



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

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

OFFICE USE ONLY

APPLICATION #: OPM-0329-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

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

Manufacturer Information

Manufacturer: Belimed

Manufacturer's Technical Representative: John Price

Mailing Address: 2325 Charleston Regional Parkway, Charleston, SC 29492

Telephone: 843-216-7424, x134

Email: John.Price@Belimed.com

Product Information

Product Name: MST-H(10) 9-6-X HSX Steam Sterilizers

Product Type: Steam Sterilizers

OPM-0329-13

Product Model Number: MST-H(10) 9-6-12 HS1, MST-H(10) 9-6-15 HS1, MST-H(10) 9-6-18 HS1,
MST-H(10) 9-6-12 HS2, MST-H(10) 9-6-15 HS2, MST-H(10) 9-6-18 HS2

General Description: Belimed's MST-H(10) 9-6-X HSX Steam Sterilizers have been engineered to provide the flexibility and versatility needed for immediate use in the OR, day to day operations in a surgery center, or quick turnaround sets in sterile processing.

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: February 26, 2016

Title: Principal Structural Engineer

Company Name: ISAT Seismic Bracing

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





OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

Registered Design Professional Preparing Engineering Recommendations

Company Name: ISAT Seismic Bracing

Name: William V Joerger California License Number: S4545

Mailing Address: 1020 Crews Rd Suite Q, 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.

BY: Jeffrey Y. Kikumoto

DATE: 07/11/2016

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: 07-11-2016

Print Name: Jeffrey Kikumoto

Title: SSE

Condition of Approval (if applicable): _____

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





INTERNATIONAL SEISMIC APPLICATION TECHNOLOGY

A Division of Tomarco Contractor Specialties

Submittal Documents

OPM-0329-13

OSHPD OPM-0329-13

**SUPPORT AND ATTACHMENT
CONSTRUCTION DRAWINGS**

MST-H(10) 9-6-X HSX STERILIZERS

BELIMED

ISAT
1020 Crews Road Suite Q
Matthews, N.C. 28105
704-841-4080



FILE NO.: CLT-0116-014

"Empowered by Experience"

REV 4



**INTERNATIONAL SEISMIC
APPLICATION TECHNOLOGY**

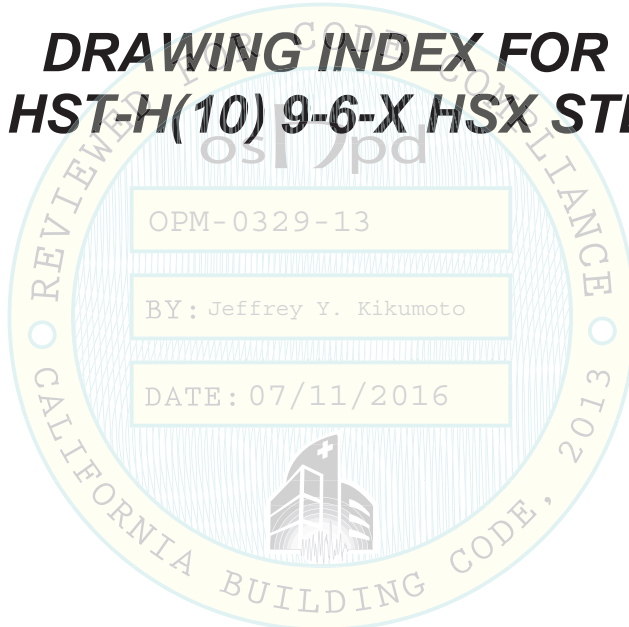
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OSHPD OPM-0329-13

**DRAWING INDEX FOR
BELIMED HST-H(10) 9-6-X HSX STERILIZERS**

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FILE NO.: CLT-0116-014

“Empowered by Experience”

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OSHPD OPM-0329-13

MANUFACTURE: BELIMED
EQUIPMENT TYPE: STERILIZER

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. SEISMIC CRITERIA USED: $S_{DS} = 2.5$ $I_p = 1.5$ $a_p = 1.0$ $R_p = 1.5$ (OTHER MECHANICAL COMPONENT) $z/h = 0.0$ WITH $F_pH = 1.13$ AT GRADE OR $z/h \leq 1.0$ WITH $F_pH = 3.00$ FOR ELEVATED FLOORS. $F_pV = 0.50$.
3. SUPPORT AND ATTACHMENT FORCES ARE DETERMINED USING ASCE 7-10 CHAPTER 13 "SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". AN OVERSTRENGTH FACTOR $\Omega_0 = 1.5$ IS USED FOR CONCRETE ANCHORAGE FORCES 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 ELEVATED SLABS FOR THE DEMAND LOADS SHOWN WHERE $S_{DS} \leq 2.5$.
6. STEEL MATERIALS: THROUGH BOLTS AISI 316 STAINLESS STEEL WITH MATCHING WASHERS AND NUTS, ATTACHMENT BRACKET BY BELIMED EURONORM 1.0037 STAINLESS STEEL WITH A TENSILE STRENGTH OF 520 MPa AND MINIMUM YIELD STRENGTH OF 270 MPa (EQUIVALENT TO 316L SS).
7. CONCRETE SLABS:
 - a. FOR SLAB ON GRADE OR ELEVATED SOLID CONCRETE SLABS: 6" MINIMUM THICKNESS OF NORMAL WEIGHT CONCRETE WITH 3000 PSI MINIMUM STRENGTH.
 - b. METAL DECK: 3" DEEP COMPOSITE STEEL DECK, 20 GAGE MINIMUM WITH FLUTE SPACING OF 12", 4.5 INCH MINIMUM BOTTOM FLUTE WIDTH WITH 3.25" SAND LIGHT WEIGHT OR NORMAL WEIGHT CONCRETE COVER AT 4000 PSI MINIMUM STRENGTH.
8. RETROFIT CONCRETE ANCHORS: HILTI KWIK BOLTS TZ (ESR-1917) STAINLESS STEEL 0.625" DIAMETER x 4.75" MINIMUM HOLE DEPTH (4" EFFECTIVE EMBEDMENT) AND 60 FT-LBS INSTALLATION TORQUE. EDGE DISTANCE IS 18" MINIMUM. FOR THE TECHNICAL FRAME A STAINLESS STEEL TZ 0.625" DIAMETER x 3.75" MINIMUM HOLE DEPTH (3.125" EFFECTIVE EMBEDMENT) MAY BE USED.

OPM-0329-13 BELIMED MST-H(10) 9-6-X HSX STERILIZER GENERAL NOTES



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OSHPD OPM-0329-13

MANUFACTURE: BELIMED
EQUIPMENT TYPE: STERILIZER

ATTACHMENT NOTES:

1. REFER TO OPM-0329-13 DETAILS FOR THE MATERIALS OF CONSTRUCTION AND FASTENER DIMENSIONS.
2. THROUGH BOLT INSTALLATION AND INSPECTION (DETAILS OF THE SUPPLEMENTAL STEEL AND CONNECTIONS TO STRUCTURE ARE SHOWN ON PAGE "MISC 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.
3. FOR POST INSTALLED CONCRETE ANCHORS PERIODIC SPECIAL INSPECTION SHALL BE IN ACCORDANCE WITH CBC 2013 SECTION 1705A AND TABLE 1705A.3 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 CALIFORNIA BUILDING CODE SECTION 1913A.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. A REPORT OF TEST RESULTS IS TO BE SUBMITTED TO THE ENFORCEMENT AGENCY. THE SEOR SHALL PROVIDE REMEDIAL ANCHORAGE DETAILS IN THE EVENT THAT AN ANCHOR FAILS TO MEET THE TEST REQUIREMENTS.
4. EXERCISE DUE CARE WHEN DRILLING POST-INSTALLED ANCHORS TO AVOID DAMAGING CONCRETE REINFORCEMENT OR TENDONS.
5. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT AND WASHER.

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD

1. CONFIRM THE MINIMUM REQUIREMENTS FOR THE CONCRETE SLAB ARE MET.
2. PROVIDE A PLAN FOR INSPECTION OF SUPPORTS AND ATTACHMENTS AND VERIFY ITS IMPLEMENTATION.
3. VERIFY THAT THE EXISITNG STRUCTURE IS ADEQUATE FOR THE IMPOSED DEAD, LATERAL AND TENSION FORCES SHOWN IN ADDTION TO ALL OTHER LOADS.
4. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH CBC 2013 AND WITH THE OPM-0329-13 DETAILS.
5. VERIFY THAT THE PROJECT SPECIFIC S_{ps} AND z/h VALUES RESULT IN SEISMIC FORCES (E_h AND E_v) DO NOT EXCEED THE VALUES SHOWN IN THESE DETAILS.

OPM-0329-13 BELIMED MST-H(10) 9-6-X HSX STERILIZER ATTACHMENT NOTES

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BELIMED MST-H (10) 9-6-X HSX STERILIZERS DIMENSIONS AND WEIGHTS							
Sterilizer		9-6-12 HS1	9-6-15 HS1	9-6-18-HS1	9-6-12 HS2	9-6-15 HS2	9-6-18-HS2
Operating Wt	kg	1811	2120	2375	2253	2569	2831
CG X1	mm	503	503	503	503	503	503
Ecc X1	mm	20	20	20	20	20	20
CG Y1	mm	706	842	979	856	1011	1165
Ecc Y1	mm	-152	-171	0	-2	-2	-1
CG Z1	mm	808	808	808	817	817	907
Anchor Postion 4	mm	1486	1797	2102	1486	1797	2102
Technical Frame		9-6-12 HS1	9-6-15 HS1	9-6-18-HS1	9-6-12 HS2	9-6-15 HS2	9-6-18-HS2
Operating Wt	kg	210	220	220	210	220	220
CG X2	mm	1528	1524	1524	1528	1524	1524
Ecc X2	mm	226	222	222	226	222	222
CG Y2	mm	642	643	643	642	643	643
Ecc Y2	mm	44	43	43	44	43	43
CG Z2	mm	584	552	552	584	552	552

Model	Attachment at Grade			Attachment at Elevated Slab		
	Anchor Type See Page "GEN NOTES" - Note 8	Forces at Grade		Anchor Type Note 3	Forces at Elevated Slab	
		Tu - Lbs	Vu - Lbs		Tu - Lbs	Vu - Lbs
MST-H(10) 9-6-12	HILTI KB ZT SS 0.625" x 4" EFF. EMBED.	1810	1400	0.625" SS ROD	3600	3750
MST-H(10) 9-6-15	HILTI KB ZT SS 0.625" x 4" EFF. EMBED.	1900	1600	0.625" SS ROD	3840	4260
MST-H(10) 9-6-18	HILTI KB ZT SS 0.625" x 4" EFF. EMBED.	2270	1760	0.625" SS ROD	4530	4700
Technical Frame	HILTI KB ZT SS 0.625" x 3.125" EFF. EMBED.	1200	300	0.625" SS ROD	2150	1030

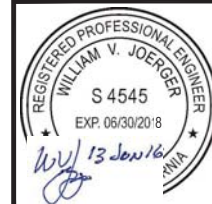
1. Tu AND Vu VALUES INCLUDE AN OVERSTRENGTH FACTOR OF 1.5 IN ACCORDANCE WITH ASCE 7-10 SUPPLEMENT No. 1.
2. FOR INTERACTION CHECKS THE CALCULATED ANCHOR CAPACITY HAS BEEN MULTIPLIED BY 0.75 TO ACCOUNT FOR THE CONCRETE ANCHORAGE CAPACITY REDUCTION FROM ACI 318-11 SECTION D3.3.4.4.
3. SEE NOTE 6 ON PAGE "GEN NOTES".

REFER TO PAGE "GRADE" FOR DETAILS AT SLAB-ON-GRADE CONCRETE SLABS.
REFER TO PAGE "MISC STEEL" FOR ELEVATED SLAB DETAILS.

OPM-0329-13 BELIMED MST-H(10) 9-6-X HSX DIMENSIONS AND ANCHOR FORCES



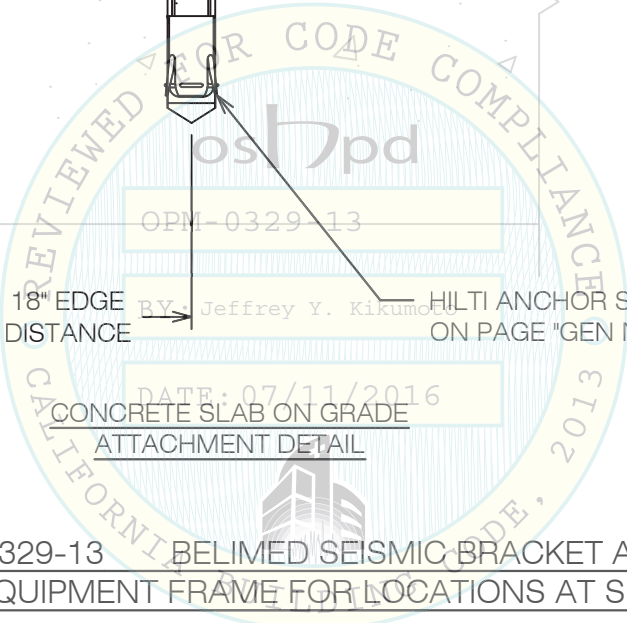
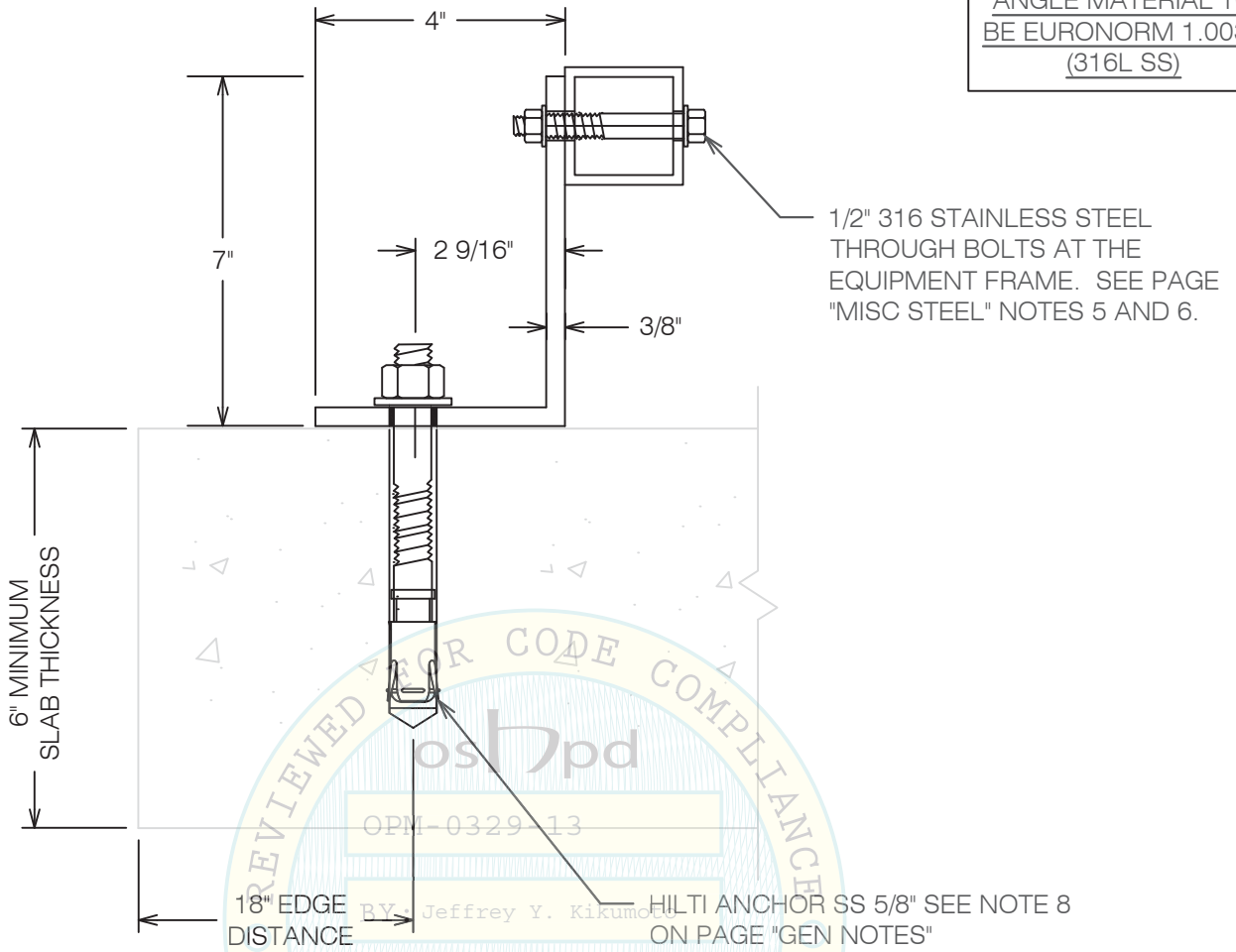
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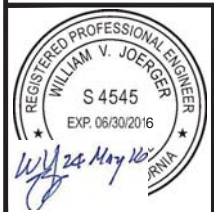
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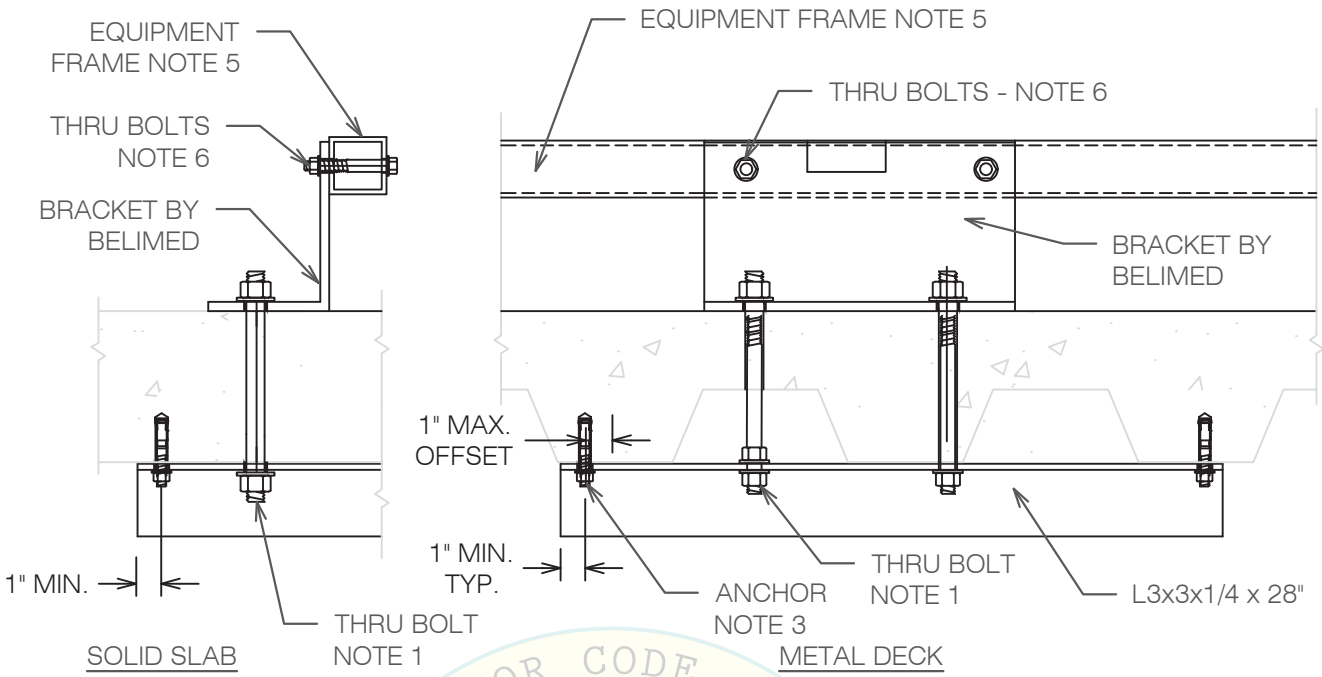
ANGLE MATERIAL TO
BE EURONORM 1.0037
(316L SS)



OPM-0329-13 BELIMED SEISMIC BRACKET ATTACHMENT TO THE EQUIPMENT FRAME FOR LOCATIONS AT SLAB-ON-GRADE

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NOTE! USE A L3x3 FOR EACH THRU BOLT WHEN BOLTS ALIGN PARALLEL TO THE DECK.

NOTES:

1. DRILL 11/16" HOLE IN THE CONCRETE SLAB TO RECEIVE THE 5/8" AISI 304 STAINLESS STEEL RODS WITH MATCHING WASHERS AND NUTS. MAINTAIN 18" EDGE DISTANCE.
2. FOR LOCATIONS WHERE A TOP NUT CANNOT BE INSTALLED IN THE SUPPLEMENTAL STEEL ANGLE, DRILL AND TAP THE STEEL MATERIAL TO RECEIVE THE 5/8" EQUIPMENT ANCHORAGE BOLT.
3. ANCHOR INTO BOTTOM OF SLAB SHALL BE HILTI KWIK BOLT TZ (ESR-1917) 1/2" x 4" HOLE DEPTH (3 1/4" EFFECTIVE EMBEDMENT) AND 40 FT-LBS INSTALLATION TORQUE.
4. SEE PAGE "GEN NOTES" NOTE 7 FOR CONCRETE SLAB AND METAL DECK REQUIREMENTS.
5. EQUIPMENT FRAME IS 60 mm x 60 mm x 5 mm EURONORM 1.0037 ASTM EQUIVALENT A283 C - A570 GR. 33 (316L STAINLESS STEEL).
6. THROUGH BOLTS AT THE EQUIPMENT FRAME ARE TO BE 0.50" 316 STAINLESS STEEL (Fu = 100 KSI). FIELD DRILL 0.563" HOLES IN FRAME AFTER VERTICAL ADJUSTMENT OF THE EQUIPMENT.

OPM-0329-13 BELIMED MST-H(10) 9-6-X HSX MISCELLANEOUS STEEL AND ATTACHMENT DETAILS AT ELEVATED SLABS

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