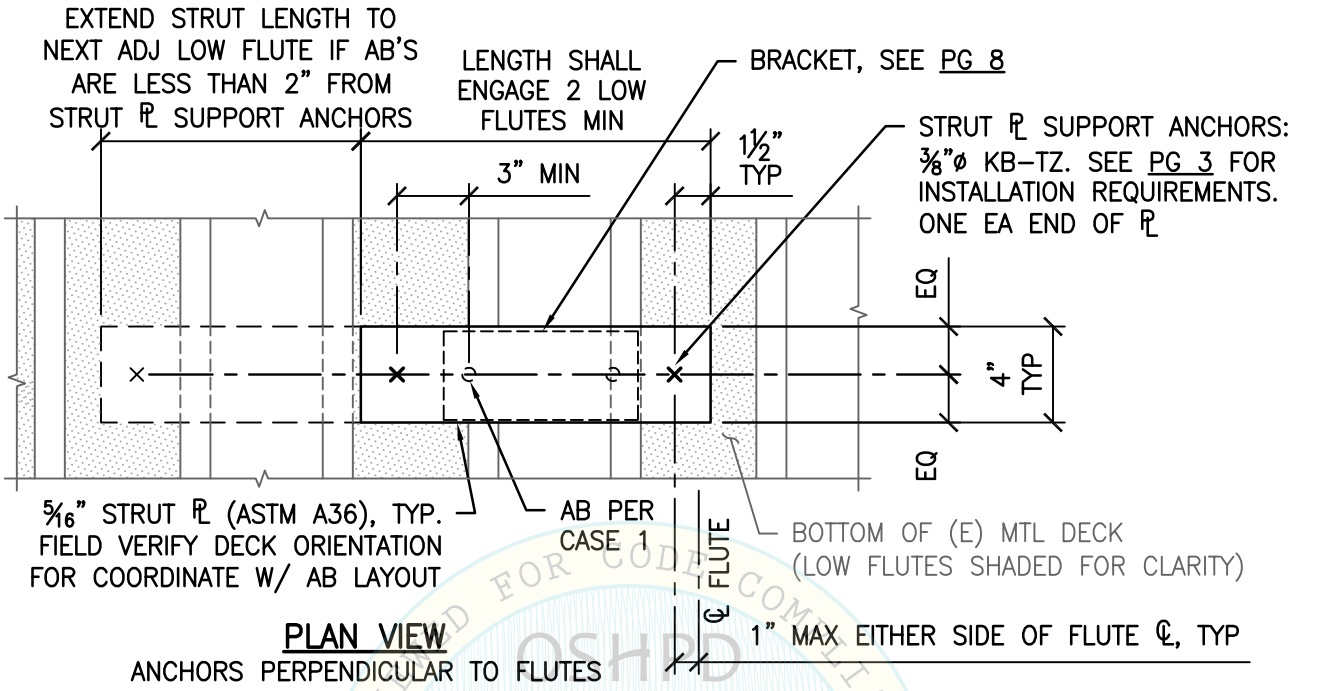
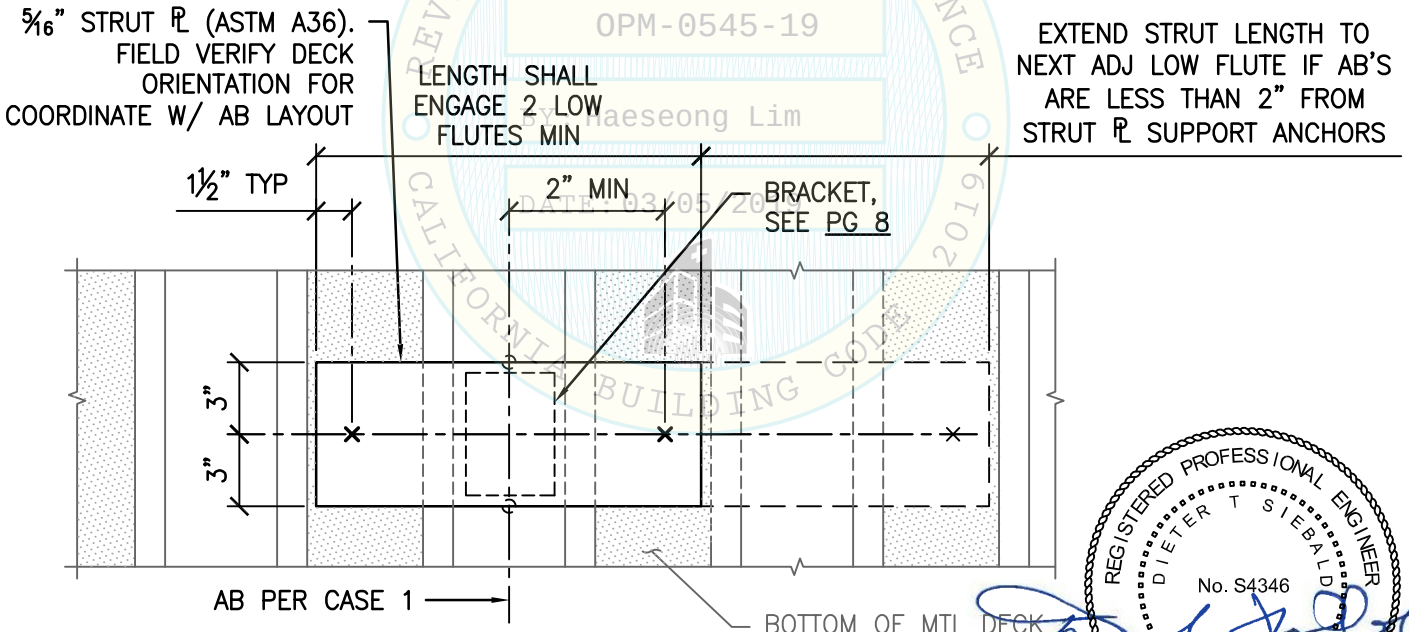
Date:	01-17-2020
Page:	12 of 15

SIEMENS HEALTHCARE DIAGNOSTICS
DIMENSION EXL

SIEMENS



PLAN VIEW
ANCHORS PERPENDICULAR TO FLUTES



PLAN VIEW
ANCHORS PARALLEL TO FLUTES

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

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

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
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Job No:	19073
Date:	01-17-2020
Page:	13 of 15

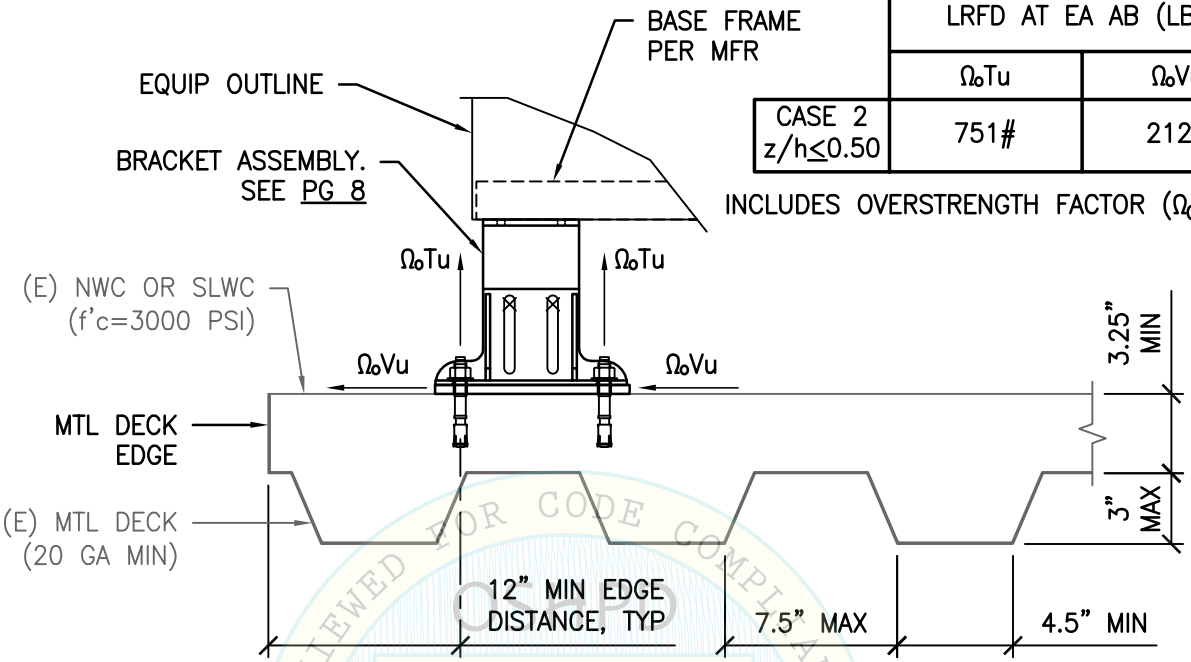
L:\Jobs19\19073 Siemens OPA-2407-07 Renewal\ACAD\STRU\S1_19073.dwg Time:Jan17,2020-09:49am Login:camachom Dimscale:1 LTScale:4

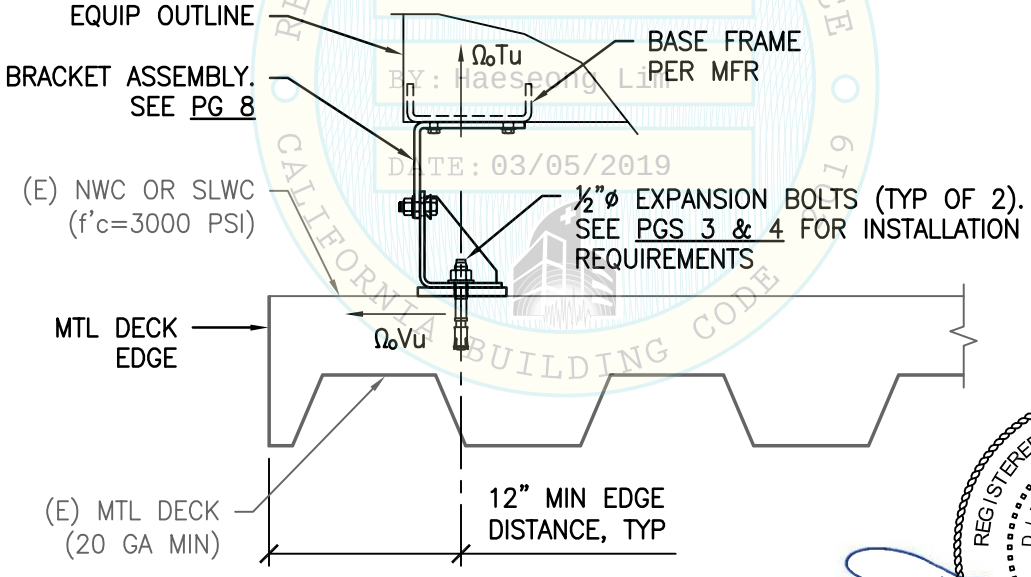
SIEMENS HEALTHCARE DIAGNOSTICS
DIMENSION EXL

SIEMENS

	MAX ANCHOR FORCES LRFD AT EA AB (LBS)	
	$\Omega_o Tu$	$\Omega_o Vu$
CASE 2 $z/h \leq 0.50$	751#	212#

INCLUDES OVERSTRENGTH FACTOR (Ω_0=1.5)





SHEET TITLE: ATTACHMENT DETAIL
CONCRETE FILL OVER METAL DECK (CASE 2)

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
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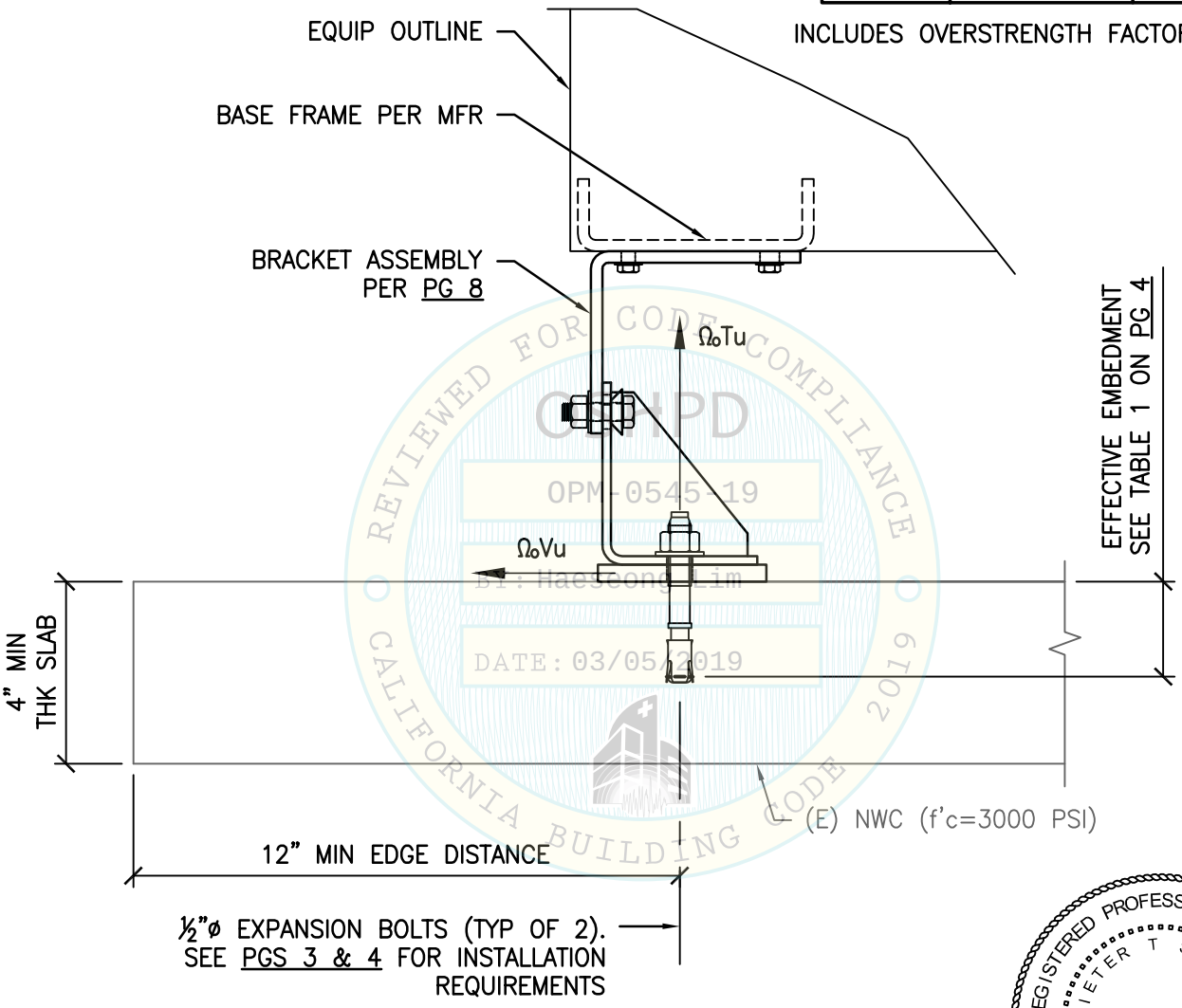
Job No:	19073
Date:	01-17-2020
Page:	14 of 15

SIEMENS HEALTHCARE DIAGNOSTICS
DIMENSION EXL

SIEMENS

	MAX ANCHOR FORCES AT LRFD AT EA AB (LBS)	
	$\Omega_o Tu$	$\Omega_o Vu$
CASE 3 $z/h \leq 0$	981#	270#

INCLUDES OVERSTRENGTH FACTOR (Ω_0=1.5)



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STATE OF CALIFORNIA

SHEET TITLE: ATTACHMENT DETAIL
CONCRETE SLAB ON GRADE (CASE 3)

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Job No:	19073
Date:	01-17-2020
Page:	15 of 15