



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OPM-0088

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: [] New [X] Renewal/Update

Manufacturer Information

Manufacturer: STERIS Cooperation

Manufacturer's Technical Representative: Zachary Miday

Mailing Address: 5900 Heisley Road, Mentor, OH 44060

Telephone: (440) 392-7688 Email: Zachary_Miday@steris.com

Product Information

Product Name: STERIS AMSCO 400 Small, Century and LAB 16 and 20 sterilizers

Product Type: Steam Sterilizer

Product Model Number: AMSCO 400 16in & 20in, Century 16in, & 20in, LAB 110, LAB 110 LS, LAB 250, LAB 250LS.

General Description: The STERIS steam sterilizers are designed for fast, efficient sterilization of surgical instruments,

Applicant Information

Applicant Company Name:

Contact Person: James L Yan

Mailing Address: 16551 4S Ranch Pkwy, San Diego, CA 92127

Telephone: (858) 876-8695 Email: jyan@engineeringonegroup.com

Title:

Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs

STATE OF CALIFORNIA- HEALTH AND HUMAN SERVICES AGENCY





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

Registered Design Professional Preparing Engineering Recommendations

Company Name: ENGINEERING ONE GROUP, INC.
Name: James Yan California License Number: S5914
Mailing Address: 16551 4S Ranch Pkwy, San Diego, CA 92127
Telephone: (626) 226-8695 Email: james.linjun.yan@gmail.com

OSHDP 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 OSHDP prior to testing.

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

OSHDP Approval

Date: 6/16/2020
Name: David Calia Title: Senior Structural Engineer
Condition of Approval (if applicable): _____



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STERIS CORPORATION

AMSCO 400 16" & 20", CENTURY 16" & 20" ; LAB
 110, 110LS, 250 & 250LS

SHEET 1
 OF 11 SHEETS

Job No. EOG200001
 Date 05/16/2020
 Drawn by JY

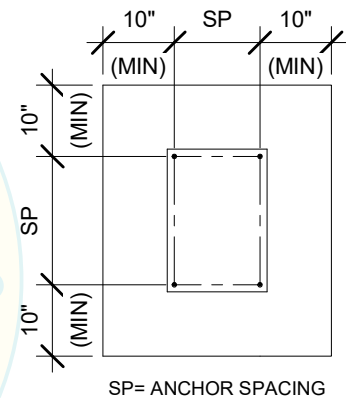
Office of Statewide Health Planning and Development
 OSHPD Preapproval of Manufacturer's Certification

OPM-0088-19

Equipment Manufacturer: Steris Corporation
 Equipment Type: Sterilizer

GENERAL NOTES

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2019. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2019.
2. THIS PRE-APPROVAL COVERS ONLY THE SUPPORTS & ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
3. POST-INSTALLED ANCHORS:
 - a. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICC REPORT.
 - b. THIS PRE-APPROVAL REQUIRES CONCRETE SLAB EDGE DISTANCE TO BE 10" MIN.
 - c. AVOID DAMAGING (E) STEEL REINF'G IN CONCRETE SLAB WHEN INSTALLING CONCRETE EXPANSIVE ANCHORS.
 - d. PROVIDE FULL THREAD ENGAGEMENT OF NUT & WASHER.



TYPICAL CONCRETE EDGE DETAIL

Anchor Diameter	Concrete Type	Min. f'c (psi)	Anchor Type	ICC Report No.	Min. Embed. (hef)	Min. Spacing	Min. Edge Dist.	Min. Conc. Thickness	Installation Torque	Test Loads	Note
3/4"	N.W. Conc.	3000	KB-TZ SS304	ESR-1917	3-3/4"	7"	10"	6"	110 Ft-Lb	Installation Torque 110 Ft-Lb	Case 1
1/2"	N.W. or Sand L.W. at Conc. over Metal Deck	3000	KB-TZ SS304	ESR-1917	2"	6 3/4"	10"	See Sheet 11	40 Ft-Lb	Installation Torque 40 Ft-Lb	Case 2

4. TESTING OF POST-INSTALLED ANCHORS PER 2019 CBC, 1910A.5 : TESTING SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO OSHPD.
 - a. AFTER A MINIMUM OF 24 HRS HAVE ELAPSED SINCE INSTALLATION, 50 PERCENT OR ALTERNATE BOLTS IN A GROUP, INCLUDING AT LEAST ONE-HALF THE ANCHORS IN EACH GROUP, SHALL BE TESTED BY TORQUE WRENCH METHOD.
 - b. ACCEPTANCE CRITERIA FOR TORQUE WRENCH METHOD: ANCHORS TESTED WITH A CALIBRATED TORQUE WRENCH MUST ATTAIN THE SPECIFIED TORQUE WITHIN 1/2 TURN OF THE NUT.
 - c. IF ANY ANCHOR FAILS, TEST ALL ANCHORS.



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 110, 110LS, 250 & 250LS

SHEET 2
 OF 11 SHEETS

Job No. EOG200001
 Date 05/16/2020
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SMALL STEAM STERILIZER SCHEDULE

AMSCO 400

LINE NO.	MODEL ID	OVERALL			CG LOCATION			WEIGHT (lbs)
		WIDTH (IN)	LENGTH (IN)	HEIGHT (IN)	Ex (IN)	Ey (IN)	CG HEIGHT (IN)	
1	16" SD	36.875	26	74.5	0.04	5.11	38.25	750
2	16" SD G	36.875	26	74.5	0.59	3.59	33.96	890
3	16" DD	36.875	26	74.5	0.03	0.54	37.24	989
4	20" SD	45.625	26	74.5	0.28	6.2	38.2	1231
5	20" SD G	45.625	26	74.5	0.77	5.7	35.5	1371
6	20" DD	45.625	26	74.5	0.22	0.59	36.8	1606
7	20" DD G	45.625	26	74.5	0.68	0.59	34.4	1726
8	20" SD + IU	45.625	26	74.5	0.26	6.5	39.45	1280
9	20" SD G + IU	45.625	26	74.5	0.72	5.99	36.5	1421
10	20" DD + IU	45.625	26	74.5	0.21	1.16	37.636	1656
11	20" DD G + IU	45.625	26	74.5	0.64	1.12	35.32	1776

BY: David M. Calia

CENTURY 16" & 20" / LAB 110, 250, 110LS & 250LS

LINE NO.	MODEL ID	OVERALL			CG LOCATION			WEIGHT (lbs)
		WIDTH (IN)	LENGTH (IN)	HEIGHT (IN)	Ex (IN)	Ey (IN)	CG HEIGHT (IN)	
1	16" SD	26	36.796	74.5	0.04	5.11	38.25	730
2	16" SD G	26	36.796	74.5	0.59	3.59	33.96	870
3	16" DD	26	36.796	74.5	0.30	0.54	37.24	970
4	20" SD	30	46.171	74.5	6.20	0.28	38.2	1100
5	20" SD G	30	46.171	74.5	5.70	0.77	35.5	1240
6	20" DD	30	44.718	74.5	0.59	0.22	36.8	1470
7	20" DD G	30	44.718	74.5	5.70	0.68	34.4	1600

NOTE:

- Ex-ECCENTRICITY OF CG WEIGHT FROM CG OF ATTACHMENT IN X DIR.
- Ey-ECCENTRICITY OF CG WEIGHT FROM CG OF ATTACHMENT IN Y DIR.
- "+ IU" INDICATES UNITS OF THE SAME STRUCTURE W/ A NEW CYCLE STERILIZER.
- 110LS & 250LS ARE COMMERCIAL NAMES FOR LIFE SCIENCE UNITS W/ DIFFERENT STERILIZER CYCLES.



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SHEET 3
 OF 11 SHEETS

Job No.	EOG200001
Date	05/16/2020
Drawn by	JY

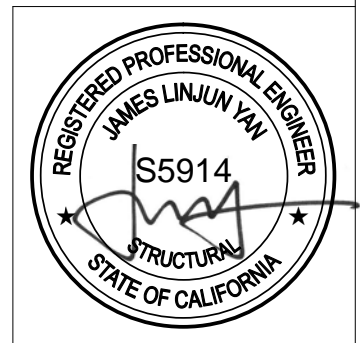
GENERAL NOTES (CONTINUED)

- FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE
 $S_{DS} = 2.12$
 $a_p = 1.0$
 $I_p = 1.5$
 $R_p = 2.5$
 $\Omega_0 = 2.0$
 $z/h = 0$ (SLAB ON GRADE) OR ≤ 1 (ELEVATED SLAB)
- ALL ANCHOR FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING

- VERIFY THAT PROJECT SPECIFIC VALUES OF S_{DS} & z/h RESULT IN SEISMIC FORCES (E_h , E_v) THAT DO NOT EXCEED THE VALUES ON THE DETAILS.
- VERIFY THAT THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR.
- VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS (SEE TYPICAL DETAIL ON SHEET 1).
- VERIFY THAT ALL NEW OR EXISTING ANCHORS ARE AN ADEQUATE DISTANCE FROM THE ANCHORS SHOWN IN THIS PRE-APPROVAL. SEOR SHALL VERIFY THAT THERE IS NO ADVERSE INTERACTION WHERE OTHER ANCHORS ARE WITHIN 10" OR $6h_{ef}$ FROM THIS UNIT'S ANCHORS.
- PROVIDE SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS. VERIFY THE ADEQUACY OF THE STRUCTURES (SUCH AS WALLS AND FLOORS) WHICH SUPPORT THE EQUIPMENT FOR THE LOADS IMPOSED ON THEM BY THE EQUIPMENT IN ADDITION TO ALL OTHER LOADS.
- VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2019 CBC AND WITH THE DETAILS SHOWN IN THIS PRE-APPROVAL. VERIFY THAT THE ACTUAL EQUIPMENT'S WEIGHT, CG LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, AND THE MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PRE-APPROVAL DOCUMENTS.

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SHEET 4
 OF 11 SHEETS

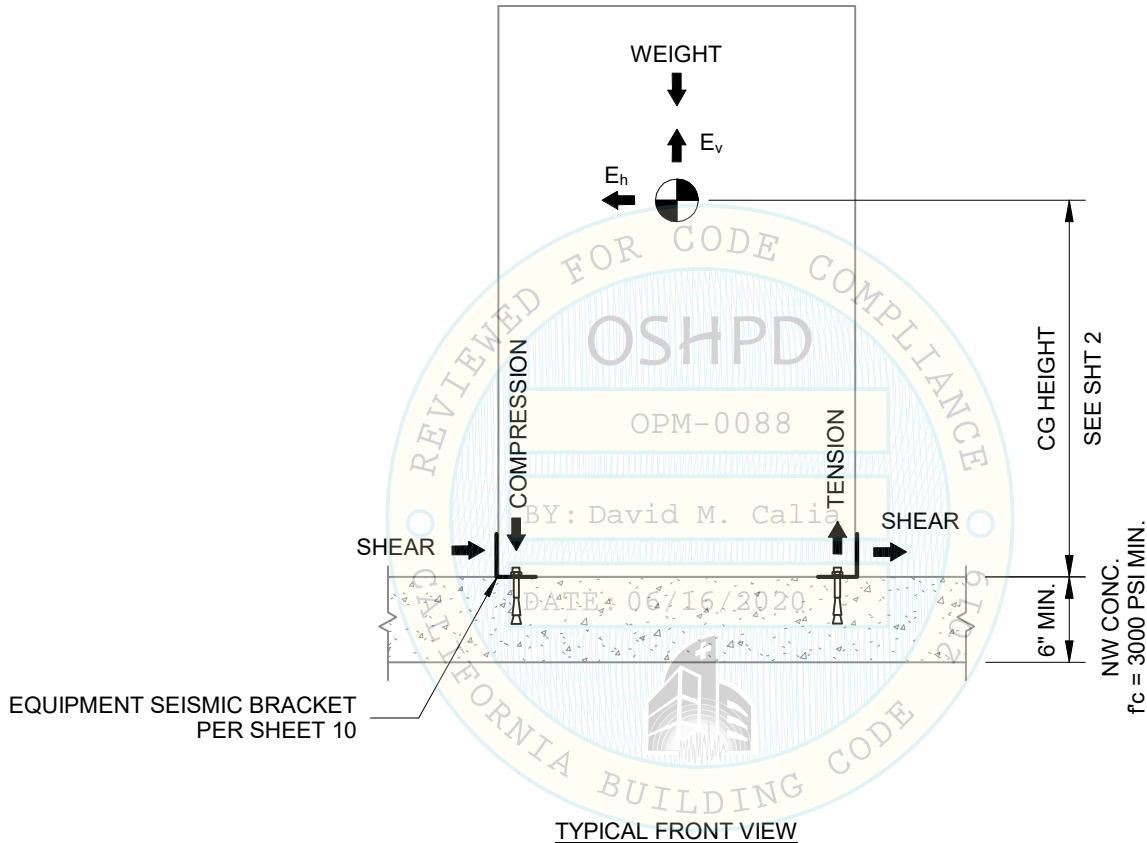
Job No. EOG200001

Date 05/16/2020

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SEISMIC SUPPORTS & ATTACHMENTS

CASE 1: SLAB ON GRADE



EQUIPMENT SEISMIC BRACKET
 PER SHEET 10

TYPICAL FRONT VIEW

NOTE:

1. THE SEISMIC FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN USED.
 HORIZONTAL SEISMIC FORCE (E_h) = $0.954 W_p$
 VERTICAL SEISMIC FORCE (E_v) = $0.424 W_p$
2. CENTER OF GRAVITY (CG) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE SUPPORT STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN.
4. SHOWN FRONT VIEW IS TYPICAL FOR ALL MODELS.
5. SEE SHEET 5 FOR BASE PLAN VIEW FOR AMSCO 400 MODELS.
 SEE SHEET 6 FOR BASE PLAN VIEW FOR CENTURY & LAB MODELS.



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 110, 110LS, 250 & 250LS

SHEET 5
 OF 11 SHEETS

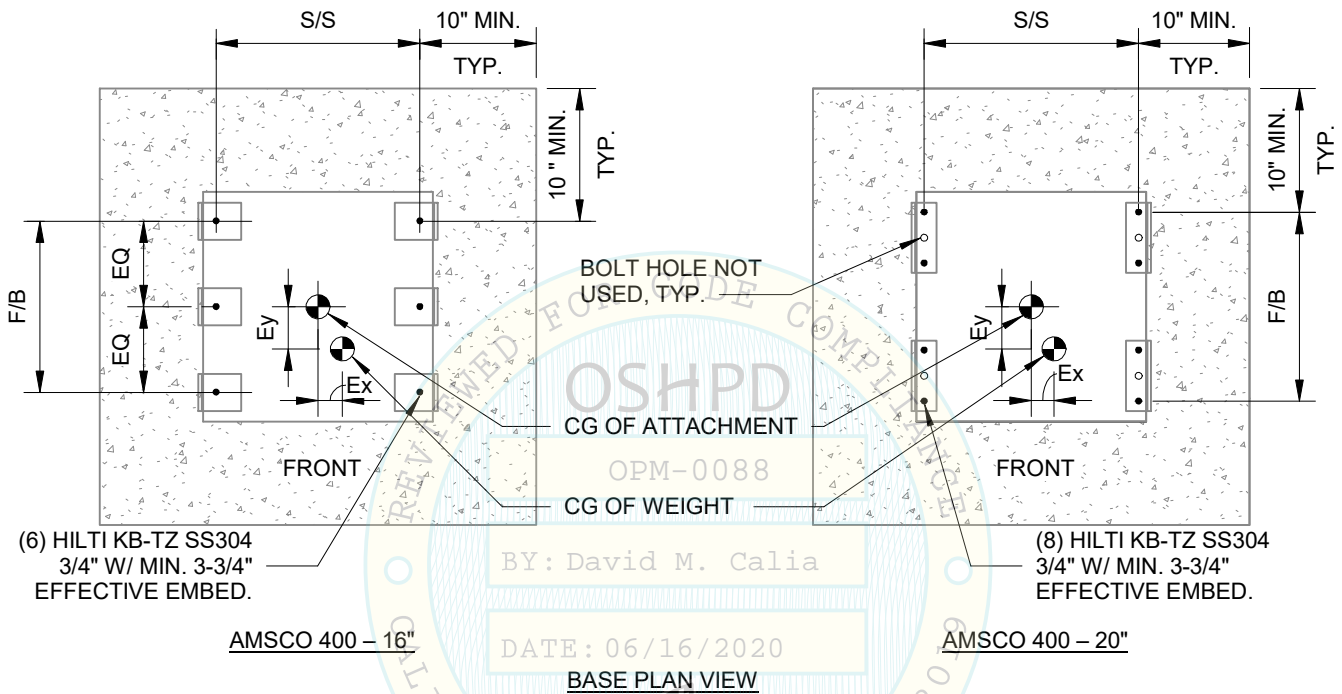
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Date 05/16/2020

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SEISMIC SUPPORTS & ATTACHMENTS

CASE 1: SLAB ON GRADE



AMSCO 400						
LINE NO.	MODEL ID	ANCHOR SPACING		WEIGHT (lbs)	V _u (lbs)	T _u (lbs)
		F/B (IN)	S/S (IN)			
1	16" SD	12	20.125	750	615	2926
2	16" SD G	12	20.125	890	627	3081
3	16" DD	12	20.125	989	452	3265
4	20" SD	20.375	24.375	1231	1125	3580
5	20" SD G	20.375	24.375	1371	1228	3630
6	20" DD	20.375	24.375	1606	1044	3375
7	20" DD G	20.375	24.375	1726	1132	3490
8	20" SD + IU	20.375	24.375	1280	1187	3908
9	20" SD G + IU	20.375	24.375	1421	1292	3930
10	20" DD + IU	20.375	24.375	1656	1121	3612
11	20" DD G + IU	20.375	24.375	1776	1208	3731

NOTE:

1. THE SHOWN ANCHOR FORCE INCLUDES OVERSTRENGTH FACTOR $\Omega_0 = 2.0$.
2. SEE SHEET 2 FOR VALUES OF E_x & E_y.
3. F/B= FRONT TO BACK S/S= SIDE TO SIDE
4. THE SHOWN V_u & T_u FORCES ARE THE TOTAL ANCHOR FORCES OF EACH SEISMIC BRACKET.



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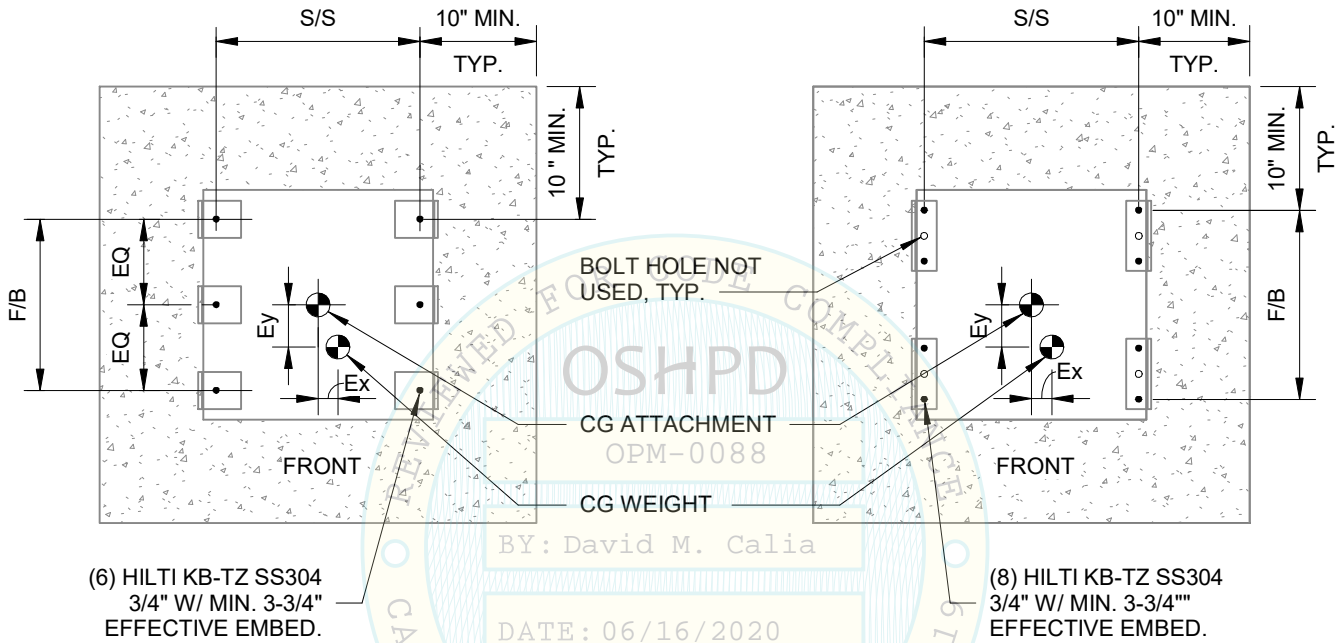
AMSCO 400 16" & 20", CENTURY 16" & 20" ; LAB
 110, 110LS, 250 & 250LS

SHEET 6
 OF 11 SHEETS

Job No. EOG200001
 Date 05/16/2020
 Drawn by JY

SEISMIC SUPPORTS & ATTACHMENTS

CASE 1: SLAB ON GRADE



(6) HILTI KB-TZ SS304
 3/4" W/ MIN. 3-3/4"
 EFFECTIVE EMBED.

(8) HILTI KB-TZ SS304
 3/4" W/ MIN. 3-3/4"
 EFFECTIVE EMBED.

CENTURY 16" & LAB 110/110LS

CENTURY 20" & LAB 250/250LS

BASE PLAN VIEW

CENTURY 16" & 20" / LAB 110, 110LS, 250 & 250LS

LINE NO.	MODEL ID	ANCHOR SPACING		WEIGHT (lbs)	V _u (lbs)	T _u (lbs)
		F/B (IN)	S/S (IN)			
1	16" SD	12	20.125	730	599	2848
2	16" SD G	12	20.125	870	613	3011
3	16" DD	12	20.125	970	445	3278
4	20" SD	20.375	24.375	1100	953	3410
5	20" SD G	20.375	24.375	1240	1059	3505
6	20" DD	20.375	24.375	1470	950	3133
7	20" DD G	20.375	24.375	1600	1364	4372

NOTE:

1. THE SHOWN ANCHOR FORCE INCLUDES OVERSTRENGTH FACTOR $\Omega_0 = 2.0$.
2. SEE SHEET 2 FOR VALUES OF E_x & E_y .
3. F/B= FRONT TO BACK S/S= SIDE TO SIDE
4. THE SHOWN V_u & T_u FORCES ARE THE TOTAL ANCHOR FORCES OF EACH SEISMIC BRACKET.
5. CENTURY & LAB UNITS ARE OF THE SAME STRUCTURE W/ DIFFERENCE IN FRONT MODEL LABEL & DISPLAY PANEL.



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SHEET 7
 OF 11 SHEETS

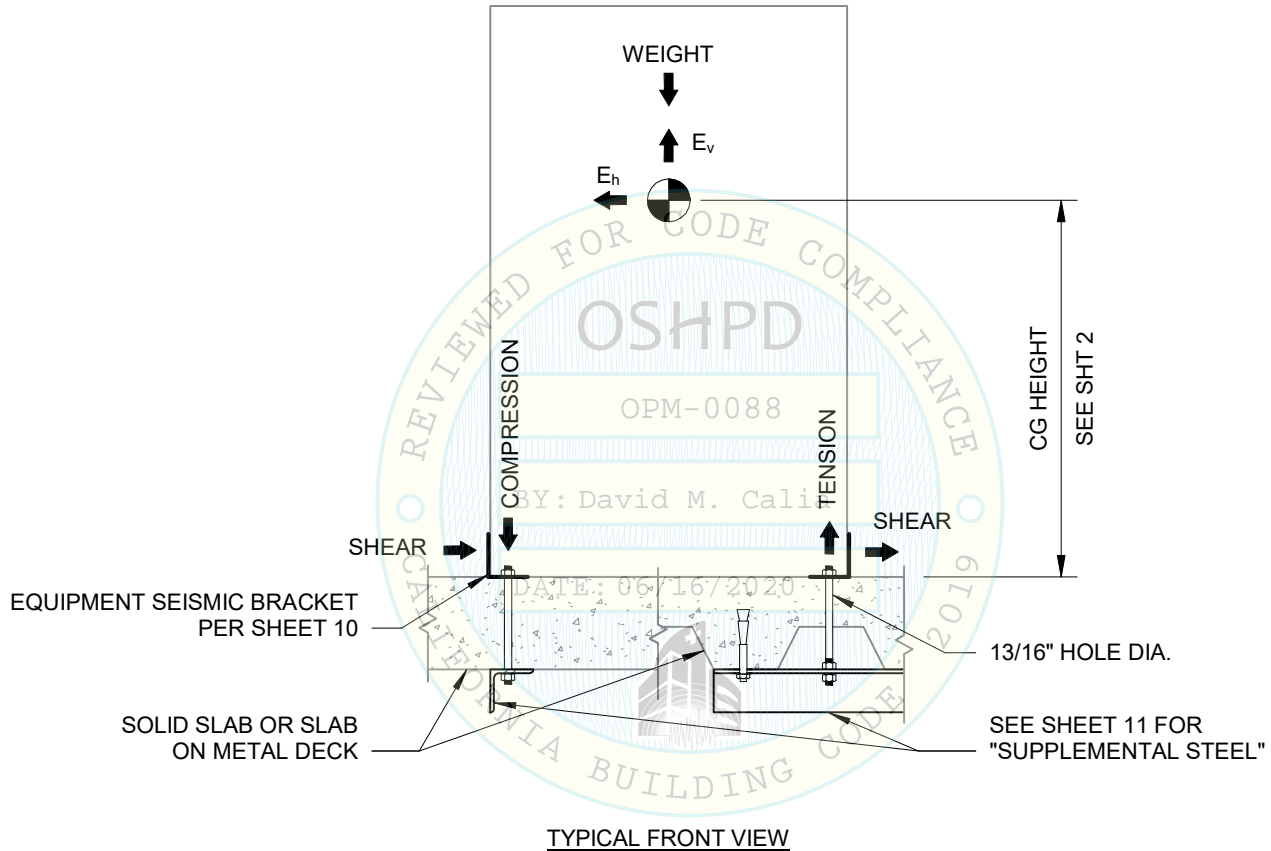
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SEISMIC SUPPORTS & ATTACHMENTS

CASE 2: ELEVATED SLABS

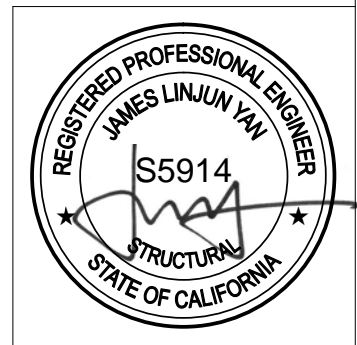


NOTE:

1. THE SEISMIC FORCES ARE DETERMINED PER 2019 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN USED.

HORIZONTAL SEISMIC FORCE (E_h) = 1.526 W_p
 VERTICAL SEISMIC FORCE (E_v) = 0.424 W_p

2. CENTER OF GRAVITY (CG) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE SUPPORT STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN.
4. SHOWN FRONT VIEW IS TYPICAL FOR ALL MODELS.
5. SEE SHEET 8 FOR BASE PLAN VIEW FOR AMSCO 400 MODELS.
 SEE SHEET 9 FOR BASE PLAN VIEW FOR CENTURY & LAB MODELS.



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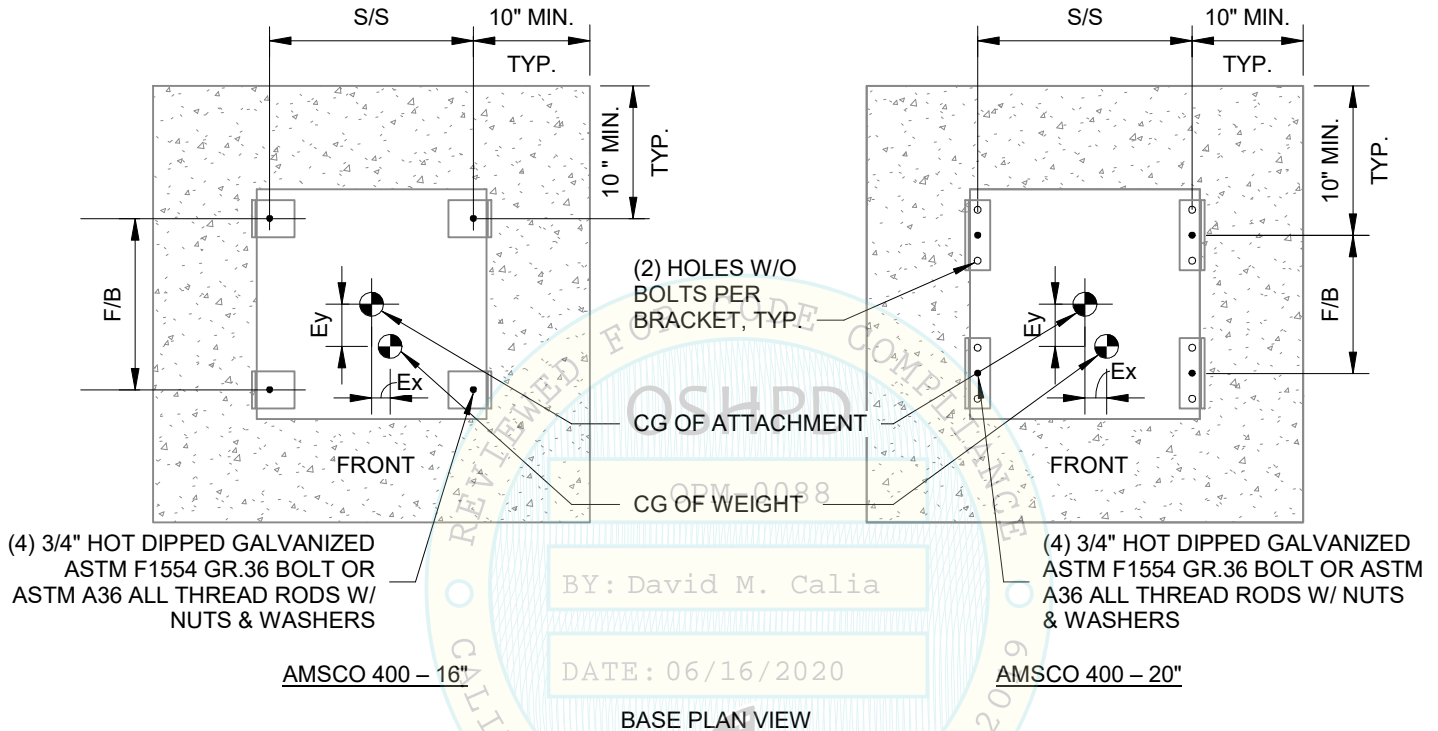
AMSCO 400 16" & 20", CENTURY 16" & 20" ; LAB
 110, 110LS, 250 & 250LS

SHEET 8
 OF 11 SHEETS

Job No. EOG200001
 Date 05/16/2020
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SEISMIC SUPPORTS & ATTACHMENTS

CASE 2: ELEVATED SLABS



(4) 3/4" HOT DIPPED GALVANIZED
 ASTM F1554 GR.36 BOLT OR
 ASTM A36 ALL THREAD RODS W/
 NUTS & WASHERS

(4) 3/4" HOT DIPPED GALVANIZED
 ASTM F1554 GR.36 BOLT OR ASTM
 A36 ALL THREAD RODS W/ NUTS
 & WASHERS

AMSCO 400 - 16"

AMSCO 400 - 20"

BY: David M. Calia

DATE: 06/16/2020

BASE PLAN VIEW

AMSCO 400 SMALL

LINE NO.	MODEL ID	ELEV. SLAB ANCHOR		WEIGHT (lbs)	V _u (lbs)	T _u (lbs)
		WIDTH F/B (IN)	LENGTH S/S (IN)			
1	16" SD	12	20.125	750	1232	2551
2	16" SD G	12	20.125	890	1301	2545
3	16" DD	12	20.125	989	1050	2699
4	20" SD	13.625	24.375	1231	2083	3608
5	20" SD G	13.625	24.375	1371	2256	3713
6	20" DD	13.625	24.375	1606	1706	3802
7	20" DD G	13.625	24.375	1726	1849	3940
8	20" SD + IU	13.625	24.375	1280	2208	3949
9	20" SD G + IU	13.625	24.375	1421	2383	3973
10	20" DD + IU	13.625	24.375	1656	1865	4076
11	20" DD G + IU	13.625	24.375	1776	2006	4217

NOTE:

1. THE SHOWN ANCHOR SHEAR FORCE INCLUDES OVERSTRENGTH FACTOR $\Omega_0 = 2.0$.
2. SEE SHEET 2 FOR VALUES OF E_x & E_y .
3. F/B= FRONT TO BACK S/S= SIDE TO SIDE
4. THE SHOWN V_u & T_u FORCES ARE THE TOTAL ANCHOR FORCES OF EACH SEISMIC BRACKET.



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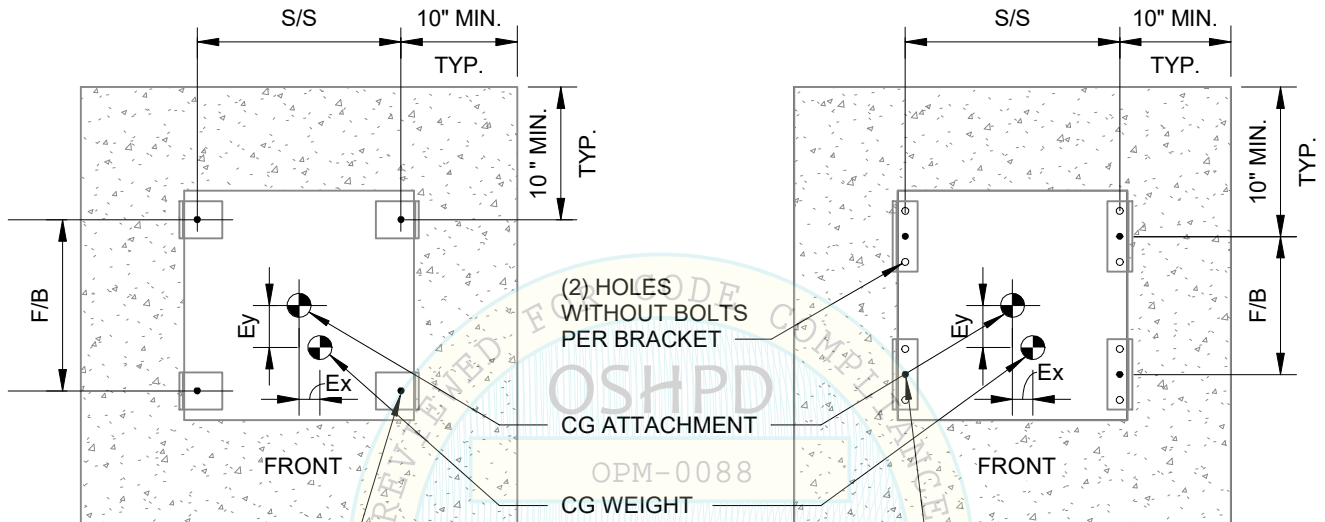
AMSCO 400 16" & 20", CENTURY 16" & 20" ; LAB 110, 110LS, 250 & 250LS

SHEET 9
 OF 11 SHEETS

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SEISMIC SUPPORTS & ATTACHMENTS

CASE 2: ELEVATED SLABS



(4) 3/4" HOT DIPPED GALVANIZED ASTM F1554 GR.36 BOLT OR ASTM A36 ALL THREAD RODS W/ NUTS & WASHERS

(4) 3/4" HOT DIPPED GALVANIZED ASTM F1554 GR.36 BOLT OR ASTM A36 ALL THREAD RODS W/ NUTS & WASHERS

CENTURY 16" & LAB 110

CENTURY 20" & LAB 250

BASE PLAN VIEW

CENTURY 16" & 20" / LAB 110, 110LS, 250 & 250LS

LINE NO.	MODEL ID	ELEV. SLAB ANCHOR		WEIGHT (lbs)	V _u (lbs)	T _u (lbs)
		WIDTH F/B (IN)	LENGTH (IN)			
1	16" SD	12	20.125	730	1199	2482
2	16" SD G	12	20.125	870	1272	2485
3	16" DD	12	20.125	970	1036	2707
4	20" SD	13.625	24.375	1100	1529	3897
5	20" SD G	13.625	24.375	1240	1705	4006
6	20" DD	13.625	24.375	1470	1524	3532
7	20" DD G	13.625	24.375	1600	2195	4998

NOTE:

- THE SHOWN ANCHOR SHEAR FORCE INCLUDES OVERSTRENGTH FACTOR $\Omega_0 = 2.0$.
- SEE SHEET 2 FOR VALUES OF E_x & E_y .
- F/B= FRONT TO BACK S/S= SIDE TO SIDE
- THE SHOWN V_u & T_u FORCES ARE THE TOTAL ANCHOR FORCES OF EACH SEISMIC BRACKET.
- CENTURY & LAB UNITS ARE OF THE SAME STRUCTURE W/ DIFFERENCE IN FRONT MODEL LABEL & DISPLAY PANEL.



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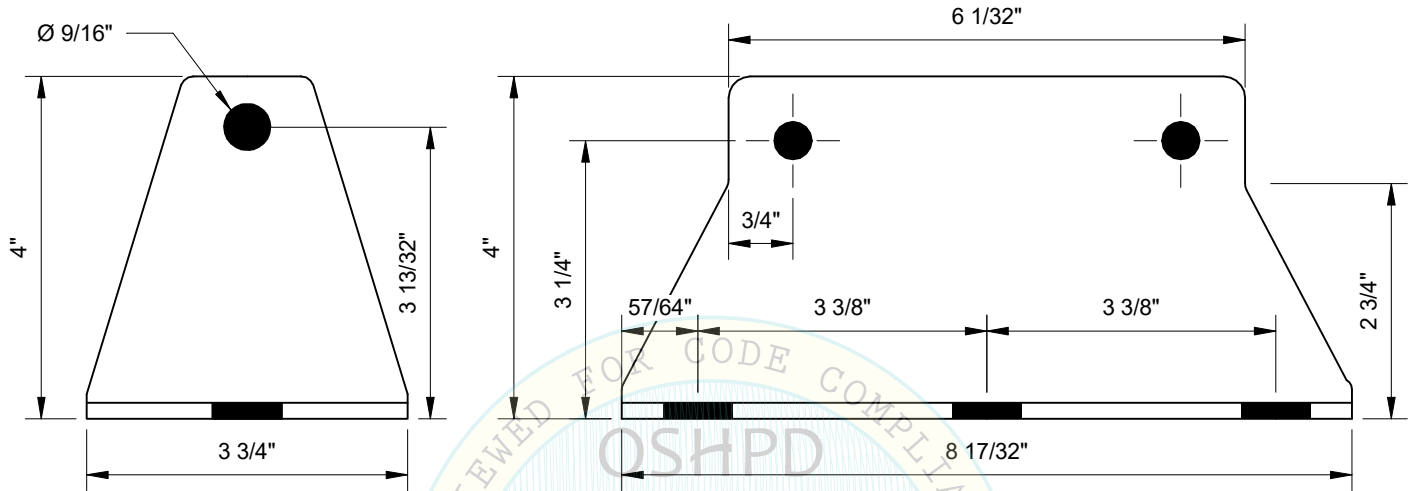
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SHEET 10
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ELEVATION - SEISMIC BRACKET FOR 16" UNIT

ELEVATION - SEISMIC BRACKET FOR 20" UNIT

1/2" - 13 GRADE 5 FLANGE BOLT AND
 FLANGE NUT, WITH THREADS
 EXCLUDED FROM THE SHEAR PLANE.
 USE (1) BOLT FOR THE 16" UNIT AND (2)
 BOLTS FOR THE 20" UNIT.

EQUIPMENT STAND BOTTOM WITH 1 5/8" DIA. ACCESS
 HOLE FOR BOLT SOCKET.
 BASE MATERIAL FOR 16" UNIT IS 0.1196" ASTM A1008
 CS TYPE A, MIN. F_y = 20ksi
 BASE MATERIAL FOR 20" UNIT IS 0.1793" ASTM A1011
 SS GRADE 45, MIN. F_y = 45ksi

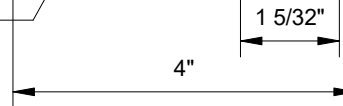
BENT PLATE 3/8" 316 OR 304
 STAINLESS STEEL SEISMIC
 BRACKET BY MANUFACTURER
 WITH DIMENSIONS SHOWN
 ABOVE (F_y = 30 KSI MIN.)

ANCHOR BOLT FOR PLAN

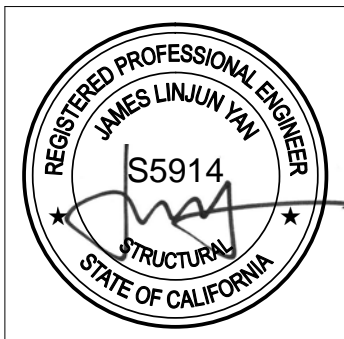
13/16" HOLE DIA.

3 13/32" FOR 16"
 3 1/4" FOR 20"

SEISMIC SHIM - DIMENSIONS MATCH
 THE HORIZONTAL LEG OF THE
 SEISMIC BRACKET. THICKNESS IS
 1/16", 1/8" & 1/4" AS NEEDED. ASTM
 A240 316L SS F_y = 25 ksi MIN.



SIDE VIEW



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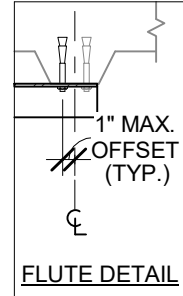
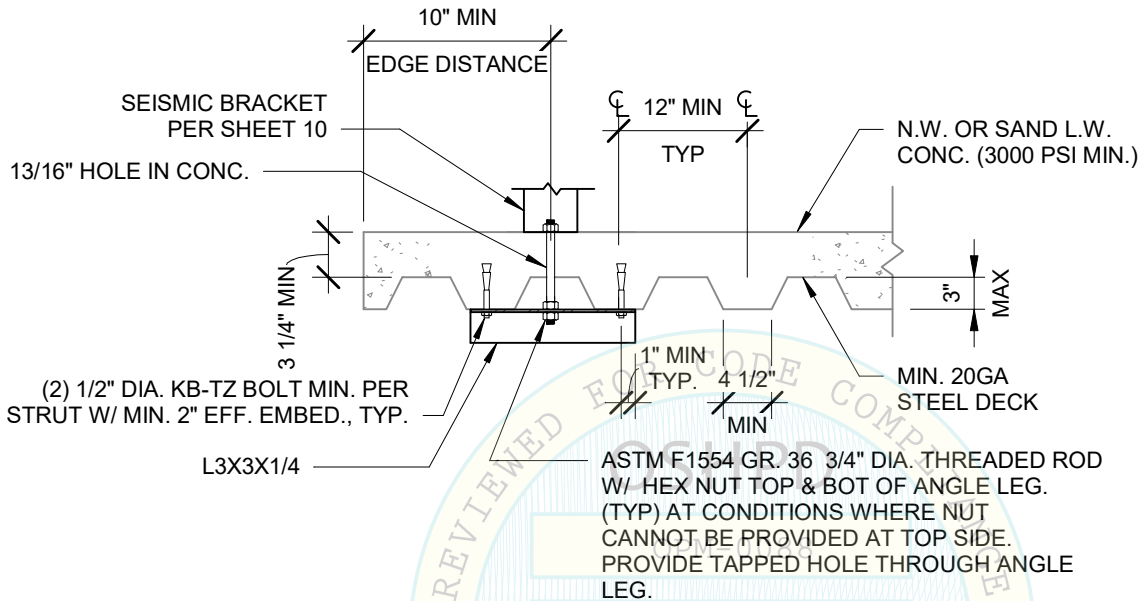
ENGINEERING ONE GROUP, INC.
 Phone: 858.876.8695
 info@engineeringonegroup.com
 www.engineeringonegroup.com

STERIS CORPORATION

AMSCO 400 16" & 20", CENTURY 16" & 20" ; LAB
 110, 110LS, 250 & 250LS

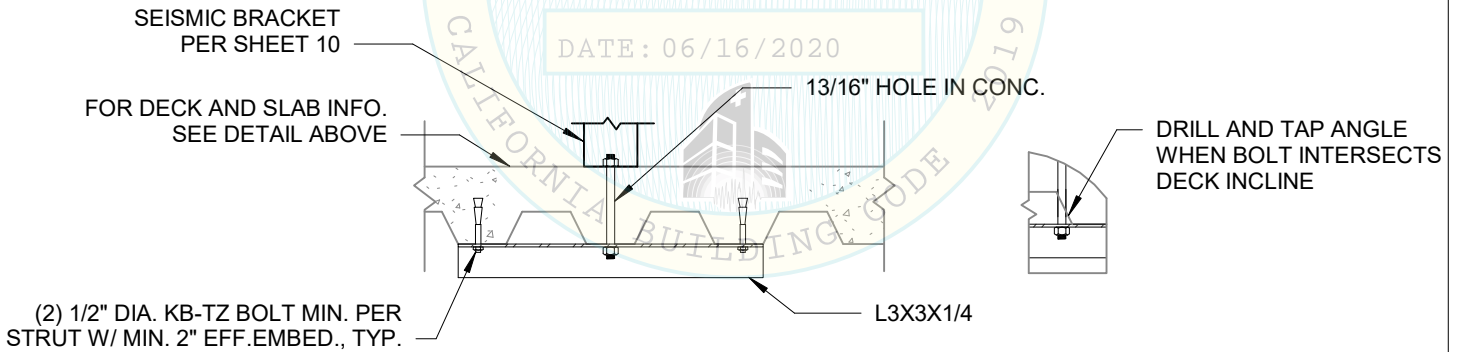
SHEET 11
 OF 11 SHEETS

Job No. EOG200001
 Date 05/16/2020
 Drawn by JY

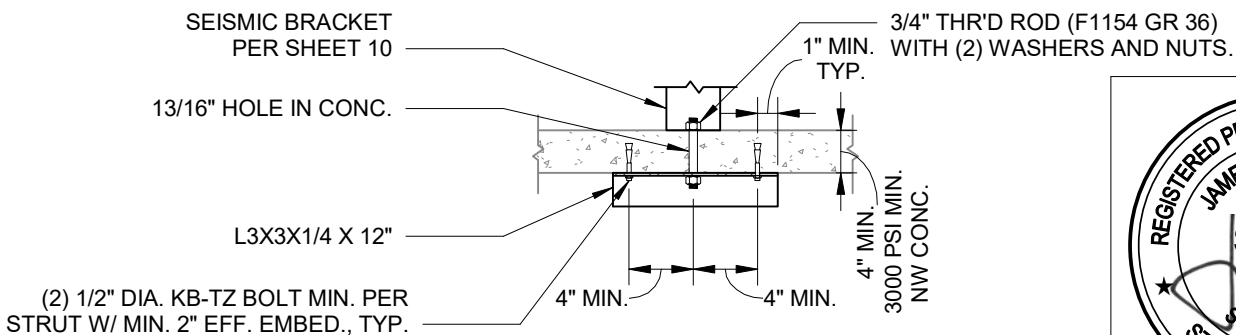


MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL

DATE: 06/16/2020



**DETAIL FOR ATTACHMENT BOLT AT THE SIDE OF THE FLUTE
 OR AT THE BOTTOM FLUTE**



DETAIL FOR ATTACHMENT BOLT AT SOLID CONCRETE SLABS



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