



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

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

OFFICE USE ONLY	
APPLICATION #:	OPM-0321-13

**OSHPD Preapproval of Manufacturer's Certification (OPM)**

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

**Manufacturer Information**

Manufacturer: Shimadzu Medical Systems USA

Manufacturer's Technical Representative: Jim Mekker

Mailing Address: 20101 S. Vermont Ave., Torrance, CA. 90502

Telephone: (216) 288-0709 Email: [mekker@shimadzu-usa.com](mailto:mekker@shimadzu-usa.com)

**Product Information**

Product Name: D150BC-40S Generator Cabinet

Product Type: Generator OPM-0321-13

Product Model Number: D150BC-40S BY: William Staehlin

General Description: Subcomponent of Socialvision G4 System DATE: 09/06/2016

**Applicant Information**

Applicant Company Name: EASE Co.

Contact Person: Jonathan Roberson, S.E.

Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA. 91709

Telephone: (909) 606-7622 Email: J.Roberson@EASECo.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: 3/2/16

Title: Principal Engineer Company Name: EASE Co.

"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: EASE Co.

Name: Jonathan Roberson, S.E. California License Number: S4197

Mailing Address: 5877 Pine Ave. Suite 210, Chino Hills, CA. 91709

Telephone: 909-606-7622 Email: J.Roberson@EASECo.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 1950-10
- Other\* (Please Specify): \_\_\_\_\_

\*Use of test 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: *William Staehlin* Date: 09-06-2016

Print Name: William Staehlin

Title: SSE

Condition of Approval (if applicable): \_\_\_\_\_

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





**EQUIPMENT ANCHORAGE  
& SEISMIC ENGINEERING**

5877 Pine Ave, Ste. 210  
Chino Hills, CA. 91709  
Phn: (909) 606-7622

Office of Statewide Health Planning and Development  
**PREAPPROVAL OF MANUFACTURER'S CERTIFICATION**  
**OPM-0321-13**

**THIS PREAPPROVAL CONFORMS TO THE 2013 CALIFORNIA BUILDING CODE**

MANUFACTURER: **SHIMADZU MEDICAL SYSTEMS**  
EQUIPMENT NAME: **D150BC-40S GENERATOR CABINET**

Sheet: 1 of 6  
Date: 8/24/16

**GENERAL NOTES**

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2013 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2013 CBC
2. THIS DOCUMENT MAY ONLY BE USED WITH THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER LISTED ABOVE FOR THE SPECIFIC PROJECT SITE AND INSTALLATION LOCATION. THIS DOCUMENT IS INVALID WITHOUT SUCH CONSENT.
3. THIS PREAPPROVAL CONFORMS TO THE 2013 CALIFORNIA BUILDING CODE WHERE  $S_{Ds}$  IS NOT GREATER THAN 1.75. SEE DETAIL FOR APPLICABILITY
4. FORCES PER ASCE 7-10 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3,  
WHERE  $S_{Ds} = 1.75$ ,  $a_p = 1.0$ ,  $I_p = 1.5$ ,  $R_p = 2.5$ ,  $z/h < 1$  AT CONCRETE SLAB & CONCRETE SLAB ON METAL DECK.  
SEE FOLLOWING SHEETS FOR  $\Omega_s$ .
5. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
6. ALL DESIGN FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.
7. CONCRETE SLAB ON METAL DECK DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION IN THE BUILDING. (i.e.  $z/h \leq 1$ )
8. CONCRETE SLAB ON GRADE DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION AT OR BELOW GRADE. (i.e.  $z/h \leq 0$ )
9. SHEET METAL SCREWS SHALL BE TEKS SCREWS BY ITW BUILDEX (ICC ESR-1976).
10. **RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING**
  - A. PROVIDE SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN ADDITION TO ALL OTHER LOADS.
  - B. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2013 CBC AND WITH THE DETAILS, MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PREAPPROVAL DOCUMENTS.
  - C. 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.
  - D. VERIFY THAT THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR AND THIS OPM.
  - E. VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS (SEE TYPICAL DETAIL ON SHEET 2).
  - F. VERIFY THAT ALL NEW OR EXISTING ANCHORS ARE AN ADEQUATE DISTANCE FROM THE UNIT ATTACHMENTS AND CHECK FOR INTERACTION WHERE OTHER ANCHORS ARE WITHIN 18" OR  $6h_{ef}$  FROM THIS UNIT'S ANCHORS.

OPM-0321-13  
BY: William Staehlin

DATE: 09/06/2016



### SHIMADZU MEDICAL SYSTEMS

DES. **J. ROBERSON**

SHEET

**2**

JOB NO. **11-1531**

OF **6**

SHEETS

### D150BC-40S GENERATOR CABINET

**11. EXPANSION ANCHORS:**

A. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICC REPORT.

Anchor Diameter	Concrete Type	Min. f'c (psi)	Anchor Type	ICC Report No.	Min. Embed.	Min. Spacing	Min. Edge Dist.	Min. Conc. Thickness	Torque Test	Direct Tension
1/2"	Normal Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	2"	3"	9"	4"	40 FT-LB	1204 lb

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 9" AWAY MINIMUM (i.e. - CORNER). SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

C. TESTING OF EXPANSION ANCHORS PER 2013 CBC, 1913A.7: TESTING SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO OSHPD

(i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST OR TORQUE TEST AT LEAST 50% OF THE ANCHORS.

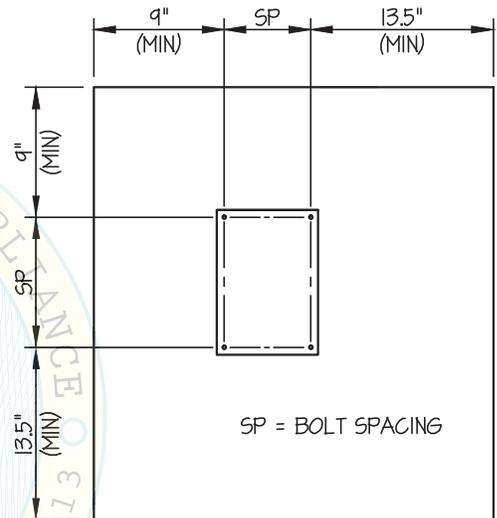
(ii) ACCEPTANCE CRITERIA:

- DIRECT TENSION TEST: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE TEST LOAD. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER BECOMES LOOSE.
- TORQUE TEST: THE APPLICABLE TORQUE MUST BE ACHIEVED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE : 1/2 TURN OF THE NUT

(iii) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.

D. AVOID DAMAGING EXISTING STEEL REINFORCING IN CONCRETE SLAB WHEN INSTALLING CONCRETE EXPANSION ANCHORS.

E. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT & WASHER.



TYPICAL CONCRETE EDGE DETAIL



### SHIMADZU MEDICAL SYSTEMS

### D150BC-40S GENERATOR CABINET

DES. J. ROBERSON

JOB NO. 11-1531

DATE 8/24/16

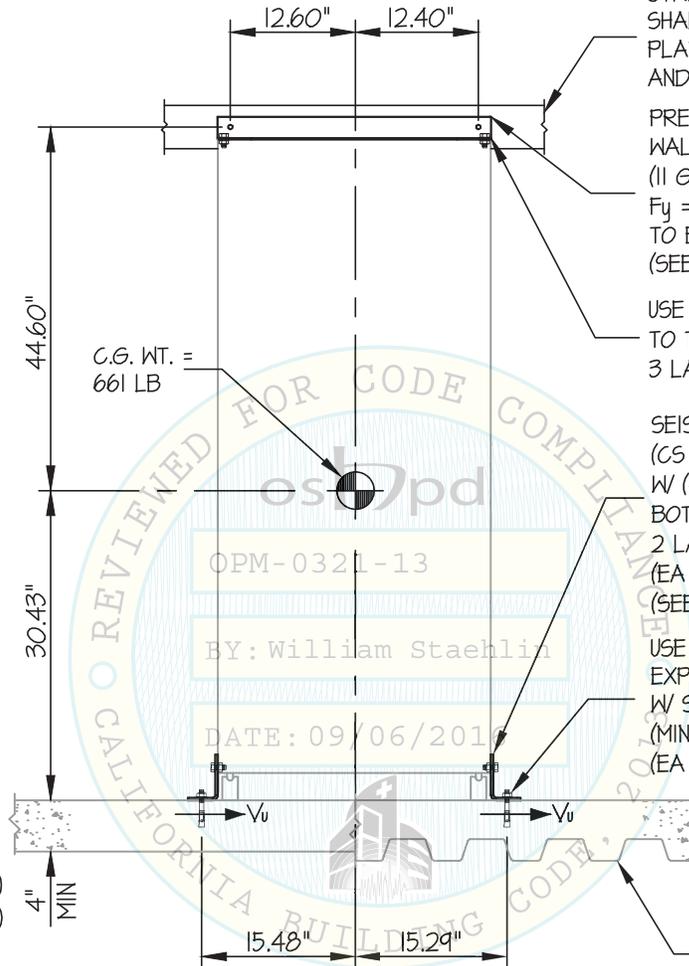
SHEET

3

OF 6 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB / CONCRETE SLAB ON METAL DECK



STRUCTURAL ENGINEER OF RECORD SHALL DESIGN THE BACKING PLATE (16 GA., 50 KSI MIN.) AND THE WALL STRUCTURE

PRE-MANUFACTURED WALL BRACKET (BY SHIMADZU) (11 GA, ASTM A1008 LOW CRS, Fy = 20 KSI) W/ 2- 1/4"Φ TEK SCREWS TO BACKING PLATE (SEE WALL BRACKET DETAIL "A")

USE (2)- M12 (GR 5 MIN) BOLT TO TOP UNIT FRAME (0.21" THK TOTAL, 3 LAYERS CRS Fy=23 KSI)

SEISMIC BRACKET (BY SHIMADZU) (CS HRS 0.25 ASTM A36) W/ (4) - 1/4"Φ TEK SCREWS TO BOTTOM UNIT FRAME (0.153" THK TOTAL, 2 LAYERS CR STEEL Fy=23 KSI) (EA BRACKET 4 PLACES, 8 TOTAL) (SEE SEISMIC BRACKET DETAIL "B")

USE 2- 1/2" HILTI KB-TZ EXPANSION ANCHORS W/ STANDARD WASHER (MIN. EMBED. (h<sub>ef</sub>) = 2") (EA BRACKET 2 PLACES, 4 TOTAL)

AT CONCRETE SLAB NORMAL WEIGHT CONCRETE (f'c = 3000 PSI MIN) AT OR BELOW GRADE LEVEL OR AT CONCRETE SLAB ON METAL DECK N.W. OR SAND L.W. (f'c = 3000 PSI MIN)

T<sub>U WALL</sub> = 216 LB/SCREW (MAX)  
 V<sub>U WALL</sub> = 169 LB/SCREW (MAX)  
 V<sub>U FLOOR</sub> = 435 LB/BOLT (MAX)  
 (V<sub>U FLOOR</sub> INCLUDES Ω)

FRONT ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10.

STRENGTH DESIGN IS USED. (S<sub>Ds</sub> = 1.75, α<sub>p</sub> = 1.0, I<sub>p</sub> = 1.5, R<sub>p</sub> = 2.5, Ω<sub>o</sub> = 2.5, z/h ≤ 1)

HORIZONTAL FORCE (E<sub>h</sub>) = 1.26 W<sub>p</sub>

HORIZONTAL FORCE (E<sub>mh</sub>) = 3.15 W<sub>p</sub> (FOR CONCRETE ANCHORAGE)

VERTICAL FORCE (E<sub>v</sub>) = 0.35 W<sub>p</sub>

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.

4. SEE GENERAL NOTES: SHEET 1 AND 2



### SHIMADZU MEDICAL SYSTEMS

### D150BC-40S GENERATOR CABINET

DES. J. ROBERSON

JOB NO. 11-1531

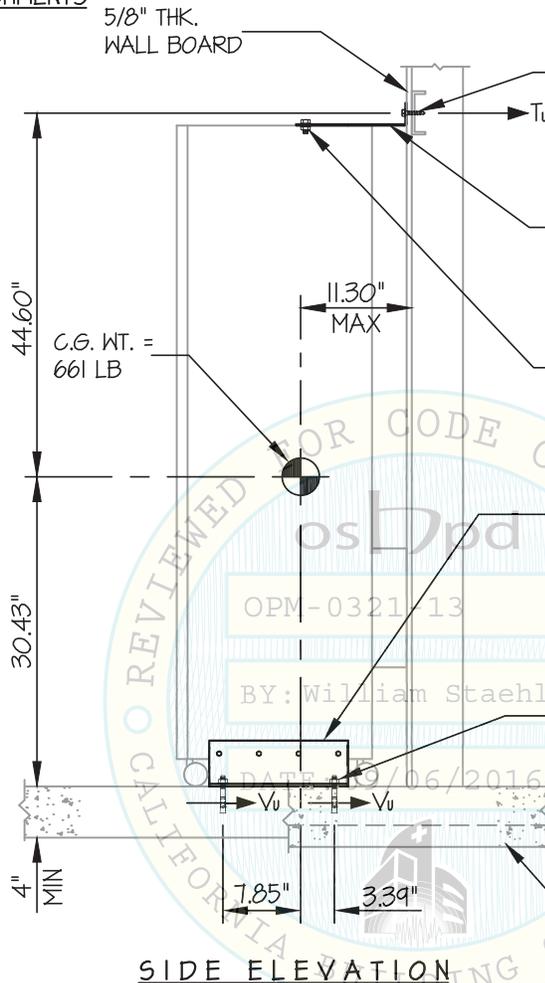
DATE 8/24/16

SHEET

4

OF 6 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS



CONCRETE SLAB / CONCRETE SLAB ON METAL DECK

STRUCTURAL ENGINEER OF RECORD SHALL DESIGN THE BACKING PLATE (16 GA., 50 KSI MIN.) AND THE WALL STRUCTURE

PRE-MANUFACTURED WALL BRACKET (BY SHIMADZU) (11 GA, ASTM A1008 LOW CRS, Fy = 20 KSI) W/ 2- 1/4"Φ TEK SCREWS TO BACKING PLATE (SEE WALL BRACKET DETAIL "A")

USE (2)- M12 (GR 5 MIN) BOLT TO TOP UNIT FRAME (0.217" THK TOTAL, 3 LAYERS CRS Fy=23 KSI)

SEISMIC BRACKET (BY SHIMADZU) (CS HRS 0.25 ASTM A36) W/ (4)- 1/4"Φ TEK SCREWS TO BOTTOM UNIT FRAME (0.153" THK TOTAL, 2 LAYERS CR STEEL Fy=23 KSI) (EA BRACKET 4 PLACES, 8 TOTAL) (SEE SEISMIC BRACKET DETAIL "B")

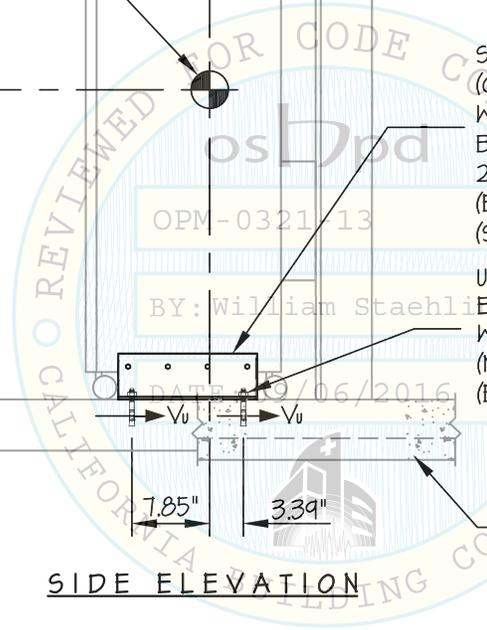
USE 2- 1/2" HILTI KB-TZ EXPANSION ANCHORS W/ STANDARD WASHER (MIN. EMBED. (h<sub>dev</sub>) = 2") (EA BRACKET 2 PLACES, 4 TOTAL)

AT CONCRETE SLAB NORMAL WEIGHT CONCRETE (f'c = 3000 PSI MIN)

AT OR BELOW GRADE LEVEL OR

AT CONCRETE SLAB ON METAL DECK N.W. OR SAND L.W. (f'c = 3000 PSI MIN)

SIDE ELEVATION



### SHIMADZU MEDICAL SYSTEMS

DES. J. ROBERSON

SHEET

# 5

JOB NO. 11-1531

OF

# 6

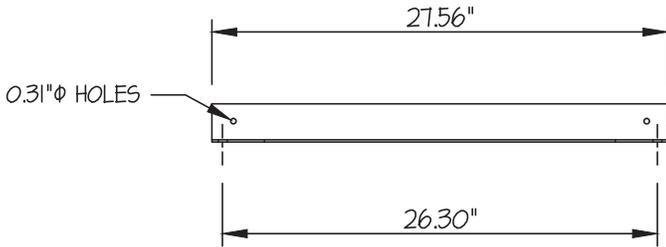
 SHEETS

## D150BC-40S GENERATOR CABINET

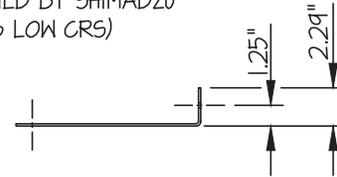
DATE 8/24/16

### SEISMIC SUPPORTS & ATTACHMENTS

### BRACKET DETAIL

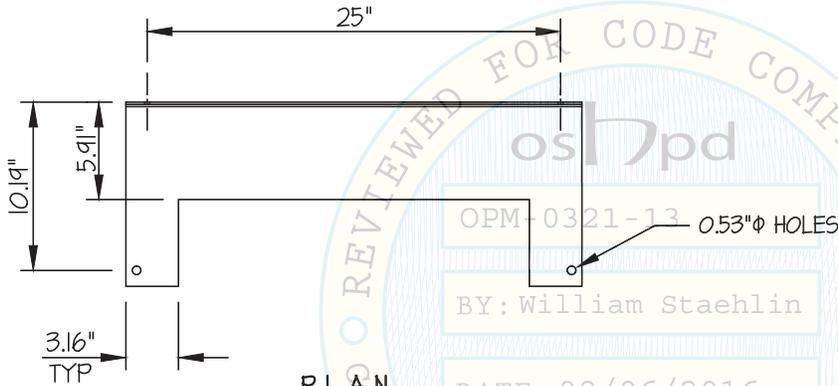


BRACKET SUPPLIED BY SHIMADZU  
(11 GA, ASTM A36 LOW CRS)



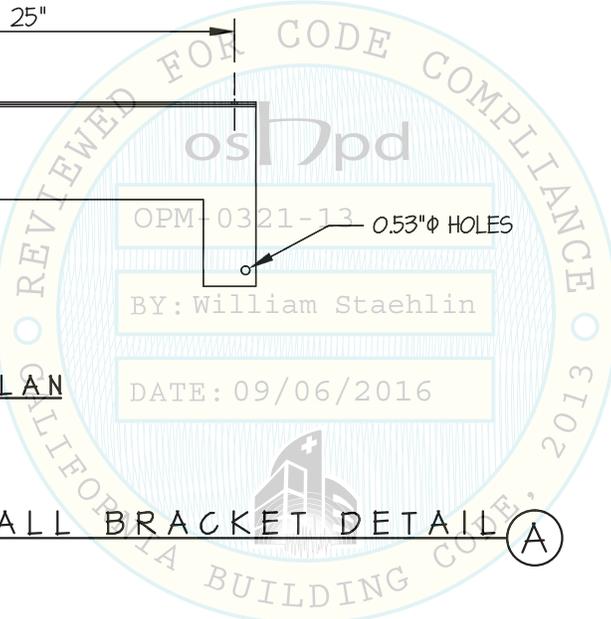
ELEVATION

SIDE



PLAN

### WALL BRACKET DETAIL (A)



## SHIMADZU MEDICAL SYSTEMS

DES. **J. ROBERSON**

SHEET

**6**

## D150BC-40S GENERATOR CABINET

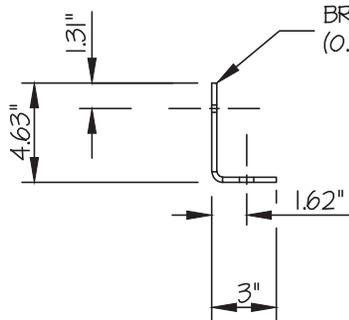
JOB NO. **11-1531**

DATE **8/24/16**

OF **6** SHEETS

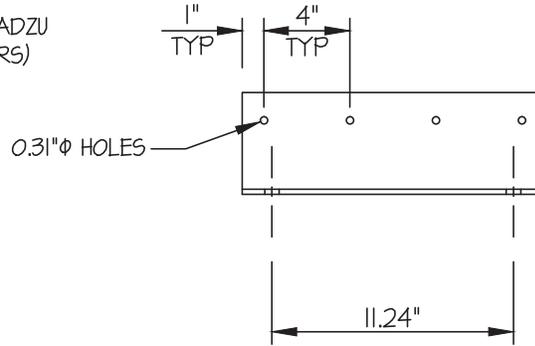
SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAIL

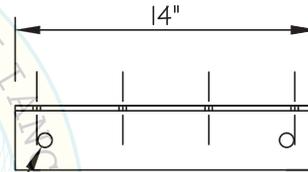
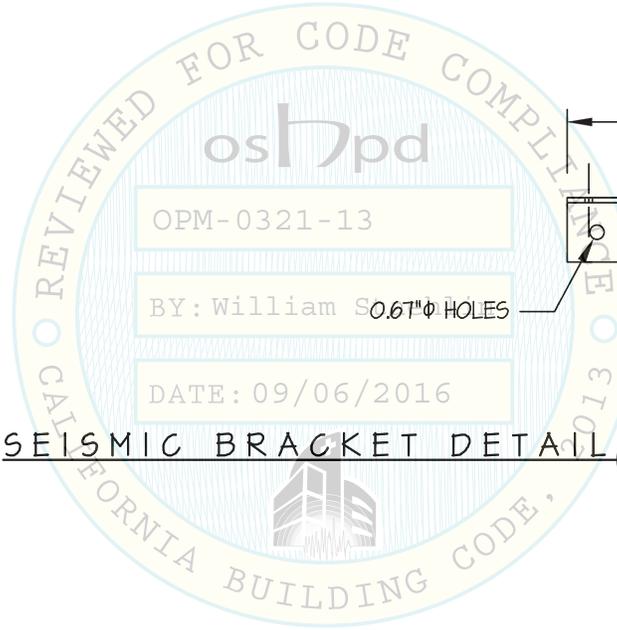


SIDE

BRACKET SUPPLIED BY SHIMADZU  
(0.25" THK ASTM A36 LOW CRS)



ELEVATION



PLAN

SEISMIC BRACKET DETAIL (B)

