

Type:

## DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

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

OFFICE USE ONLY

APPLICATION #: OPM-0520

HCAI Preapproval of Manufacturer's Certification	(OPM)

New X Renewal/Update

## **Manufacturer Information**

Manufacturer: Belimed, Inc

Manufacturer's Technical Representative: Jay Upchurch

Mailing Address: 8351 Palmetto Commerce Parkway, Suite 10, Ladson, SC 29456

Telephone: (843) 216-7424

Email: jay.upchurch@belimed.com

## **Product Information**

Product Name: ELD / WTD (14) External

Product Type: Steam Generator / Steam Exchanger

Product Model Number: ELD / WTD 30, ELD / WTD 45, ELD / WTD 60, ELD / WTD 90

General Description: ELD / WTD: The purpose of this pressure device is to generate pure steam for general use for e.g. sterilizers.

OPM-0520

# **Applicant Information**

Applicant Compar	ny Name: Belimed, Inc	ARI	IL DING
Contact Person:	Jay Upchurch	30	ILDING
Mailing Address:	8351 Palmetto Commerce Parkv	vay, Suit	e 10, Ladson, SC 29456
Telephone: (843)	) 216-7424	Email:	jay.upchurch@belimed.com
Title: Product Ma	nager		

"A healthier California where all receive equitable, affordable, and quality health care"

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY





# DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

## Registered Design Professonal Preparing Engineering Recommendations

Company	/ Name <sup>.</sup>	ISAT SEISMIC BRACING	
Company	y iname.		

Name: Deep Shah

California License Number: S5867

Mailing Address: 14848 Northam Street, La Mirada, CA 90638

Telephone: (714) 523-1771

Email: dshah@isatsb.com

ICAI Special Seismic Certification Preapproval (OSP)
Special Seismic Certification is preapproved under OSP OSP Number:
EOR CODE CON
Certification Method
esting 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, 2022 (CBSC 2022) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test riteria other than those adopted in the CBSC 2022 may be used when approved by HCAI prior to testing.
X Analysis
Experience Data
Combination of Testing, Analysis, and/or Experience Data (Please Specify):
OBNUS CODE
ICAI Approval
Date: 5/21/2024
Iame: Timothy Piland Title: Senior Structural Engineer
condition of Approval (if applicable):





# **Submittal Documents**



**OPM-0520** 

# ATTACHMENT OPM DRAWINGS ELD/WTD EXTERNAL STEAM GENERATOR / STEAM EXCHANGER



BELIMED

ISAT 14848 Northam Street, La Mirada, CA 90638 877-999-4728

FILE NO.: CLT-0818-222

REV 5



# OSHPD OPM-0520 **DRAWING INDEX DRAWING INDEX Cover Page** рi Index Page ріі Drawings for OPM-0520 05/21/2024 **General Notes** р1 **Attachment Notes** p 2 **Dimensions and Anchorage Forces** р3 Belimed ELD / WTD 30 Layout Plan p4 Belimed ELD / WTD 30 Layout Elevation р5 Belimed ELD / WTD 30 Layout Connections p6 Belimed ELD / WTD 30 Layout Welds р7 Belimed ELD / WTD 45 Layout Plan p 8 Belimed ELD / WTD 45 Elevation p 9 Belimed ELD / WTD 45 Connections p 10

FILE NO.: CLT-0188-222

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Index Rev 5

OSHPD OPM-0520 DWG - ii

Belimed ELD / WTD 45 Layout Welds	p 11
Belimed ELD / WTD 60 Layout Plan	p 12
Belimed ELD / WTD 60 Layout Elevation	p 13
Belimed ELD / WTD 60 Layout Connections	p 14
Belimed ELD / WTD 60 Layout Welds	p 15
Belimed ELD / WTD 90 Layout Plan	p 16
Belimed ELD / WTD 90 Layout Elevation	p 17
Belimed ELD / WTD 90 Layout Connections	p 18
Belimed ELD / WTD 90 Layout Welds	p 19
Equipment Anchorage at Grade	p 20
Equipment Anchorage at Elevated Slabs S2 Switch Bracket S1 Switch Bracket	p 21
S2 Switch Bracket	p 22
S1 Switch Bracket	p 23
Corner Bracket OPM-0520	p 24
Corner Bracket Weld	p 25
Middle Bracket	p 26
Middle Bracket Weld DATE: 05/21/2024	p 27
SG1 Bracket	p 28
SG2 Bracket HSS	p 29
HSS A BUILDING	p 30
Belimed Part Numbers	p 31

FILE NO.: CLT-0188-222

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Index Rev 5

OSHPD OPM-0520 DWG - iii

# OSHPD OPM-0520

## MANUFACTURE: BELIMED

## EQUIPMENT TYPE: STEAM GENERATOR/STEAM EXCHANGER

#### **GENERAL NOTES**

1.	THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2019. THE
2.	DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2019. SEISMIC CRITERIA USED: $S_{DS} = 2.50$ $I_P = 1.5$ $a_P = 1.0$ $R_P = 1.5$ (OTHER MECHANICAL COMPONENT) $z/h = 0.0$
3.	WITH F <sub>pH</sub> = 1.13 AT GRADE OR z/h <= 1.0 WITH F <sub>pH</sub> = 3.00 FOR ELEVATED FLOORS. F <sub>pV</sub> = 0.50. SUPPORT AND ATTACHMENT FORCES ARE DETERMINED USING ASCE 7-16 CHAPTER 13 "SEISMIC DESIGN
	REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". AN OVERSTRENGTH FACTOR $\Omega_0$ = 2.0 is used for
	CONCRETE ANCHORAGE FORCES PER ASCE 7-16 TABLE 13.6-1. LOADS SHOWN ARE STRENGTH DESIGN LOADS PER
	ASCE 7-16 SECTION 12.4.3.2.
4. 5.	THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE. THIS PREAPPROVAL IS FOR CONCRETE SLAB AT GRADE OR ELEVATED SLABS FOR THE DEMAND LOADS SHOWN

- 6. STEEL MATERIALS: THROUGH BOLTS AISI 304 STAINLESS STEEL (MIN TENSILE STRENGTH OF 73 KSI) WITH MATCHING WASHERS AND NUTS. BRACKETS BY BELIMED EURONORM 1.4301 STAINLESS STEEL WITH A TENSILE STRENGTH OF 73KSI (500 Mpa) AND MINIMUM YIELD STRENGTH OF 28 KSI (195 Mpa, EQUIVALENT TO 304 SS). FRAME MEMBERS ARE FABRICATED FROM EURONORM 1.4301 STAINLESS STEEL EQUIVALENT TO 304 SS. BOLTS FOR FRAME MATERIALS: 1.4301 (304) WITH TENSILE STRENGTH 102 KSI (700 N/mm<sup>2</sup>).
- 7. CONCRETE SLABS:

WHERE  $S_{DS} \ll 2.5$ .

a. FOR SLAB ON GRADE OR ELEVATED SOLID CONCRETE SLABS: 6" MINIMUM THICKNESS OF NORMAL WEIGHT CONCRETE WITH 4000 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. POST-INSTALLED CONCRETE ANCHORS FOR SOLID CONCRETE: HILTI KWIK BOLT TZ2 (ESR-4266) STAINLESS STEEL
5/8" DIAMETER x 4.25" HOLE DEPTH (3.25" EFFECTIVE EMBEDMENT), 4" MINIMUM EDGE DISTANCE AND 3.62"
MINIMUM SPACING FOR SLAB ON GRADE. HILTI KWIK BOLT TZ2 (ESR-4266) STAINLESS STEEL 5/8" DIAMETER x
4.75" HOLE DEPTH (4" EFFECTIVE EMBEDMENT), 16" MINIMUM EDGE DISTANCE AND 3.62" MINIMUM SPACING
FOR ELEVATED SOLID SLAB, TORQUE TO 60 FT-LBS. FOR ANCHORS INTO SOFFIT OF THE METAL DECK USE 1/2"
DIAMETER x 2.75" HOLE DEPTH (2" EFFECTIVE EMBEDMENT), 6" MINIMUM EDGE DISTANCE AND 8" MINIMUM

OPM-0520 BELIMED ELD AND WTD STEAM GENERATOR/EXCHANGER **GENERAL NOTES** OTAL SUPPORT ation • Engineering • BIM • Fabrication A Division of Tomarco Contractor Specialti International Seismic Application Technology 14848 Northam Street, La Mirada, CA 90638 877-999-4728 www.isatsb.com DRAWN BY: WV] **DATE:** 12/26/18 REVISED BY: ML **DATE:** 05/03/24 **REV NO:** 4 SCALE PAGE N.T.S. GEN NOTES

# OSHPD OPM-0520

## MANUFACTURE: BELIMED

## EQUIPMENT TYPE: STEAM GENERATOR/STEAM EXCHANGER

#### ATTACHMENT NOTES:

- 1. REFER TO OPM-0520 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 "ELEVATED".) 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 TIGHTNESS 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 2019 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 2019 CALIFORNIA BUILDING CODE SECTION 1910A.5 BY CONFIRMING THE INSTALLATION TORQUE OF 60 FT-LBS FOR 5/8" BOLTS (STAINLESS STEEL) AND 50 FT-LBS FOR 1/2" BOLTS ) ({CARBON STEEL})TEST 50% OF THE ANCHORS FOR EACH PIECE OF EQUIPMENT. IF ANY FAILS TEST ALL ANCHORS. TESTING AND SPECIAL INSPECTION OF EXPANSION ANCHORS SHALL BE PERFORMED BY AN APPROVED AGENCY EMPLOYED BY THE FACILITY OWNER PER CBC 1704A AND 1910A.5 AND CAC 7-249. A REPORT OF TEST RESULTS IS TO BE SUBMITTED TO THE INSPECTOR OF RECORD. OWNER AND ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE. 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 SPECIFIED IN THIS OPM FOR THE CONCRETE SLAB ARE MET, INCLUDING MATERIAL PROPERTIES AND THICKNESS OF CONCRETE SLAB.
- 2. PROVIDE A PLAN FOR INSPECTION OF SUPPORTS AND ATTACHMENTS AND VERIFY ITS IMPLEMENTATION.
- 3. VERIFY THAT THE EXISTING STRUCTURE IS ADEQUATE FOR THE IMPOSED DEAD, LATERAL AND TENSION FORCES SHOWN IN ADDITION TO ALL OTHER LOADS.
- 4. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH CBC 2019 AND WITH THE OPM-0520 DETAILS.
- 5. VERIFY THAT THE PROJECT SPECIFIC S<sub>DS</sub> AND z/h VALUES RESULT IN SEISMIC FORCES (Eh AND Ev) DO NOT EXCEED THE VALUES SHOWN IN THESE DETAILS.

	OPM-0520 BELIMED ELD AND WTD STEAM GENERATOR/EXCHANGER					
ATTACHMENT NOTES						
	Innovation • Eng	treet, La Mirad	<sup>rication</sup> <sup>ialties</sup> <b>n Technology</b> la, CA 90638			
	PROFESSION PROFESSION PROFESSION STATES STAT	<b>REVISED BY</b>	: 12/26/18 : ML : 05/03/24			
		N.T.S.	ATTACHMENT			

BELIMED ELD/WTD STEAM GENERATOR/STEAM EXCHANGER DIMENSIONS AND WEIGHTS									
Steam Generator/									
Steam Exchanger		ELD 30	ELD 45	ELD 60	ELD 90	WTD 30	WTD 45	WTD 60	WTD 90
Operating Wt	lb	538	666	756	869	560	672	750	827
CG X	in	14.4	14.8	14.3	15.1	14.0	14.7	14.1	14.4
Ecc X	in	-2.4	-1.9	-2.1	-1.3	-2.4	-1.8	-2.1	-1.8
CG Y	in	16.0	27.0	28.9	28.3	16.0	26.1	28.9	30.0
Ecc Y	in	-1.2	-0.2	-5.3	-4.2	-1.3	-0.8	-5.2	-4.2
CG Z	in	22.2	22.2	21.6	21.9	22.7	22.4	21.2	21.0

CENTER OF GRAVITY (CG) IN THE X AND Y DIMENSIONS IS MEASURED FROM THE LOWER RIGHT CORNER OF THE EQUIPMENT LEG; SEE EQUIPMENT PLAN SHEETS. CG Z IS MEASURED FROM THE FLOOR TO THE VERTICAL CENTER OF GRAVITY.

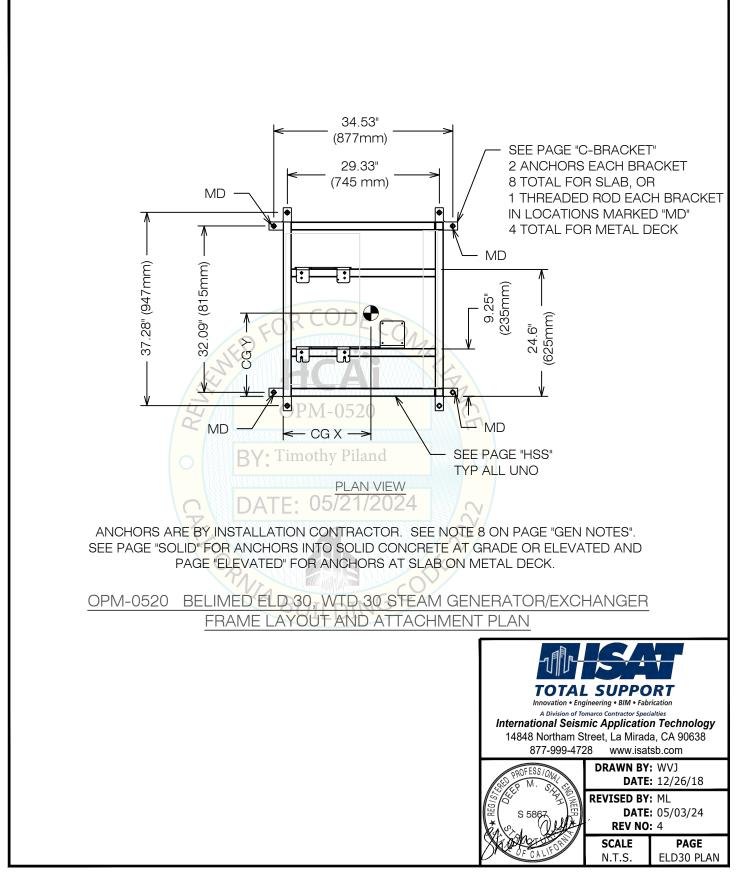
	Attachment at Grade					Attachment at Elevated Slab						
Madal		Anch	nor Type		Forces a	orces at Grade		Anchor Type			Forces at Elevated Slab	
Model	See Page	e "GEN	NOTES"	- Note 8	Vu - lbf	Tu - lbf		Note 2			Vu - lbf	Tu - lbf
ELD 30	HILTI K	§ 722	ŞS 0.625" :	(3.25")	421	602	HILTI KE	TZ2 S	S 0.625" x 4"	/ 0.625" SS ROD	1146	1684
ELD 45	HILTI K	, ₿ TZ2∢	\$S 0.625" :	(3.25")	515	577	HILTI KE	TZ2 S	S 0.625" x 4"	/ 0.625" SS ROD	1396	1619
ELD 60	HILTI K	BTZ2	\$S 0.625" >	§3.25" <	624	639	ністі кв	TZ2 S	\$ 0.625" x 4"	/ 0.625" SS ROD	1560	1755
ELD 90	HILTI K	\$ TZ2	\$S 0.625" :	¥3.25"<	667	499	ністі кр	TZ2 S	\$ 0.625" x 4"	/ 0.625" SS ROD	1762	1938
WTD 30	HILTI K	₿ TZ2)	\$\$ 0.625" <sup>!</sup>	<b>∢</b> 3.25" ⟨	421	602	HILTI KE	TZ2 S	\$ 0.625" x 4"	/ 0.625" SS ROD	1146	1684
WTD 45	HILTI K	BTZ2∢	\$S 0.625" :	∲3.25"<	515	577	ністі ке	TZ2 S	S 0.625" x 4"	/ 0.625" SS ROD	1396	1619
WTD 60	HILTI K	B TZ2	\$S 0.625" ;	₹3.25" {	624	639	HILTI KE	TZ2 S	S 0.625" x 4"	/ 0.625" SS ROD	1560	1755
WTD 90	HILTI K	BTZ2	\$S 0.625" :	3.25"	667	499	HILTI KE	TZ2 Ş	S 0.625" x 4"	/ 0.625" SS ROD	1762	1938

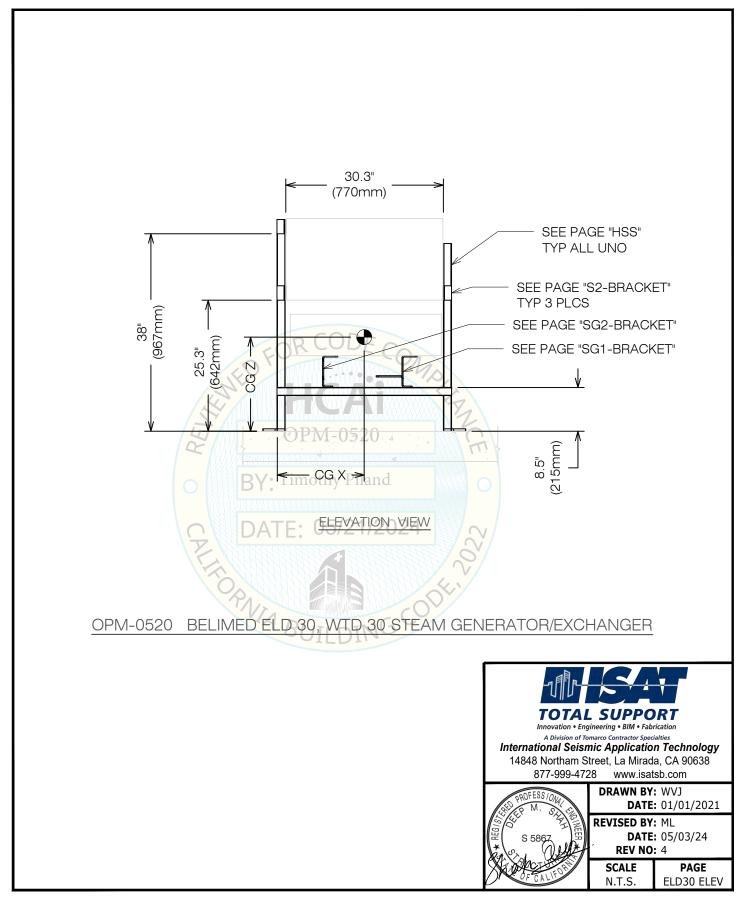
1. TU AND VU VALUES INCLUDE AN OVERSTRENGTH FACTOR OF 2.0 IN ACCORDANCE WITH ASCE 7-16

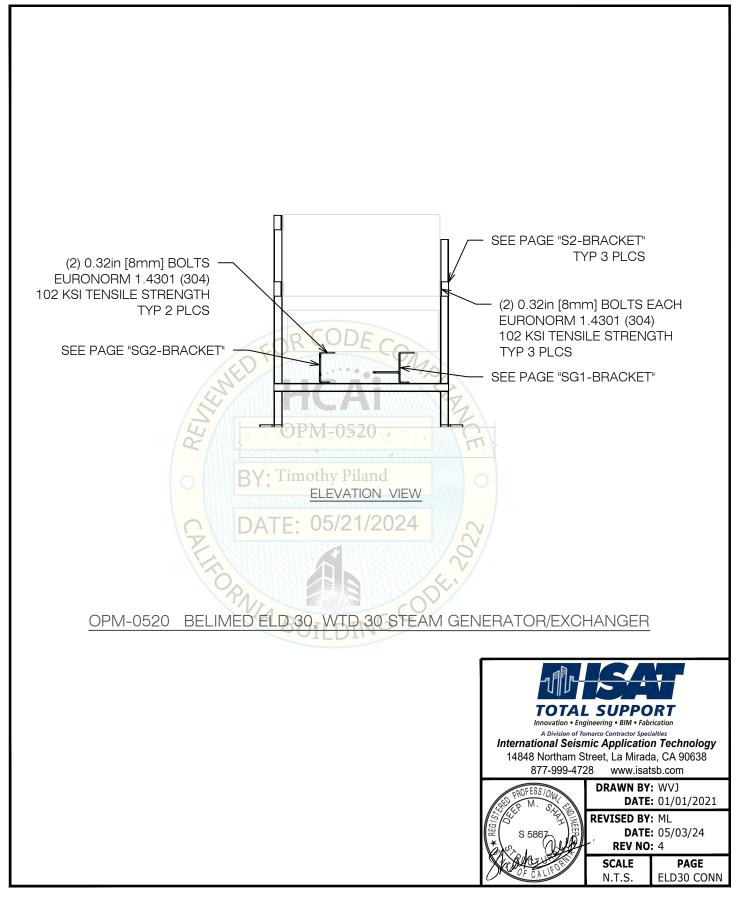
2. SEE NOTE 6 OR 8 ON PAGE "GEN NOTES". FOR ANCHORS AT ELEVATED SLAB ON METAL DECK, USE 0.625" SS ROD

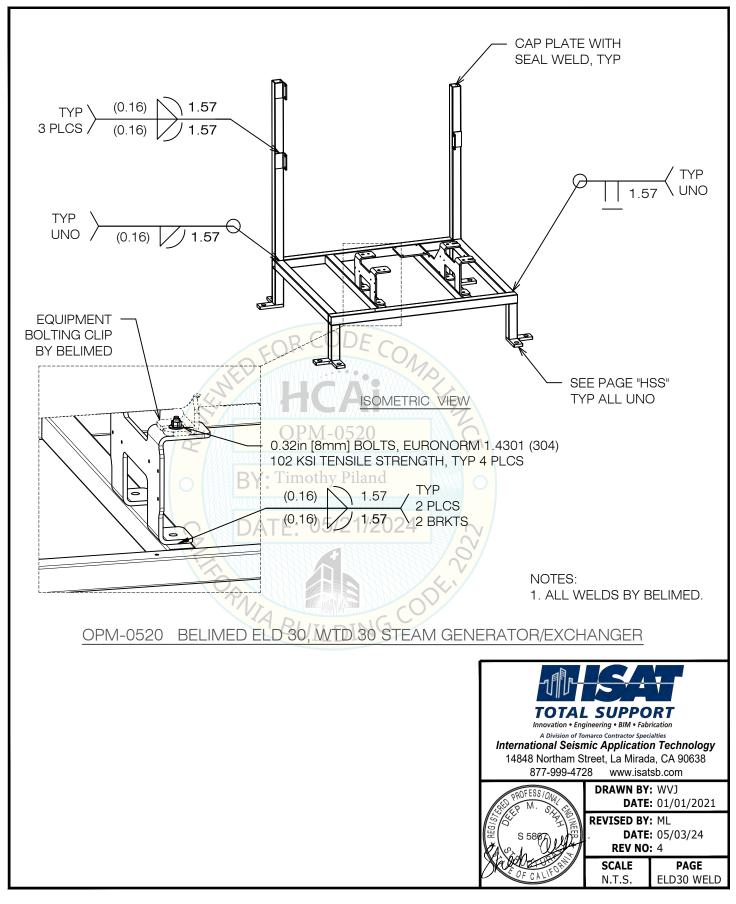
OPM-0520 BELIMED ELD AND WTD STEAM GENERATOR/EXCHANGER DIMENSIONS AND ANCHORAGE FORCES

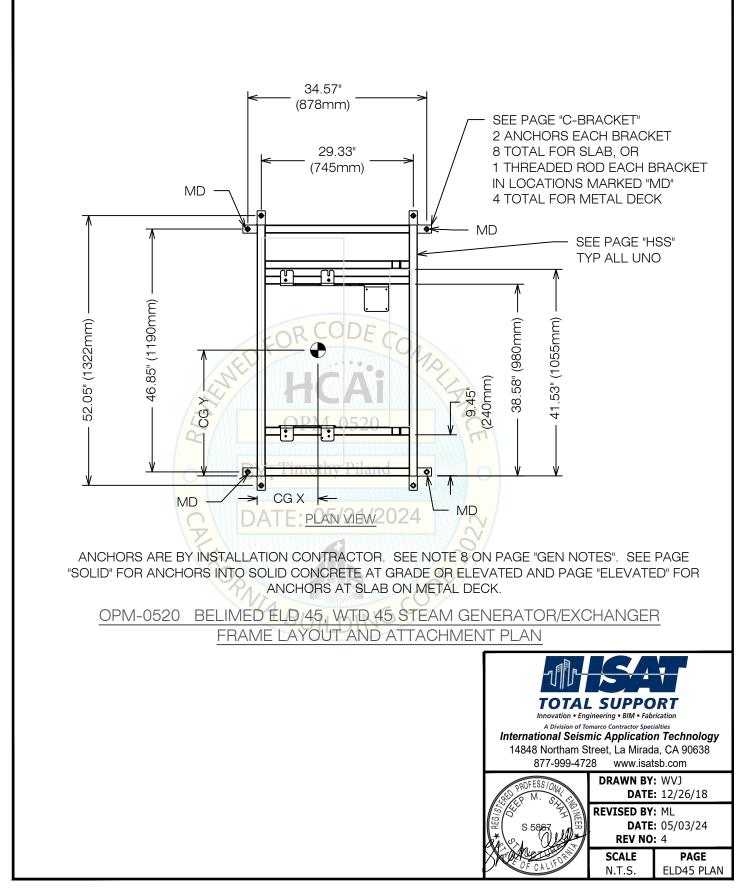


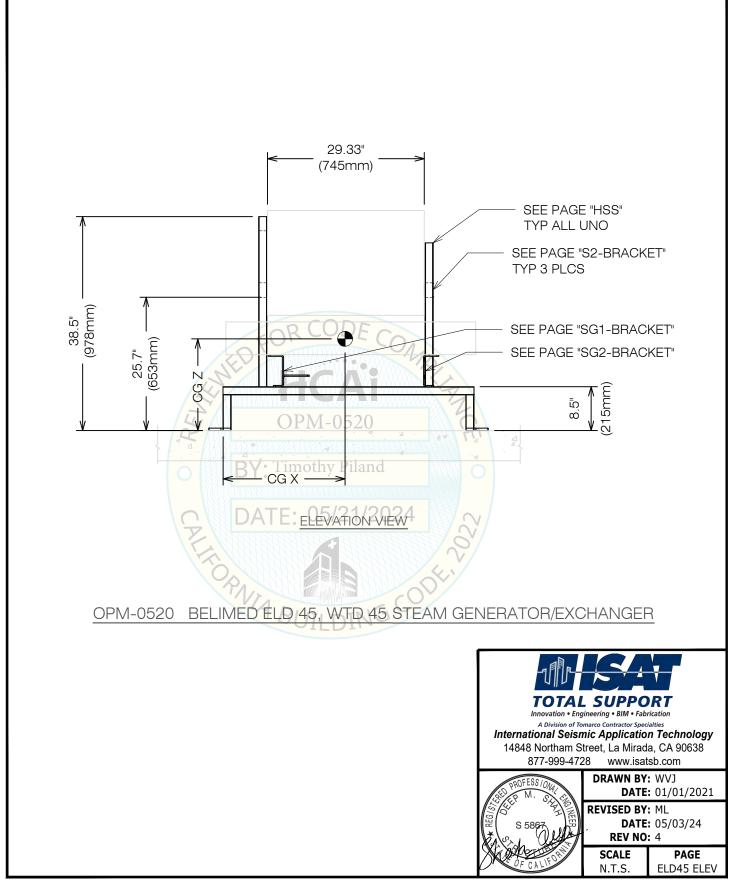


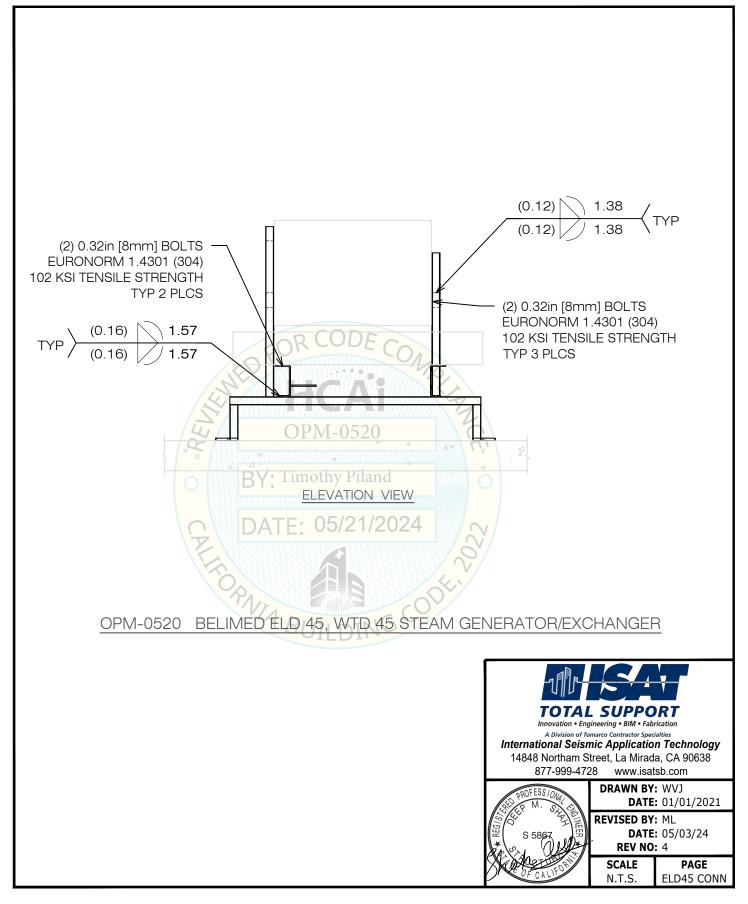


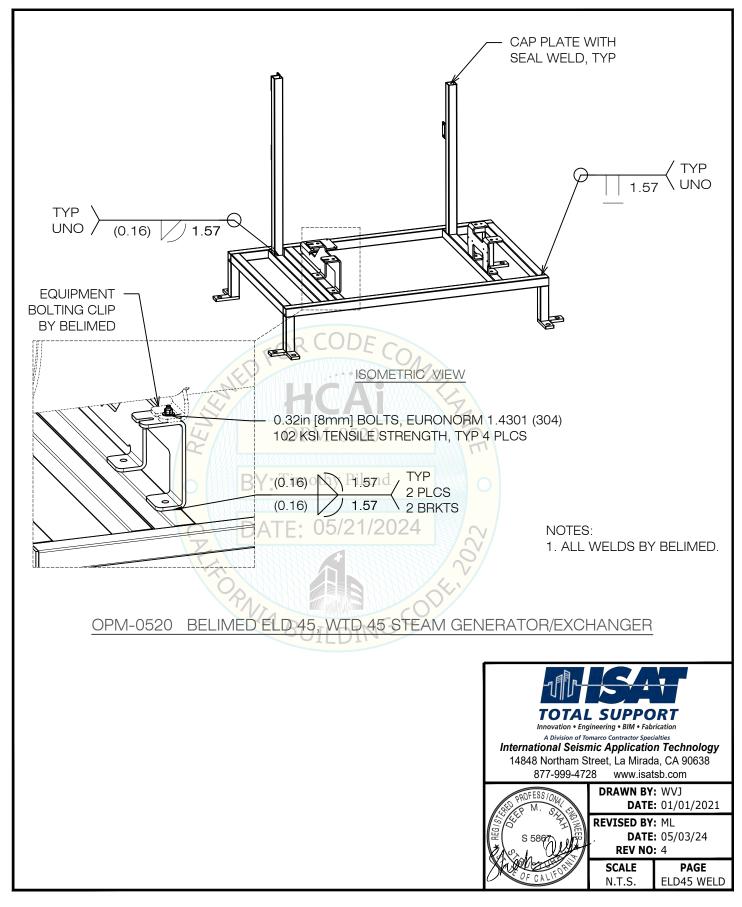


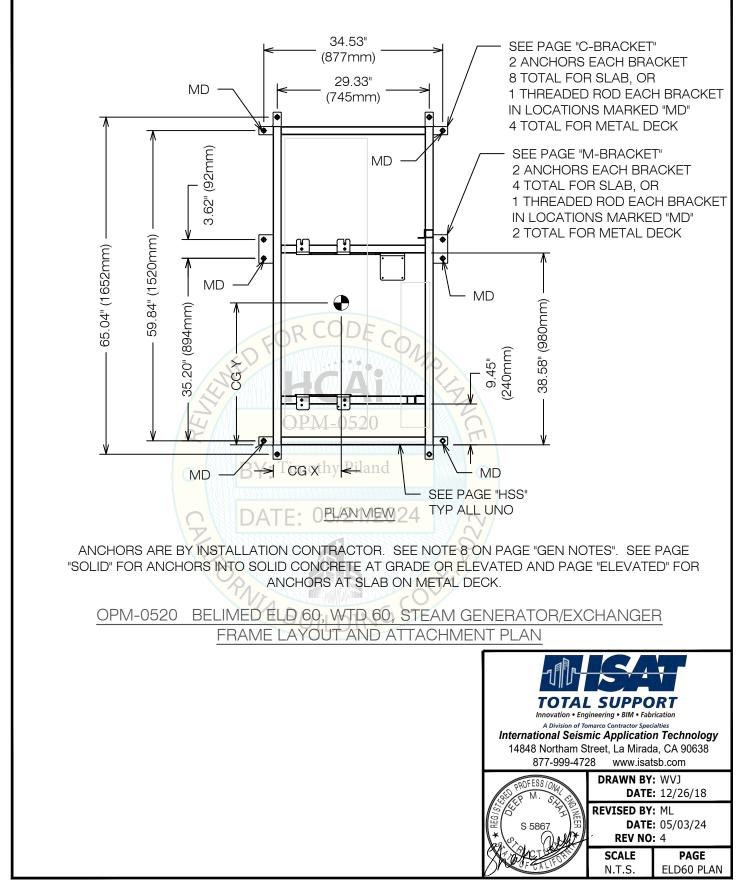


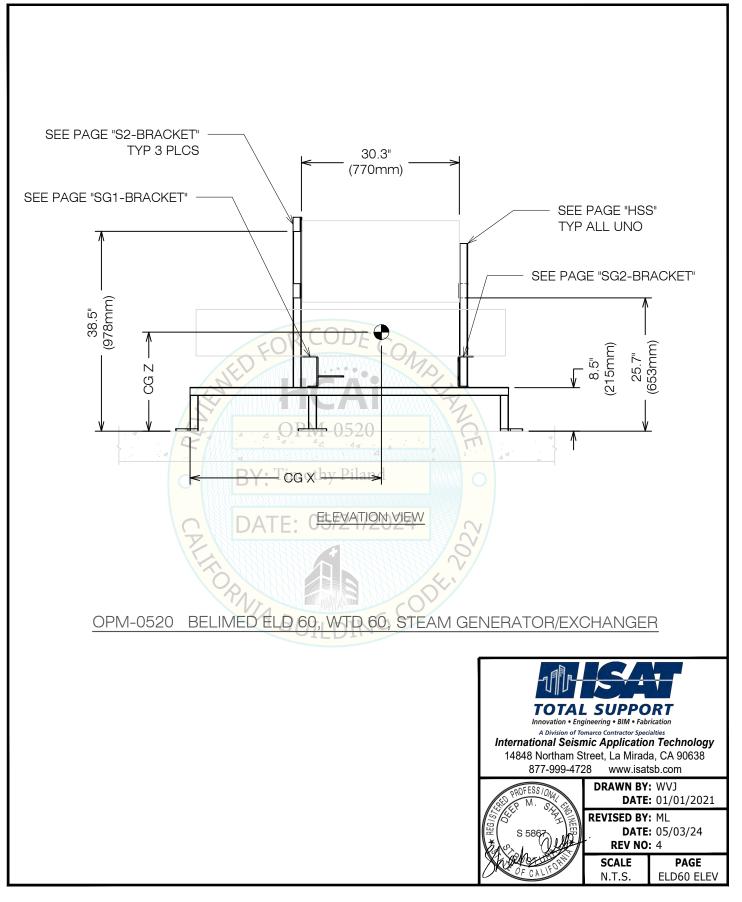


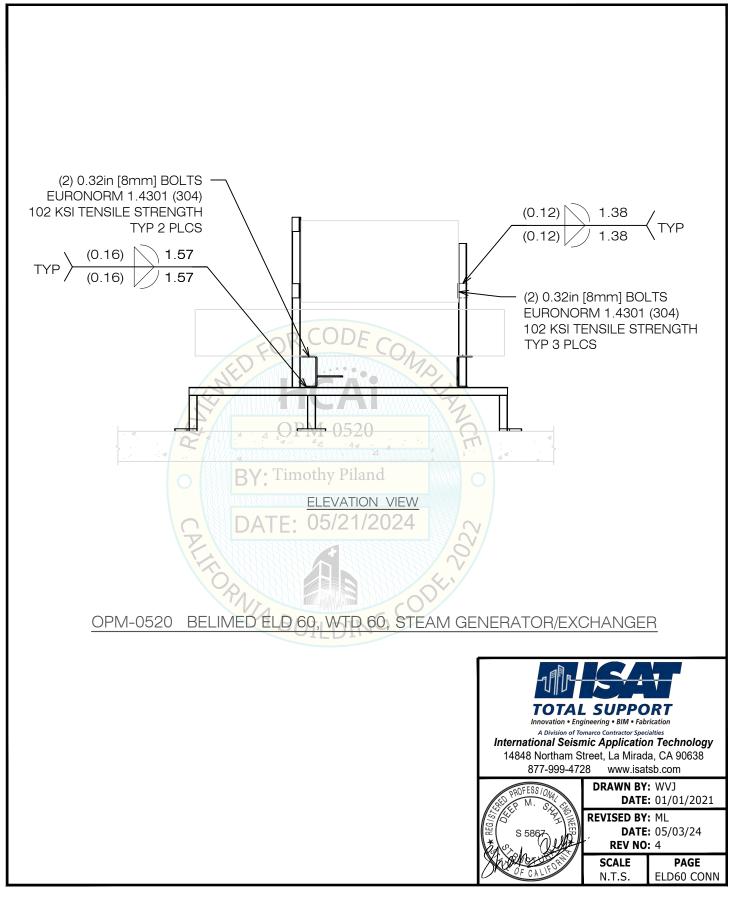


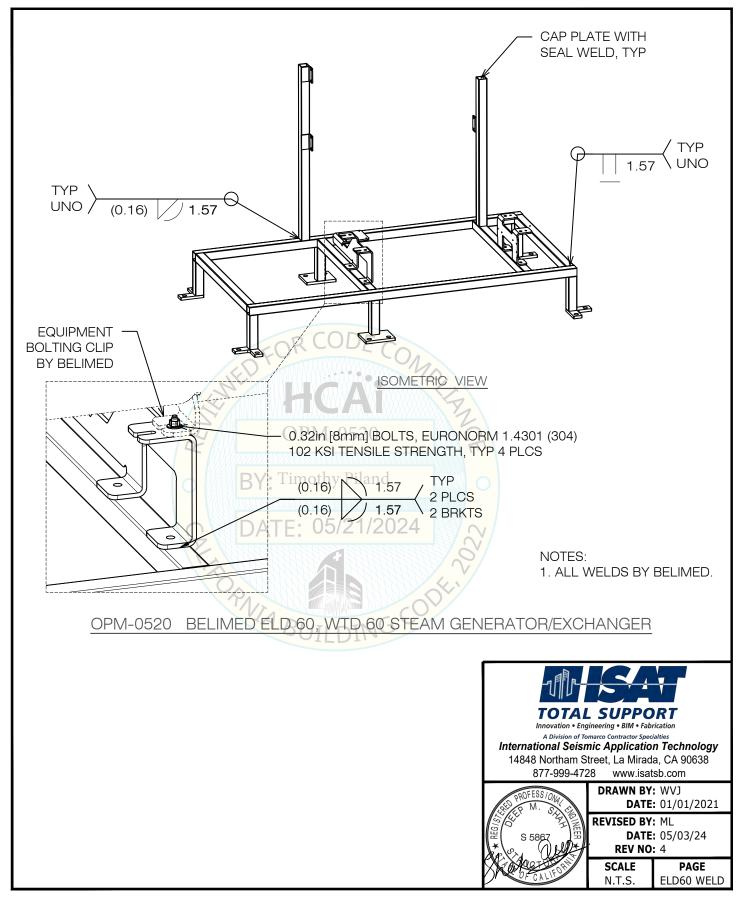


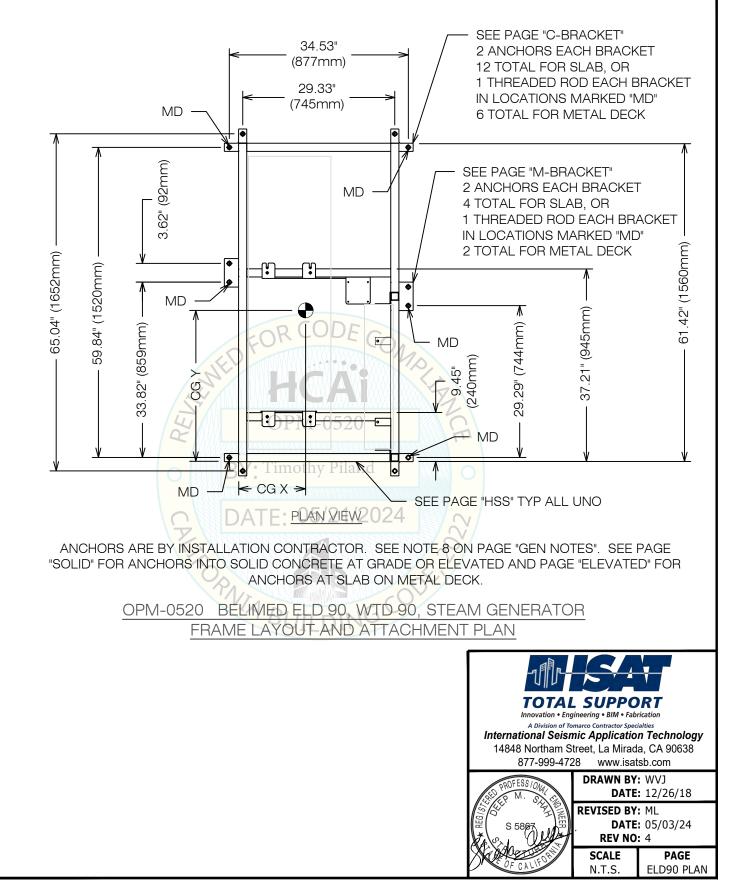


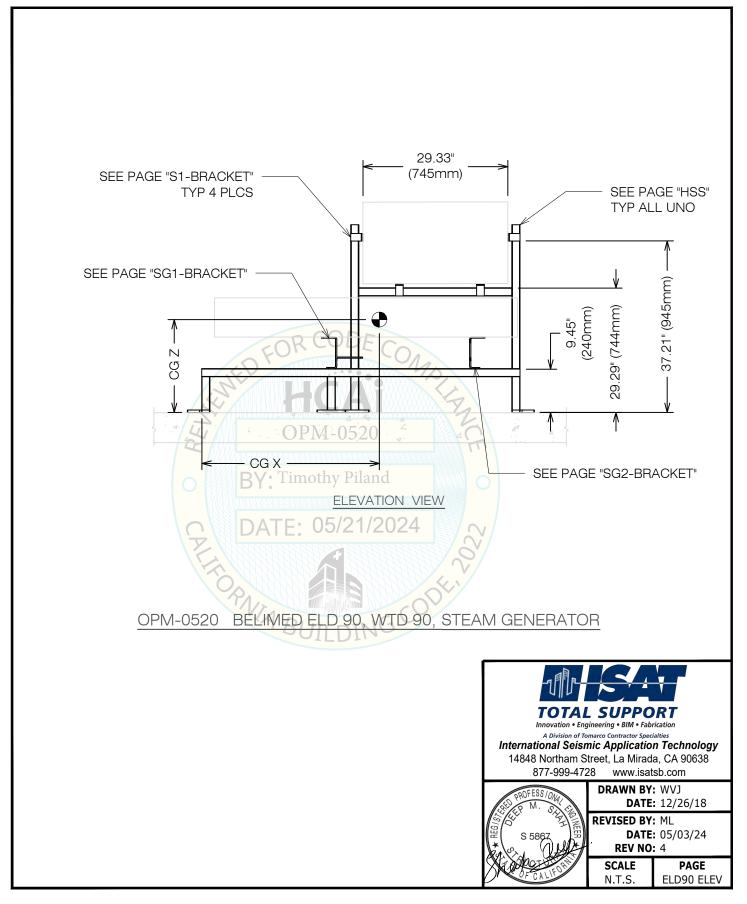


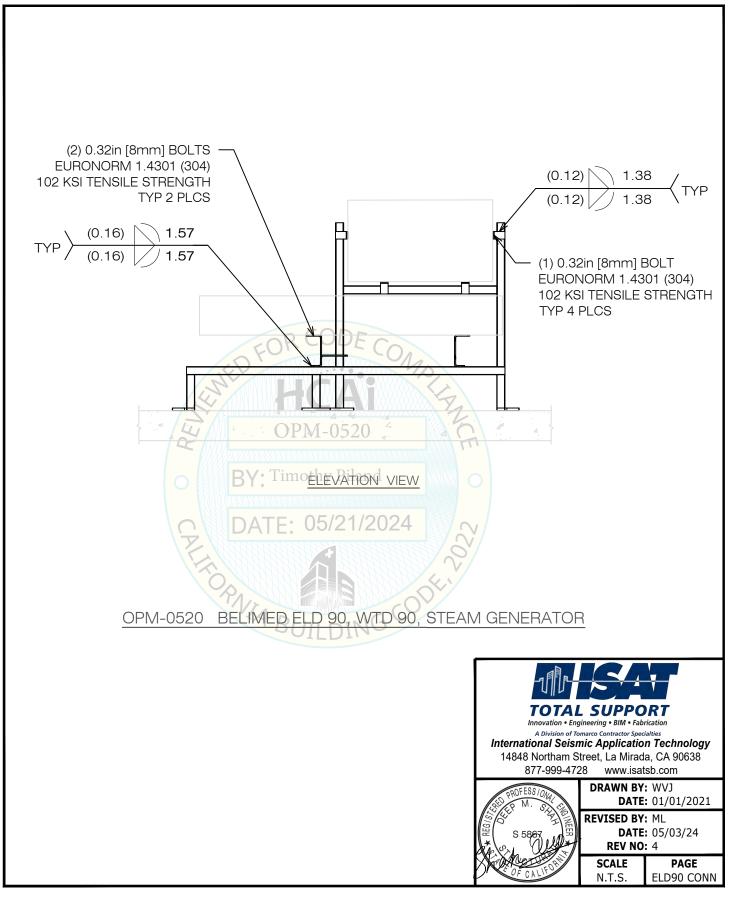


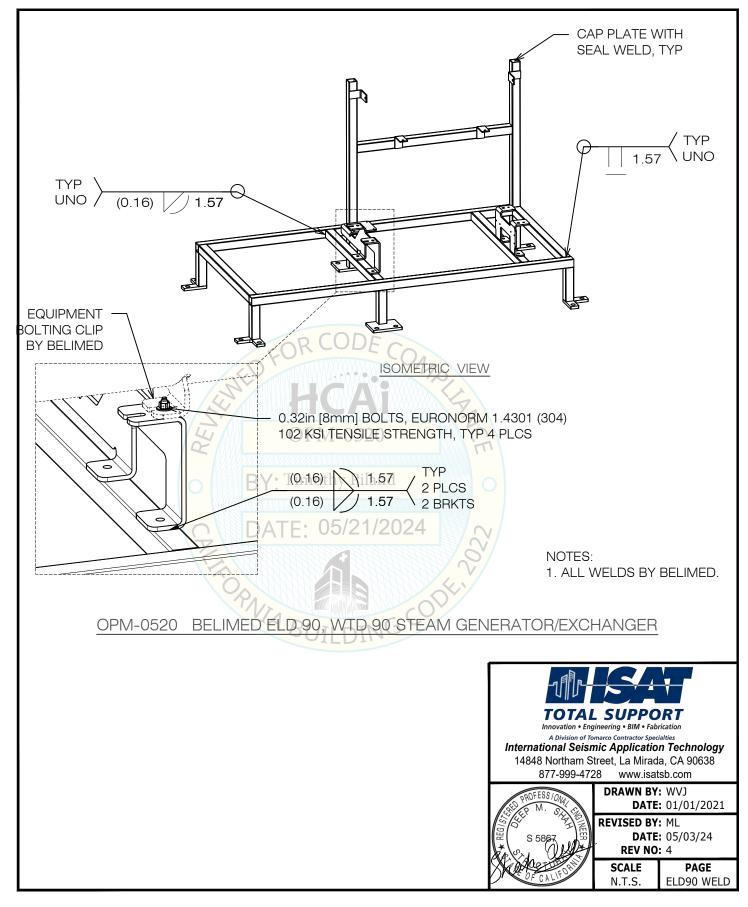


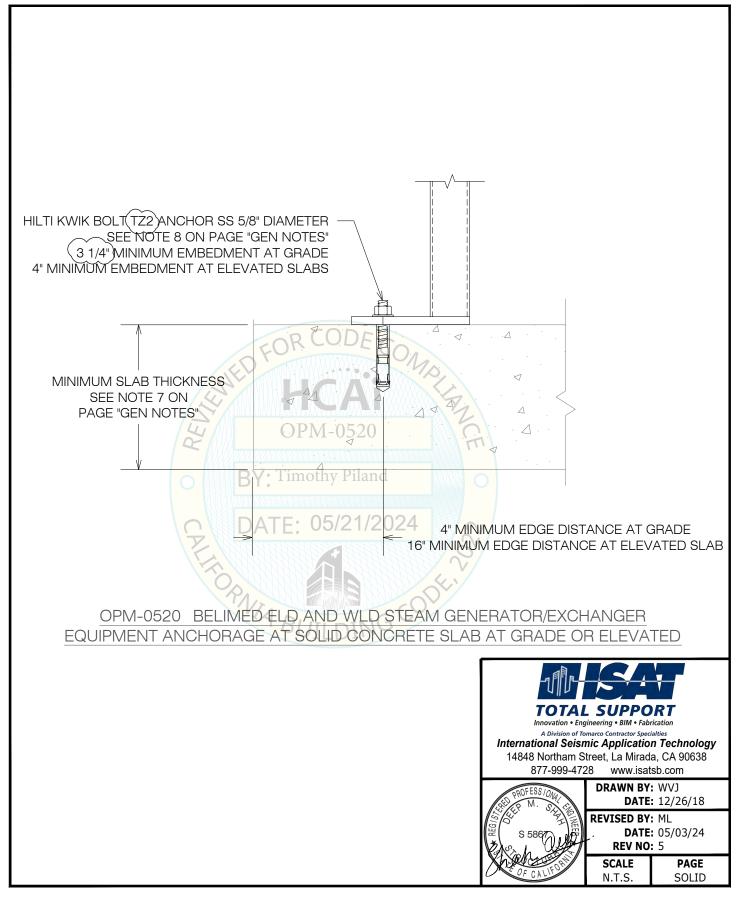


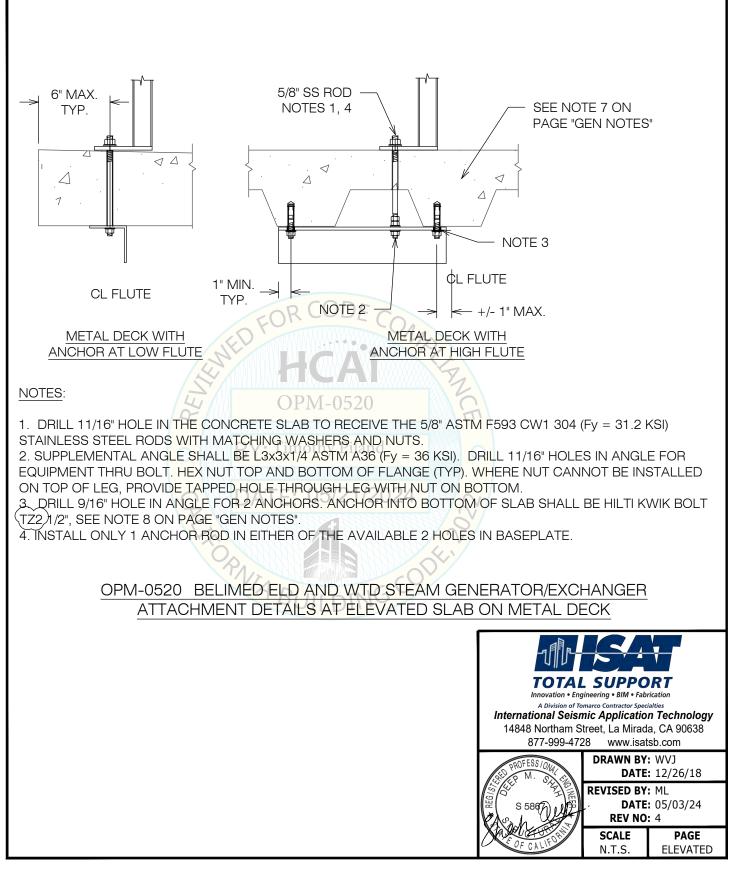


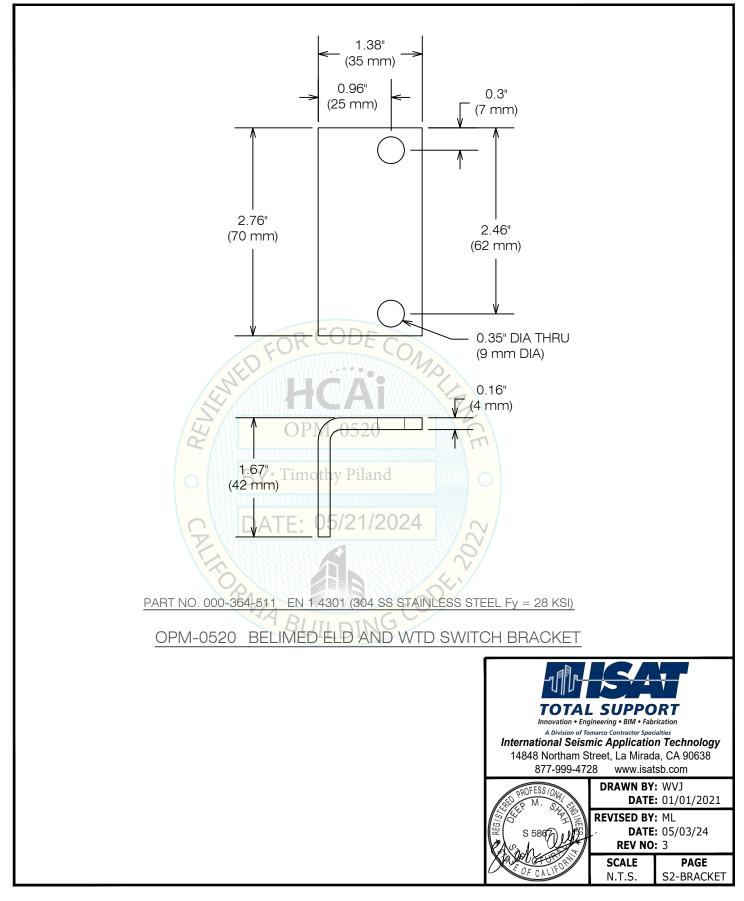


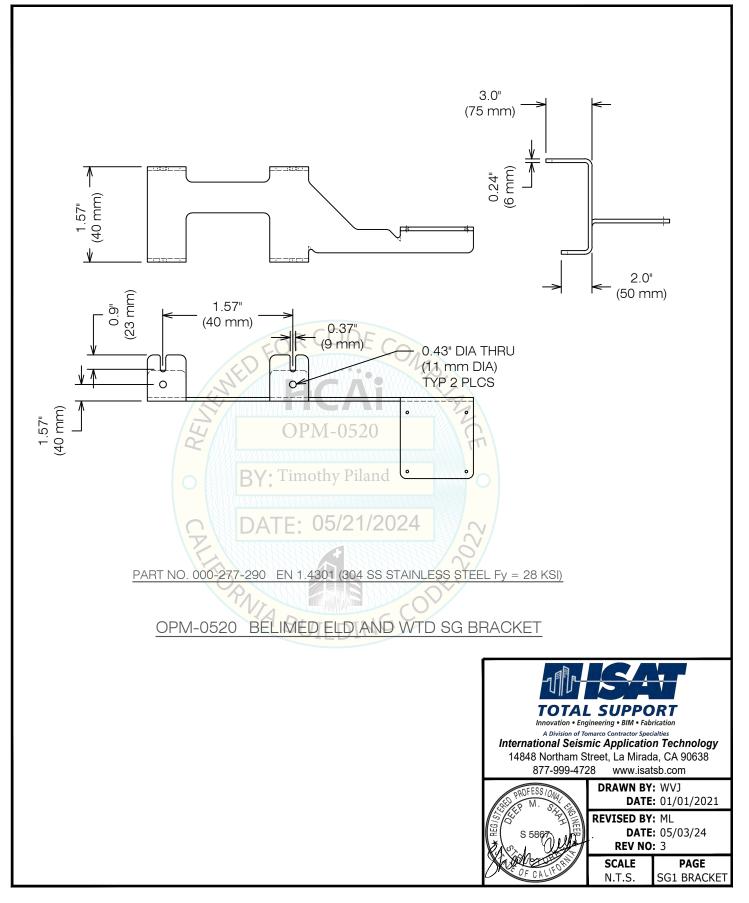


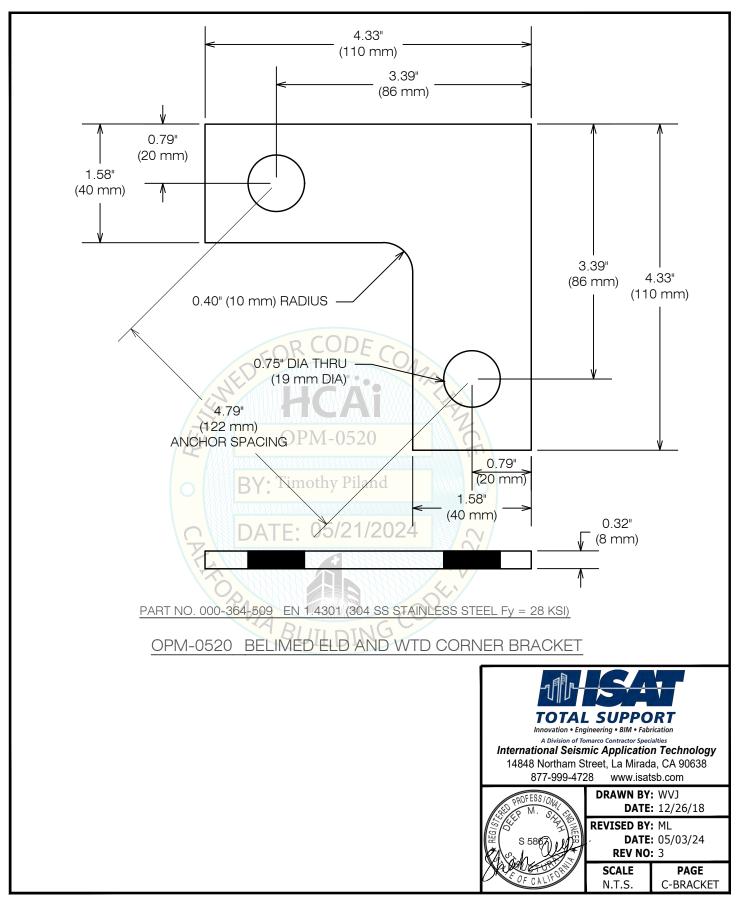




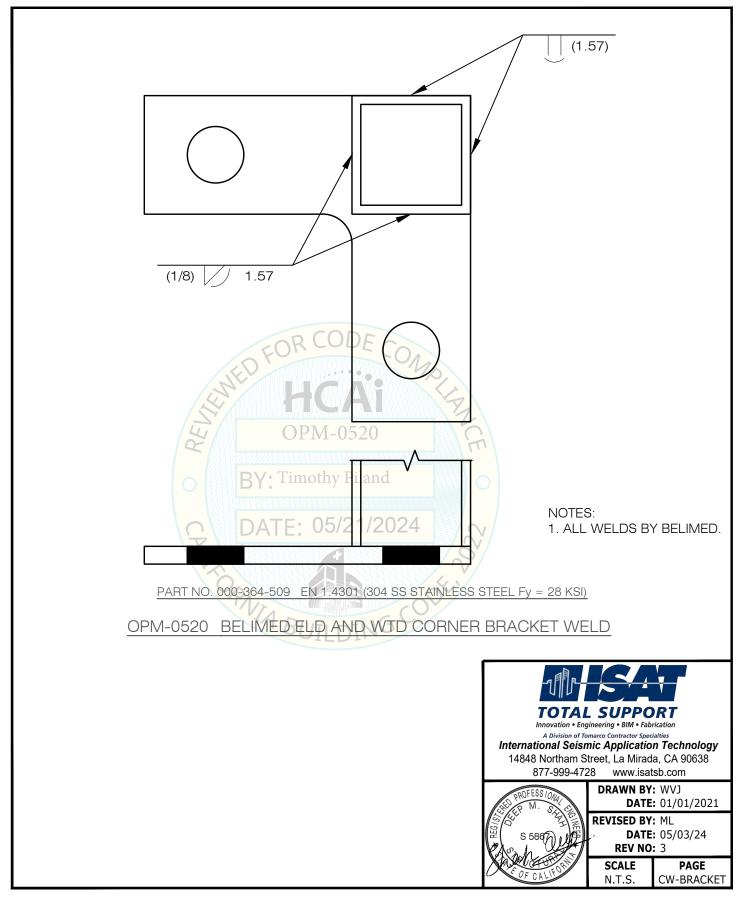


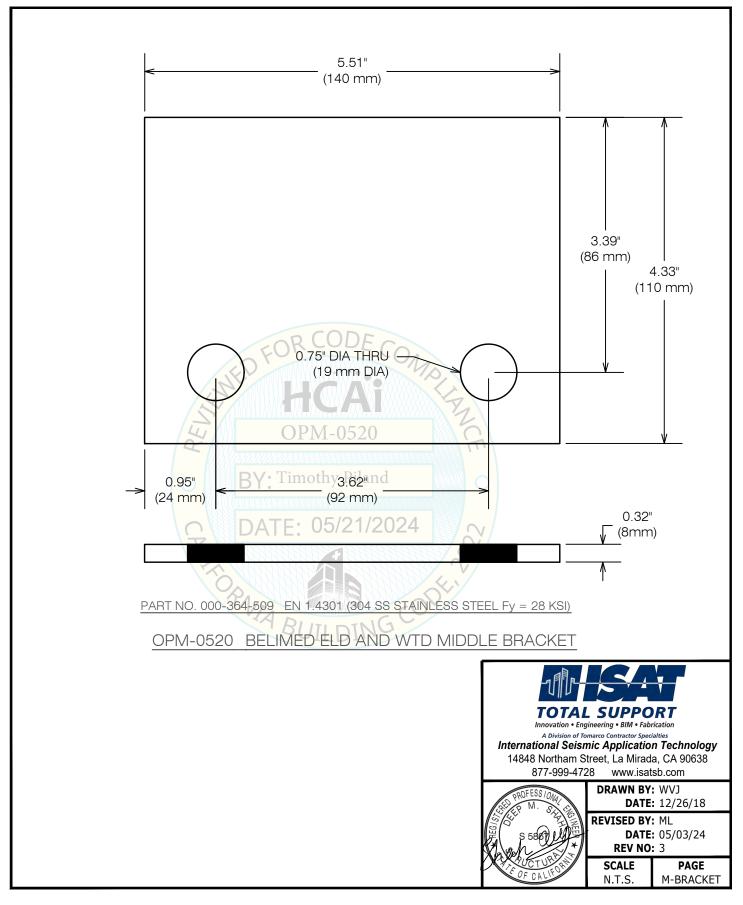


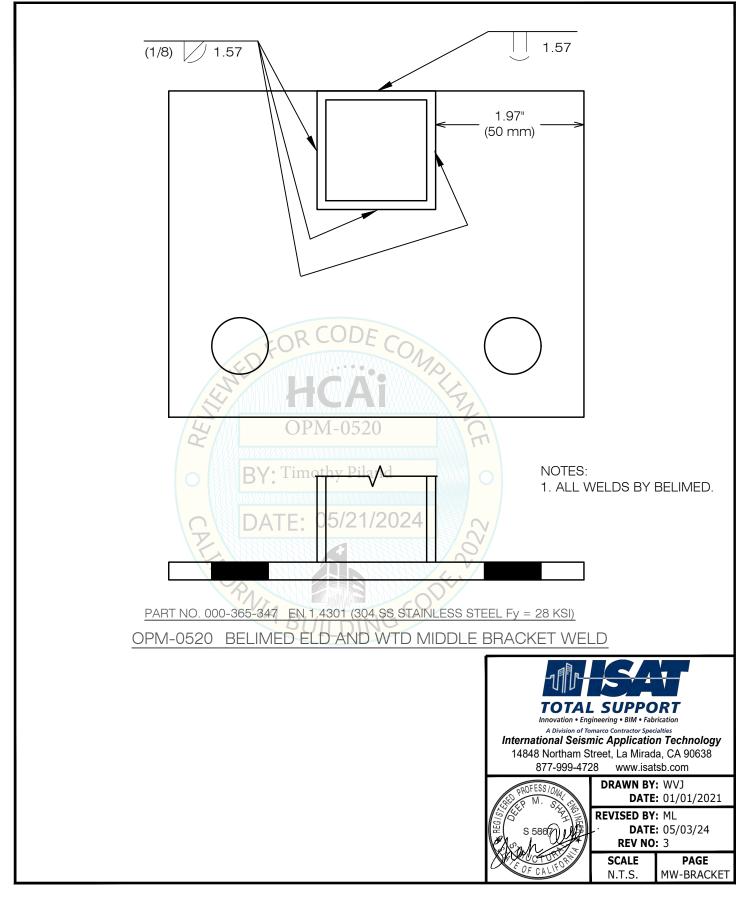


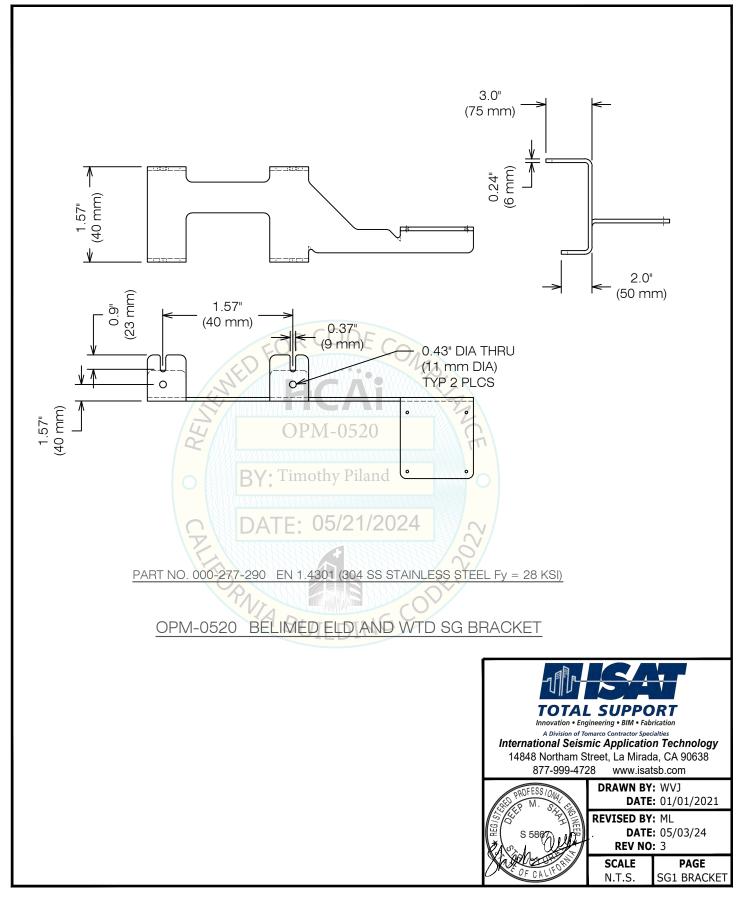


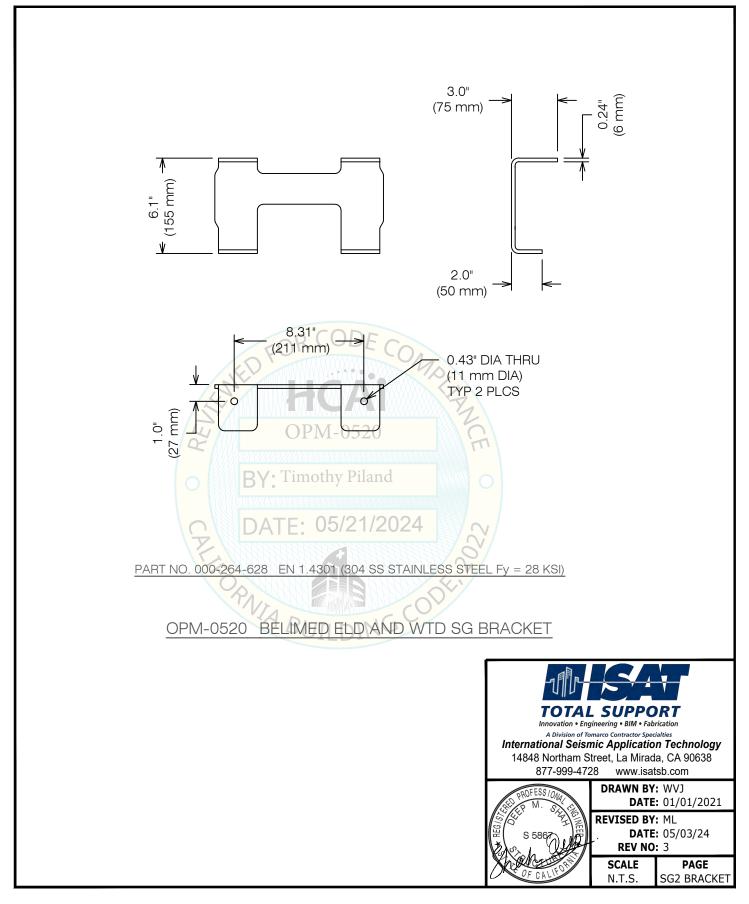
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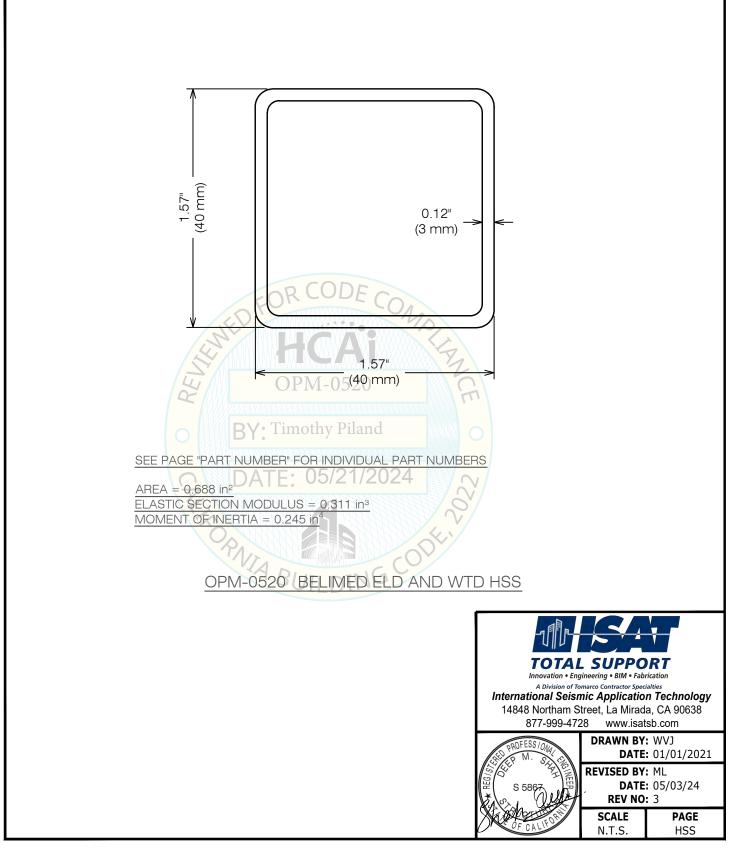












BELIMED ELD/WTD STEAM GENERATOR/STEAM EXCHANGER PART NUMBERS									
PART NO	DESCRIPTION	MATERIAL SPECIFICATION	YIELD STRENGTH	THICKNESS					
000-364-511	SWITCH BRACKET, 2 HOLE	EN 1.4301	28 KSI	0.16 in					
000-364-656	SWITCH BRACKET, 1 HOLE	EN 1.4301	28 KSI	0.16 in					
000-364-509	CORNER ANCHOR BRACKET	EN 1.4301	28 KSI	0.32 in					
000-365-347	MIDDLE ANCHOR BRACKET	EN 1.4301	28 KSI	0.32 in					
000-277-290	SG BRACKET 1	EN 1.4301	28 KSI	0.24 in					
000-264-628	SG BRACKET 2	EN 1.4301	28 KSI	0.24 in					
000-364-461	40x40x167	EN 1.4301	28 KSI	0.12 in					
000-364-462	40x40x1230	EN 1.4301	28 KSI	0.12 in					
000-364-460	40x40x705	EN 1.4301	28 KSI	0.12 in					
000-364-622	40x40x855	EN 1.4301	28 KSI	0.12 in					
000-364-641	40x40x1560	EN 1.4301	28 KSI	0.12 in					
000-364-652	40x40x750	EN 1.4301	28 KSI	0.12 in					
000-365-396	40x40x822.5	EN 1.4301	28 KSI	0.12 in					
000-365-411	40x40x833.5	EN 1.4301	28 KSI	0.12 in					

OPM-0520 BELIMED PART NUMBER SUMMARY

ITZUZ

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POPNIA BUILDING CODE

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