



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OPM-0243

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: New Renewal/Update

Manufacturer Information

Manufacturer: Belimed

Manufacturer's Technical Representative: Jay Upchurch

Mailing Address: 8351 Palmetto Commerce Parkway, Suite101, Ladson, SC 29456

Telephone: (843) 216-7424

Email: jay.upchurch@belimed.us

Product Information

Product Name: WD230/WD250 WASHERS

OPM-0243

Product Type: Other Mechanical & Electrical Components

Product Model Number: WD230, WD230E, WD250, WD250E

General Description: Sterilization of Mechanical Instruments

Applicant Information

Applicant Company Name: EASE LLC.

Contact Person: Tiffany Tonn

Mailing Address: 1515 FAIRVIEW AVE, STE 205, MISSOULA, MT 59801

Telephone: (406) 541-3273

Email: tiffany@easeco.com

Title: Office Manager

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STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION**

Registered Design Professional Preparing Engineering Recommendations

Company Name: EASE LLC
Name: Jonathan Roberson California License Number: S4197
Mailing Address: 5877 Pine Ave., Suite 210, Chino Hills, CA 91709
Telephone: (951) 295-1892 Email: jon@EASECo.com

HCAI Special Seismic Certification Preapproval (OSP)

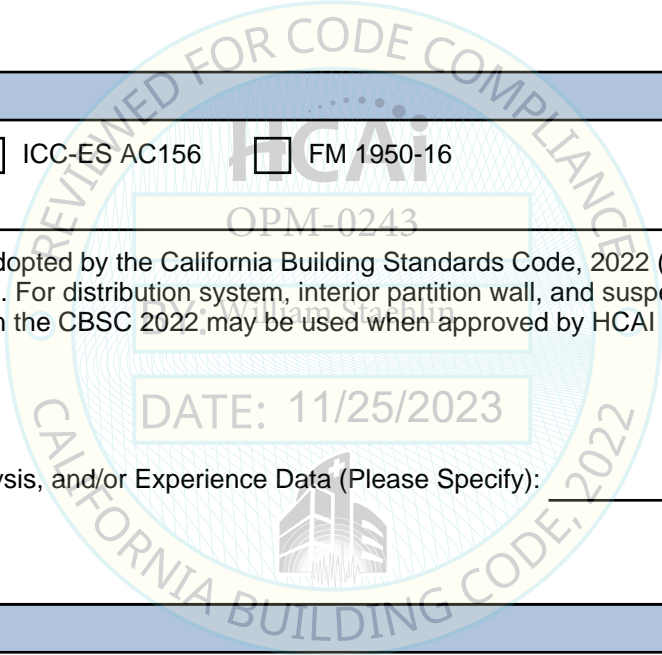
Special Seismic Certification is preapproved under OSP OSP Number: _____

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, 2022 (CBSC 2022) 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 2022 may be used when approved by HCAI prior to testing.

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



HCAI Approval

Date: 11/25/2023
Name: William Staehlin Title: Senior Structural Engineer
Condition of Approval (if applicable): _____

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**EQUIPMENT ANCHORAGE
& SEISMIC ENGINEERING**

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

The Department of Health Care Access and Information
PREAPPROVAL OF MANUFACTURER'S CERTIFICATION
OPM-0243

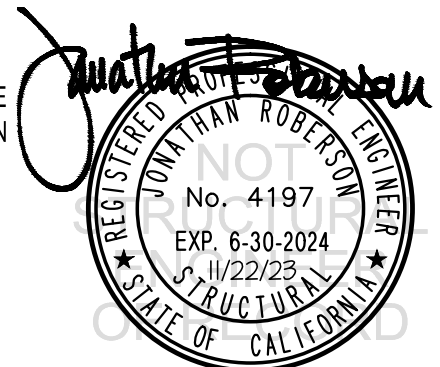
THIS PREAPPROVAL CONFORMS TO THE 2022 CALIFORNIA BUILDING CODE

MANUFACTURER: **BELIMED, INC.**
EQUIPMENT NAME: **WD230/WD250 WASHERS**

Sheet: 1 of 8
Date: 11/22/23

GENERAL NOTES

1. THIS HCAI PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2022 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2022 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 2022 CALIFORNIA BUILDING CODE WHERE S_{Ds} IS NOT GREATER THAN 2.30.
4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE $S_{Ds} = 2.30$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $z/h = 0$ AT CONCRETE SLAB & $z/h \leq 1$ AT CONCRETE SLAB ON METAL DECK. SEE FOLLOWING SHEETS FOR Ω_e .
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 DETAIL VALID FOR DEMANDS SHOWN AT OR BELOW GRADE. (i.e. $z/h = 0$)
9. **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 2022 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 REPORT. 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.



BELIMED, INC.

WD230/WD250 WASHERS

DES. **J. ROBERSON**

JOB NO. **11-2313**

DATE **11/22/23**

SHEET

2

OF **8** SHEETS

10. 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 Test
3/8"	Sand Light Weight	3000	Hilti Kwik Bolt TZ2 (CARBON STEEL)	ESR-4266	2"	6.75"	12"	See Detail "A"	30 FT-LB	N/A
1/2"	Normal Weight	3000	Hilti Kwik Bolt TZ2 (STAINLESS STEEL)	ESR-4266	2.5"	3"	24"	5"	40 FT-LB	1938 lb

- B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 24" AWAY MINIMUM (i.e. - CORNER). SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

- C. TESTING AND SPECIAL INSPECTION OF EXPANSION ANCHORS SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY EMPLOYED BY THE FACILITY OWNER PER CBC 1704A & 1910A.5 AND CAC 7-149. ALL REPORTS SHALL BE SENT TO THE INSPECTOR OF RECORD, OWNER AND THE ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE.

- (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

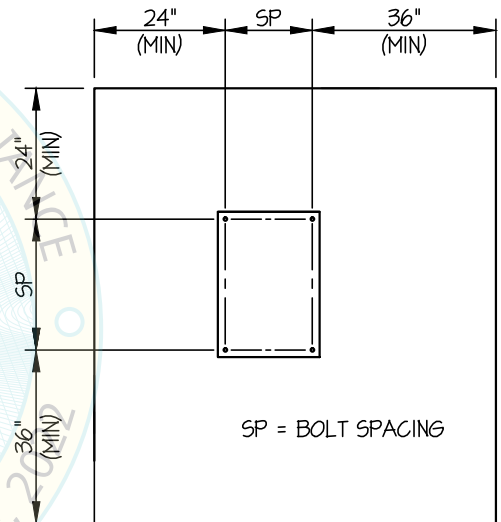
- (iii) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.

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

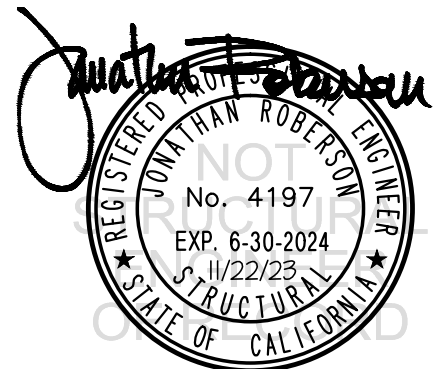
- E. PROVIDE FOR FULL THREAD ENGAGEMENT OF NUT & WASHER.

11. BOLTS THROUGH CONCRETE ON METAL DECK

- A. BOLTS SHALL BE TORQUED BY 3/4 TURN OF THE NUTS AFTER THE SNUG TIGHT (THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT) CONDITION IS ACHIEVED, UNLESS OTHERWISE NOTED.
- B. THROUGH BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16) FOR CONCRETE.
- C. THROUGH-BOLTS IN CONCRETE SHALL RECEIVE SPECIAL INSPECTION AND TESTING (THROUGH BOLTS WITH STEEL TO STEEL CONNECTION IN TENSION DO NOT REQUIRE TENSION TESTING) IN ACCORDANCE WITH REQUIREMENTS FOR POST-INSTALLED ANCHORS.



TYPICAL CONCRETE EDGE DETAIL (SLAB ON GRADE ONLY)



BELIMED, INC.

DES. **J. ROBERSON**

SHEET

3

JOB NO. **11-2313**

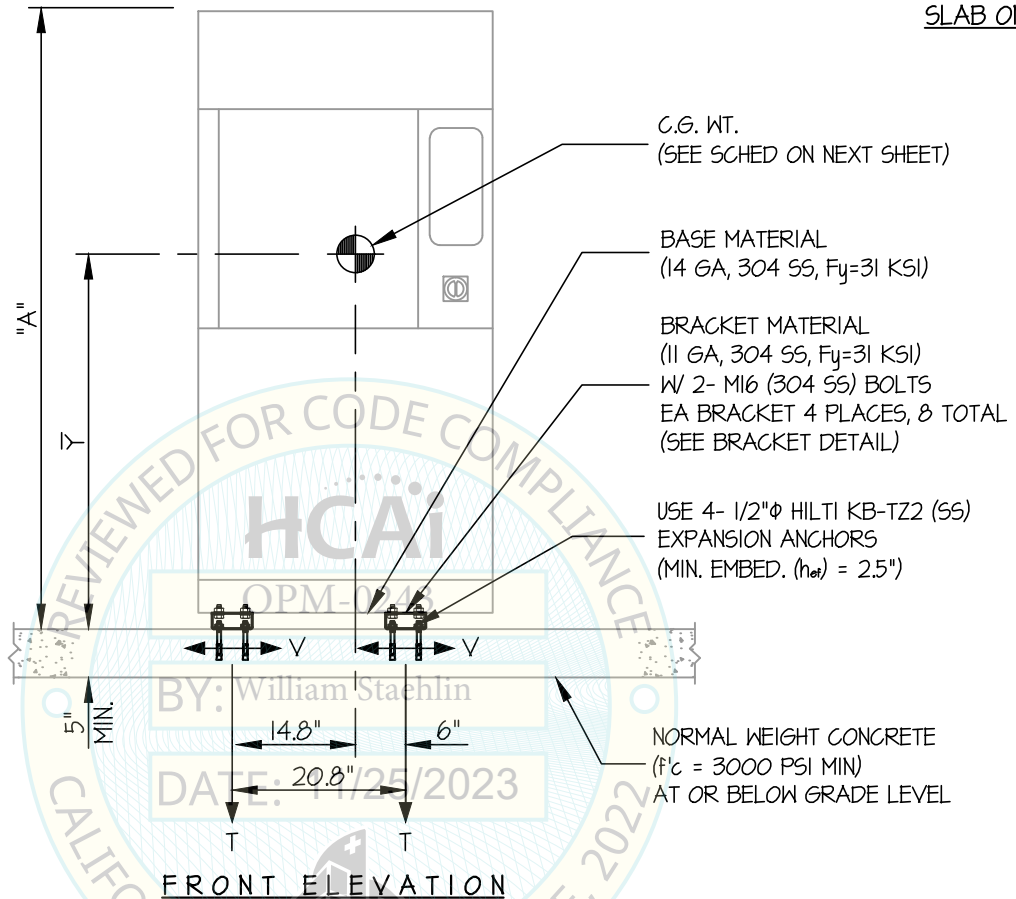
WD230/WD250 WASHERS

DATE **11/22/23**

OF **8** SHEETS

SEISMIC ANCHORAGE

SLAB ON GRADE



NOTES:

- FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED. (EXAMPLE: S_{ds} = 2.30, α_p = 10, I_p = 15, R_p = 15, Ω_o = 2.0, z/h = 0)

HORIZONTAL FORCE (E _h)	=	1.035 W _p
HORIZONTAL FORCE (E _{mh})	=	2.07 W _p (FOR CONCRETE ANCHORAGE)
VERTICAL FORCE (E _v)	=	0.46 W _p
- THIS CALCULATION ENCOMPASSES WEIGHTS AND VERTICAL C.G. POSITIONS NOT EXCEEDING VALUES SHOWN.
- THIS CALCULATION WAS PREPARED WITHOUT KNOWLEDGE OF ANY SITE CONDITION. COMPATIBILITY FOR USE WITH A SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD OF THE INSTALLATION (SEOR). USE REQUIRES APPROVAL BY THE SEOR.
- STRUCTURAL ENGINEER OF RECORD FOR THE INSTALLATION SHALL VERIFY ALL CONDITIONS, EVALUATE INTERACTION WITH ADJACENT EQUIPMENT AND ANCHORS, AND PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
- SEE GENERAL NOTES: SHEETS 1 AND 2



BELIMED, INC.

DES. **J. ROBERSON**

SHEET

4

WD230/WD250 WASHERS

JOB NO. **11-2313**

DATE **11/22/23**

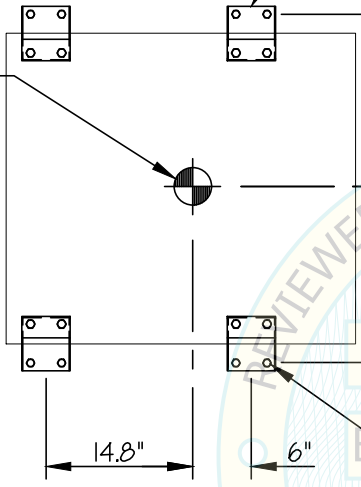
OF **8** SHEETS

SEISMIC ANCHORAGE

SLAB ON GRADE

BRACKET MATERIAL
(11 GA, 304 SS, $F_y=31$ KSI)
W/ 2- M16 (304 SS) BOLTS
EA BRACKET 4 PLACES, 8 TOTAL
(SEE BRACKET DETAIL)

C.G. WT.
(SEE SCHED)
(\bar{Y} = SEE SCHED)



USE 2- 1/2" ϕ HILTI KB-TZ2 (SS)
EXPANSION ANCHORS
(MIN. EMBED. (h_{ef}) = 2.5")
(EA BRACKET 4 PLACES, 8 TOTAL)

MODELS	WEIGHT (lb)	\bar{Y} (in)	"A" (in)	** T_u (lb)	** V_u (lb)
WD230	700	40.4	74.5	831	313
WD230E	800	44.3	89.2	1047	357
WD250	800	40.4	74.5	949	357
* WD250E	900	44.3	89.2	1178	402

* THIS MODEL REPRESENTED IN CALCULATION BELOW

** VALUES INCLUDE Ω_o

PLAN AT BASE

DATE: 11/25/2023

Jonathan Roberson
REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2024
11/22/23
STRUCTURAL
STATE OF CALIFORNIA

BELIMED, INC.

DES. **J. ROBERSON**

SHEET

5

JOB NO. **11-2313**

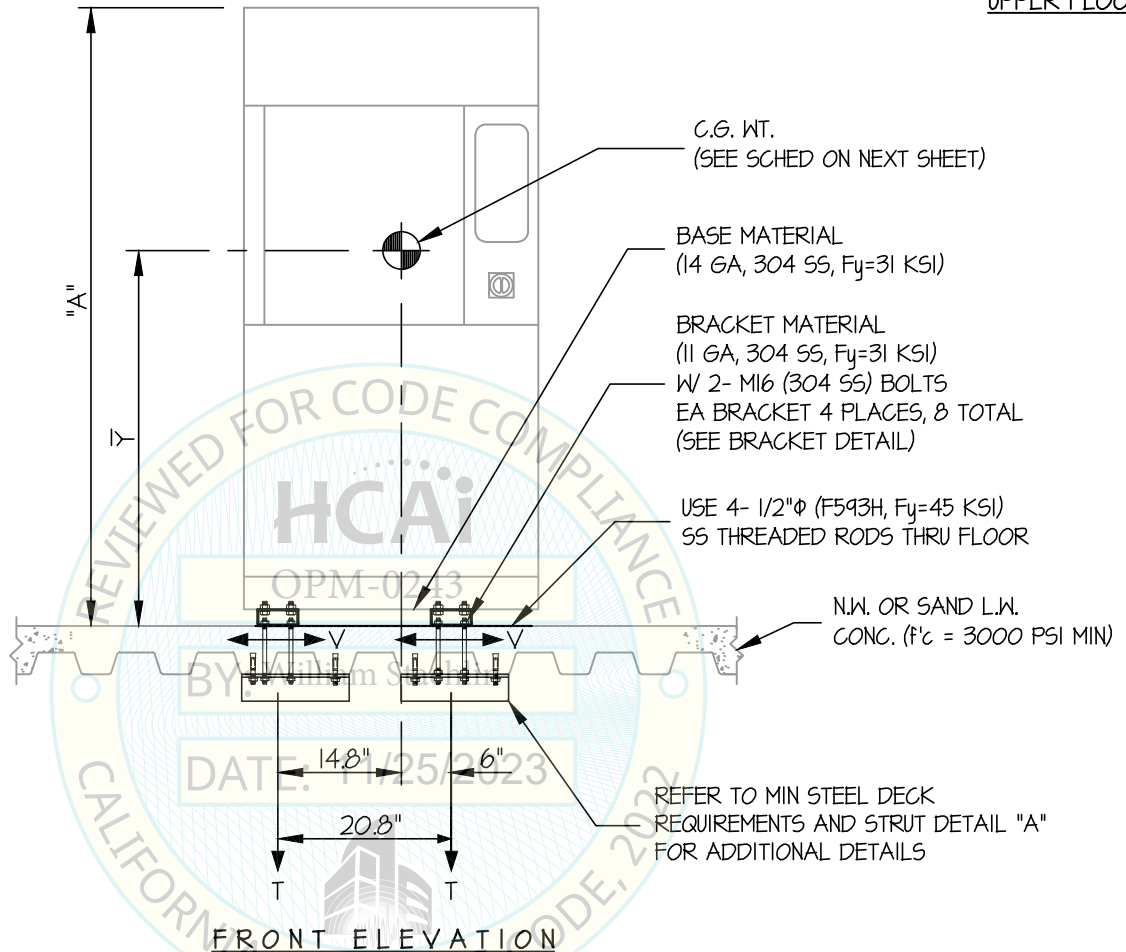
WD230/WD250 WASHERS

DATE **11/22/23**

OF **8** SHEETS

SEISMIC ANCHORAGE

UPPER FLOOR



NOTES:

- FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED. (EXAMPLE: $S_{ds} = 2.30$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 1.5$, $z/h \leq 1$)

HORIZONTAL FORCE (E_h) = $2.76 W_p$

VERTICAL FORCE (E_v) = $0.46 W_p$

- THIS CALCULATION ENCOMPASSES WEIGHTS AND VERTICAL C.G. POSITIONS NOT EXCEEDING VALUES SHOWN.
- THIS CALCULATION WAS PREPARED WITHOUT KNOWLEDGE OF ANY SITE CONDITION. COMPATIBILITY FOR USE WITH A SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD OF THE INSTALLATION (SEOR). USE REQUIRES APPROVAL BY THE SEOR.
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- SEE GENERAL NOTES: SHEETS 1 AND 2



BELIMED, INC.

DES. **J. ROBERSON**

SHEET

6

WD230/WD250 WASHERS

JOB NO. **11-2313**

DATE **11/22/23**

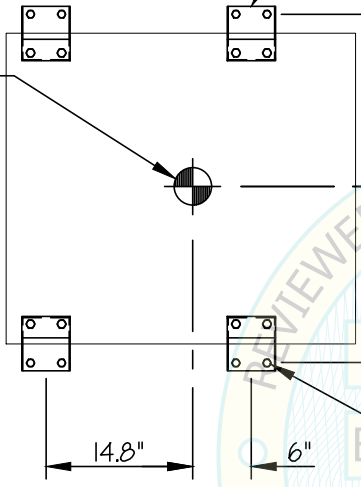
OF **8** SHEETS

SEISMIC ANCHORAGE

UPPER FLOOR

BRACKET MATERIAL
(11 GA, 304 SS, Fy=31 KSI)
W/ 2- M16 (304 SS) BOLTS
EA BRACKET 4 PLACES, 8 TOTAL
(SEE BRACKET DETAIL)

C.G. WT.
(SEE SCHED)
(\bar{Y} = SEE SCHED)



MODELS	WEIGHT (lb)	\bar{Y} (in)	"A" (in)	** Tu (lb)	** Vu (lb)
WD230	700	40.4	74.5	1126	417
WD230E	800	44.3	89.2	1417	476
WD250	800	40.4	74.5	1287	476
* WD250E	900	44.3	89.2	1594	536

* THIS MODEL REPRESENTED IN CALCULATION BELOW
** VALUES DO NOT INCLUDE Ω

USE 4- 1/2" ϕ (F593H, Fy=45 KSI)
SS THREADED RODS THRU FLOOR

DATE: 11/25/2023

PLAN AT BASE



BELIMED, INC.

DES. **J. ROBERSON**

SHEET

7

JOB NO. **11-2313**

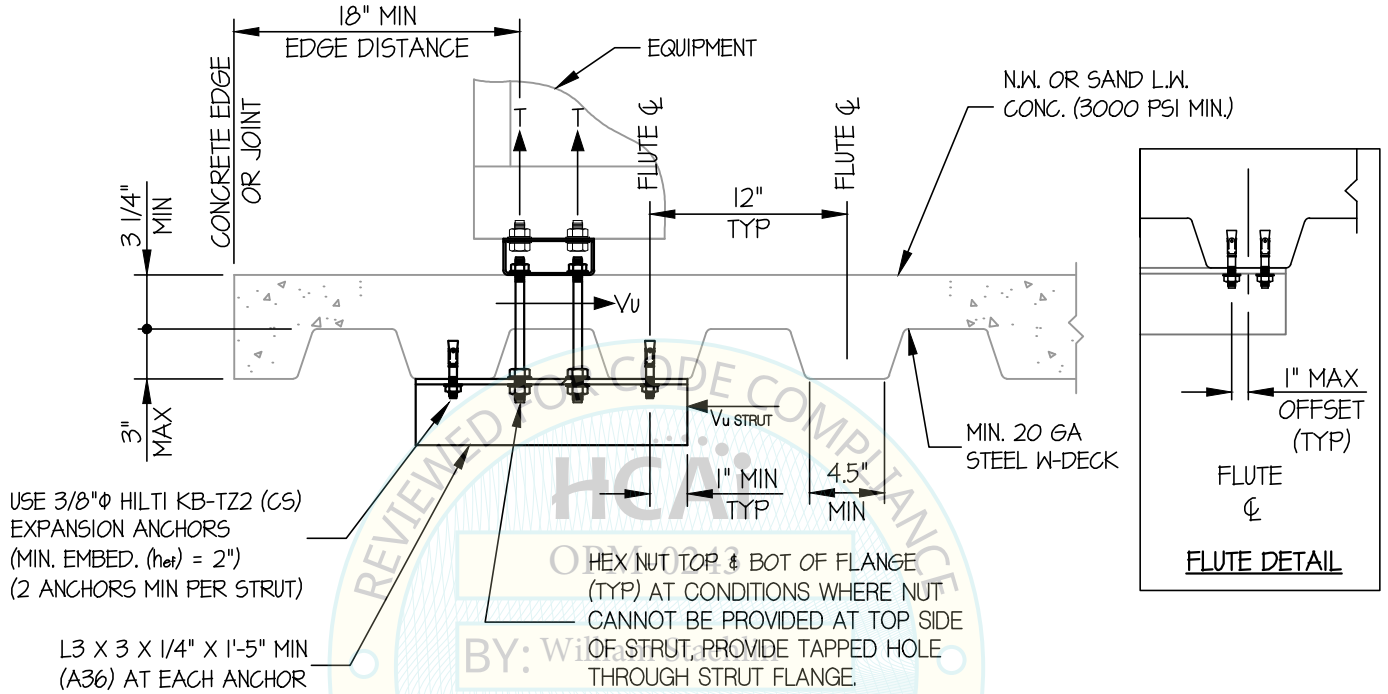
DATE **11/22/23**

OF **8** SHEETS

WD230/WD250 WASHERS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE DETAIL



MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL



BELIMED, INC.

DES. J. ROBERSON

SHEET

8

JOB NO. 11-2313

DATE 11/22/23

OF 8 SHEETS

WD230/WD250 WASHERS

SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAIL

