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

OFFICE USE ONLY
APPLICATION #: OPM-0076-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

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

Manufacturer Information

Manufacturer: STERIS

Manufacturer's Technical Representative: Zach Miday

Mailing Address: STERIS Corporation, 5900 Heisley Rd, Mentor, Ohio 44060

Telephone: 440-392-7688 Email: Zachary.Miday@Steris.com

Product Information

Product Name: AMSCO 450LS and AMSCO 500 Series Steam Sterilizers

Product Type: Steam Sterilizer

Product Model Number: 39VS, 51VS, 939VS-1, 939VS-2, 939VS-3, 939VS-4, 639VS-5, 1251VS-1, 1251VS-2, 1251VS-3, 1251VS-4, 851VS-5

General Description: The AMSCO 450LS and AMSCO 500 and steam sterilizers are designed for fast, efficient sterilization of heat and moisture stable material in life science and healthcare applications.

Applicant Information

Applicant Company Name: ISAT Seismic Bracing

Contact Person: William V Joerger

Mailing Address: 1020 Crews Road, Suite Q, Matthews NC 28105

Telephone: 510-714-0216 Email: wvjoerger@isatsb.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant: _____ Date: September 04, 2014

Title: Principal Structural Engineer Company Name: ISAT Seismic Bracing

Registered Design Professional Preparing Engineering Recommendations

Company Name: ISAT Seismic Bracing

Name: William V Joerger California License Number: S4545

Mailing Address: 1020 Crews Rd, Matthews NC 28105

Telephone: 510-714-0216 Email: wvjoerger@isatsb.com

OSHPD Special Seismic Certification Preapproval (OSP)

☐ Special Seismic Certification is preapproved under OSP-
(Separate application for OSP is required)

☒ Special Seismic Certification is no preapproved

Certification Method(s)

☐ Testing in accordance with: ☐ ICC-ES AC156 ☐ FM 1950-10

☐ Other* (Please Specify): Equipment is considered to be rugged. OPM is for anchorage to concrete slabs.

*Use of criteria other than those adopted by the California Building Standards Code, 2013 (CBSC 2013) 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 2013 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 2013 ONLY

Signature: Date: September 5, 2014

Print Name: William Staehlin

Title: Senior Structural Engineer

Condition of Approval (if applicable):

INTERNATIONAL SEISMIC APPLICATION TECHNOLOGY

Submittal Documents

OSHPD OPM-0076-13

SUPPORT AND ATTACHMENT OPM DRAWINGS

STERIS AMSCO 450LS AND AMSCO 500 STERILIZERS

STERIS

ISAT
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704-841-4080

05SEP14

FILE NO.: CLT-1113-152b ***"Empowered by Experience"*** REV 4

OPM-0076-13 DWG - i

INTERNATIONAL SEISMIC APPLICATION TECHNOLOGY

OSHPD OPM-0076-13

STERIS AMSCO 450LS AND AMSCO 500 STERILIZERS

DRAWING INDEX

DRAWING INDEX

OSHPD OPM-0076-13

MANUFACTURE: STERIS

EQUIPMENT TYPE: STERILIZERS

GENERAL NOTES FOR ATTACHMENT TO SLAB ON GRADE:

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2013. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2013.
2. SEISMIC CRITERIA USED: S_{DS} = 2.5 I_P = 1.5 ap = 1.0 Rp = 2.5 (WET SIDE COMPONENT) z/h = 0.0 FpHorz = 1.13 Wp FpVertical = 0.50 Wp.
3. SUPPORT AND ATTACHMENT FORCES ARE DETERMINED USING ASCE 7-10 CHAPTER 13 "SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". AN OVERSTRENGTH FACTOR Ω_0 = 2.5 IS USED FOR ANCHORAGE TO CONCRETE PER ASCE 7-10 SUPPLEMENT 1 TABLE 13.6-1. LOADS SHOWN ARE STRENGTH DESIGN LOADS PER CBC 2013 SECTION 1909A.
4. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
5. THIS PREAPPROVAL IS FOR CONCRETE SLAB AT GRADE OR BELOW FOR THE DEMAND LOADS SHOWN WHERE z/h = 0 AND SDS <= 2.5. REFER TO "ELEVATED SLAB LAYOUT" AND "ELEVATED SLAB NOTES" FOR OTHER CONDITIONS THAT ARE PART OF OPM-0076-13.

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD

1. CONFIRM THE MATERIAL PROPERTIES AND THICKNESS OF THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ATTACHED MEETS THE REQUIREMENTS OF ICC-ES ESR-1917.
2. PROVIDE A PLAN FOR INSPECTION OF SUPPORTS AND ATTACHMENTS AND VERIFY ITS IMPLEMENTATION.
3. CONFIRM THE SPECIFIED MINIMUM CONCRETE EDGE DISTANCES ARE MAINTAINED BASED ON THE ACTUAL EQUIPMENT LOCATION. VERIFY THAT EXISTING OR NEW ANCHORS ARE AN ADEQUATE DISTANCE FROM THIS UNIT'S ATTACHMENT. CHECK FOR POST-INSTALLED ANCHOR INTERACTION WHERE OTHER ANCHORS ARE WITHIN 6 h_{ef} = 22.5".
4. VERIFY THAT THE EXISITNG STRUCTURE IS ADEQUATE FOR THE IMPOSED DEAD, LATERAL AND TENSION FORCES SHOWN IN ADDTION TO ALL OTHER LOADS.
5. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH CBC 2013 AND WITH THE OPM-0076-13 DETAILS. MATERIALS AND DIMENSIONS OF THE SUPPORT WHERE THE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN.
6. VERIFY THAT THE PROJECT SPECIFIC S_{DS} AND h/z VALUES RESULT IN SEISMIC FORCES (Eh AND Ev) DO NOT EXCEED THE VALUES SHOWN IN THESE DETAILS.

OPM-0076-13

STERIS AMSCO 450LS AND AMSCO 500 NOTES FOR SLAB-ON-GRADE

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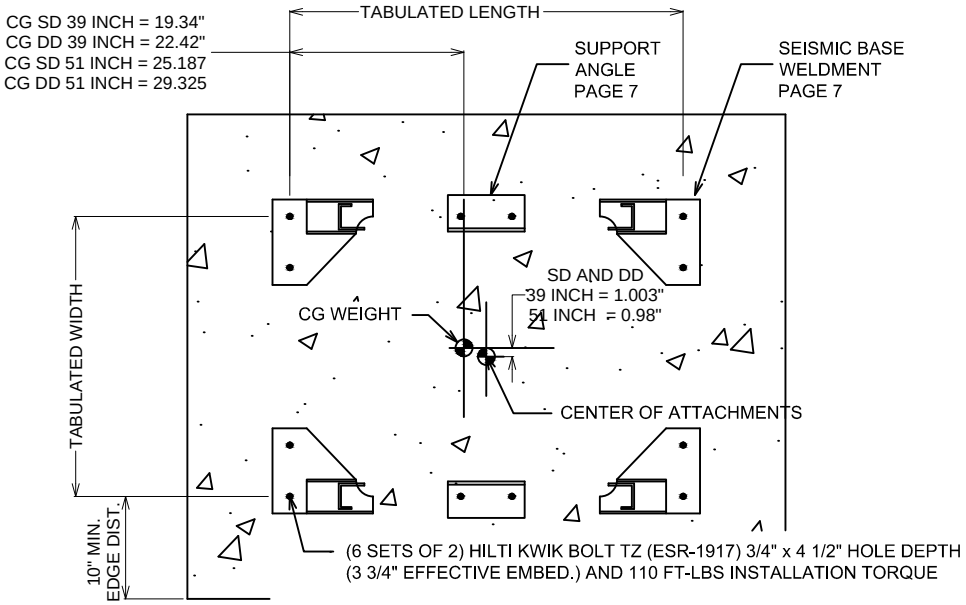
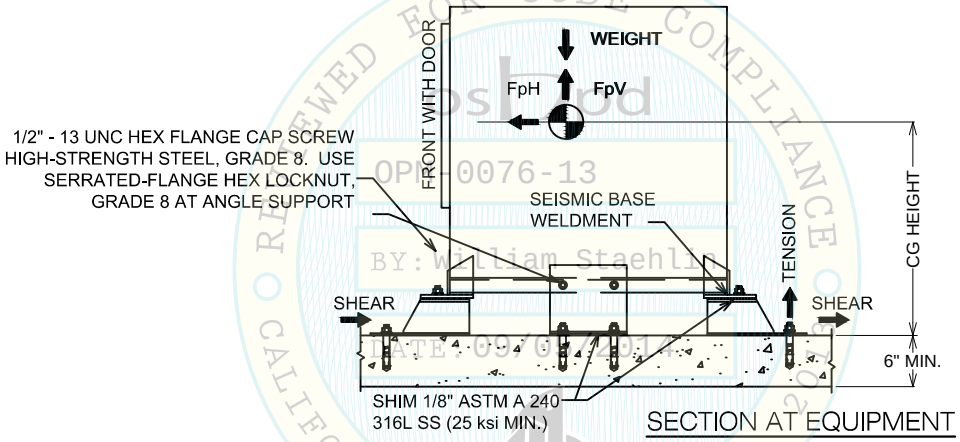
DATE: 03/28/14	
REVISED BY: WVJ	
DATE: 09/04/14	
REV NO: 3	
SCALE N.T.S.	**PAGE** GRADE NOTES

OPM-0076-13 DWG - 1



PLAN AT EQUIPMENT ATTACHMENTS AND SUPPORTS



SECTION AT EQUIPMENT

OPM-0076-13

AMSCO 450LS AND AMSCO 500 EQUIPMENT ATTACHMENT DETAIL AT SLAB-ON-GRADE

SEE "GRADE NOTES" FOR DIMENSIONS, NOTES AND ATTACHMENT FORCES

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OPM-0076-13 DWG - 2

MANUFACTURE: STERIS

EQUIPMENT TYPE: STERILIZERS

GENERAL NOTES FOR ATTACHMENT TO ELEVATED SLABS:

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2013. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2013.
2. SEISMIC CRITERIA USED: S_{DS} = 2.5 I_P = 1.5 ap = 1.0 Rp = 2.5 (WET SIDE COMPONENT) z/h =1.0 FpHorz = 1.80 Wp FpVertical = 0.50 Wp.
3. SUPPORT AND ATTACHMENT FORCES ARE DETERMINED USING ASCE 7-10 CHAPTER 13 "SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". AN OVERSTRENGTH FACTOR Ω_0 = 2.5 IS USED FOR CONCRETE MATERIALS AND Ω_0 = 1.0 FOR STEEL MATERIALS PER ASCE 7-10 SUPPLEMENT 1 TABLE 13.6-1. LOADS SHOWN ARE STRENGTH DESIGN LOADS PER CBC 2013 SECTION 1909A.
4. USE (4) 0.50" HOT DIPPED GALVANIZED THROUGH BOLTS TO A SUPPLEMENTAL STEEL MEMBER BELOW. DETAILS OF THE SUPPLEMENTAL STEEL AND CONNECTIONS TO STRUCTURE ARE SHOWN ON PAGE "SUPPLEMENTAL STEEL".
   a. THROUGH BOLTS ARE TO BE TORQUED BY 3/4 TURN OF THE NUT AFTER SNUG TIGHT CONDITION IS ACHIEVED. SNUG TIGHT CONDITION IS DEFINED AS THE THIGHTNEE REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
   b. THROUGH BOLT HOLES SHALL BE 1/16" LARGER THAN THE BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16") FOR BOTH THE STEEL AND CONCRETE.
   c. THROUGH BOLTS WITH STEEL-TO-STEEL CONNECTION IN TENSION DO NOT REQUIRE TESTING.
5. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
6. THIS PREAPPROVAL IS FOR ELEVATED CONCRETE SLABS FOR THE DEMAND LOADS SHOWN WHERE z/h <= 1 AND SDS <= 2.5. REFER TO "SLAB-ON-GRADE LAYOUT" AND "SLAB-ON-GRADE NOTES" FOR OTHER CONDITIONS THAT ARE PART OF OPM-0076-13.

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD

1. CONFIRM THE MATERIAL PROPERTIES AND THICKNESS OF THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ATTACHED MEETS THE REQUIREMENTS OF THIS OPM.
2. PROVIDE A PLAN FOR INSPECTION OF SUPPORTS AND ATTACHMENTS AND VERIFY ITS IMPLEMENTATION.
3. CONFIRM THE SPECIFIED MINIMUM CONCRETE EDGE DISTANCES ARE MAINTAINED BASED ON THE ACTUAL EQUIPMENT LOCATION. VERIFY THAT EXISTING OR NEW ANCHORS ARE AN ADEQUATE DISTANCE FROM THIS UNIT'S ATTACHMENT.
4. VERIFY THAT THE EXISITNG STRUCTURE IS ADEQUATE FOR THE IMPOSED DEAD, LATERAL AND TENSION FORCES SHOWN IN ADDTION TO ALL OTHER LOADS.
5. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH CBC 2013 AND WITH THE OPM-0076-13 DETAILS INCLUDING MATERIALS AND DIMENSIONS OF THE SUPPORT WHERE THE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN.
6. VERIFY THAT THE PROJECT SPECIFIC S_{DS} AND h/z VALUES RESULT IN SEISMIC FORCES (Eh AND Ev) DO NOT EXCEED THE VALUES SHOWN IN THESE DETAILS.

OPM-0076-13

STERIS AMSCO 450LS AND AMSCO 500 NOTES FOR ELEVATED SLABS

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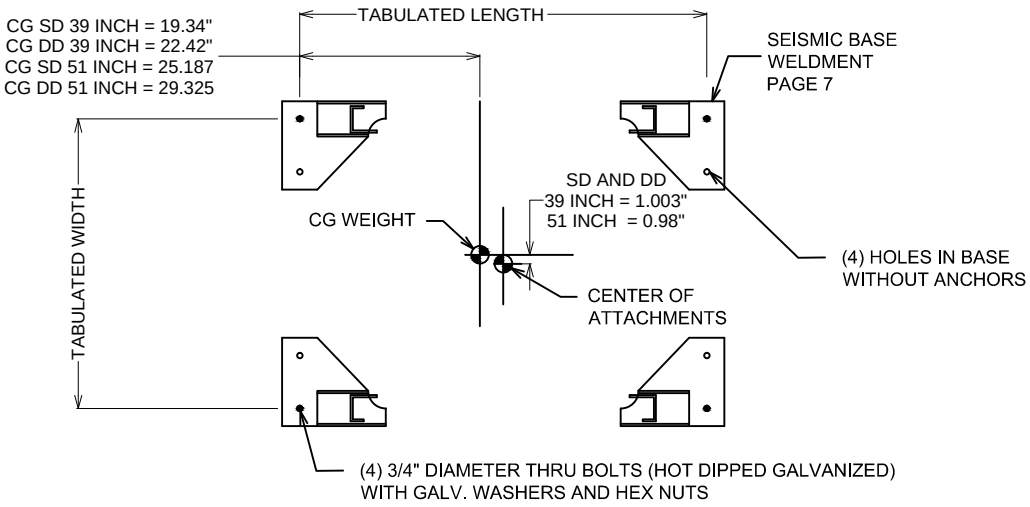
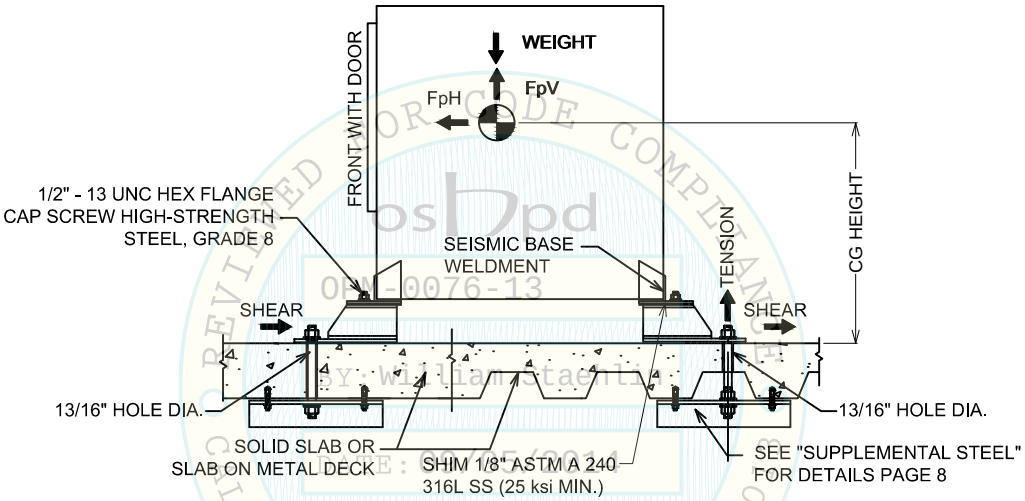
OPM-0076-13 DWG - 3



PLAN AT EQUIPMENT SUPPORTS



SECTION AT EQUIPMENT SUPPORTS

OPM-0076-13

AMSCO 450LS AND AMSCO 500 EQUIPMENT ATTACHMENT DETAIL AT ELEVATED SLABS

SEE "ELEV. NOTES" FOR DIMENSIONS AND ATTACHMENT FORCES

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OSHPD OPM-0076-13

MANUFACTURE: STERIS

EQUIPMENT TYPE: STERILIZERS

ATTACHMENT GENERAL NOTES:

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2013. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2013.
2. SEE "SLAB-ON-GRADE NOTES" AND "ELEVATED SLAB NOTES" FOR SEISMIC CRITERIA USED.

SLAB-ON-GRADE NOTES:

3. USE (8) HILTI KWIK BOLT TZ (ICC-ES ESR-1917 FOR MAY 2013) 0.75" x 4.5" HOLE DEPTH (3.75" EFFECTIVE EMBEDMENT) STAINLESS STEEL ANCHORS IN A CONCRETE SLAB WITH A MINIMUM THICKNESS OF 6 INCH; 110 FT-LBS INSTALLATION TORQUE. MINIMUM EDGE DISTANCE = 10". MINIMUM SPACING = 6".
4. CONCRETE USED FOR DESIGN IS A NORMAL WEIGHT SLAB WITH A MINIMUM f'c = 3000 PSI AT 28 DAYS AND A MINIMUM THICKNESS OF 6 INCHES.
5. PERIODIC SPECIAL INSPECTION PER CBC 2013 SECTION 1705A AND TABLE 1705A INCLUDING VERIFICATION OF ANCHOR TYPE, ANCHOR DIMENSIONS, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, ANCHOR SPACING, EDGE DISTANCES, CONCRETE MEMBER THICKNESS, TIGHTENING TORQUE, HOLE DIMENSIONS, ANCHOR EMBEDMENT AND ADHERENCE TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. IN ADDITION, FOLLOW THE PROVISIONS OF THE 2013 CALIFONIA BUILDING CODE SECTION 1916A.7.2 BY CONFIRMING THE INSTALLATION TORQUE SPECIFIED BY THE MANUFACTURER. TESTING IS NOT TO OCCUR UNTIL A MINIMUM OF 24 HOURS HAS ELAPSED AFTER THE INSTALLATION OF THE SUBJECT ANCHORS. TESTING SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR. TEST 50% OF THE ANCHORS FOR EACH PIECE OF EQUIPMENT. USING A CALIBRATED TORQUE WRENCH VERIFY THE INSTALLATION TORQUE IS OBTAINED WITHIN 1/2 TURN OF THE NUT. REPORT OF TEST REPORTS ARE TO BE SUBMITTED TO OSHPD.

ELEVATED SLAB NOTES:

6. USE (4) 0.75" HOT DIPPED GALVANIZED STEEL THROUGH BOLTS TO SUPPLMENTAL STEEL MEMBER BELOW. DESIGN OF THE SUPPLEMENTAL STEEL AND CONNECTIONS TO THE STRUCTURE ARE SHOWN ON PAGE "SUPPLEMENTAL STEEL".
   a. THROUGH BOLTS SHALL BE TORQUED BY 3/4 TURN OF THE NUT AFTER SNUG TIGHT CONDITION IS ACHIEVED (UNLESS OTHERWISE NOTED). SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
   b. THROUGH BOLT HOLES SHALL BE 1/16" LARGER THAN THE BOLTS SIZE (HOLE SIZE = BOLT SIZE + 1/16") FOR BOTH STEEL AND CONCRETE.
   c. THROUGH BOLTS WITH STEEL-TO-STEEL CONNECTION IN TENSION DO NOT REQUIRE TESTING.
   d. USE ONE NUT AND WASHER ON EACH END. WHERE BOLT OCCURS IN THE OPEN AREA OF THE METAL DECK PROVIDE AN ADDITIONAL NUT AND WASHER ON TOP OF THE SUPPLEMENTAL STEEL MEMBER, SEE DWG 8.

OPM-0076-13

STERIS AMSCO 450LS AND AMSCO 500 ATTACHMENT NOTES

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AMSCO 450LS AND AMSCO 500 AT OR BELOW GRADE								
AMSCO 450LS AND AMSCO 500 DIMENSIONS AND WEIGHTS						FRONT-TO-BACK ATTACHMENT FORCES IN POUNDS		
Model	Length	Width	CG Height	Weight	FpHorz	TENSION		SHEAR
SD 39 INCH	46.125	32.8125	47.25	2650	1.13	4429 Lbs.		1872 Lbs.
DD 39 INCH	46.125	32.8125	47.25	3100	1.13	5067 Lbs.		2189 Lbs.
SD 51 INCH	58.259	32.81	42.892	3250	1.13	4048 Lbs.		2295 Lbs.
DD 51 INCH	58.259	32.81	42.185	3600	1.13	4273 Lbs.		22542 Lbs.
						SIDE-TO-SIDE TOTAL ATTACHMENT FORCES IN POUNDS		
						TENSION AT SUPPORT	TENSION AT ANGLE	SHEAR
SD 39 INCH	46.125	32.8125	47.25	2650	1.13	4241 Lbs.	2837 Lbs.	2436 Lbs.
DD 39 INCH	46.125	32.8125	47.25	3100	1.13	4960 Lbs.	3318 Lbs.	2850 Lbs.
SD 51 INCH	58.259	32.81	42.892	3250	1.13	4792 Lbs.	3071 Lbs.	2988 Lbs.
DD 51 INCH	58.259	32.81	42.185	3600	1.13	5236 Lbs.	3329 Lbs.	3310 Lbs.

AMSCO 450LS AND AMSCO 500 ABOVE GRADE							
AMSCO 450LS AND AMSCO 500 DIMENSIONS AND WEIGHTS						FRONT-TO-BACK ATTACHMENT FORCES	
Model	Length	Width	CG Height	Weight	FpHorz	TENSION	SHEAR
SD 39 INCH	46.125	32.8125	47.25	2650	1.8	2988 Lbs.	2981 Lbs.
DD 39 INCH	46.125	32.8125	47.25	3100	1.8	3426 Lbs.	3488 Lbs.
SD 51 INCH	58.259	32.81	42.892	3250	1.8	2763 Lbs.	3656 Lbs.
DD 51 INCH	58.259	32.81	42.185	3600	1.8	2961 Lbs.	4050 Lbs.
						SIDE-TO-SIDE TOTAL ATTACHMENT FORCES	
						TENSION	SHEAR
SD 39 INCH	46.125	32.8125	47.25	2650	1.8	6984 Lbs.	3881 Lbs.
DD 39 INCH	46.125	32.8125	47.25	3100	1.8	8170 Lbs.	4540 Lbs.
SD 51 INCH	58.259	32.81	42.892	3250	1.8	7736 Lbs.	4759 Lbs.
DD 51 INCH	58.259	32.81	42.185	3600	1.8	8421 Lbs.	5272 Lbs.

STRENGTH DESIGN WAS USED FOR ANCHOR FORCE CALCULATIONS. Tu AND Vu ARE TABULATED ABOVE INCLUDING Ω PER ACI 318-11.

SERIES	SD AND DD 39 INCH	SD AND DD 51 INCH
AMSCO 500	939VS-1	1251VS-1
AMSCO 500	939VS-2	1251VS-2
AMSCO 500	939VS-3	1251VS-3
AMSCO 500	939VS-4	1251VS-4
AMSCO 500	639VS-5	851VS-5
AMSCO 450LS	39VS	51VS

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STERIS AMSCO 450LS AND AMSCO 500 ATTACHMENT FORCES

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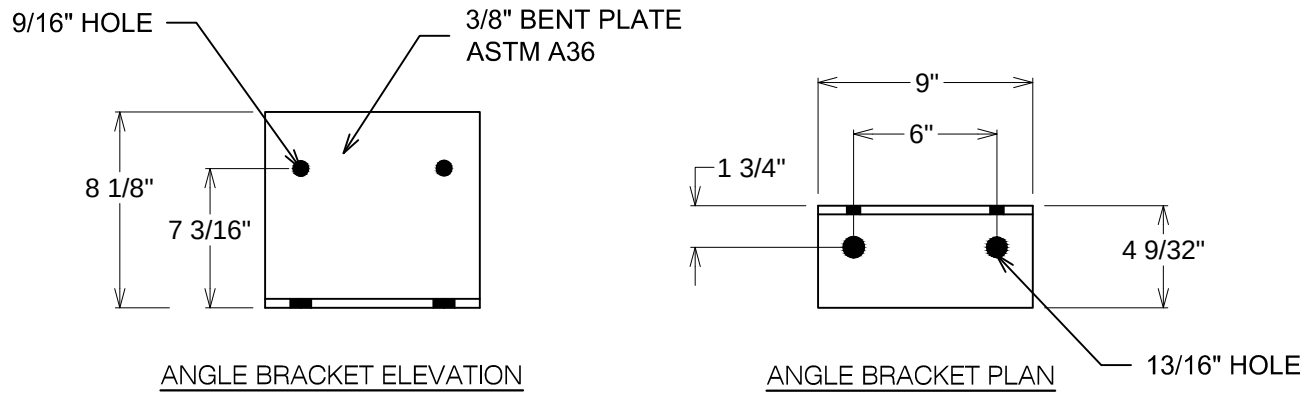
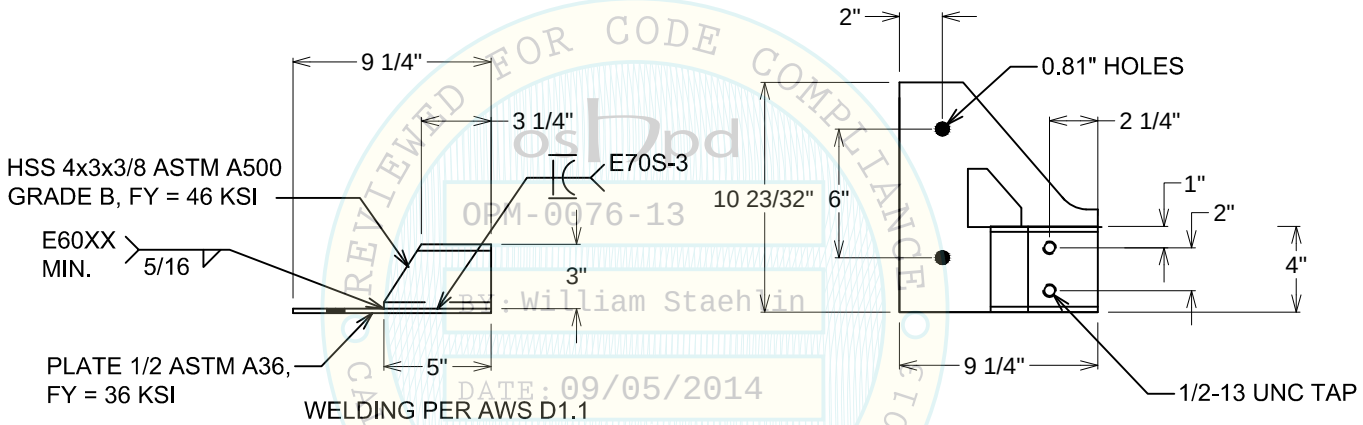
PAGE FORCES



ANGLE BRACKET ELEVATION

ANGLE BRACKET PLAN

SEISMIC TIE DOWN CENTER BRACKET FOR SLAB-ON-GRADE ONLY



BASE WELDMENT ELEVATION

BASE WELDMENT PLAN

SEISMIC BASE WELDMENT

OPM-0076-13
STERIS AMSCO 450LS AND AMSCO 500 SUPPORT DETAILS

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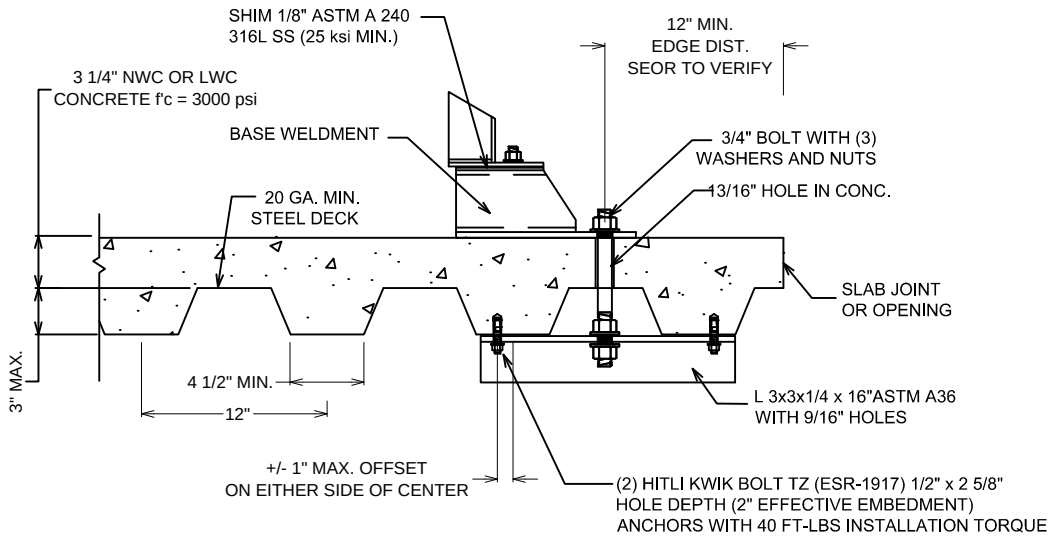
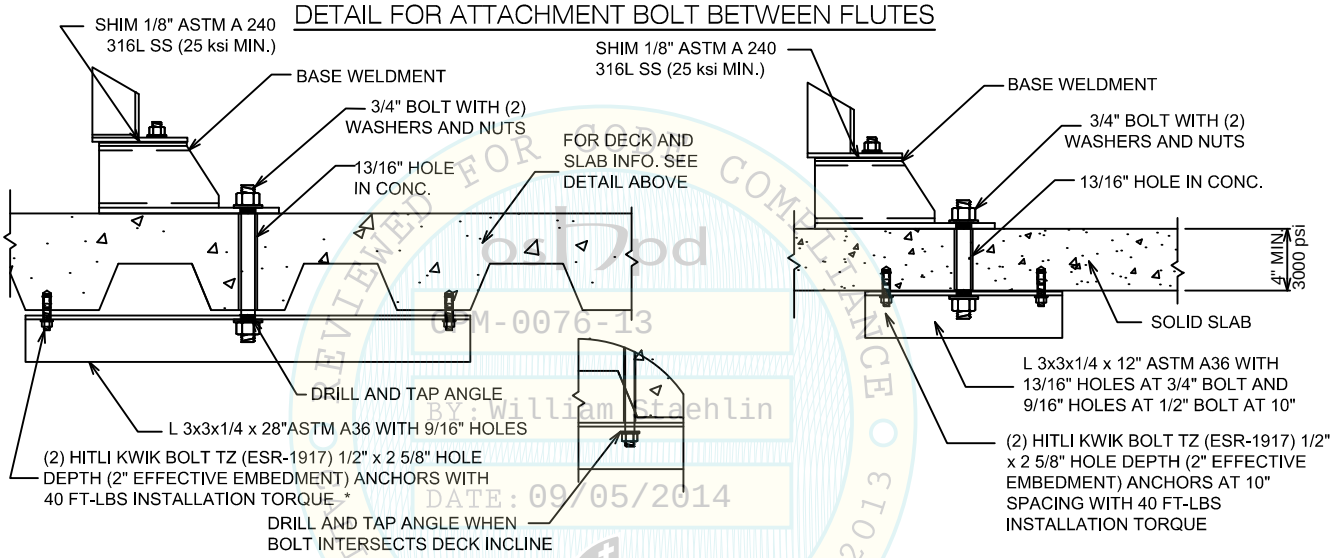
OPM-0076-13 DWG - 7



DETAIL FOR ATTACHMENT BOLT BETWEEN FLUTES



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

DETAIL FOR ATTACHMENT BOLT AT SOLID CONCRETE SLABS

OPM-0076-13
STERIS AMSCO 450LS AND AMSCO 500
SUPPLEMENTAL STEEL FOR ELEVATED SLABS

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OPM-0076-13 DWG - 8