



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-0744

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: New Renewal/Update

Manufacturer Information

Manufacturer: Shimadzu Medical Systems USA

Manufacturer's Technical Representative: Akiharu Yamagata

Mailing Address: 440 Wrangler Drive, Suite 300, Coppell, TX 75019

Telephone: (310) 217-8855 Email: yamagata@shimadzu-usa.com

Product Information

Product Name: FLOUROspeed X1

Product Type: Fluoroscopy and Radiography System

Product Model Number: YSF-500, Atlas 2.0 PC, DR-OPE, DR-300 Exam, YSF Electrical Cabinet, FSx1 D150BC-40S

General Description: multiple component digital radiography and fluroscopy mdedical diagnostic imaging system

Applicant Information

Applicant Company Name: W.E. Gundy & Associates, Inc.

Contact Person: Frank Eckwright

Mailing Address: 1199 Shoreline Dr Ste 310, Boise, ID 83702

Telephone: (208) 342-5989 Email: feckwright@wegai.com

Title: Principal Engineer

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STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY





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

Registered Design Professional Preparing Engineering Recommendations

Company Name: W.E. GUNDY & ASSOCIATES, INC.
Name: Frank Eckwright California License Number: CE82375
Mailing Address: 1199 Shoreline Dr, Ste 310, Boise, ID 83702
Telephone: (208) 342-5989 Email: feckwright@wegai.com

HCAI Special Seismic Certification Preapproval (OSP)

Special Seismic Certification is preapproved under OSP OSP Number: OSP-0775

Certification Method

Testing in accordance with: ICC-ES AC156 FM 1950 ASHRAE 171 FEMA 461
 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: 11/5/2025
Name: William Staehlin Title: Senior Structural Engineer
Condition of Approval (if applicable): _____

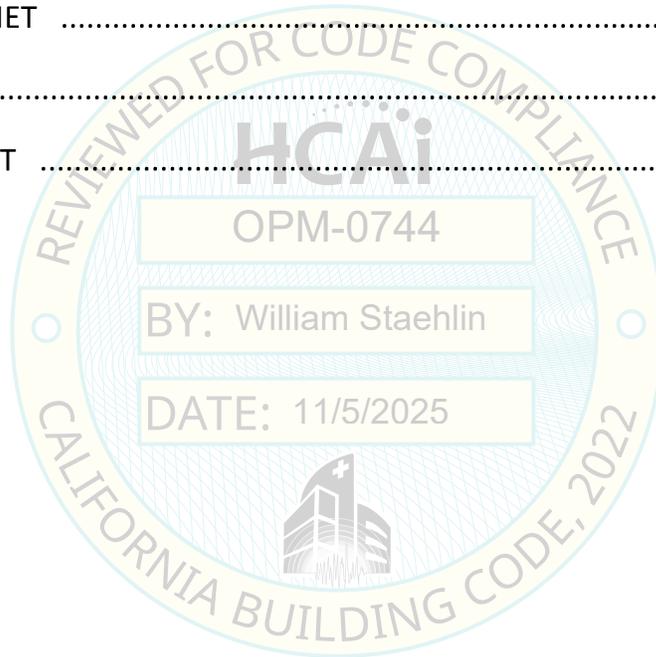
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TABLE OF CONTENTS

	<u>PAGES</u>
GENERAL NOTES	S1 - S2
ATLAS 2.0 PC	S3 - S6
DR-300 EXAM X1 CABINET	S7 - S10
DR-OPE CABINET	S11 - S14
FSX1 D150BC-40S CABINET	S15 - S18
YSF-500 TABLE	S19 - S25
YSF-ELECTRICAL CABINET	S26 - S29



GENERAL NOTES

1. THIS HCAI PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2022. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2022
2. SEISMIC DEMAND CRITERIA PER 2022 CBC AND ASCE 7-16:
 - a. Atlas 2.0 PC, DR-OPE CABINET, AND YSF-500 TABLE
 - $a_p = 1.0, R_p = 1.5, I_p = 1.50, \Omega_0 = 2.0$
 - $S_{DS} = 1.10$ & $z/h = 0.0, E_h = F_p = 0.495 W_p$
 - $S_{DS} = 2.0$ & $z/h = 0.0, E_h = F_p = 0.9 W_p$
 - $S_{DS} = 2.0$ & $z/h = 1.0, E_h = F_p = 2.4 W_p$
 - b. DR-300 EXAM X1 CABINET, FSX1 D150BC-40S CABINET, AND YSF ELECTRICAL CABINET
 - $a_p = 1.0, R_p = 2.5, I_p = 1.50, \Omega_0 = 2.0$
 - $S_{DS} = 2.0$ & $z/h = 0.0, E_h = F_p = 0.9 W_p$
 - $S_{DS} = 2.0$ & $z/h = 1.0, E_h = F_p = 2.4 W_p$
 - c. Maximum Vertical Demand for All Components
 - $E_v = 0.4 W_p$
3. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE
4. ALL LOADS SHOWN ON THE DRAWINGS ARE FACTORED LOADS AND SHALL BE USED FOR STRENGTH DESIGN UNO
5. MINIMUM MATERIAL PROPERTIES:
 - a. CONCRETE:
 - i. SLABS/BEAMS: NORMAL WEIGHT, THICKNESS $\geq 4"$, $3,000 \text{ psi} \leq f'_c \leq 8,000 \text{ PSI}$
 - ii. SLAB ON METAL DECK: NORMAL WEIGHT, $f'_c \geq 3,000$
 - b. STEEL:
 - i. THREADED ROD: ASTM F1554 Gr. 105 ($F_u = 125 \text{ KSI}$)
 - ii. BOLT: A307 ($F_u = 60 \text{ KSI MIN}$)
 - iii. NUT: ASTM A563A HEX NUT
 - iv. WASHER: ASTM 844 FLAT WASHER
 - v. HOT ROLLED STEEL ANGLE: $F_y = 36 \text{ KSI MIN.}$
 - vi. METAL DECK: 20GA THICK
 - c. POST-INSTALLED CONCRETE ANCHORS:
 - i. HILTI KB-TZ2 (ICC ESR-4266 REISSUED DECEMBER 2023)
 - ii. HILTI HIT-HY 200 V3 ADHESIVE ANCHORS (ICC ESR-4868 REVISED MARCH 2023)
 - d. SHEET METAL SCREWS:
 - i. ITW BUILDDEX TEKS (ICC ESR-1976 REVISED JANUARY 2023)
6. POST-INSTALLED ANCHORS SHALL BE INSTALLED PER THE REQUIREMENTS OF THE EVALUATION SERVICE REPORT (ICC ESR-4266 AND ICC ESR-4868) AND THE PARAMETERS GIVEN IN THESE DRAWINGS.



GENERAL NOTES CONTINUED

7. TESTING OF POST-INSTALLED ANCHORS SHALL BE ACCORDING TO 2022 CBC SECTION 1910A.5. A MINIMUM OF 50% OF POST-INSTALLED ANCHORS SHALL BE TESTED NO LESS THAN 24 HOURS AFTER INSTALLATION. ALL TESTS SHALL BE CONDUCTED 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 (IOR), OWNER, & THE ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE.
 - a. ACCEPTANCE CRITERIA:
 - i. WEDGE ANCHORS: A CALIBRATED TORQUE WRENCH SHALL BE USED TO VERIFY THE INSTALLATION TORQUE IS OBTAINED WITHIN 1/2 TURN OF THE NUT
 - ii. ADHESIVE ANCHORS: THE DIRECT TENSION TEST LOAD SHALL BE APPLIED FOR A MINIMUM OF 15 SECONDS AND THE ANCHOR SHALL EXHIBIT NO DISCERNIBLE MOVEMENT. THE TESTING APPARATUS SUPPORT SHALL NOT BE LOCATED WITHIN 1.5 TIMES THE ANCHOR'S EMBEDMENT DEPTH.
8. IF ANY ANCHOR FAILS TESTING, ALL OF THE ANCHORS OF THE SAME TYPE SHALL BE TESTED, WHICH ARE INSTALLED BY THE SAME TRADE, NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME THE INITIAL TEST FREQUENCY.
9. DESIGN IS CONTROLLED BY SEISMIC FORCES. NON-SEISMIC FORCES SUCH AS GRAVITY ARE OUTSIDE THE SCOPE OF THIS OPM.
10. 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, UNO
 - 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.

RESPONSIBILITIES OF THE BUILDING STRUCTURAL ENGINEER OF RECORD

1. VERIFY THE INSTALLATION CONFORMS TO CBC 2022 AND THIS OPM, INCLUDING MATERIAL PROPERTIES AND DIMENSIONS OF THE SUPPORT.
2. VERIFY THE PROJECT SPECIFIC S_{DS} AND Z/H VALUES DO NOT RESULT IN SEISMIC FORCES EXCEEDING THE VALUES IN THIS OPM.
3. VERIFY ALL ANCHORS ARE A MINIMUM OF 12" FROM ALL CONCRETE EDGES AND ARE SUFFICIENTLY SPACED FROM ANY NEW OR EXISTING ANCHORS.
4. VERIFY ACCEPTABLE COVER IS PROVIDED FOR POST-INSTALLED ANCHORS INTO UPPER FLUTE OF SLAB ON METAL DECK.

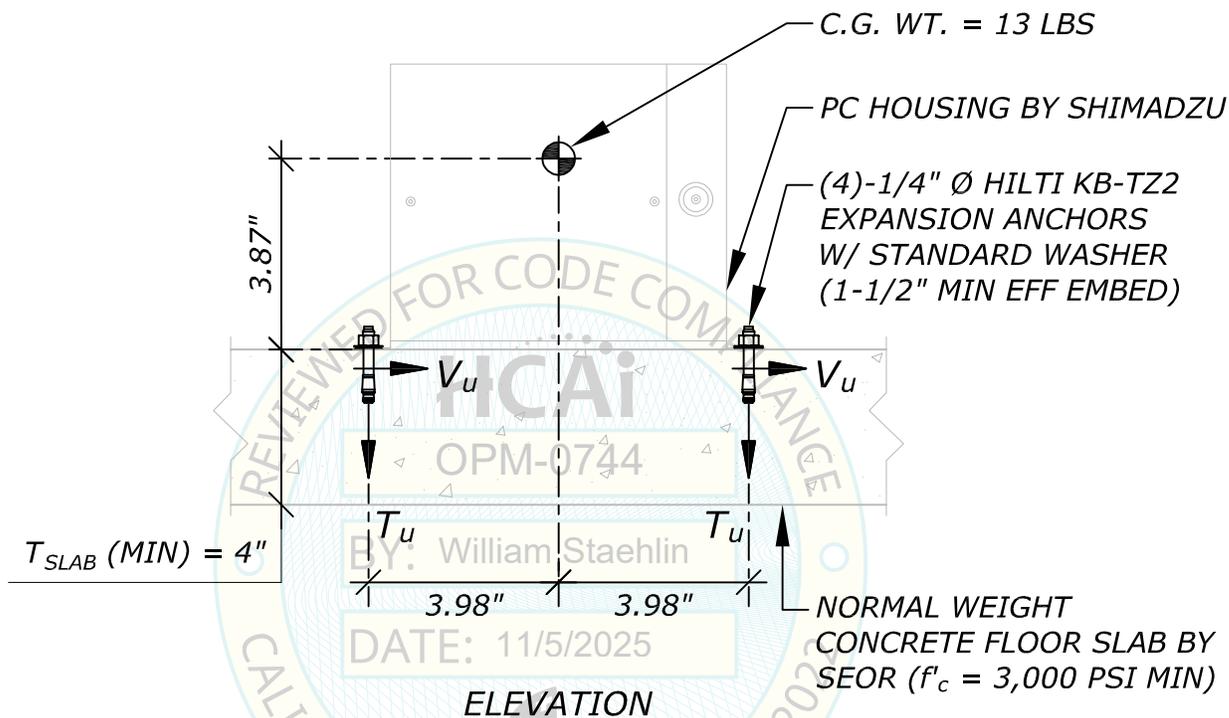


Project No.1376-04		Date:2025.04.08
Drawn By: RG	Checked By: FE	Scale: NTS

S2

SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 2.0g$, $z/h = 0$)

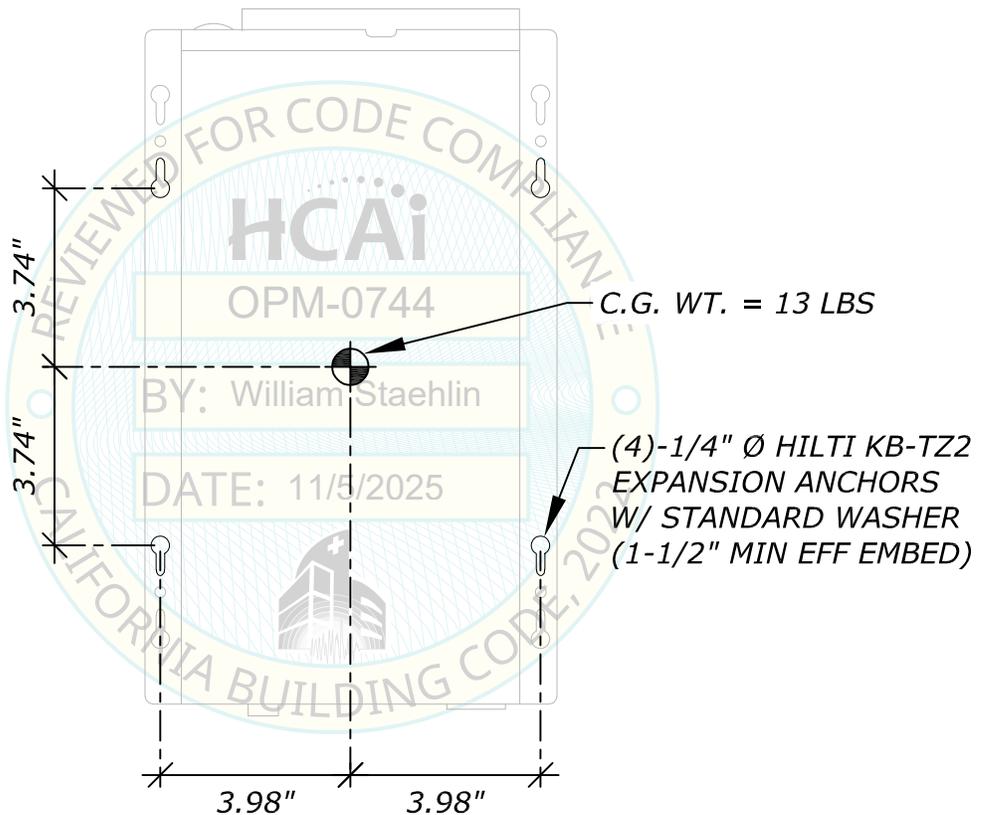


TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
HILTI KB-TZ2	1/4"	1-1/2"	2"	1-1/2"	1-1/2"	4 ft-lbs



SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 2.0g$, $z/h = 0$)



T_u (MAX) = 6 LBS

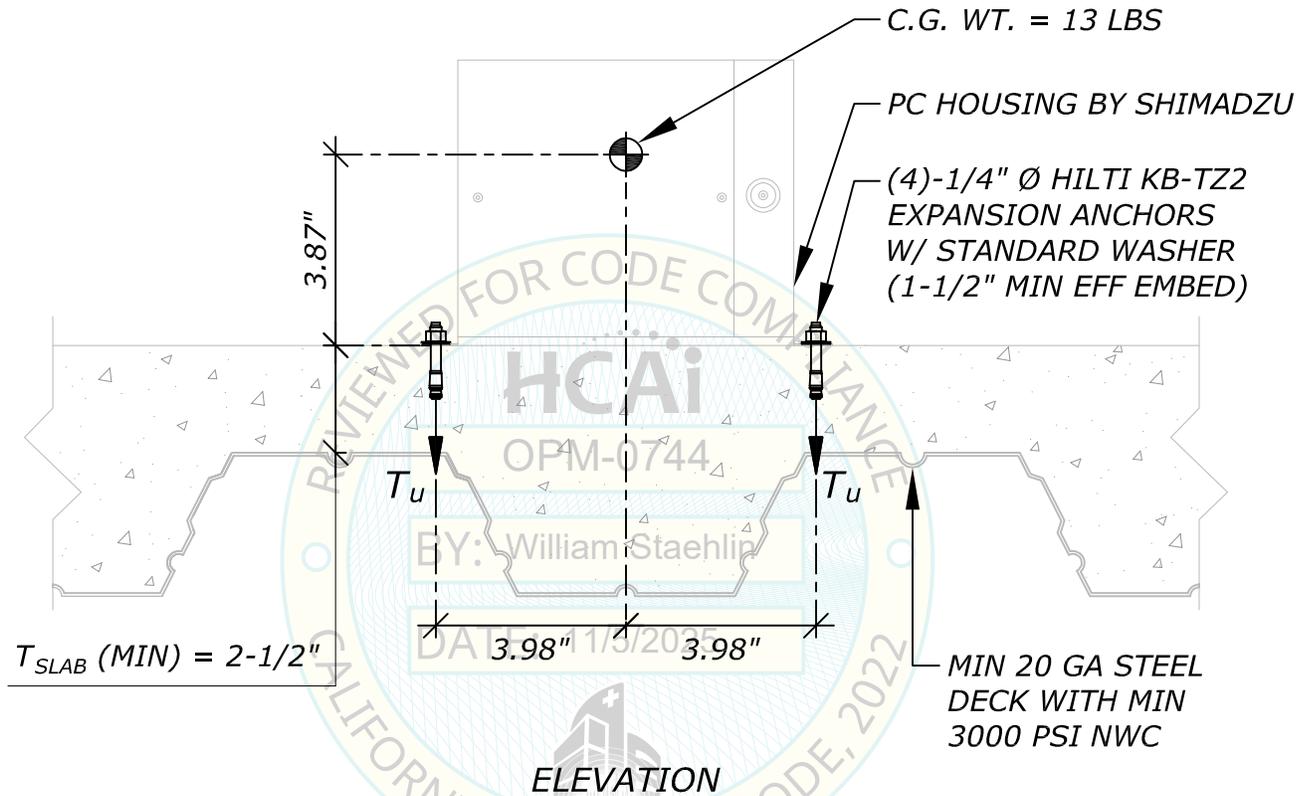
V_u (MAX) = 8 LBS

PLAN VIEW - BASE ($S_{DS} \leq 2.0$)



SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)

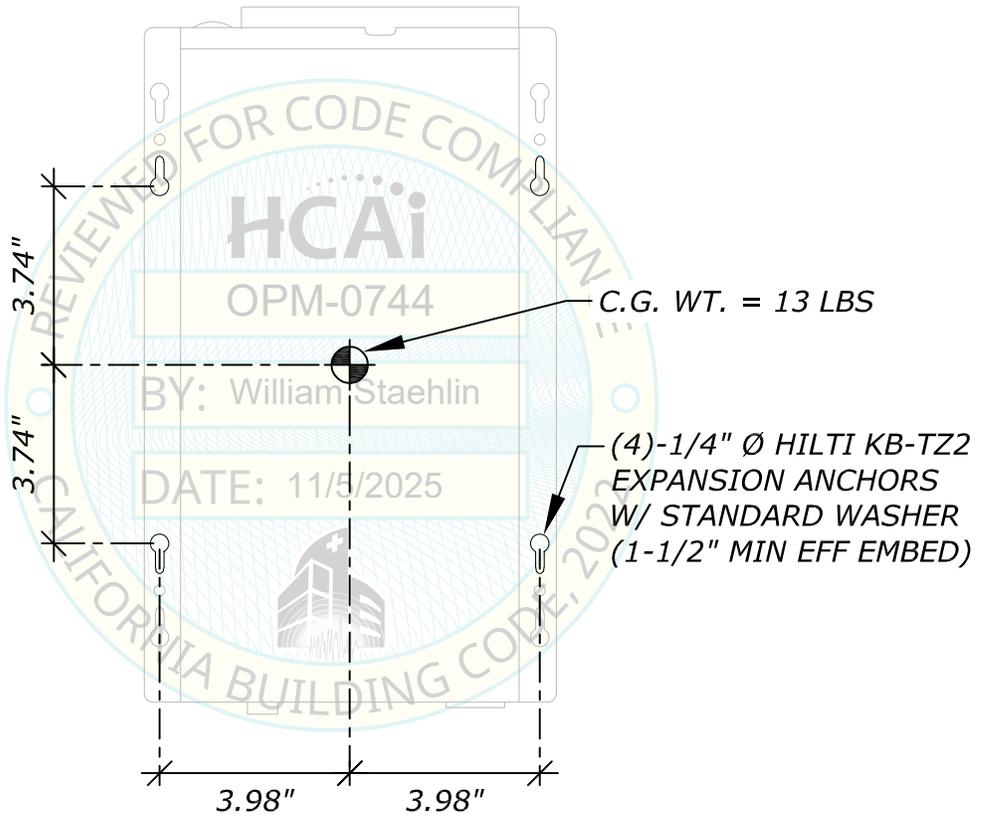


TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
HILTI KB-TZ2	1/4"	1-1/2"	2"	3"	3"	4 ft-lbs



SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)



T_u (MAX) = 19 LBS

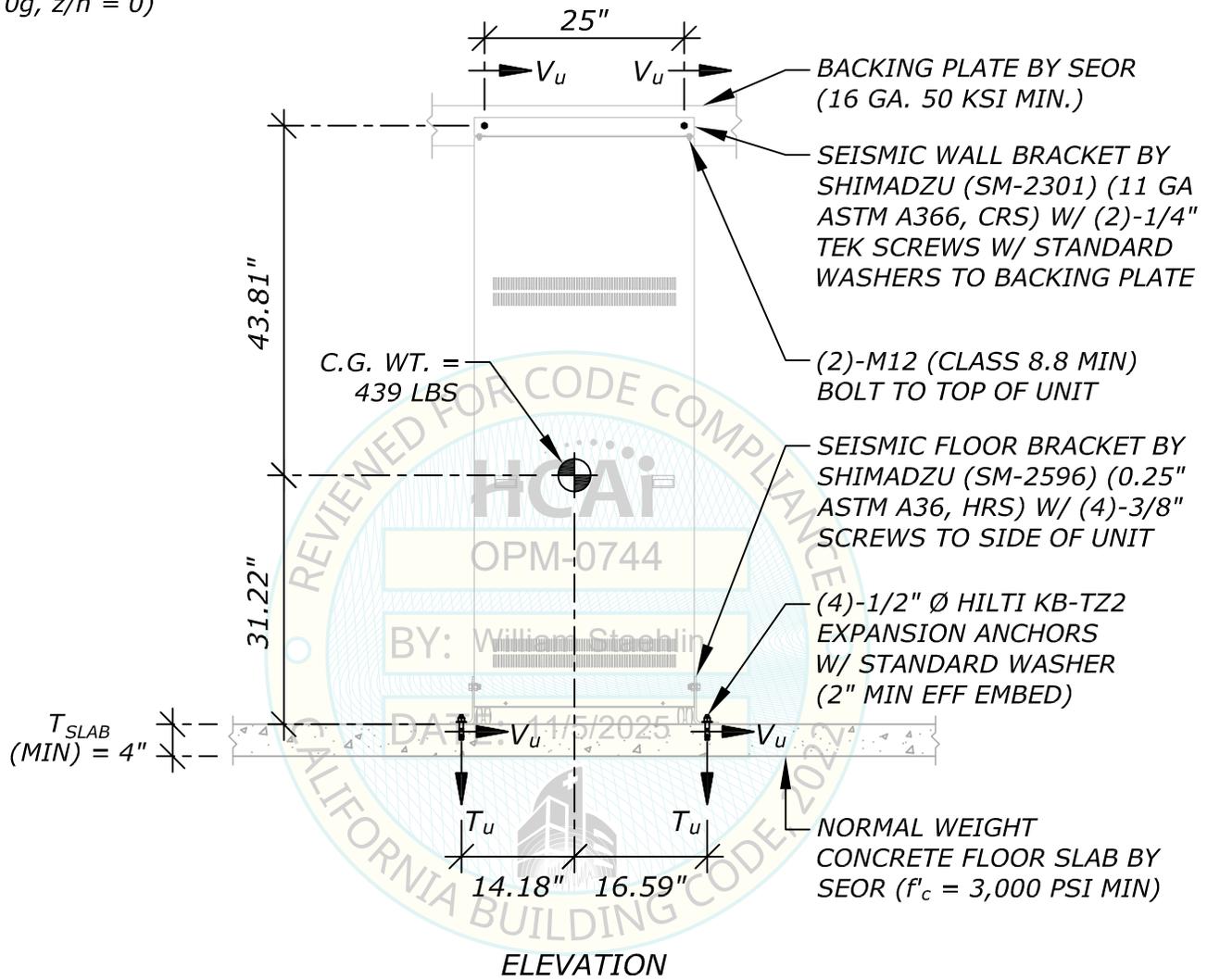
V_u (MAX) = 20 LBS

PLAN VIEW - BASE ($S_{DS} \leq 2.0$)



SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 2.0g$, $z/h = 0$)

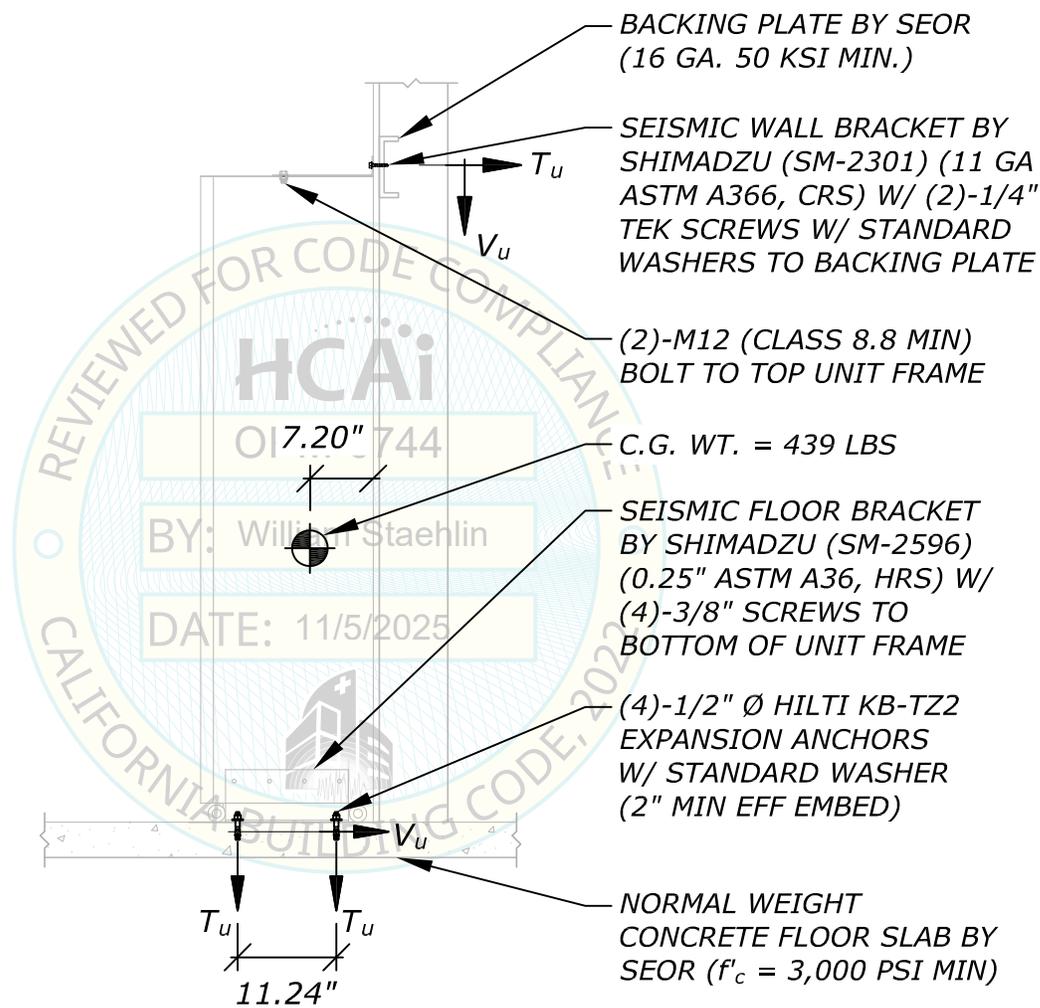


LOCATION	TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
FLOOR	HILTI KB-TZ2	1/2"	2"	2-3/4"	2-3/4"	2-3/4"	50 ft-lbs
WALL	TEK SCREW	1/4"	--	--	--	--	--



SEISMIC ANCHORAGE

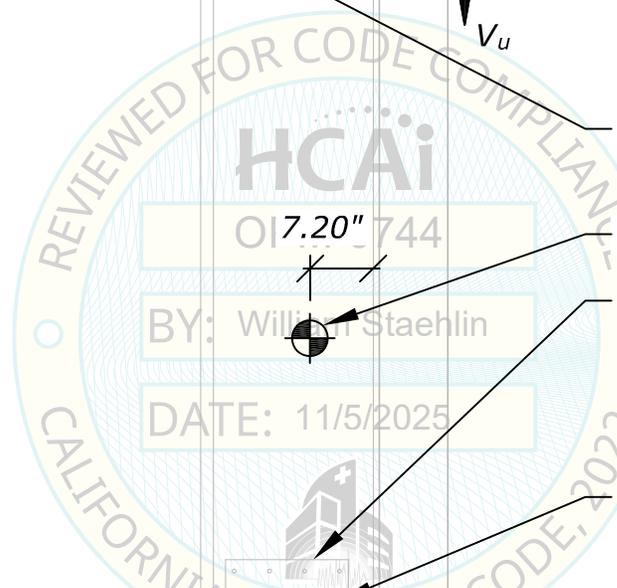
(AT SLAB-ON-GRADE,
 $S_{DS} \leq 2.0g$, $z/h = 0$)



FLOOR:
 T_u (MAX) = 563 LBS
 V_u (MAX) = 199 LBS

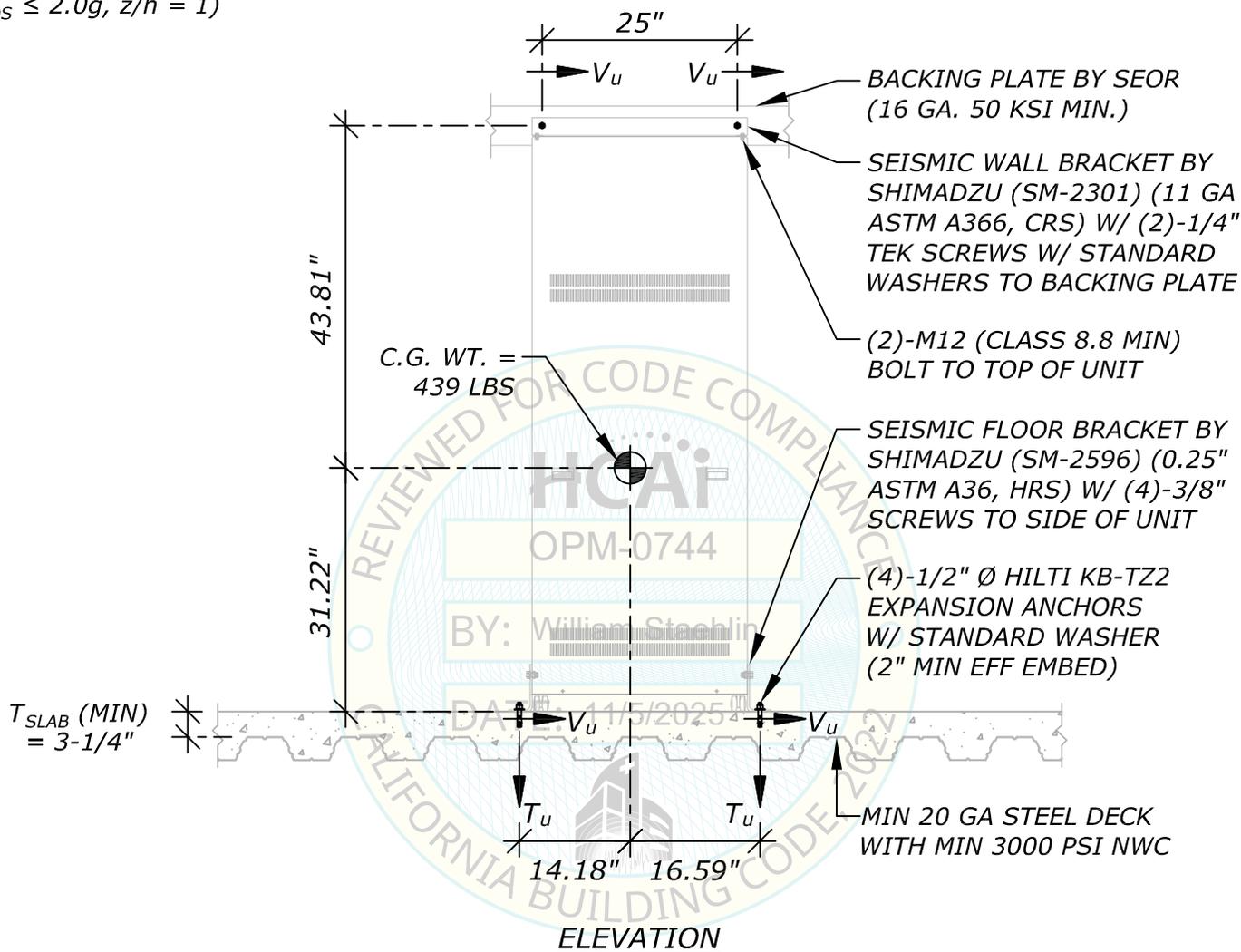
WALL:
 T_u (MAX) = 52 LBS
 V_u (MAX) = 44 LBS

SIDE ELEVATION ($S_{DS} \leq 2.0$)



SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)

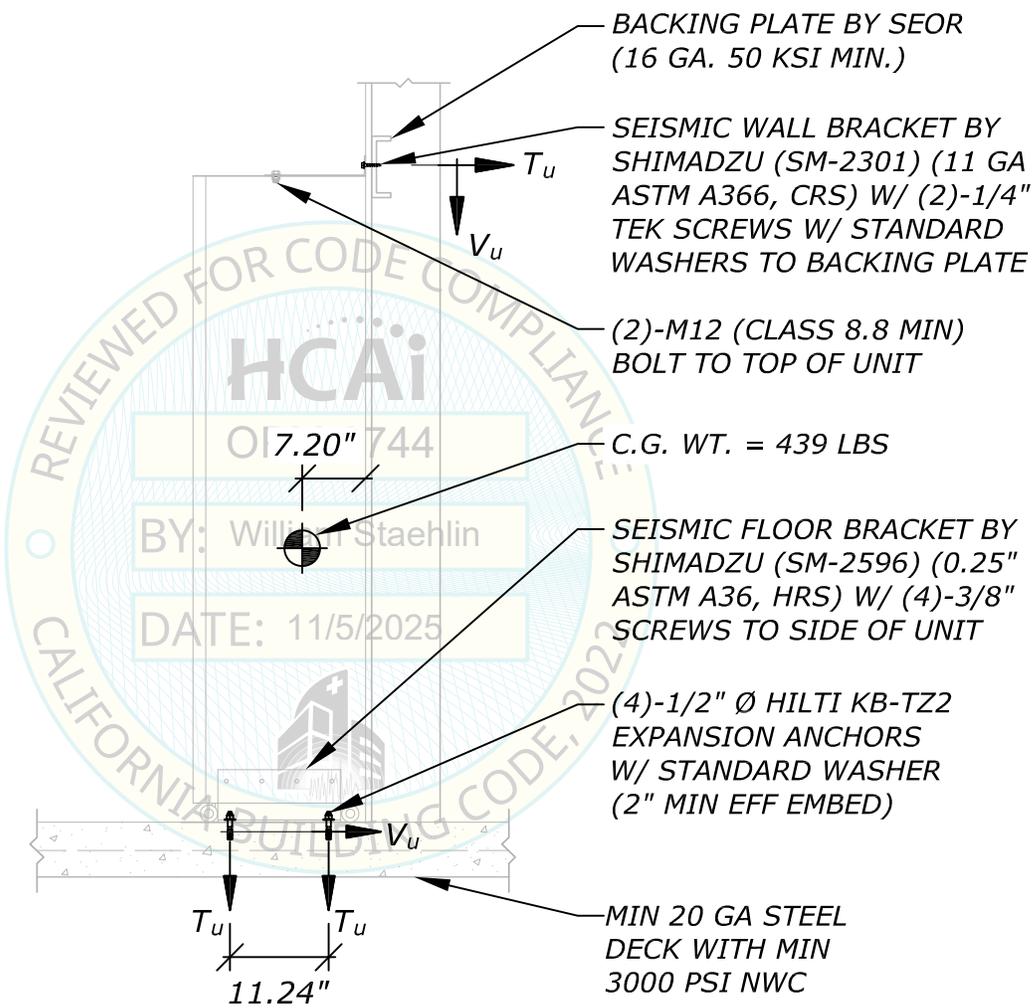


LOCATION	TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
FLOOR	HILTI KB-TZ2	1/2"	2"	2-3/4"	7-1/2"	9"	50 ft-lbs
WALL	TEK SCREW	1/4"	--	--	--	--	--



SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)



FLOOR:
 T_u (MAX) = 901 LBS
 V_u (MAX) = 319 LBS

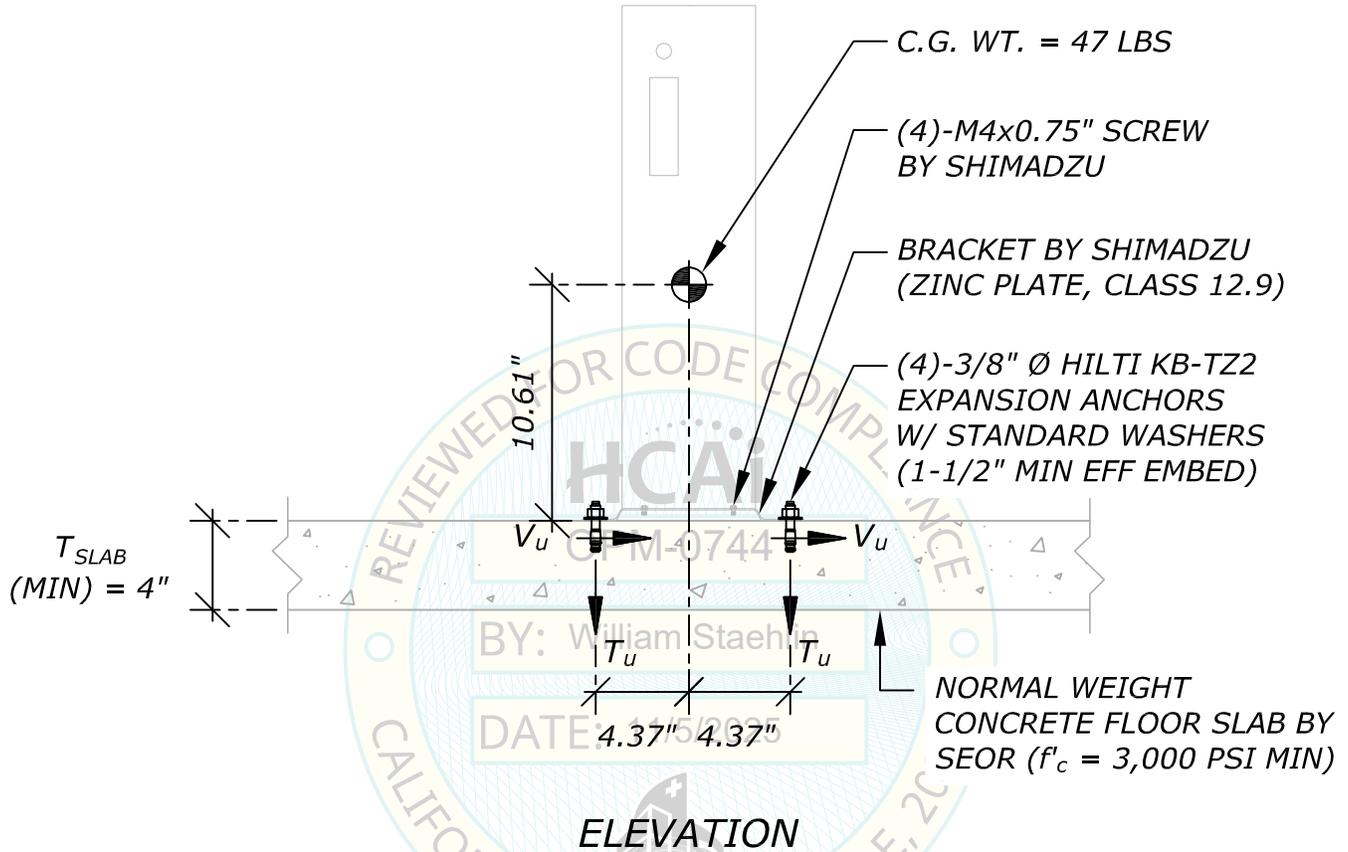
WALL:
 T_u (MAX) = 83 LBS
 V_u (MAX) = 71 LBS

SIDE ELEVATION ($S_{DS} \leq 2.0$)



SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 2.0g$, $z/h = 0$)



TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
HILTI KB-TZ2	3/8"	1-1/2"	2"	5"	5"	30 ft-lbs

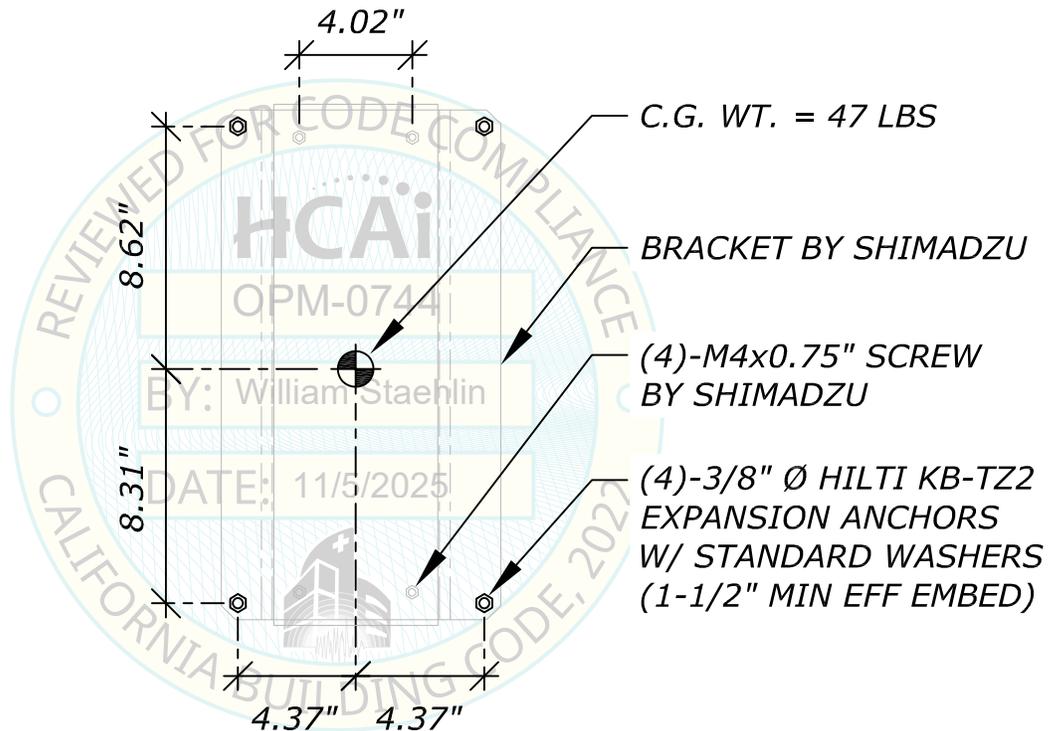


Project No. 1376-04 Date: 2025.04.08
 Drawn By: RG Checked By: FE Scale: NTS

S11

SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 2.0g$, $z/h = 0$)



T_u (MAX) = 53 LBS

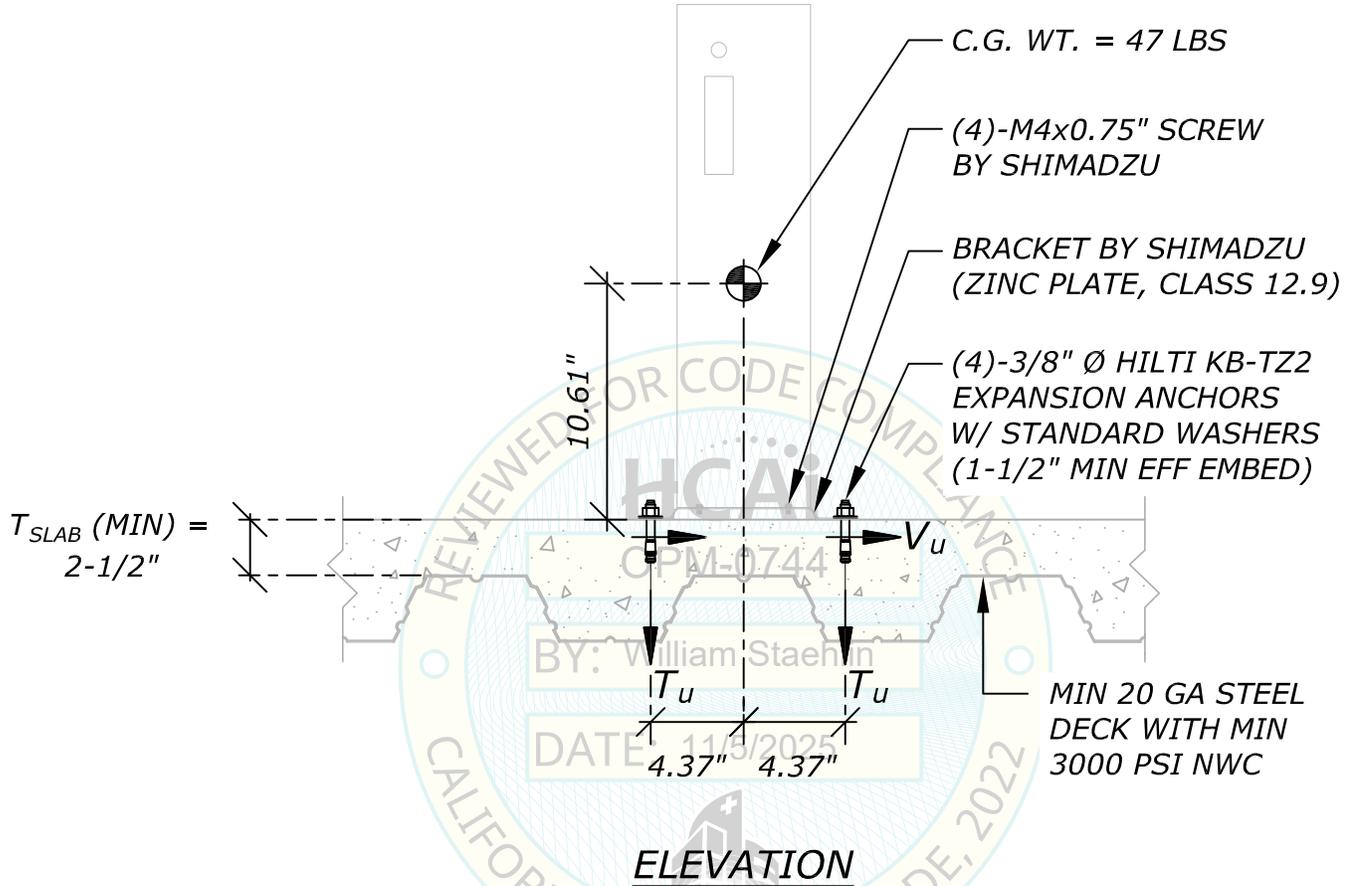
V_u (MAX) = 27 LBS

PLAN VIEW - BASE ($S_{DS} \leq 2.0$)



SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)



TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
HILTI KB-TZ2	3/8"	1-1/2"	2"	16"	8"	30 ft-lbs

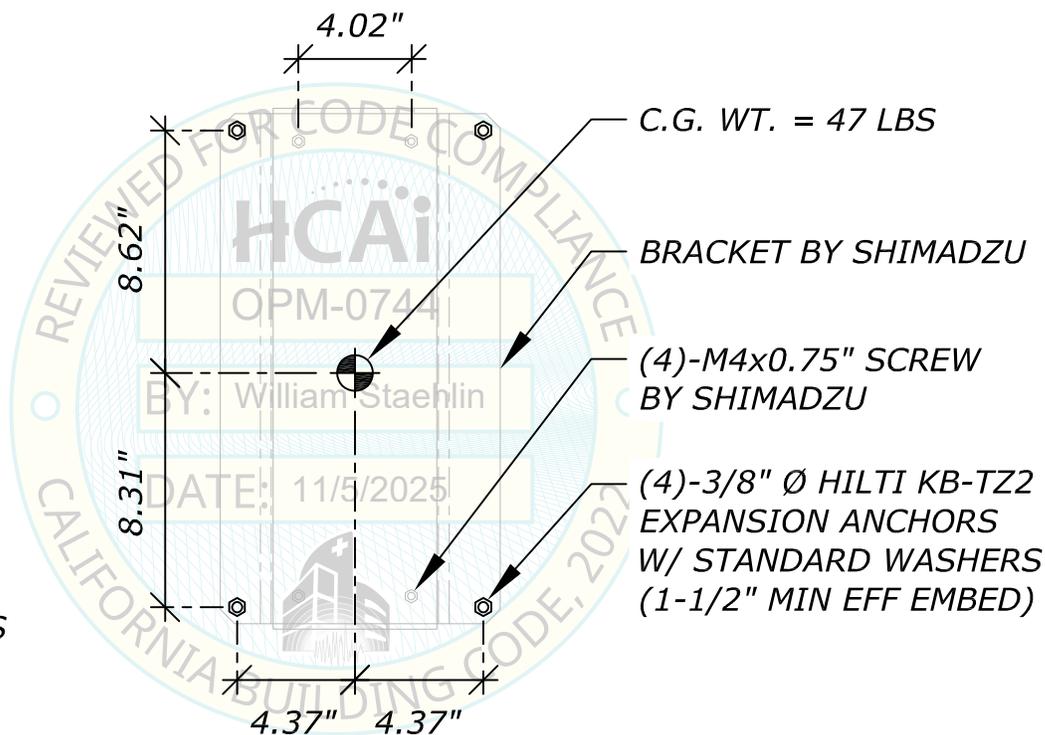


Project No.1376-04	Date:2025.04.08
Drawn By: RG	Checked By: FE
Scale: NTS	

S13

SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)



T_u (MAX) = 152 LBS

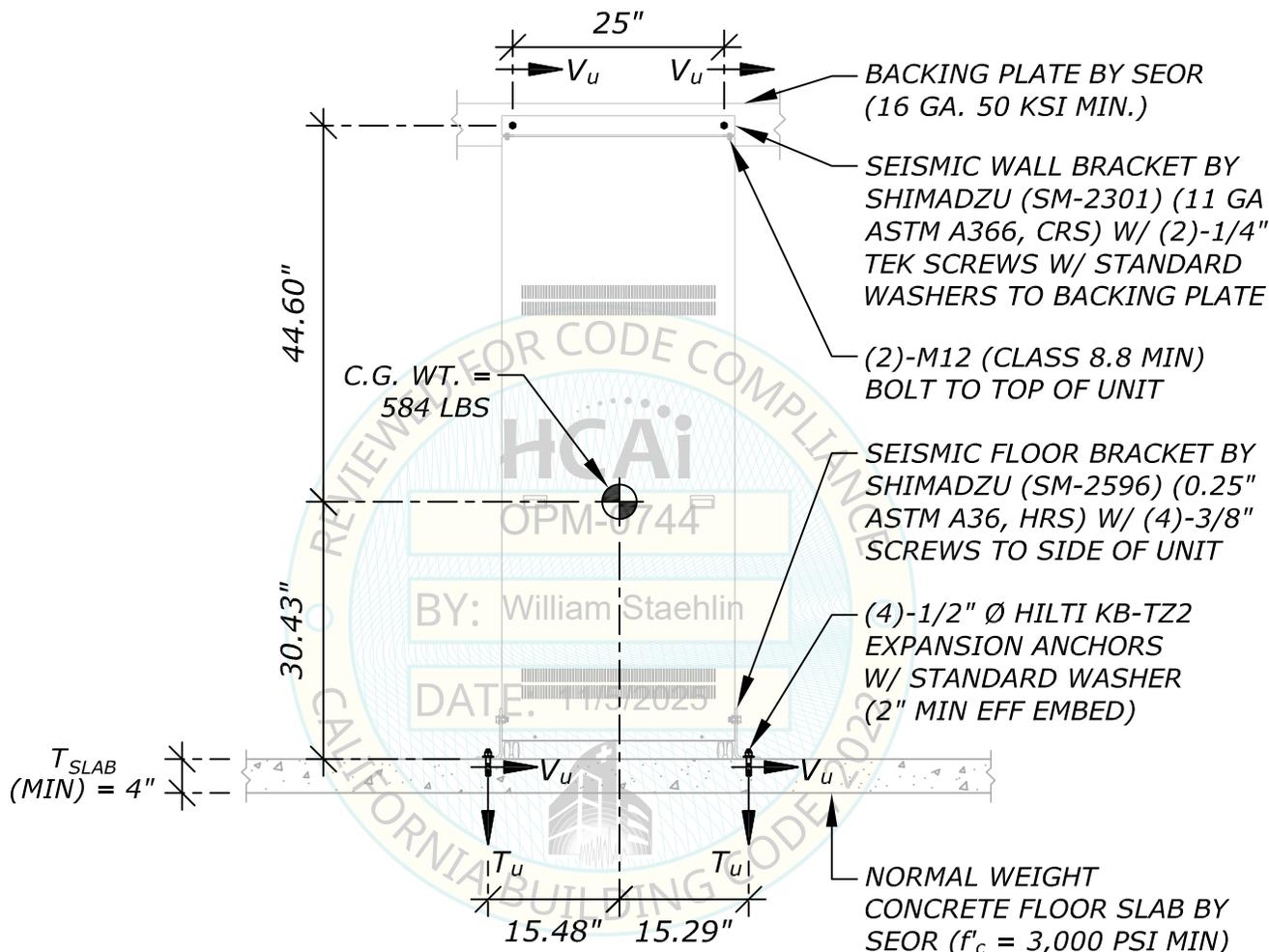
V_u (MAX) = 73 LBS

PLAN VIEW - BASE ($S_{DS} \leq 2.0$)



SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 2.0g, z/h = 0$)



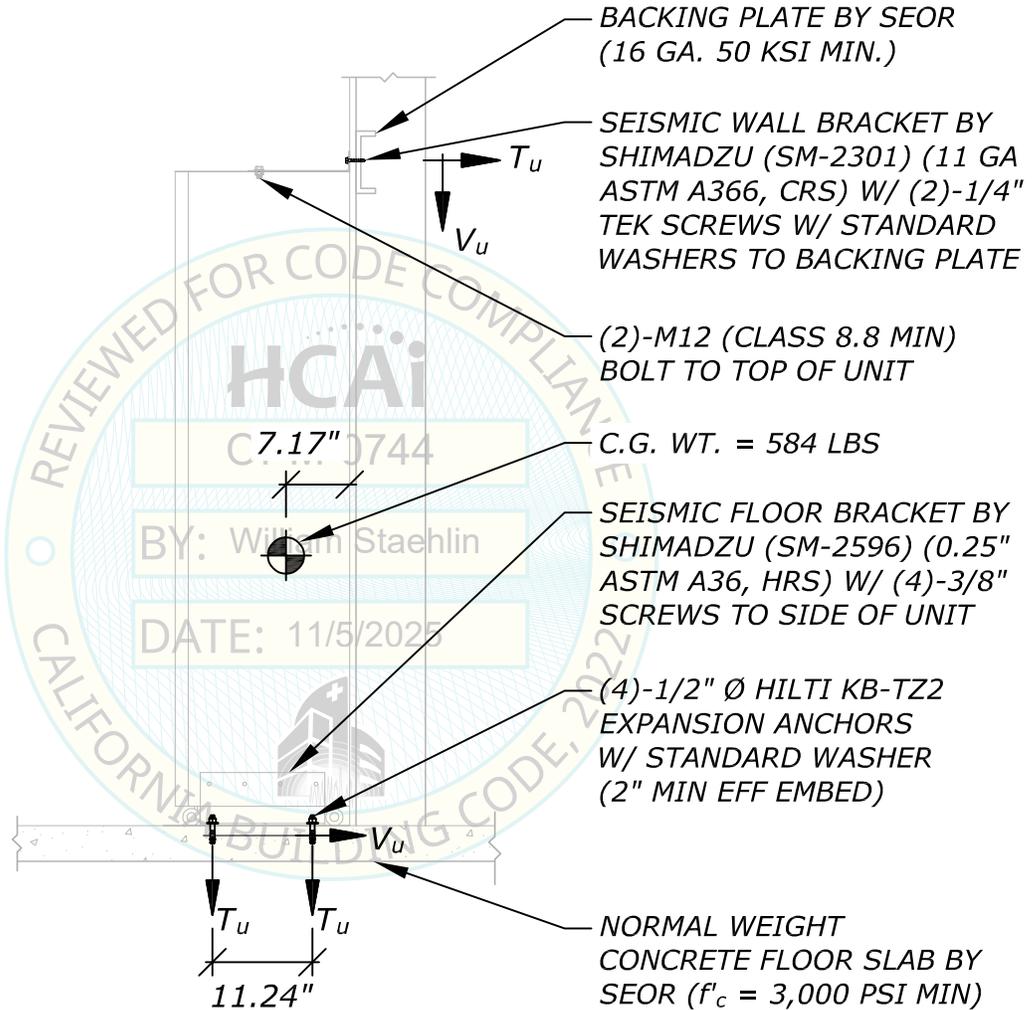
ELEVATION

LOCATION	TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
FLOOR	HILTI KB-TZ2	1/2"	2"	2-3/4"	2-3/4"	2-3/4"	50 ft-lbs
WALL	TEK SCREW	1/4"	--	--	--	--	--



SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 2.0g, z/h = 0$)



FLOOR:

T_u (MAX) = 748 LBS

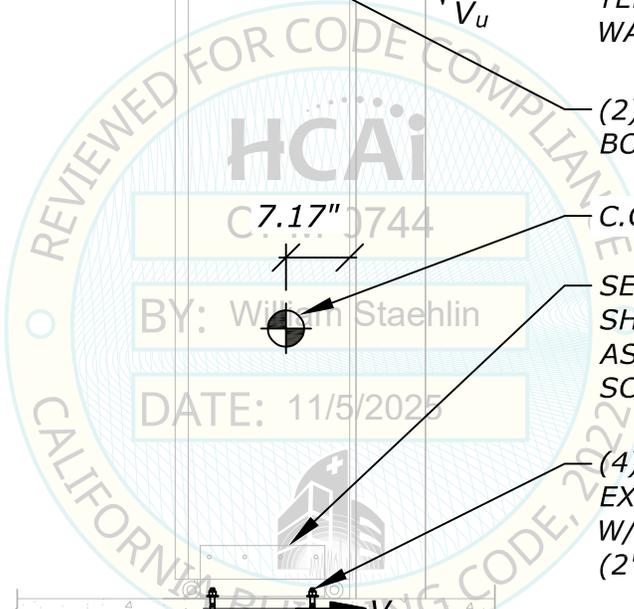
V_u (MAX) = 269 LBS

WALL:

T_u (MAX) = 66 LBS

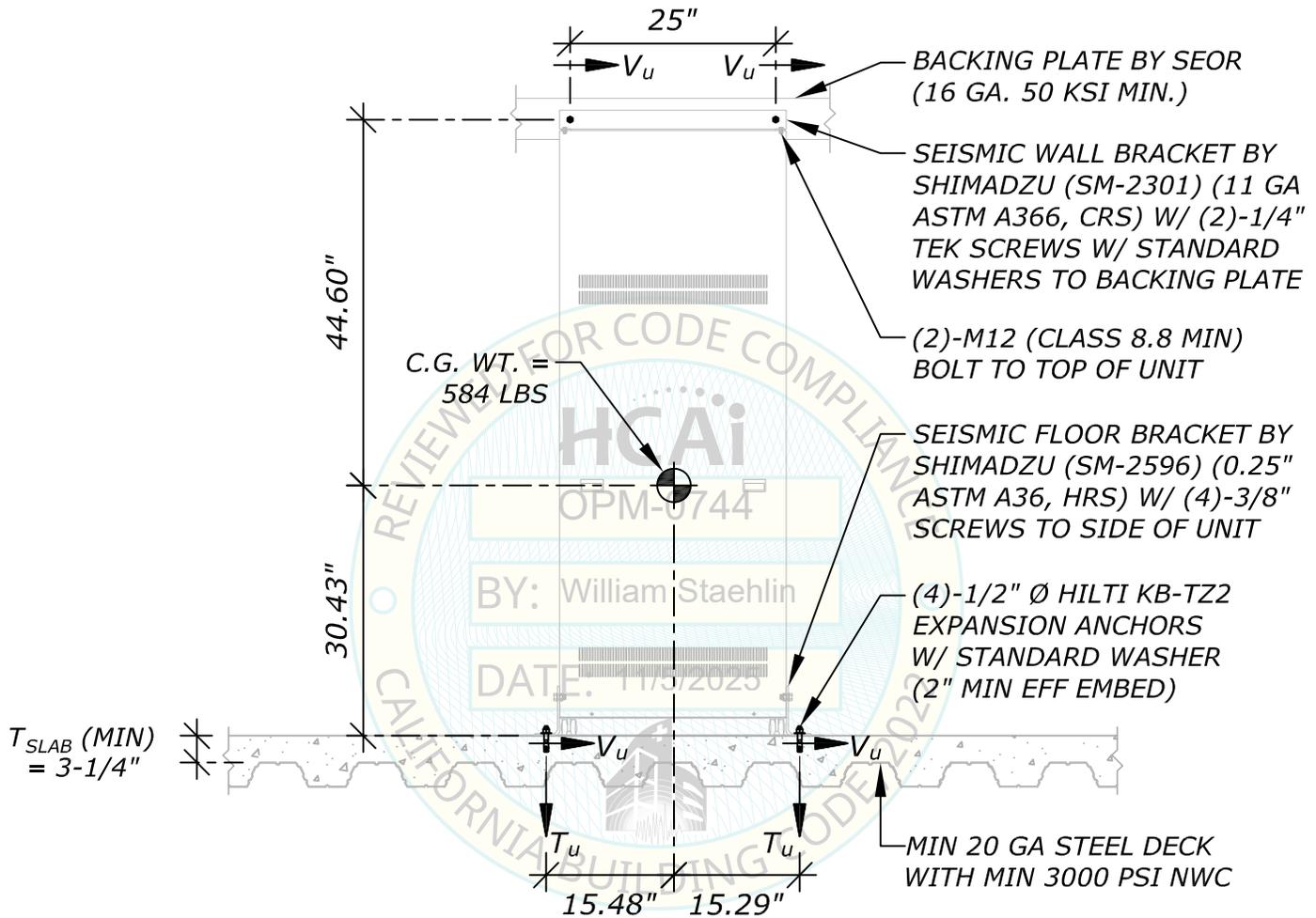
V_u (MAX) = 56 LBS

SIDE ELEVATION ($S_{DS} \leq 2.0$)



SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)



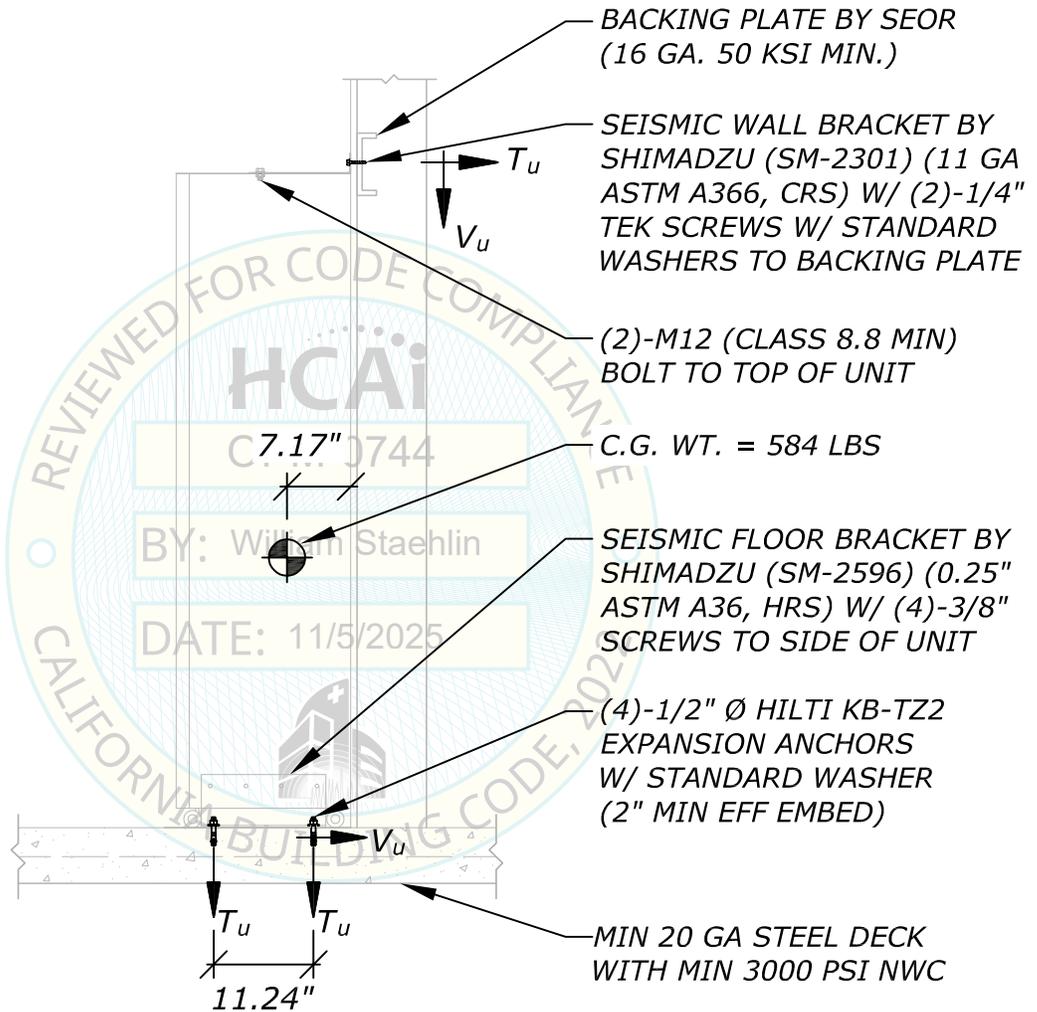
ELEVATION

LOCATION	TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
FLOOR	HILTI KB-TZ2	1/2"	2"	2-3/4"	7-1/2"	9"	50 ft-lbs
WALL	TEK SCREW	1/4"	--	--	--	--	--



SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)



FLOOR:

T_u (MAX) = 1197 LBS

V_u (MAX) = 430 LBS

WALL:

T_u (MAX) = 105 LBS

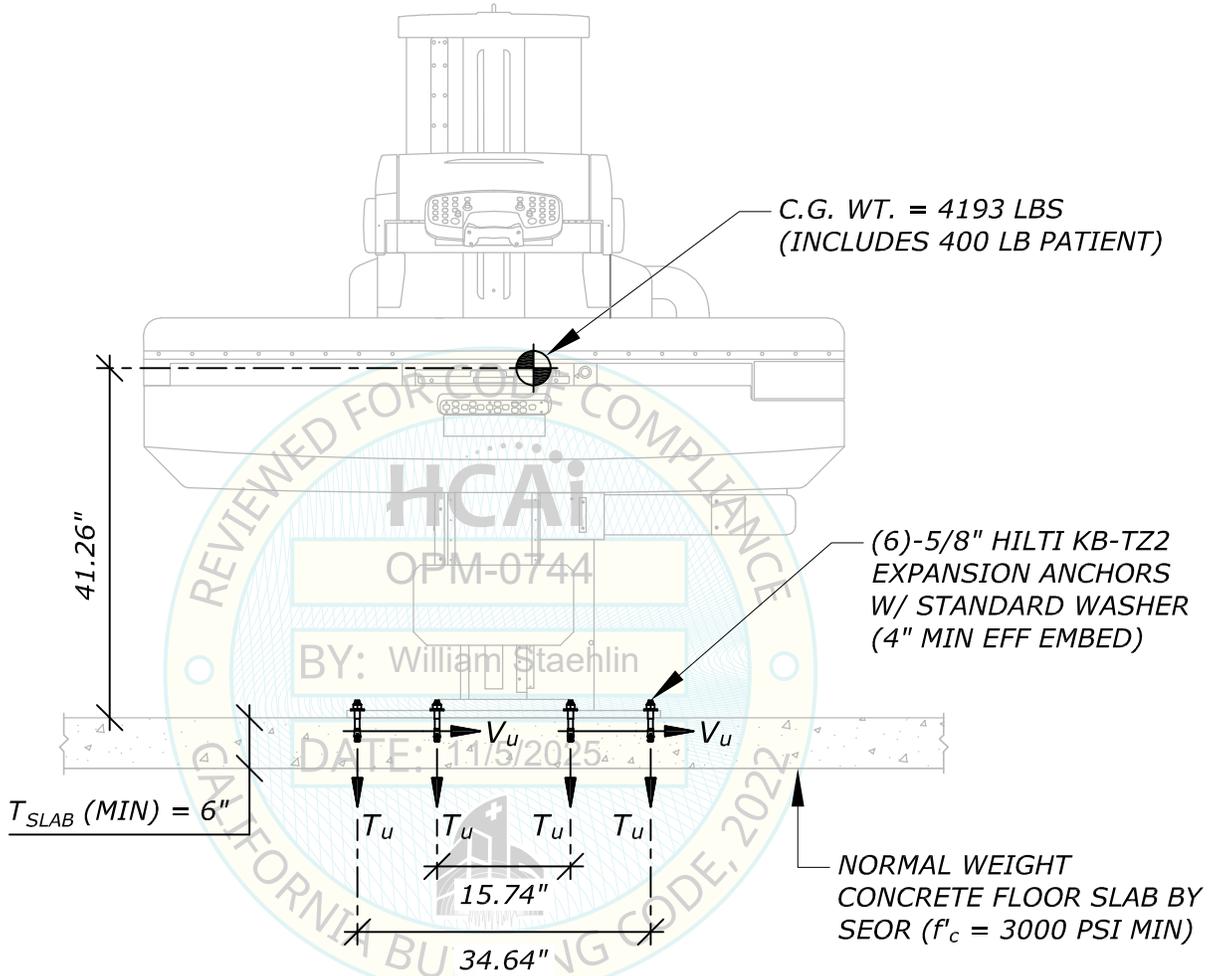
V_u (MAX) = 90 LBS

SIDE ELEVATION ($S_{DS} \leq 2.0$)



SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 0.9g$, $z/h = 0$)



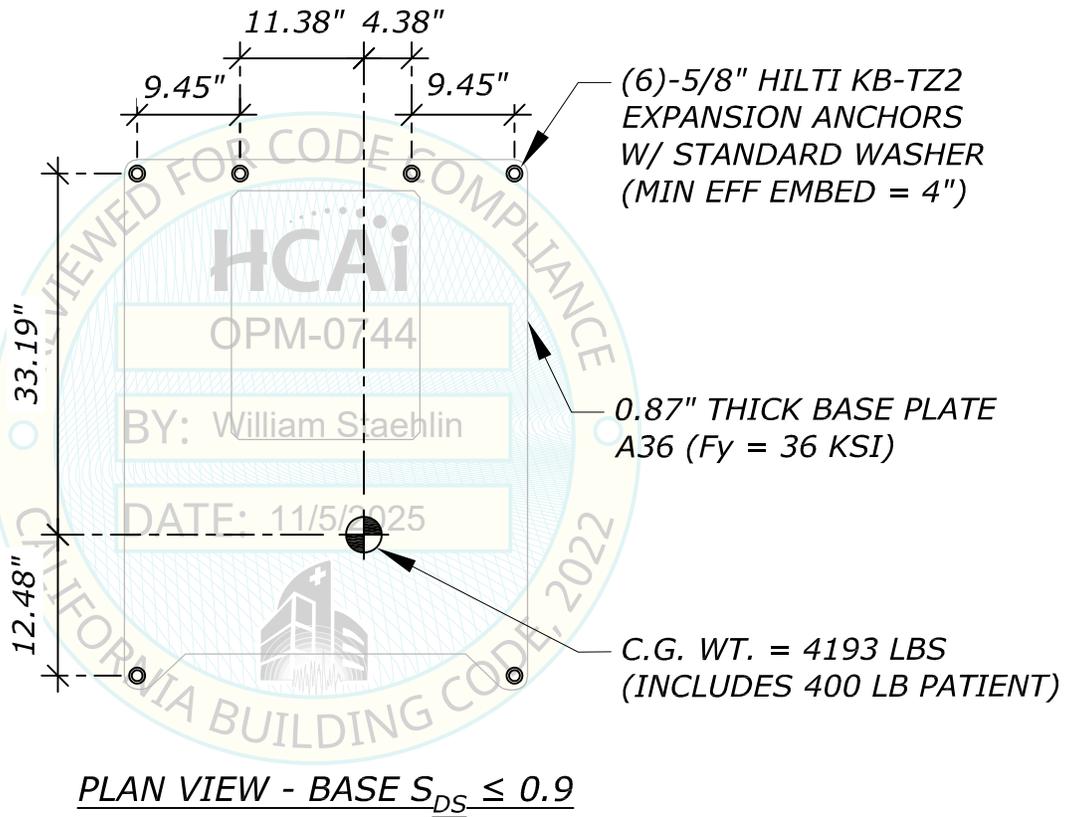
ELEVATION

TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
HILTI KB-TZ2	5/8"	4"	4-3/4"	2-3/4"	2-1/4"	40 ft-lbs

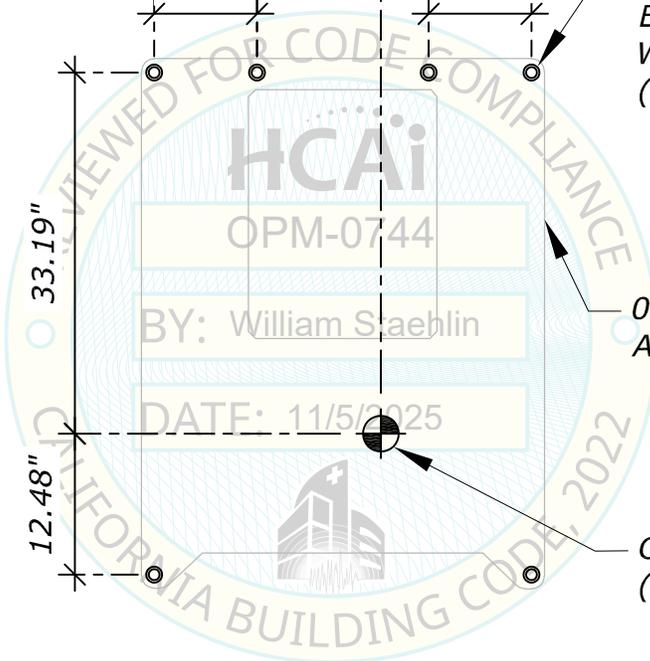


SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 0.9g$, $z/h = 0$)



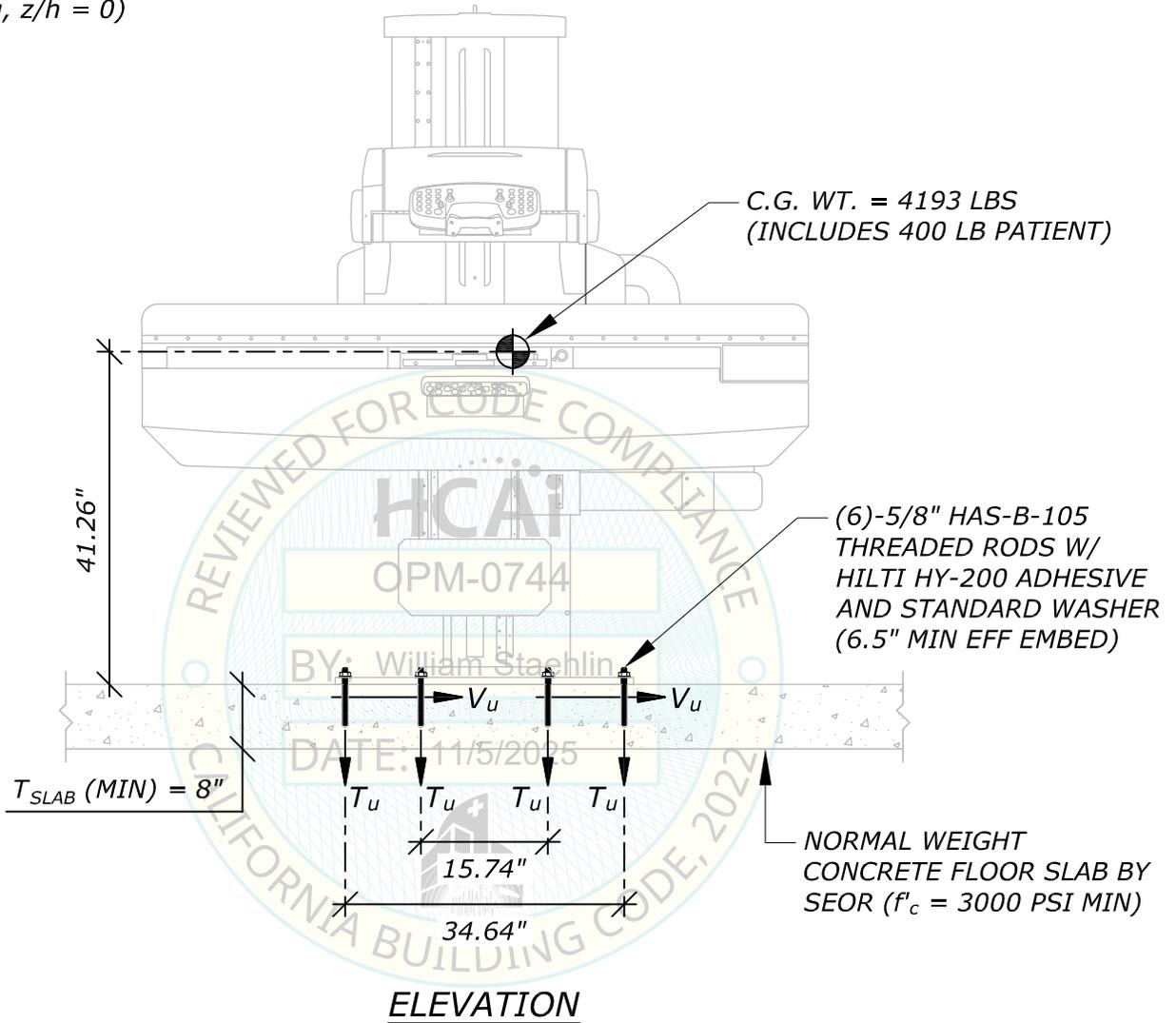
T_u (MAX) = 1053 LBS
 V_u (MAX) = 1285 LBS



SHIMADZU Excellence in Science	Project No.1376-04	Date:2025.04.08	S20
	Drawn By: RG	Checked By: FE	

SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $0.9 < S_{DS} \leq 2.0g, z/h = 0$)

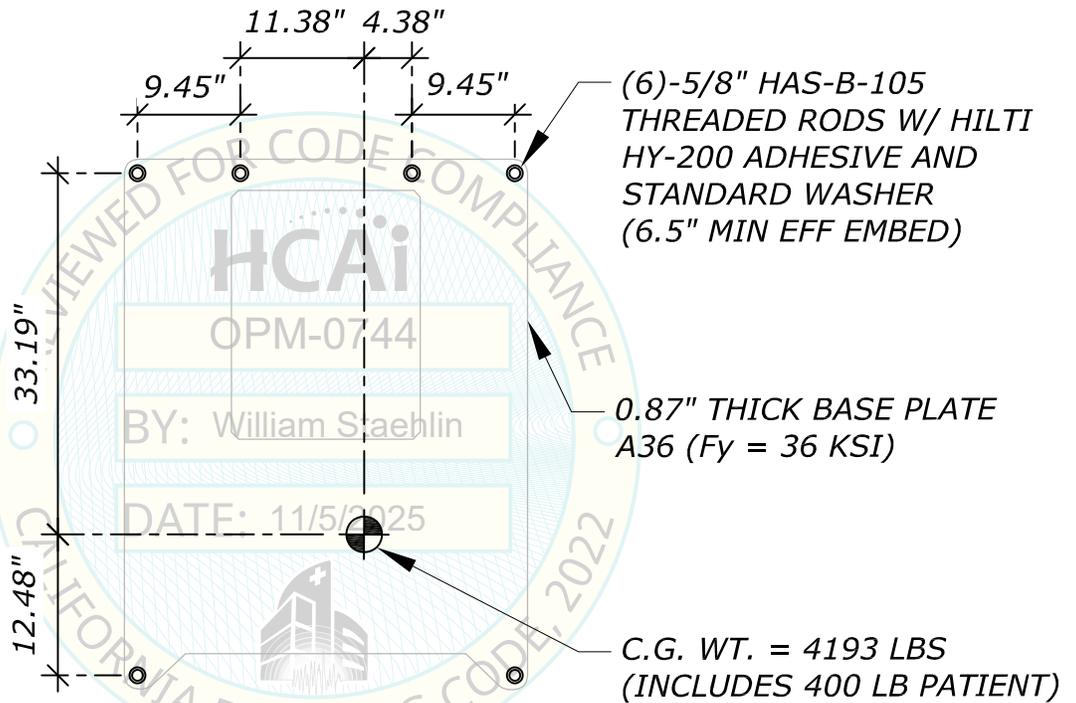


TYPE	DIA	EFF EMBED (h_{ef})	C_{min}	S_{min}	Direct Tension Test Load
THREADED ROD	5/8"	6.5"	2-3/4"	2-3/4"	8340 lbs



SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $0.9 < S_{DS} \leq 2.0g, z/h = 0$)



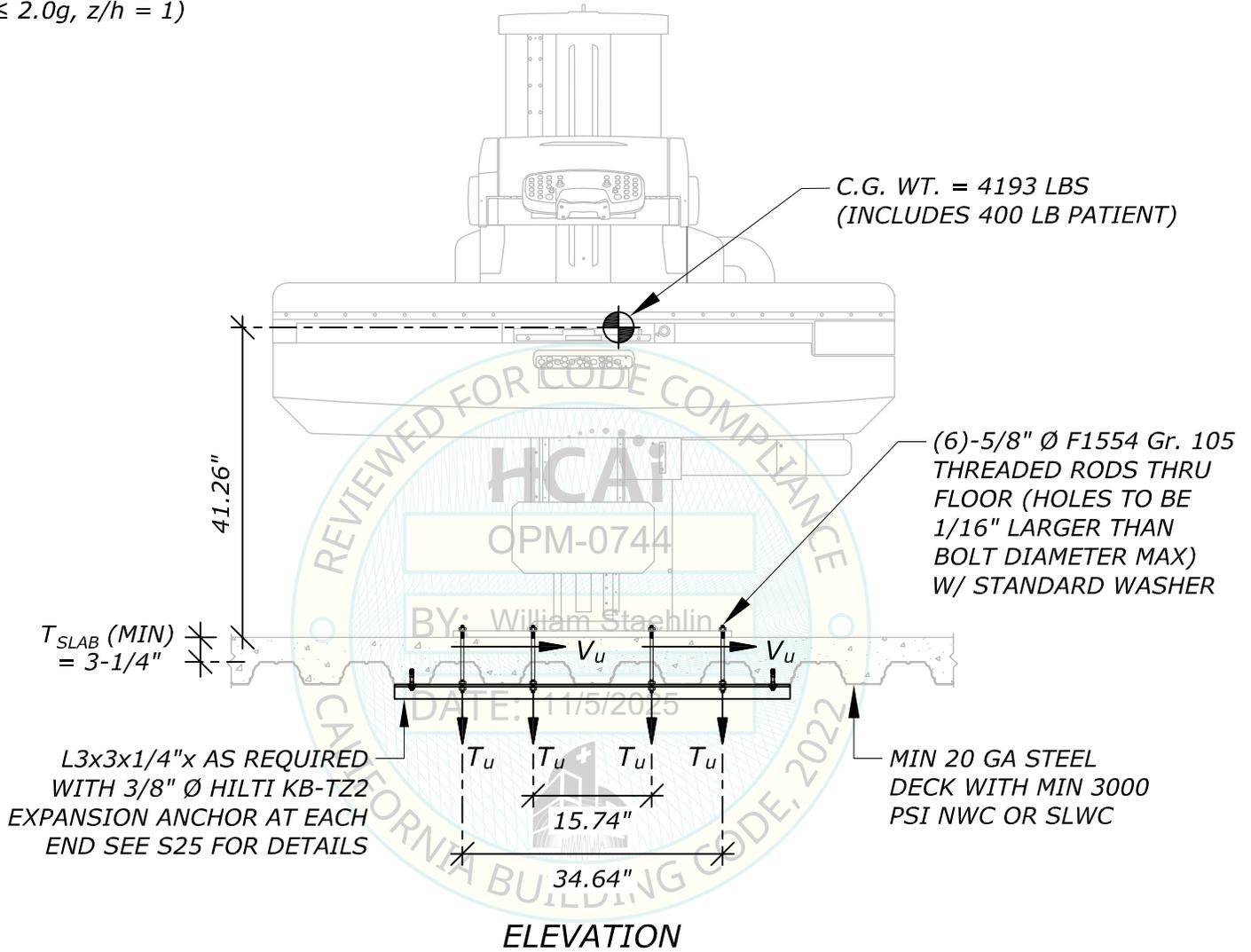
T_u (MAX) = 3151 LBS
 V_u (MAX) = 2857 LBS

PLAN VIEW - BASE $0.9 < S_{DS} \leq 2.0$



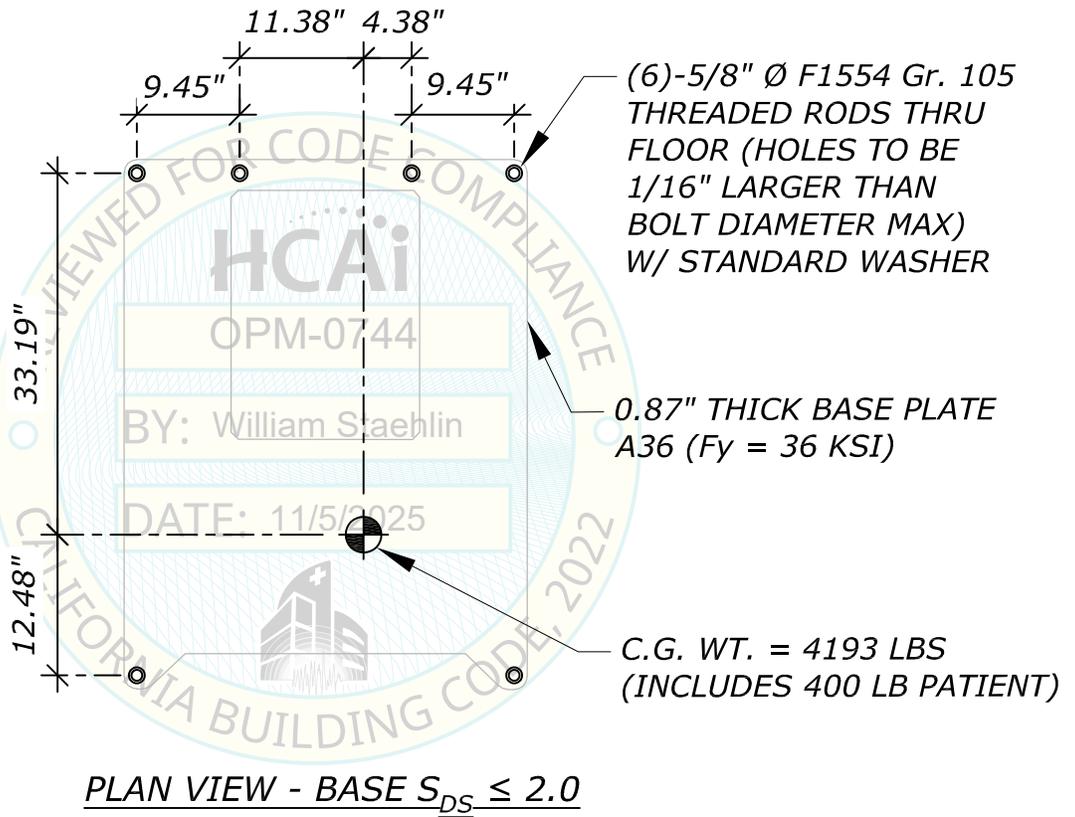
SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)



SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)

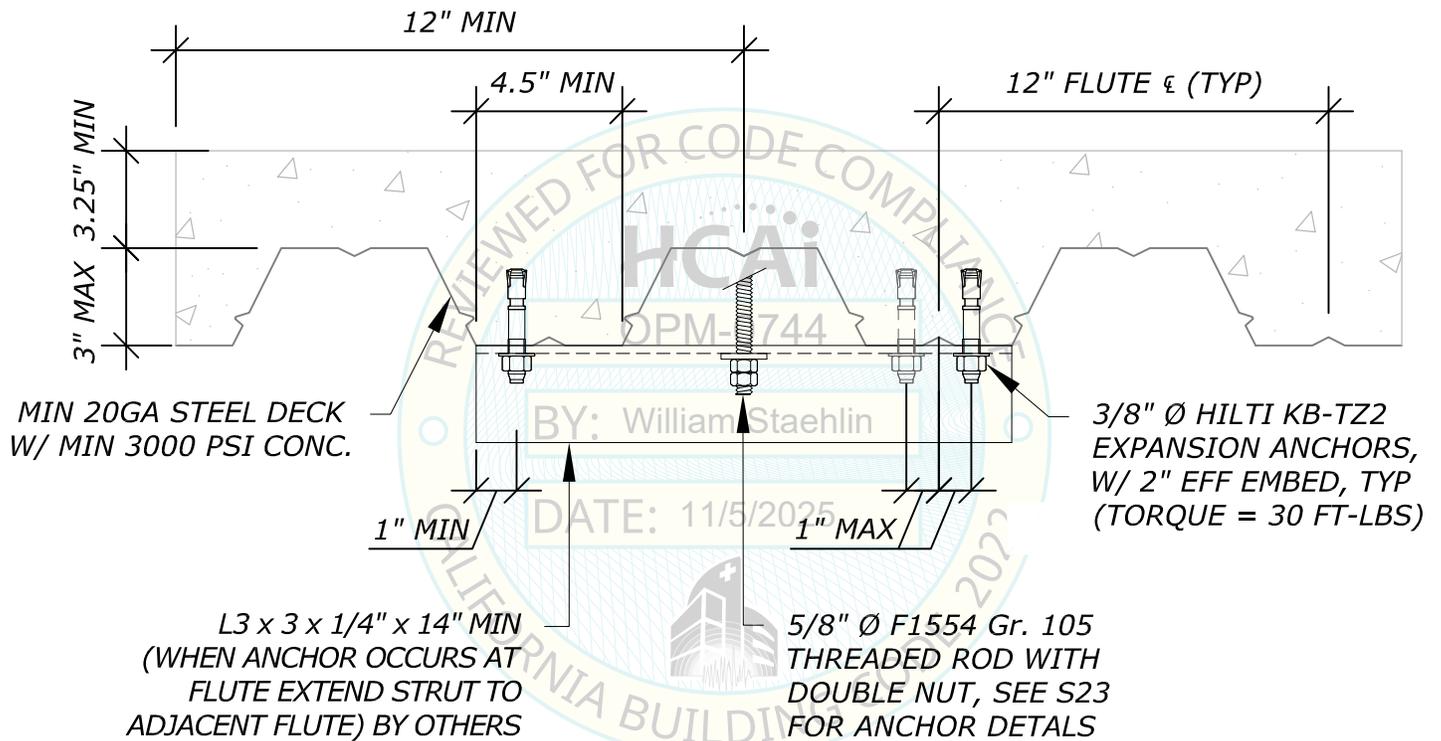


T_u (MAX) = 6966 LBS
 V_u (MAX) = 3706 LBS

PLAN VIEW - BASE $S_{DS} \leq 2.0$



SEISMIC ANCHORAGE

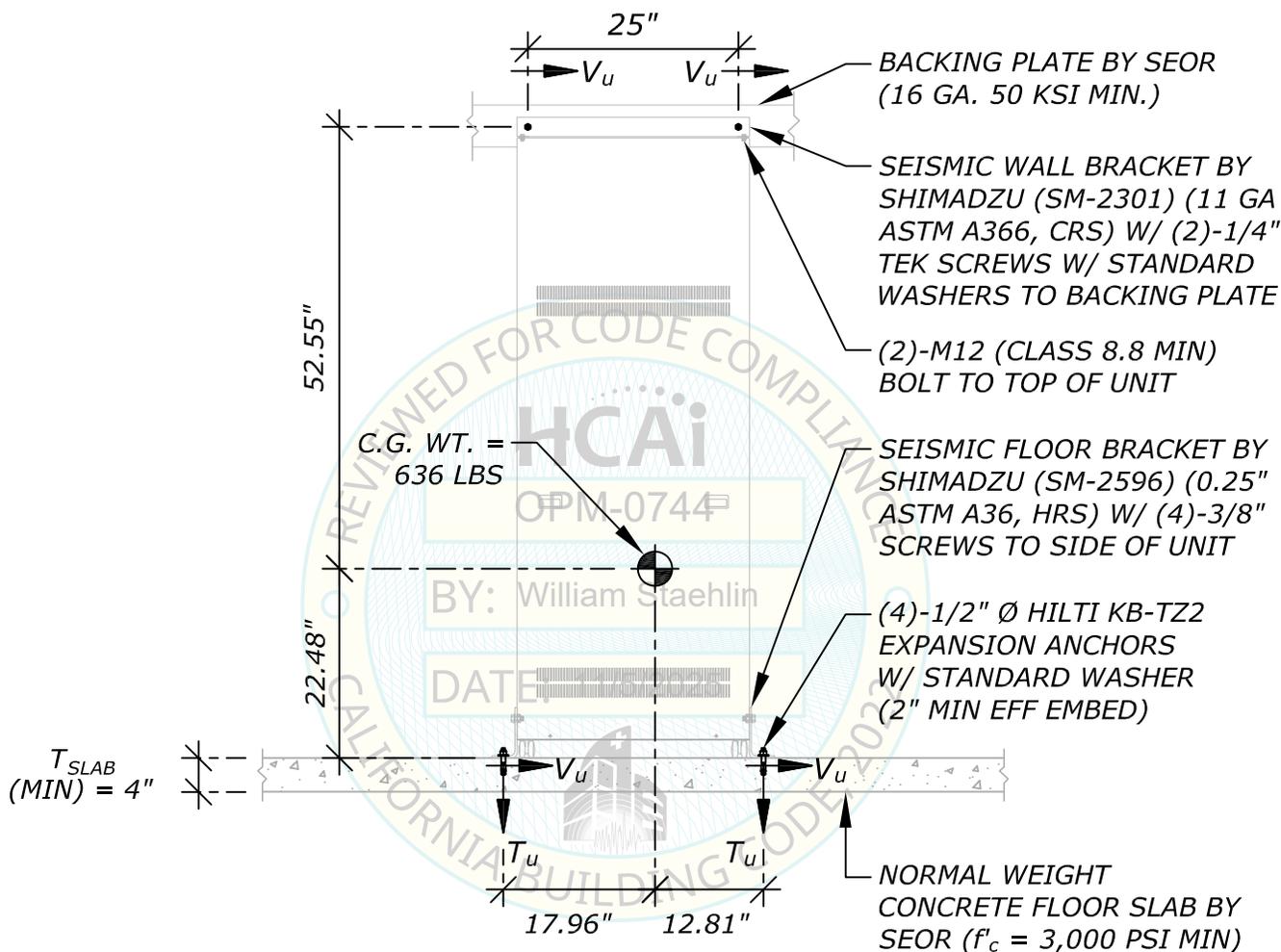


ELEVATION - STRUT DESIGN



SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 2.0g, z/h = 0$)



ELEVATION

LOCATION	TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
FLOOR	HILTI KB-TZ2	1/2"	2"	2-3/4"	2-3/4"	2-3/4"	50 ft-lbs
WALL	TEK SCREW	1/4"	--	--	--	--	--



SEISMIC ANCHORAGE

(AT SLAB-ON-GRADE,
 $S_{DS} \leq 2.0g$, $z/h = 0$)

FLOOR:

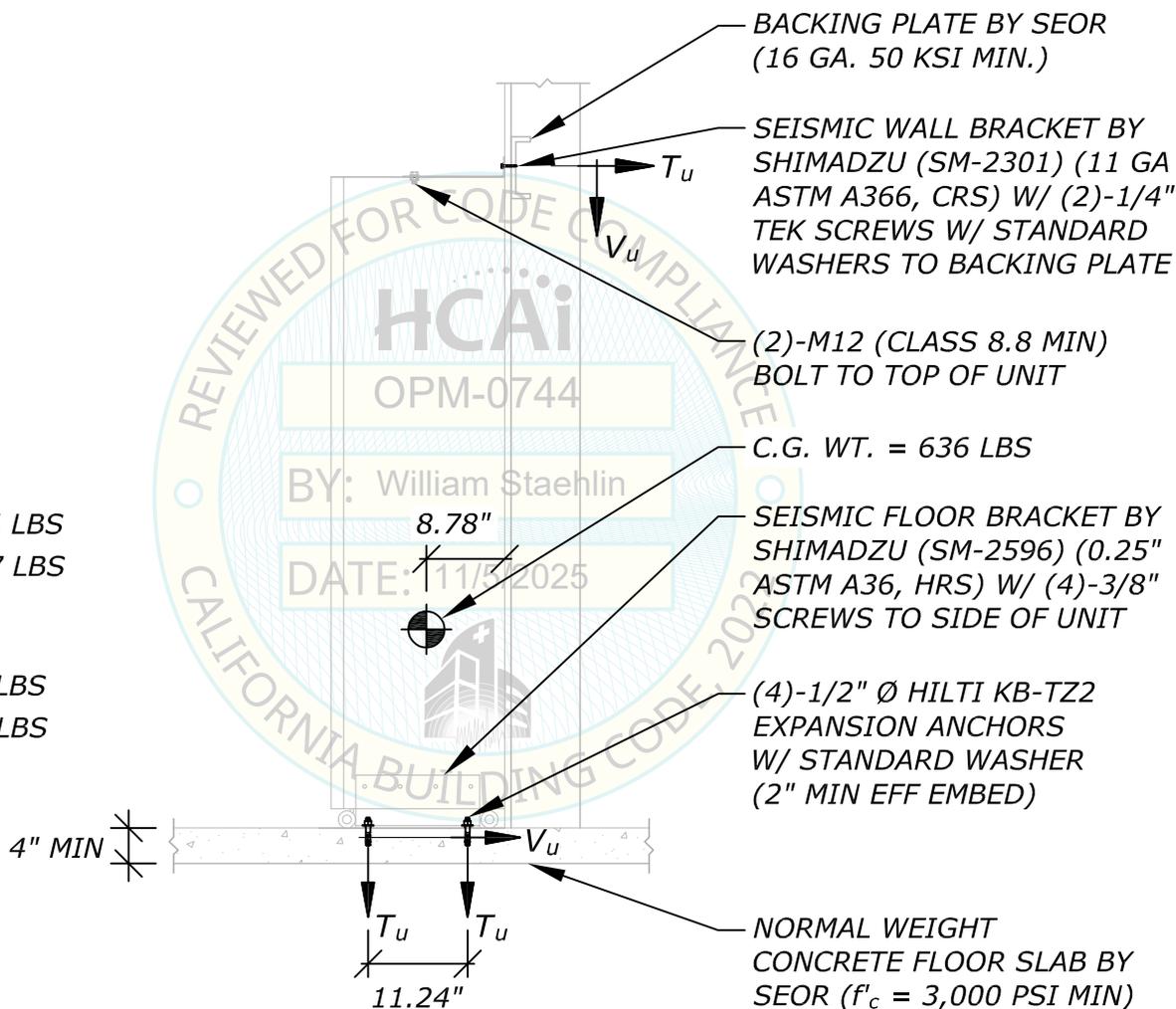
T_u (MAX) = 756 LBS

V_u (MAX) = 327 LBS

WALL:

T_u (MAX) = 42 LBS

V_u (MAX) = 35 LBS

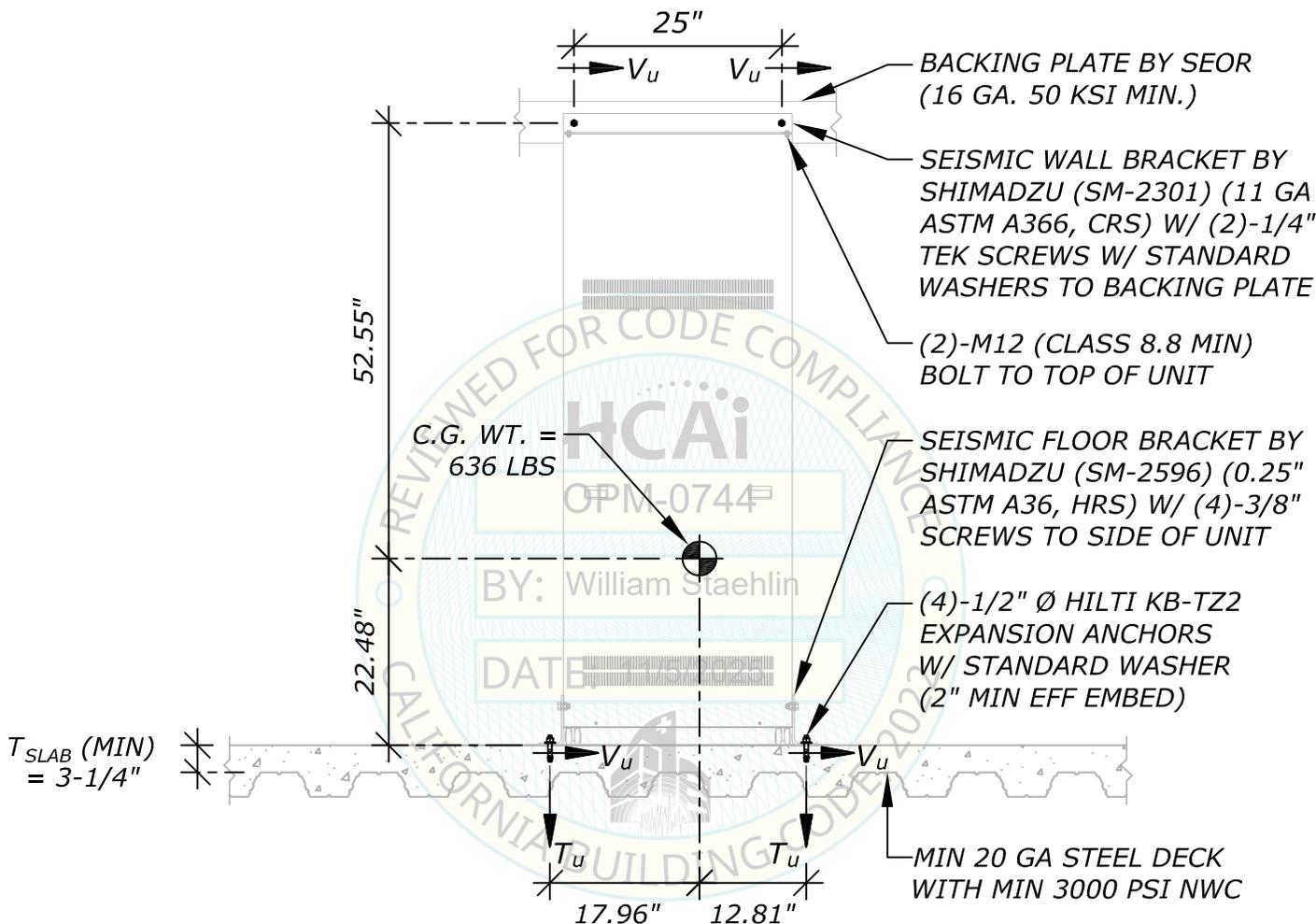


SIDE ELEVATION ($S_{DS} \leq 2.0$)



SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)



ELEVATION

LOCATION	TYPE	DIA	EFF EMBED (h_{ef})	HOLE DEPTH (h_o)	C_{min}	S_{min}	Required Torque
FLOOR	HILTI KB-TZ2	1/2"	2"	2-3/4"	7-1/2"	9"	50 ft-lbs
WALL	TEK SCREW	1/4"	--	--	--	--	--



SEISMIC ANCHORAGE

(AT SLAB ON METAL DECK,
 $S_{DS} \leq 2.0g$, $z/h = 1$)

FLOOR:

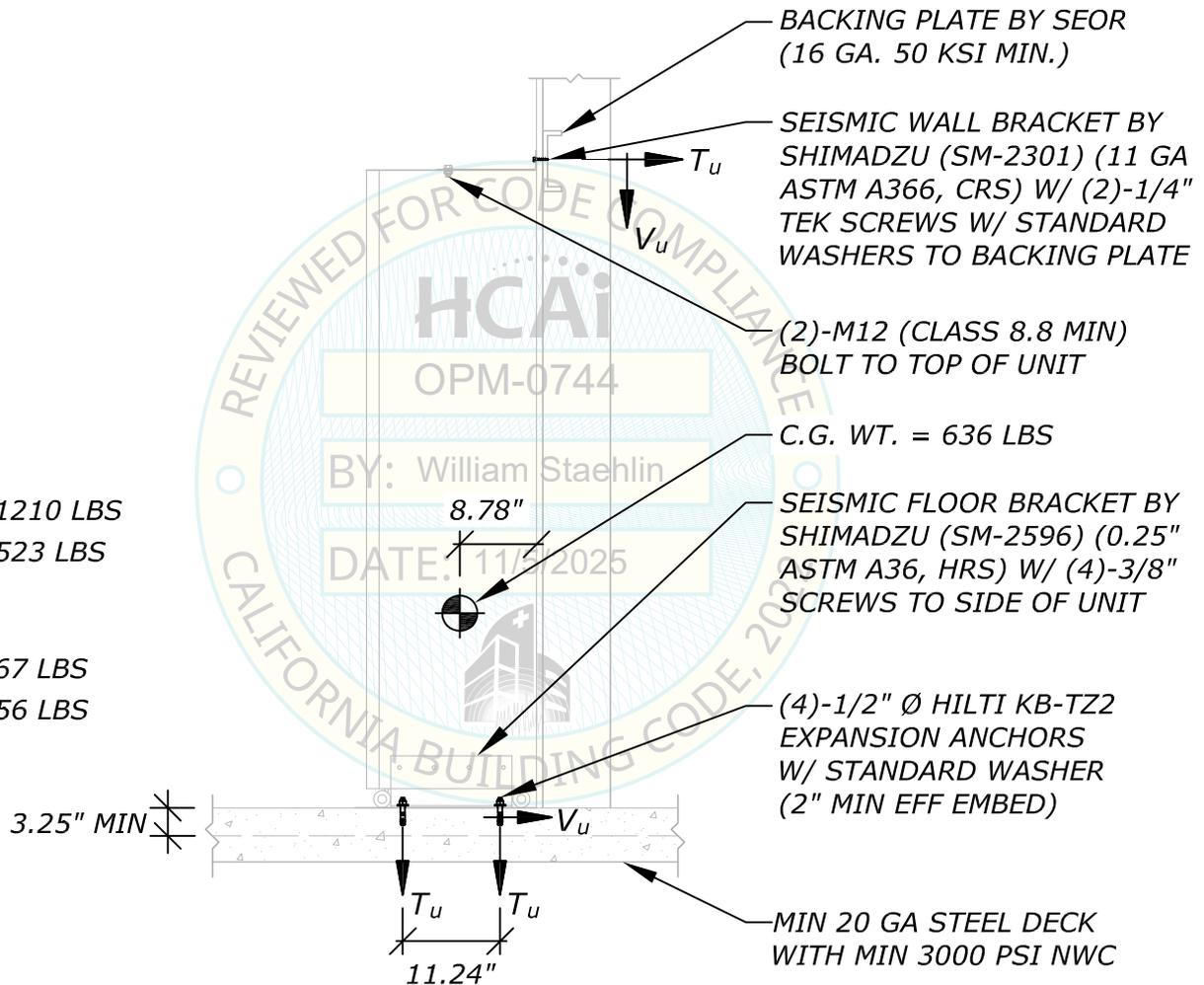
T_u (MAX) = 1210 LBS

V_u (MAX) = 523 LBS

WALL:

T_u (MAX) = 67 LBS

V_u (MAX) = 56 LBS



SIDE ELEVATION ($S_{DS} \leq 2.0$)

