



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

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

OFFICE USE ONLY

APPLICATION #: OPM-0128

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: New Renewal/Update

Manufacturer Information

Manufacturer: KNOLL INC.

Manufacturer's Technical Representative: Michael Kraynak

Mailing Address: 1235 Water St., EAST GREENVILLE, PA 18041

Telephone: (215) 679-1217

Email: mkraynak@knoll.com

Product Information

Product Name: KNOLL MORRISON PARTITIONS AND CALIBRE FILE CABINETS

Product Type: Workstations with partitions (64 inch and 80 inch heights) and file cabinets.

Product Model Number: Morrison Panels: MP2(64,80)(18,24,30,36,42,48,60); Calibre File Cabinets: C2F64(30,36,42)

General Description: Floor mounted workstations with partitions and file cabinets. Workstations are anchored to the floor in specific locations, shown in plan. The file cabinets are 64/80 inch high and anchored to the floor in specific locations, shown in plan. The anchor type used depends on substrate (concrete slab on grade, elevated slab, concrete over metal deck).

Applicant Information

Applicant Company Name: RSG Structural Engineers, Inc.

Contact Person: Bob Glasgow

Mailing Address: 4516 Wyman Drive, Sacramento, CA 95821

Telephone: (916) 716-5286

Email: bglasgow@rsgse.com

Title: Structural Engineer

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

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: RSG Structural Engineers, Inc.
Name: Robert Glasgow California License Number: S4567
Mailing Address: 4516 Wyman Drive, Sacramento, CA 95821
Telephone: (916) 716-5286 Email: bglasgow@rsgse.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, 2019 (CBSC 2019) 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 2019 may be used when approved by HCAI prior to testing.

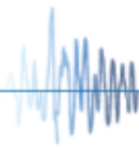
- Analysis
Experience Data
Combination of Testing, Analysis, and/or Experience Data (Please Specify):

HCAI Approval

Date: 8/29/2022
Name: William Staehlin Title: Senior Structural Engineer
Condition of Approval (if applicable):

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

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KNOLL MORRISON PARTITIONS & KNOLL CALIBRE FILE CABINETS

HCAI PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM-0128)

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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

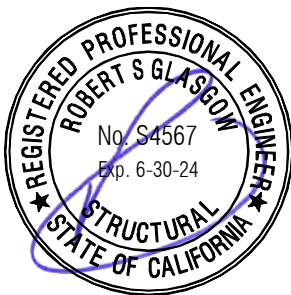
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GENERAL NOTES:

1. THIS HCAI PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2019 CALIFORNIA BUILDING CODE (CBC). THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2019.
2. EQUIPMENT TYPE: MANUFACTURED PARTITIONS (MORRISON™) & FILE CABINETS (CALIBRE™)
3. EQUIPMENT MANUFACTURER: KNOLL, INC EAST GREENVILLE, PA
4. FORCES ARE PER ASCE 7-16. SECTION 13.3.1. FOR CONDITIONS WHERE $z/h = 0$ AND $0 < z/h \leq 1.0$:
 $S_{DS} = 2.5$ $a_p = 1.0$ $R_p = 2.5$ $I_p = 1.5$ $\Omega_o = 2.5$
5. MINIMUM SUBSTRATE REQUIREMENTS FOR ANCHORAGE ARE AS FOLLOWS:
SLAB ON GRADE: $t = 4"$ MIN @ PARTITIONS AND $5"$ MIN @ CABINETS $f'_c = 3000$ PSI MIN
ELEVATED SLAB: $t = 4"$ MIN $f'_c = 3000$ PSI MIN
CONCRETE OVER METAL DECK:
 $2 \frac{1}{2}"$ SAND LWC ($f'_c = 3000$ PSI MIN) OVER $2W$ OR $3W$ ($2"$ OR $3"$) METAL DECK MIN
 NO EXCEPTIONS TO MINIMUM REQUIREMENTS. REFERENCE PAGES 33, 34, AND 41 TO 46 FOR ATTACHMENT DETAILS
6. THIS PRE-APPROVAL IS APPLICABLE TO ANY LOCATION IN THE STATE OF CALIFORNIA AND AT ANY HEIGHT WITHIN THE BUILDING.
7. THIS PRE-APPROVAL COVERS THE SUPPORTS & ATTACHMENTS OF THE UNIT TO THE STRUCTURE FOR THE UNITS AND CONFIGURATIONS SHOWN ONLY.

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD:

1. FOR SITE SPECIFIC INSTALLATION, VERIFY:
 - a. THE ADEQUACY OF NEW OR EXISTING STRUCTURE TO RESIST THE FORCES AND WEIGHT SPECIFIED FOR EACH EQUIPMENT IN ADDITION TO ALL OTHER LOADS.
 - b. THE ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS.
 - c. THE ANCHORS ARE AT AN ADEQUATE DISTANCE FROM ANY NEW OR EXISTING ANCHORS.
 - d. PROVIDE AND DESIGN ANY SUPPLEMENTARY MEMBERS AS REQUIRED.
 - e. THE INSTALLATION IS IN CONFORMANCE WITH THE 2019 CBC AND WITH DETAILS SHOWN ON THIS PRE-APPROVAL.
 - f. THE EQUIPMENT'S ACTUAL WEIGHT, CENTER OF GRAVITY (C.G.) LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS AND MATERIAL AND GAGE OF UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH INFORMATION SHOWN ON THIS PRE-APPROVAL.
 - g. PROVIDE DESIGN FOR ANY SUPPLEMENTARY MEMBERS TO WHICH UNIT IS ATTACHED.
 - h. VERIFY THAT THE PROJECT SPECIFIC VALUES OF S_{DS} & z/h RESULT IN SEISMIC FORCES (E_h , E_v) THAT DO NOT EXCEED VALUES ON THE DETAILS.



KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

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POST-INSTALLED ANCHORS NOTES:

1. TESTING OF POST INSTALLED ANCHORS IS PER CBC 2019 SECTION 1910A.5.
2. APPLY PROOF TEST LOADS TO WEDGE ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE. IF NOT, REMOVE NUT & INSTALL A THREADED COUPLER TO THE SAME TIGHTNESS OF THE ORIGINAL NUT USING A TORQUE WRENCH & APPLY LOAD.
3. REACTION LOADS FROM TEST FIXTURES MAY BE APPLIED CLOSE TO THE ANCHOR BEING TESTED, PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE FIXTURE(S).
4. TEST EQUIPMENT IS TO BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.
5. THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
 - A. HYDRAULIC RAM METHOD: WEDGE ANCHORS TESTED WITH A HYDRAULIC JACK OR SPRING LOADED DEVICES SHALL MAINTAIN THE TEST LOAD FOR A MINIMUM OF 15 SECONDS AND SHALL EXHIBIT NO DISCERNABLE MOVEMENT DURING THE TENSION TEST, E.G., AS EVIDENCED BY LOOSENING OF THE WASHER UNDER THE NUT.
 - B. TORQUE WRENCH METHOD: WEDGE ANCHORS TESTED WITH A CALIBRATED TORQUE WRENCH MUST ATTAIN THE SPECIFIED TORQUE WITHIN 1/2 TURN OF NUT FOR ALL ANCHOR DIAMETERS, EXCEPT FOR SLEEVE TYPE ANCHORS. 1/4 TURN OF THE NUT MAY BE USED FOR 3/8"Ø SLEEVE TYPE ANCHORS ONLY.
6. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE (PRE- OR POST- TENSIONED) LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF ONE INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.
7. ALL TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE SPECIAL INSPECTOR/INSPECTOR OF RECORD. A REPORT OF THESE RESULTS SHALL BE SUBMITTED TO HCAI.
8. AFTER A MINIMUM OF 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST (OR APPLY MFR'S INSTALLATION TORQUE PER APPLICABLE ICC-ES ESR) 50% OF THE ANCHORS.
9. IF ANCHORS FAIL TESTING, TEST ALL ANCHORS OF THE SAME TYPE INSTALLED BY THE SAME TRADE AND NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME INITIAL TESTING FREQUENCY.
10. TEST LOADS FOR ANCHORS IN NORMAL OR SAND LIGHTWEIGHT CONCRETE:

ANCHOR	DIAMETER (in)	INSTALLATION/ TEST TORQUE (FT-LBS)	TENSION TEST LOAD (LBS)	h_{eff} (in)	MIN EDGE DIST (in)	ICC-ES ESR NO.
DEWALT SCREW-BOLT+	3/8	25	1875	2	12	3889
POWER STUD+	3/4	110	N/A	4	12	2502
POWER STUD+	3/8	20	N/A	2 3/8	12	2502

ANCHOR	DIAMETER (in)	TENSION TEST LOAD (LBS)	h_{eff} (in)	MIN EDGE DIST (in)
1/2"Ø CAST IN PLACE GROUTED ANCHOR	3/4	4035	3 3/4	12




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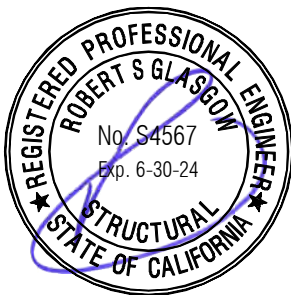
KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

POST-INSTALLED ANCHORS NOTES, CONTINUED:

11. CONCRETE BOLTS SHALL BE CARBON STEEL DEWALT SCREW-BOLT+ COMPLYING WITH ICC ESR-3889 DATED NOVEMBER 2021.
12. EXPANSION ANCHORS SHALL BE CARBON STEEL DEWALT POWER STUD+ COMPLYING WITH ICC ESR-2502 DATED MAY 2022.

BOLTS THROUGH CONCRETE ON METAL DECK NOTES:

1. 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.
2. THROUGH BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16) FOR CONCRETE.
3. 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.
4. MINIMUM EDGE DISTANCE IS 18".



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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
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SUMMARY OF WEIGHTS FOR KNOLL MORRISON WORKSTATION COMPONENTS:

		64" KNOLL MORRISON WORKSTATIONS					80" KNOLL MORRISON WORKSTATIONS		
		ITEM	DL (LBS)	LL			ITEM	DL (LBS)	LL
64" FULL HT PANEL	24" WIDE		25.0	-	80" FULL HT PANEL	24" WIDE		31.3	-
	36" WIDE		37.9	-		30" WIDE		39.5	-
	48" WIDE		50.0	-		48" WIDE		62.5	-
42" PANEL USED IN CONJUNCTION W/ 22" WINDOW	24" WIDE		17.2	-	48" PANEL USED IN CONJUNCTION W/ 32" WINDOW	24" WIDE		19.7	-
	30" WIDE		20.4	-		30" WIDE		23.3	-
	36" WIDE		23.5	-		36" WIDE		26.9	-
	48" WIDE		31.2	-		48" WIDE		35.7	-
22" WINDOW USED IN CONJUNCTION W/ 42" PANEL	24" WIDE		10.7	-	32" WINDOW USED IN CONJUNCTION W/ 48" PANEL	24" WIDE		15.5	-
	30" WIDE		14.0	-		30" WIDE		20.3	-
	36" WIDE		17.4	-		36" WIDE		25.3	-
	48" WIDE		22.7	-		48" WIDE		33.0	-
WORK SURFACES	MUI S3624		30	-	WORK SURFACES	MUI S3624		30	-
	MUI S4824		40	-		MUI S4824		40	-
	MUI C4872		94	-		MUI C4872		94	-
	MUI C7248		94	-		MUI C7248		94	-
OVERHEAD SHELVES	RSI M24		13.3	66 ¹	OVERHEAD SHELVES	RSI M24		13.3	66 ¹
	RSI M48		21.3	132 ¹		RSI M48		21.3	132 ¹

NOTES:

1. LL BASED ON CBC TABLE 1607A.1 NOTE P.



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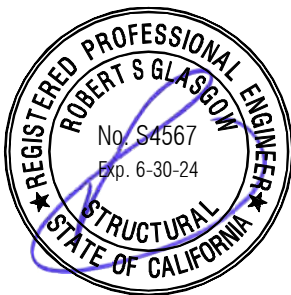
KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE CABINET SEISMIC SUPPORTS & ATTACHMENTS


SUMMARY OF WEIGHTS FOR KNOLL CALIBRE FILE CABINETS:

CALIBRE™ FILE CABINETS		
ITEM	DL (LBS)	LL ¹ (LBS)
30" WIDE 5 SHELVES	207	461
36" WIDE 5 SHELVES	229	564
42" WIDE 5 SHELVES	250	666

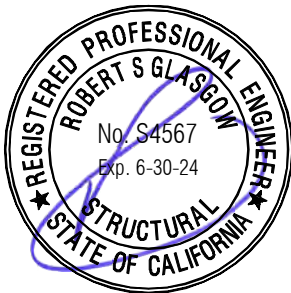
NOTES:

1. LL BASED ON CBC TABLE 1607A.1 NOTE P.



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Knoll MORRISON™ System 64" Height Configurations



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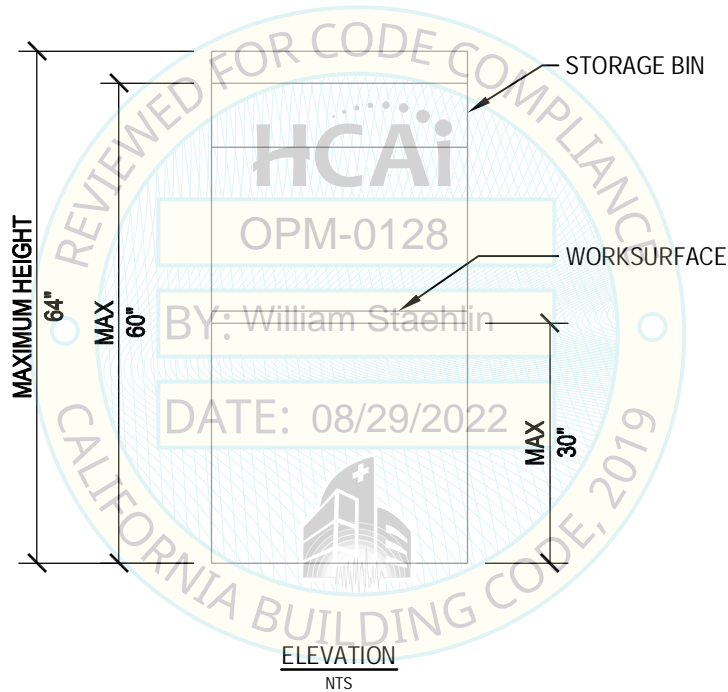
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

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THE FOLLOWING PARTITION CONFIGURATIONS REPRESENT COMMON ARRANGEMENTS OF THE KNOLL MORRISON PARTITION SYSTEM. PARTITIONS INSTALLED IN ACCORDANCE WITH THIS PRE-APPROVAL SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. PARTITIONS SHALL NOT BE INSTALLED IN A ROW TO FORM CORRIDOR OR EXIT WAY.
2. USE OF THESE PARTITIONS IS LIMITED TO NON-PATIENT, ADMINISTRATIVE, OFFICE AREAS.
3. THIS OPM APPLIES ONLY TO THE MODELS AND CONFIGURATIONS SHOWN IN THIS OPM
4. PARTITION CONFIGURATIONS CONSIST OF:
 - PARTITION WALLS
 - WORK SURFACES
 - OVERHEAD STORAGE BINS
5. MAXIMUM PANEL HEIGHT AND STORAGE BIN INSTALLATION HEIGHT IS SHOWN BELOW.
6. REFER TO MANUFACTURER DRAWINGS FOR PANEL TO PANEL CONNECTIONS.



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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

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LEGEND

PANEL SIZE

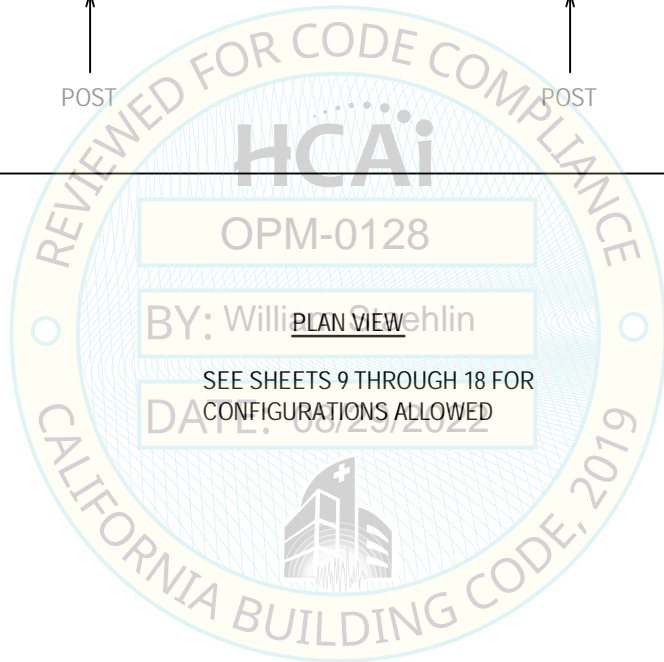
INDICATES PANEL WIDTH

60X

INDICATES SEISMIC ANCHOR PER SHEET 33, 34 OR 35. SEE SHEET 32 FOR DIFFERENCE BETWEEN "A" ANCHOR AND "B" ANCHOR.

POST

POST



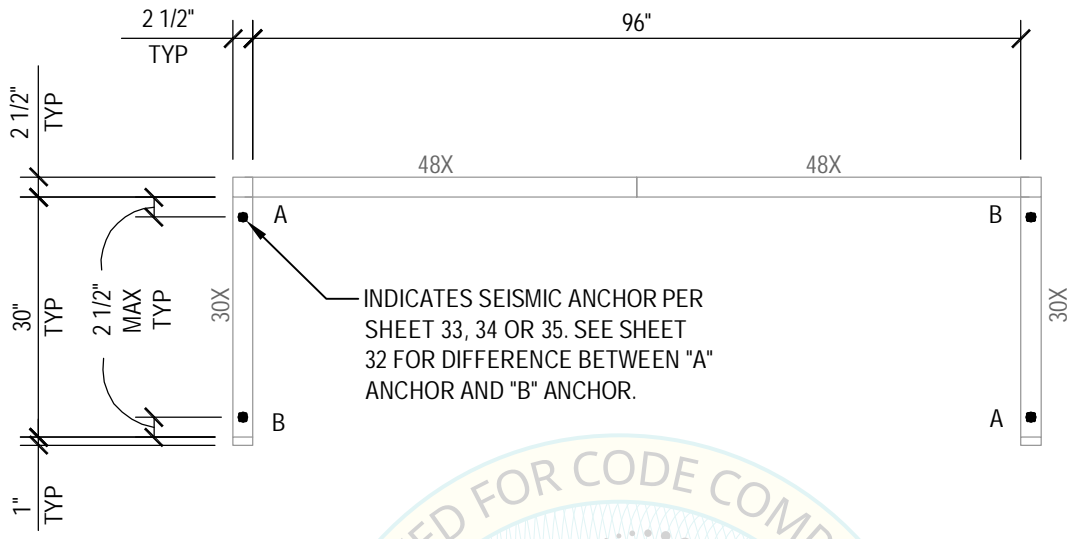
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CABINET SEISMIC SUPPORTS & ATTACHMENTS**

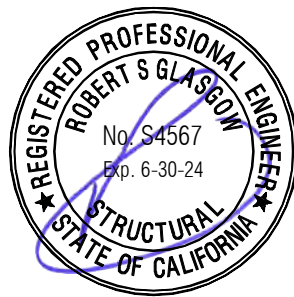
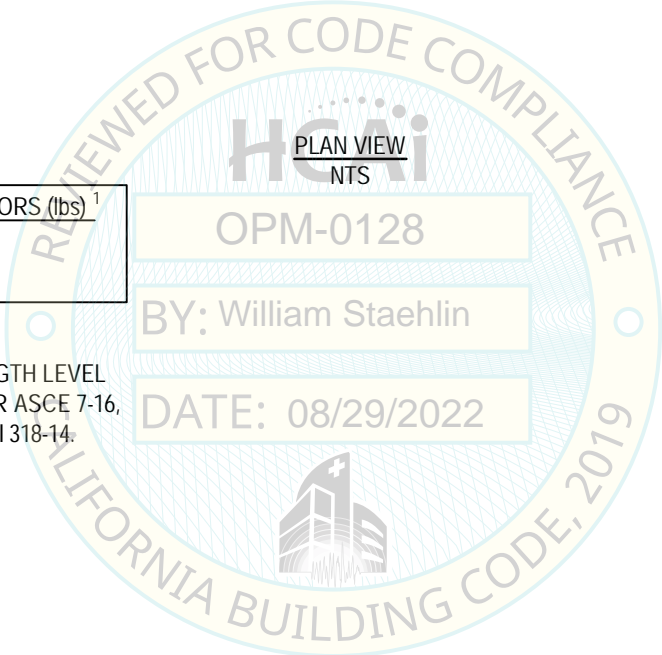
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PLAN VIEW
NTS

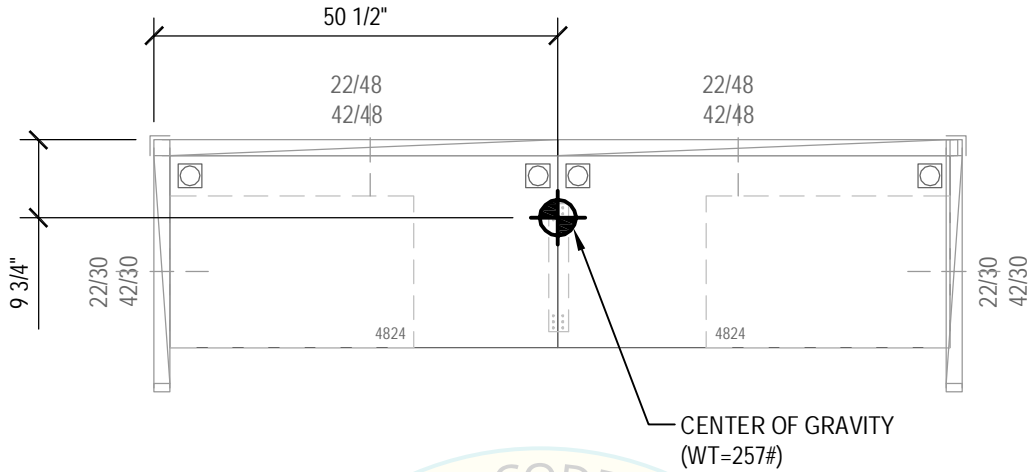
MAX REACTION AT ANCHORS (lbs) ¹
V=301
T=775

- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14.

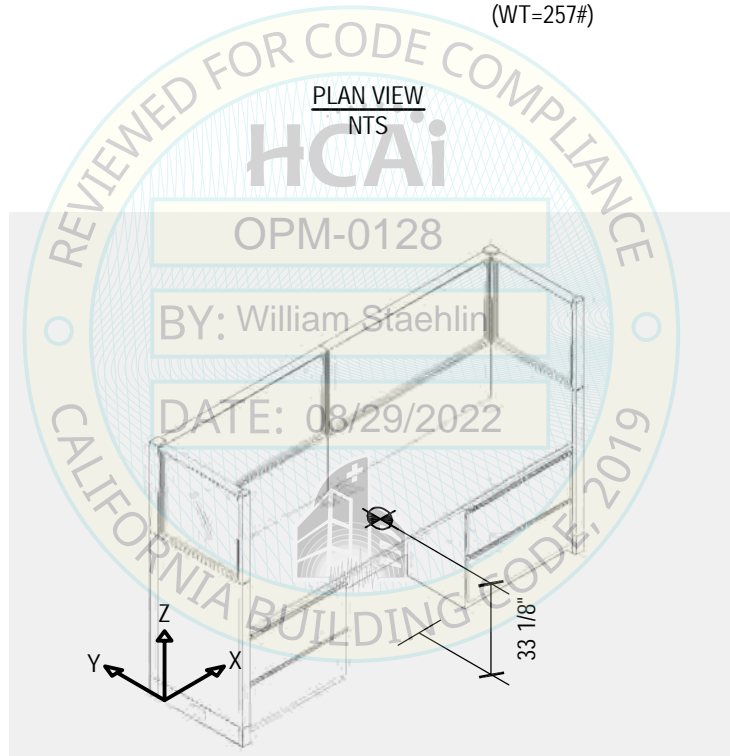


**SEISMIC ANCHOR LOCATIONS
WORKSTATION 2A, 64" HEIGHT**

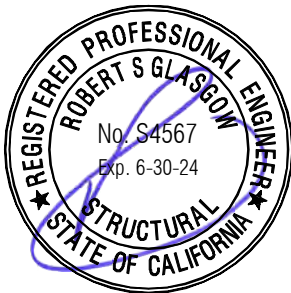
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PLAN VIEW
NTS



ISOMETRIC VIEW
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**WEIGHT AND CENTER OF GRAVITY
WORKSTATION 2A, 64" HEIGHT**

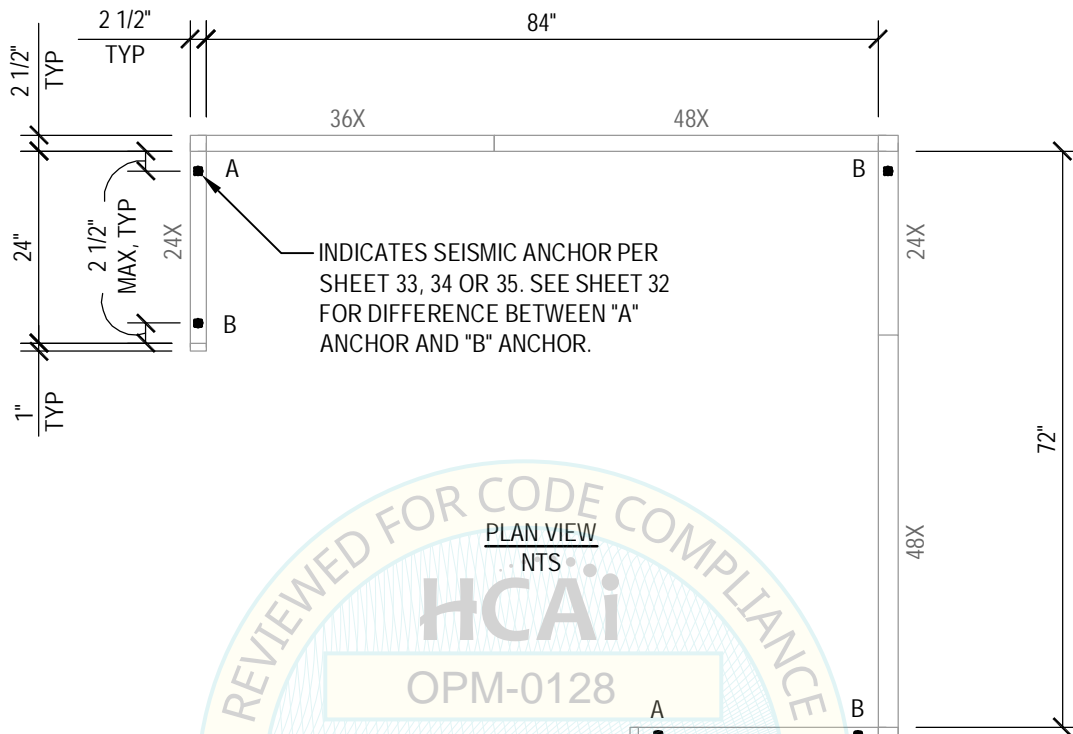


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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 10 OF 49



MAX REACTION AT ANCHORS (lbs) ¹
V=553
T=874

- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14

SEISMIC ANCHOR LOCATIONS
WORKSTATION 1A, POD 1, 64" HEIGHT



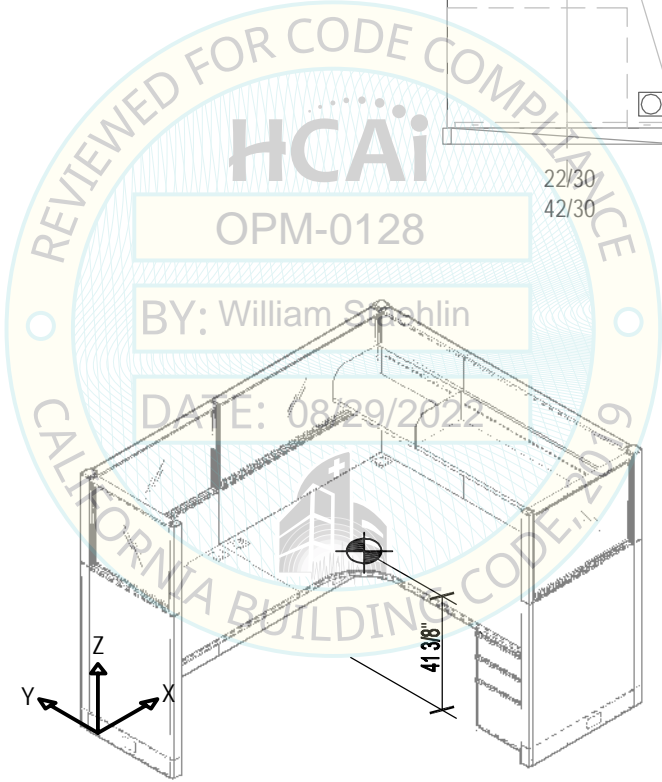
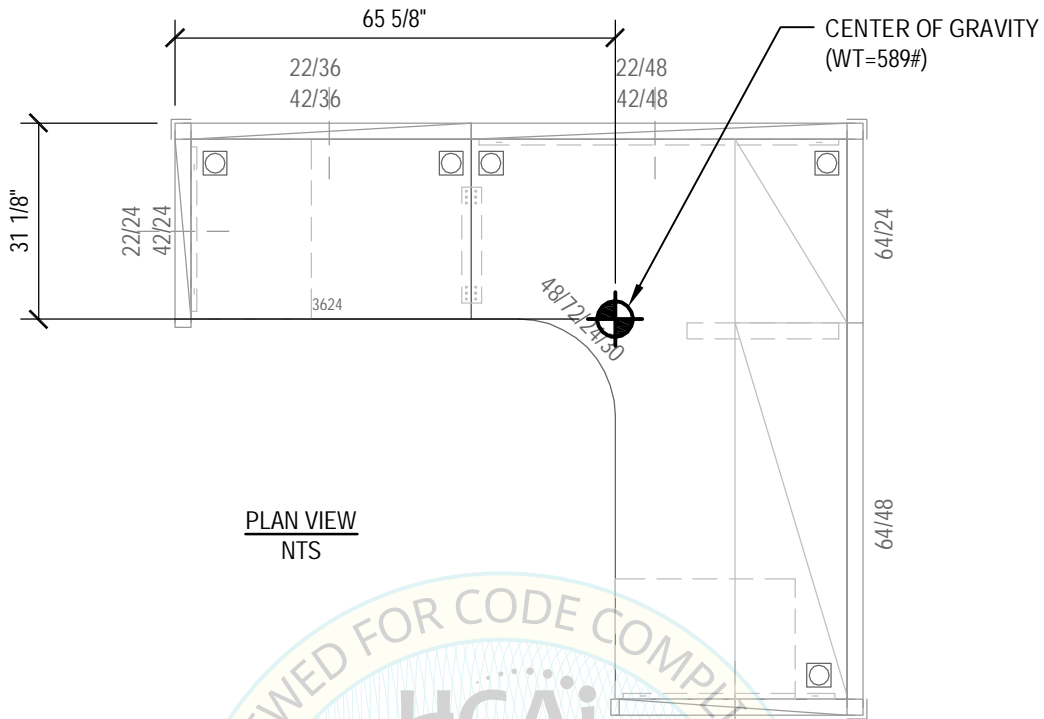
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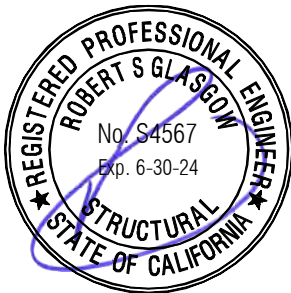
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
 CABINET SEISMIC SUPPORTS & ATTACHMENTS

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REVIEWED FOR CODE COMPLIANCE
 HCAi
 OPM-0128
 BY: William Staehlin
 DATE: 08/29/2022
 CALIFORNIA BUILDING CODE 2019



**WEIGHT AND CENTER OF GRAVITY
 WORKSTATION 1A, POD 1, 64" HEIGHT**

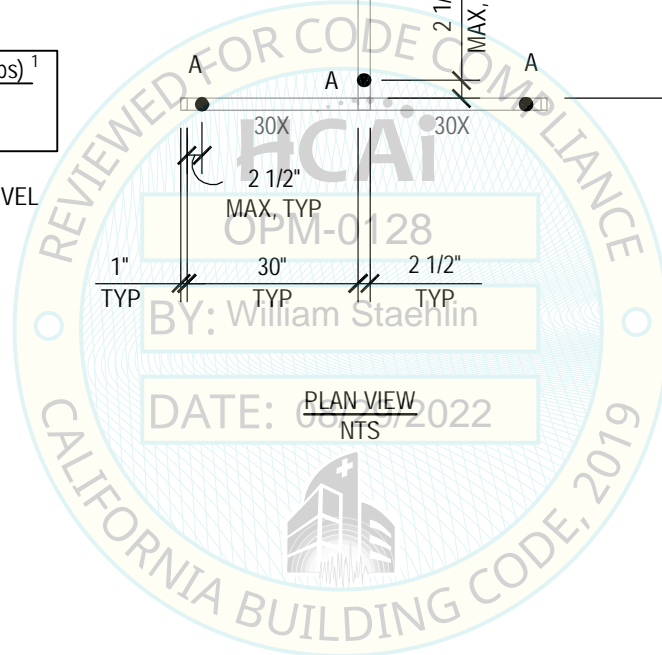
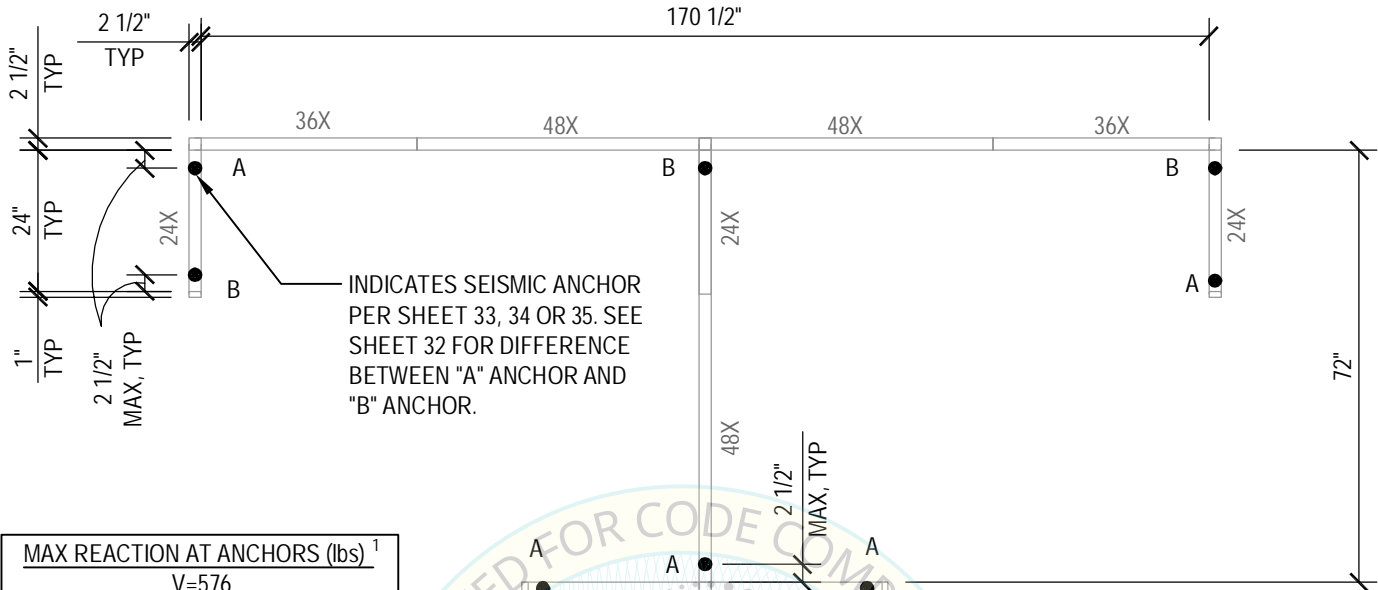


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**KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
 CABINET SEISMIC SUPPORTS & ATTACHMENTS**

SHEET 12 OF 49




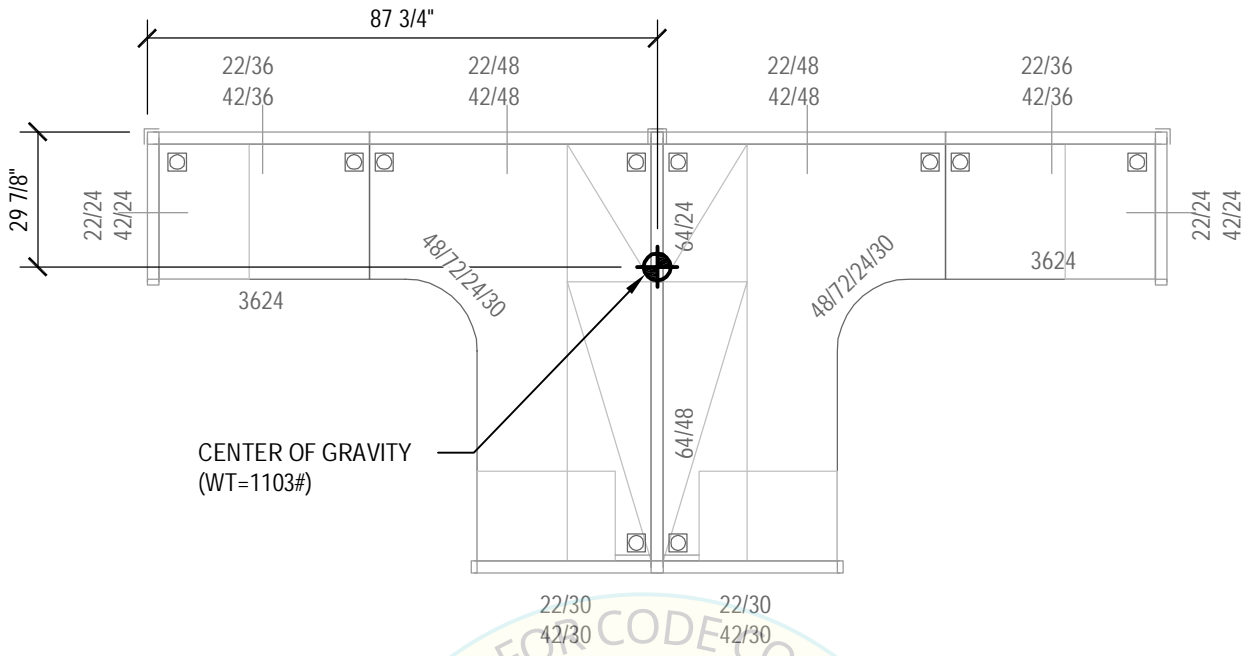
MAX REACTION AT ANCHORS (lbs) ¹	
V=	576
T=	1047

- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14

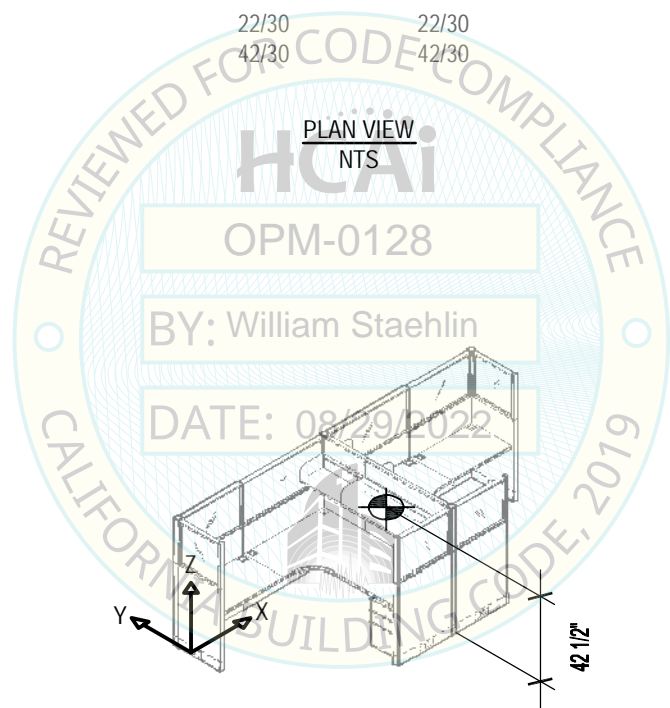


SEISMIC ANCHOR LOCATIONS
WORKSTATION 1A, POD 2, 64" HEIGHT

	4516 Wyman Drive Sacramento, CA 95821	KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE CABINET SEISMIC SUPPORTS & ATTACHMENTS
	P: (916) 716-5286	



PLAN VIEW
NTS

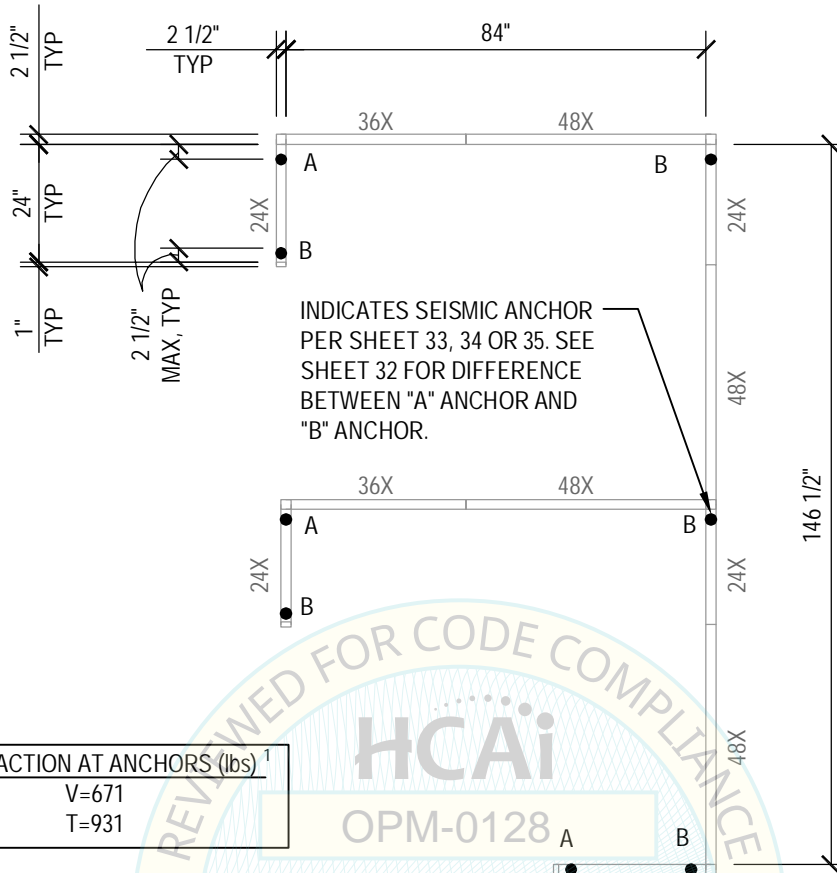


ISOMETRIC VIEW
NTS

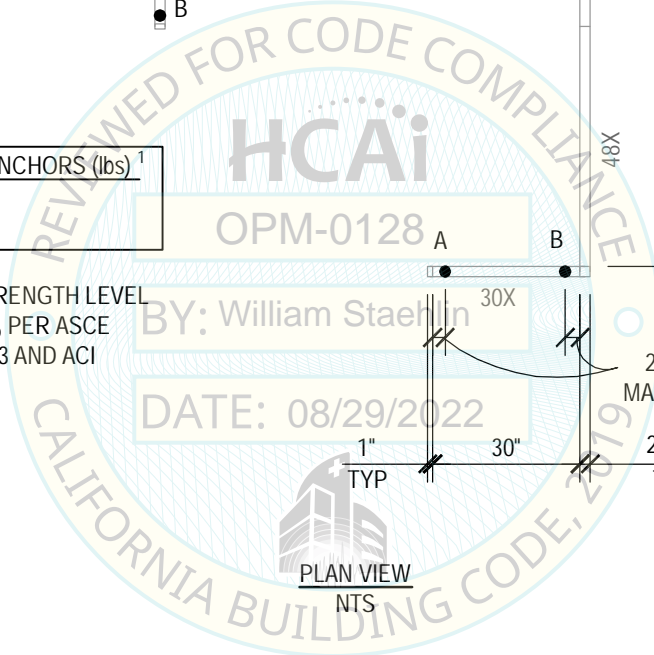


**WEIGHT AND CENTER OF GRAVITY
WORKSTATION 1A, POD 2, 64" HEIGHT**

 <p>Structural Engineers www.RSGSE.com</p>	<p>4516 Wyman Drive Sacramento, CA 95821 P: (916) 716-5286</p>	<p>KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE CABINET SEISMIC SUPPORTS & ATTACHMENTS</p>	<p>SHEET 14 OF 49</p>
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- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14

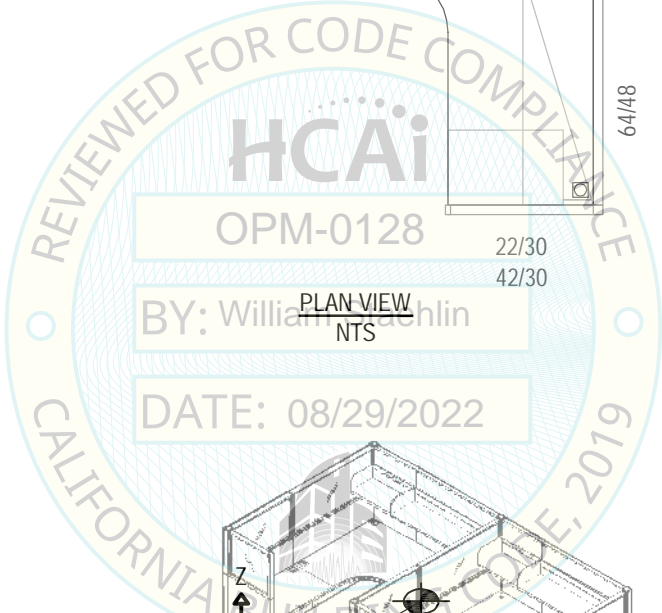
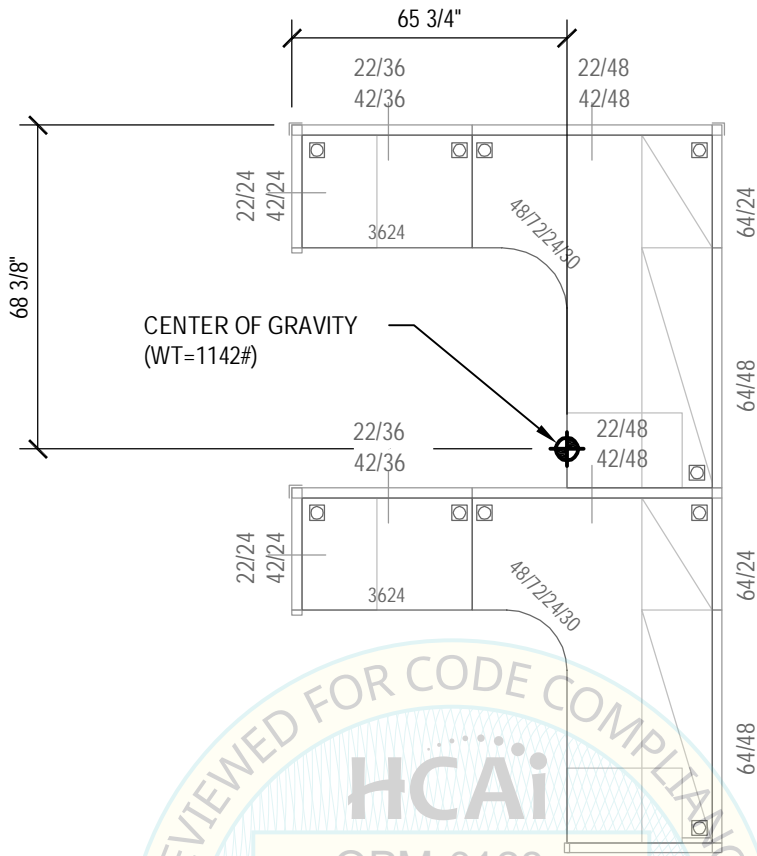


PLAN VIEW
NTS

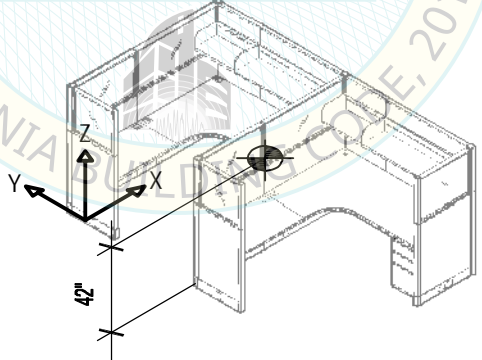


SEISMIC ANCHOR LOCATIONS
WORKSTATION 1A, POD 3, 64" HEIGHT

	4516 Wyman Drive Sacramento, CA 95821 P: (916) 716-5286	KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE CABINET SEISMIC SUPPORTS & ATTACHMENTS	SHEET 15 OF 49
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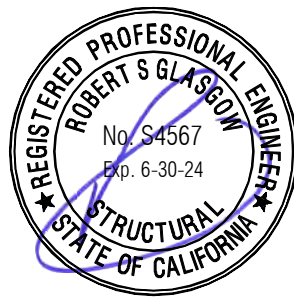


OPM-0128
 PLAN VIEW
 NTS
 DATE: 08/29/2022



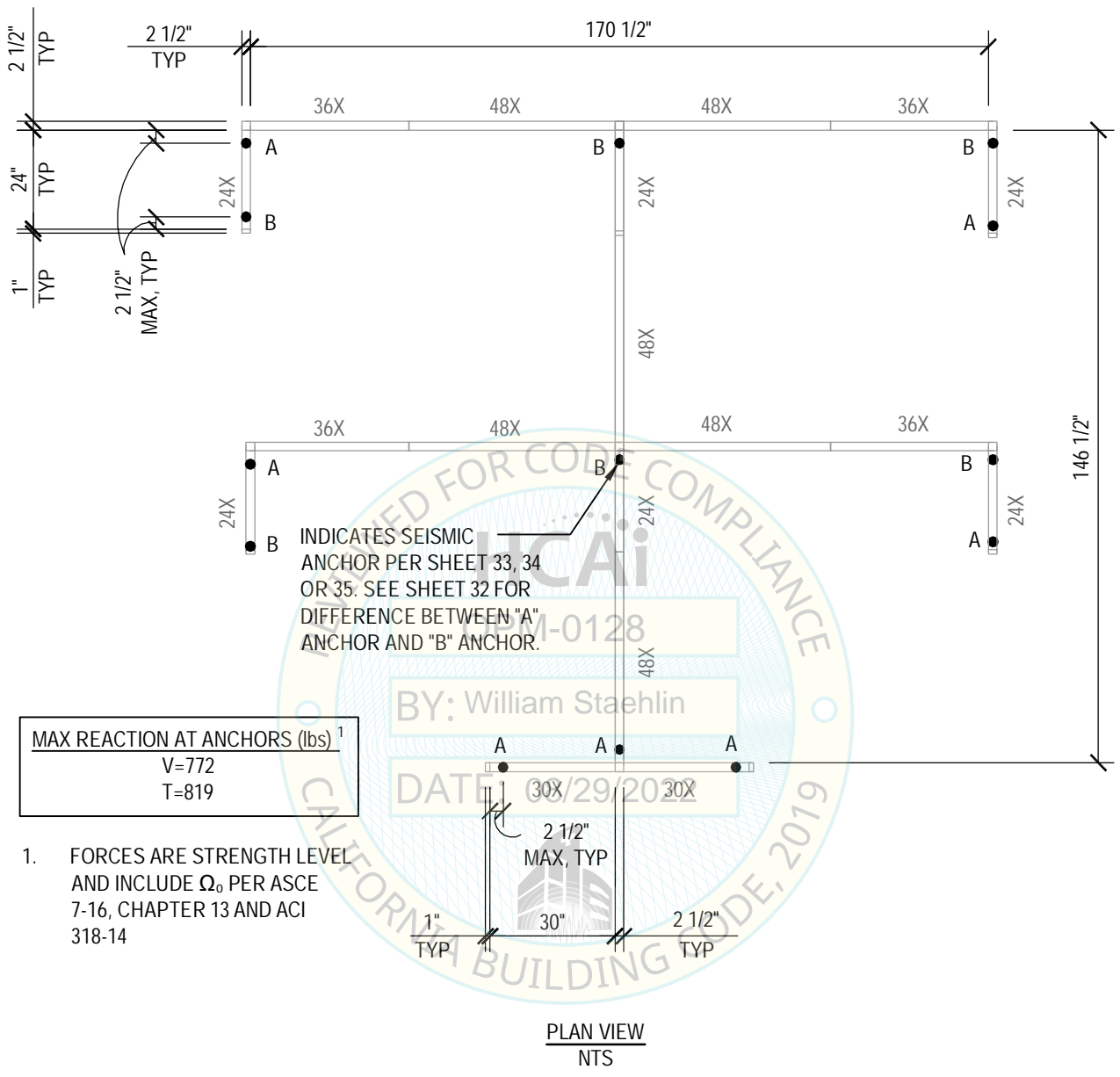
ISOMETRIC VIEW
 NTS

**WEIGHT AND CENTER OF GRAVITY
 WORKSTATION 1A, POD 3, 64" HEIGHT**



4516 Wyman Drive
 Sacramento, CA 95821
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
 CABINET SEISMIC SUPPORTS & ATTACHMENTS

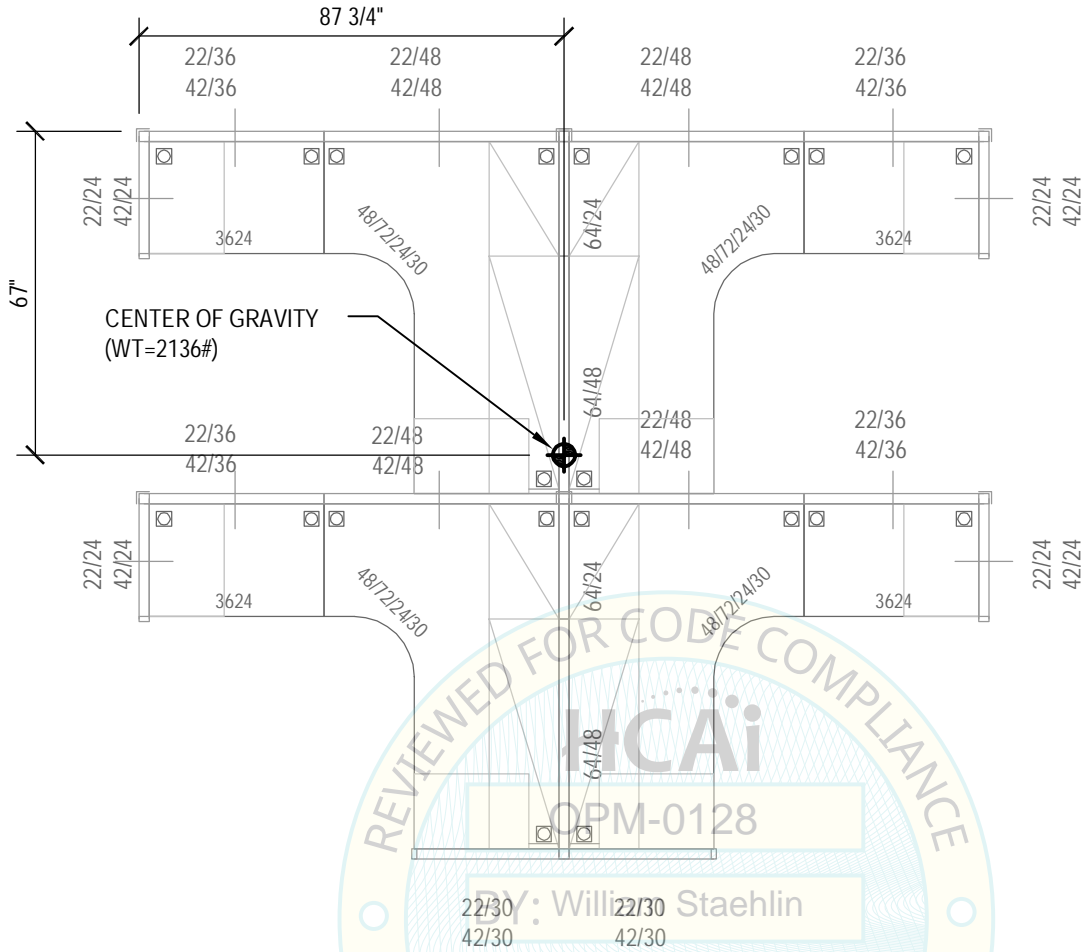


SEISMIC ANCHOR LOCATIONS
WORKSTATION 1A, POD 4, 64" HEIGHT



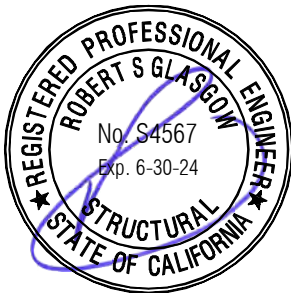
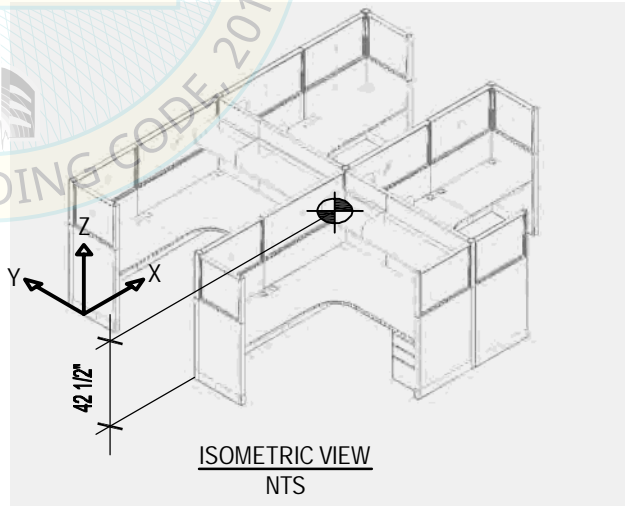
4516 Wyman Drive
 Sacramento, CA 95821
 P: (916) 716-5286

KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
 CABINET SEISMIC SUPPORTS & ATTACHMENTS



PLAN VIEW
NTS

DATE: 08/29/2022



**WEIGHT AND CENTER OF GRAVITY
WORKSTATION 1A, POD 4, 64" HEIGHT**



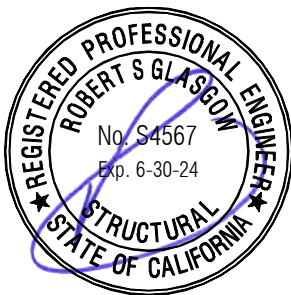
4516 Wyman Drive
Sacramento, CA 95821

P: (916) 716-5286

**KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS**

SHEET 18 OF 49

Knoll MORRISON™ System 80" Height Configurations



4516 Wyman Drive
Sacramento, CA 95821

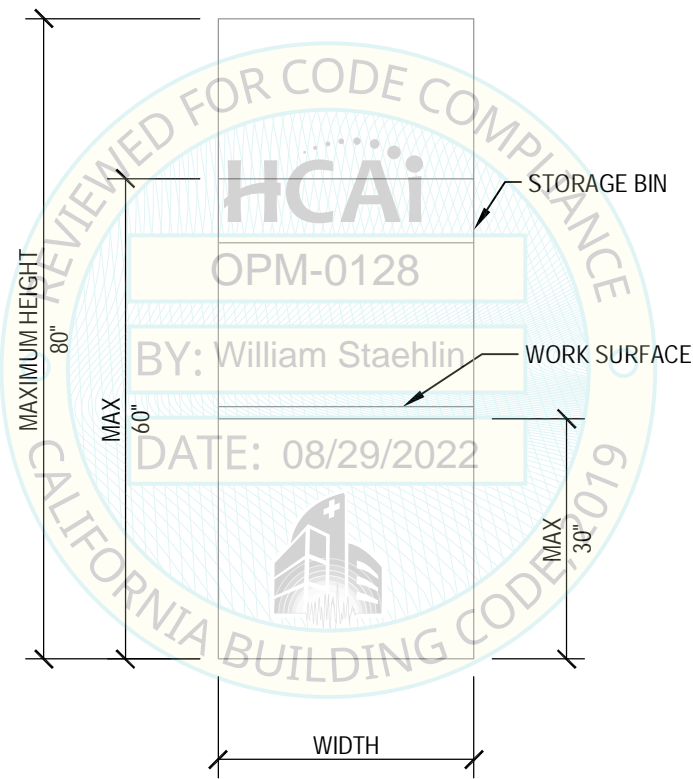
P: (916) 716-5286

KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 19 OF 49

THE FOLLOWING REPRESENT COMMON ARRANGEMENTS OF THE KNOLL MORRISON PARTITION SYSTEM. PARTITIONS INSTALLED IN ACCORDANCE WITH THIS PRE-APPROVAL SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. PARTITIONS SHALL NOT BE INSTALLED IN A ROW TO FORM CORRIDOR OR EXIT WAY.
2. USE OF THESE PARTITIONS IS LIMITED TO NON-PATIENT, ADMINISTRATIVE, OFFICE AREAS.
3. THIS OPM APPLIES ONLY TO THE MODELS AND CONFIGURATIONS SHOWN IN THIS OPM.
4. PANEL CONFIGURATIONS CONSIST OF:
 - PARTITION WALLS
 - WORKSURFACES
 - OVERHEAD STORAGE BINS
5. MAXIMUM PANEL HEIGHT AND STORAGE BIN INSTALLATION HEIGHT IS SHOWN BELOW.
6. REFER TO MANUFACTURER DRAWINGS FOR PANEL TO PANEL CONNECTIONS.



ELEVATION
NTS



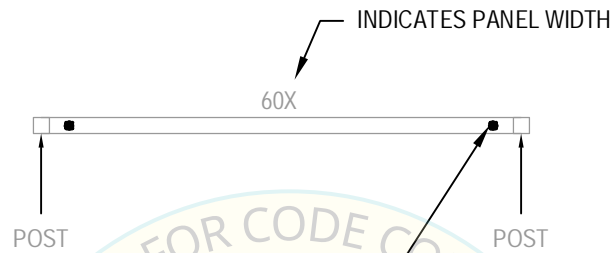
	4516 Wyman Drive Sacramento, CA 95821
	P: (916) 716-5286

KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 20 OF 49

LEGEND

PANEL SIZE

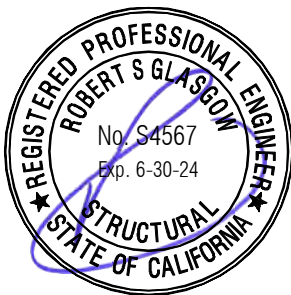


INDICATES SEISMIC ANCHOR PER SHEET 33, 34, OR 35. SEE SHEET 32 FOR DIFFERENCE BETWEEN "A" ANCHOR AND "B" ANCHOR

BY: William Staehlin

DATE: 08/29/2022
PLAN VIEW
NTS

SEE SHEETS 22 THROUGH 31 FOR CONFIGURATIONS ALLOWED

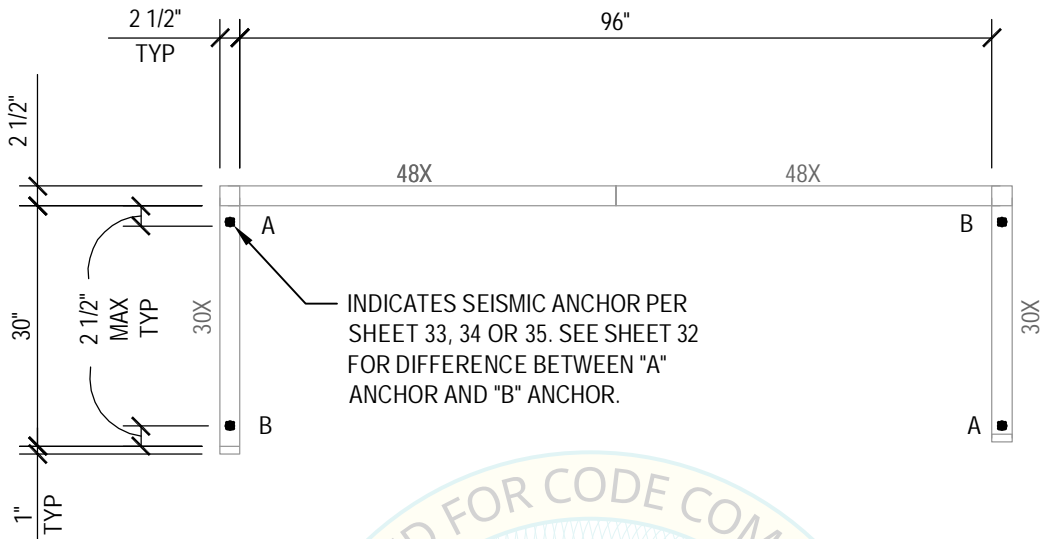


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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 21 OF 49



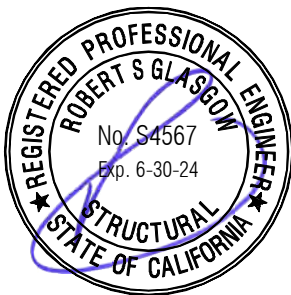
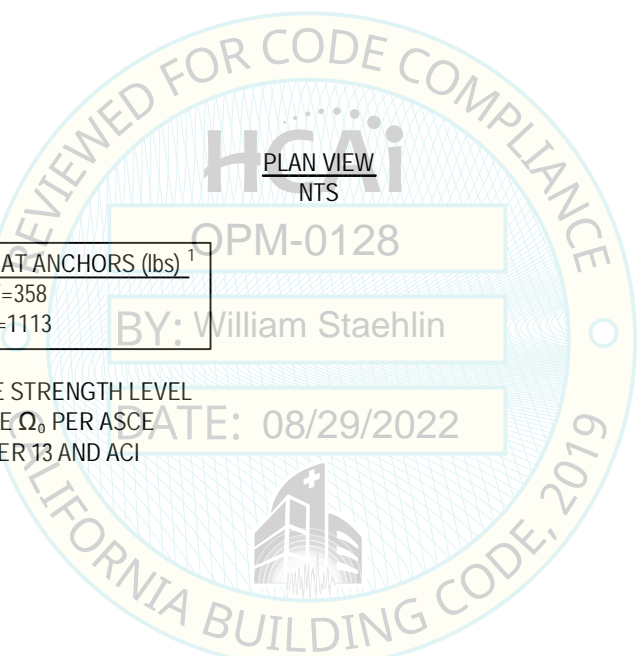
PLAN VIEW
NTS

MAX REACTION AT ANCHORS (lbs) ¹

V=358

T=1113

- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14



SEISMIC ANCHOR LOCATIONS
WORKSTATION 2B, 80" HEIGHT

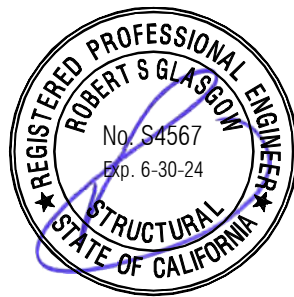
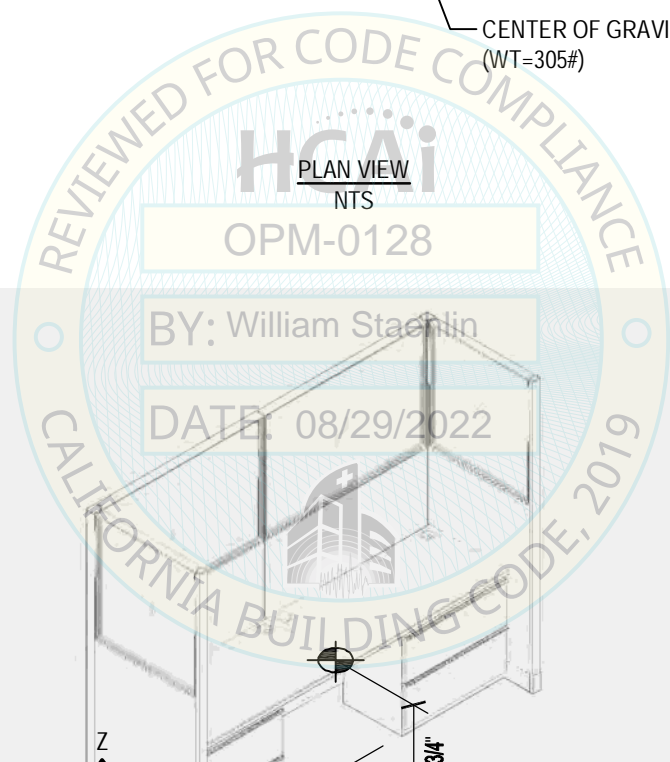
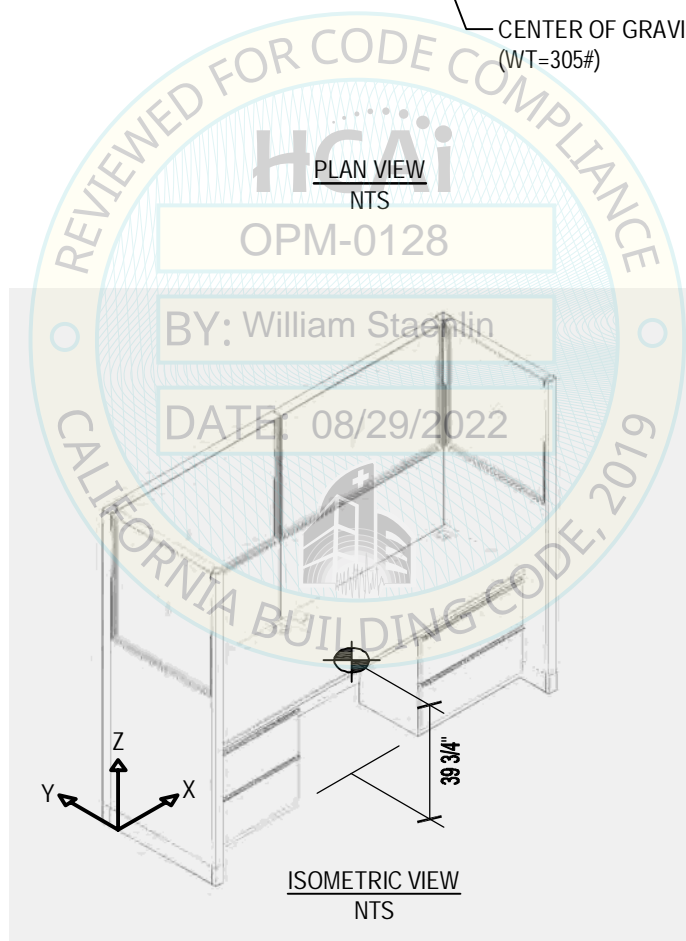
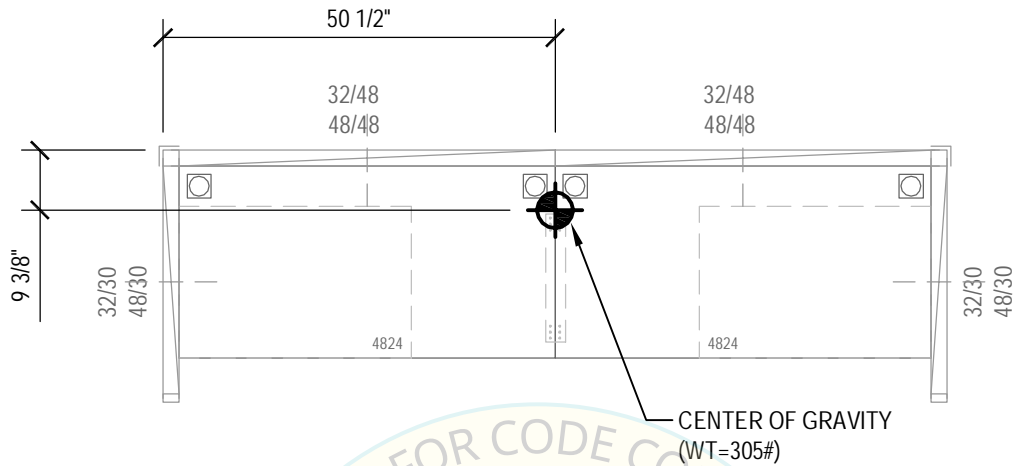


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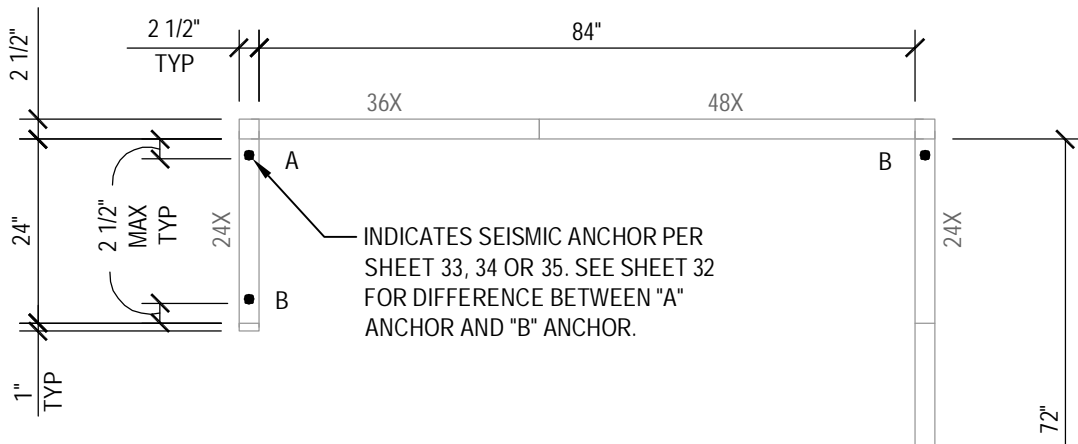
KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 22 OF 49



**WEIGHT AND CENTER OF GRAVITY
WORKSTATION 2B, 80" HEIGHT**

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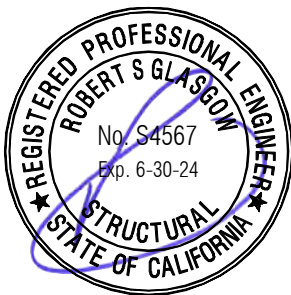


PLAN VIEW
NTS

MAX REACTION AT ANCHORS (lbs) ¹
V=611
T=1047

- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14

SEISMIC ANCHOR LOCATIONS
WORKSTATION 1B, POD 1, 80" HEIGHT

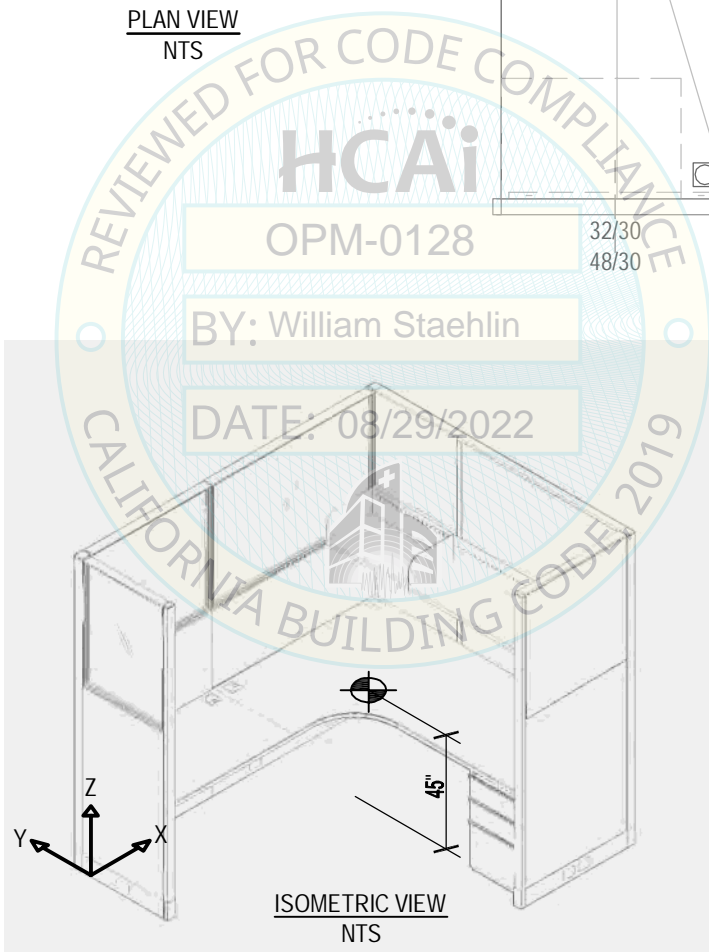
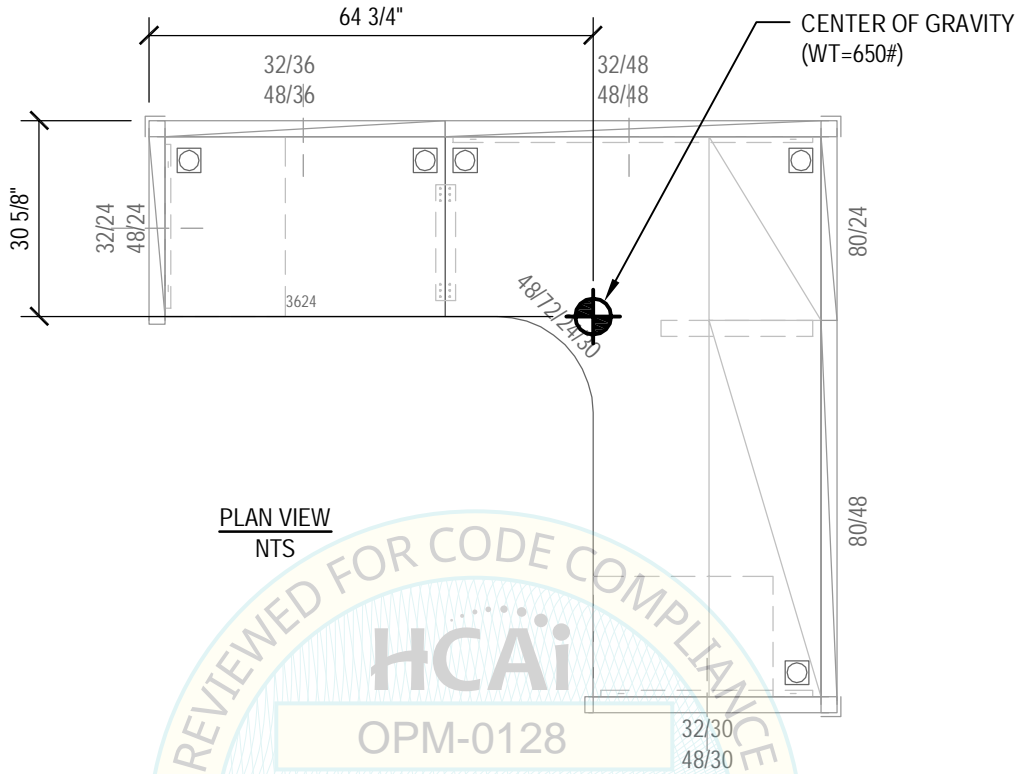


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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 24 OF 49



**WEIGHT AND CENTER OF GRAVITY
WORKSTATION 1B, POD 1, 80" HEIGHT**

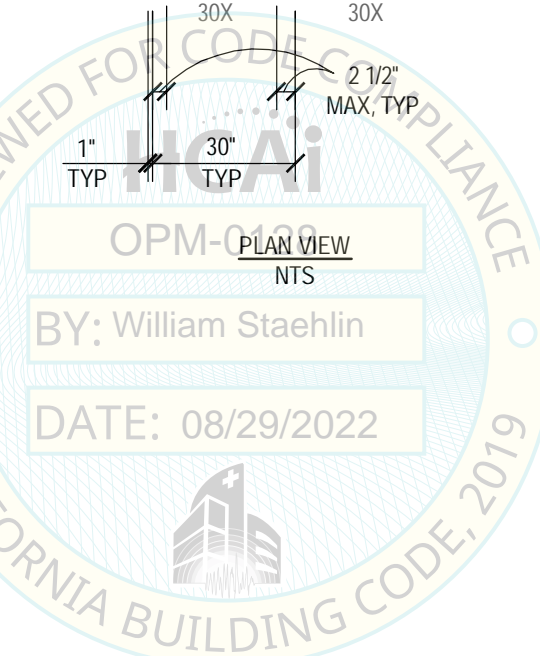
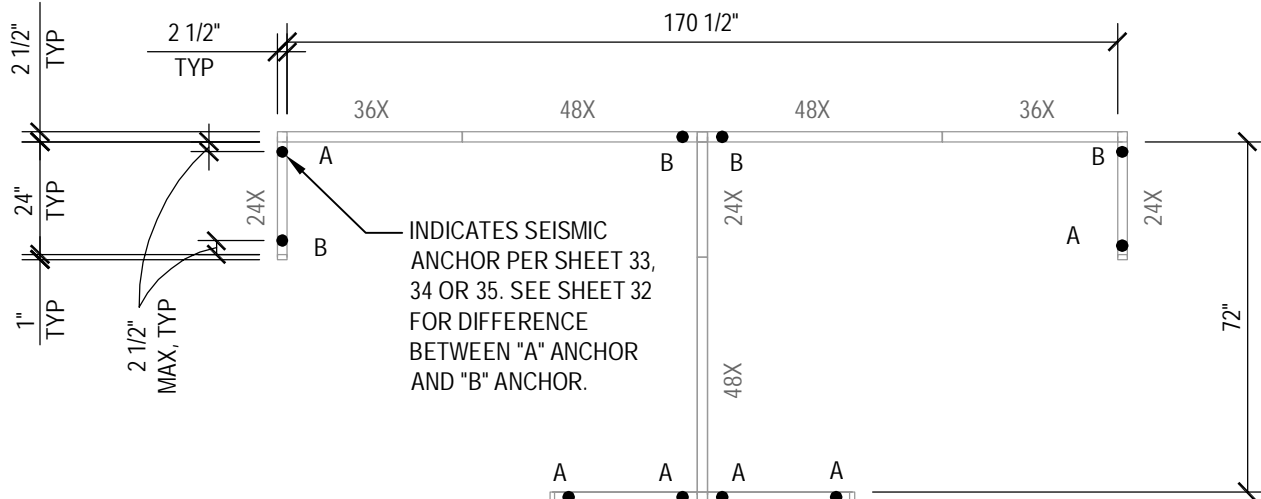


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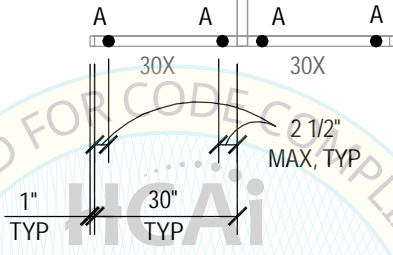
**KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS**

SHEET 25 OF 49

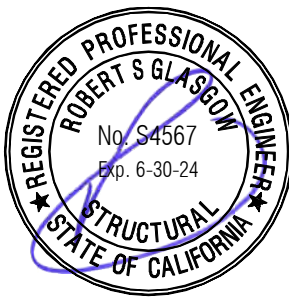


<p>MAX REACTION AT ANCHORS (lbs) ¹</p> <p>V=567</p> <p>T=970</p>
--

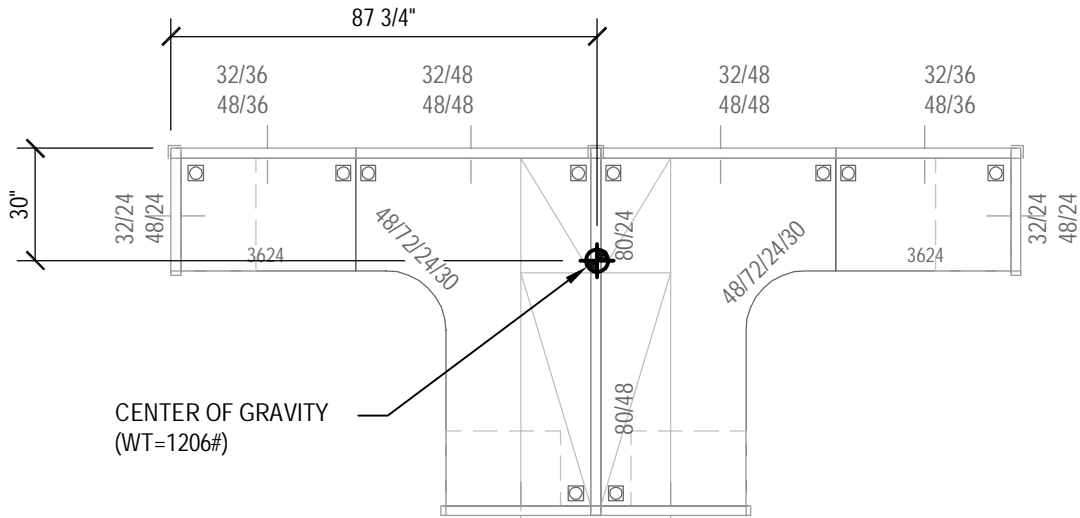
- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14



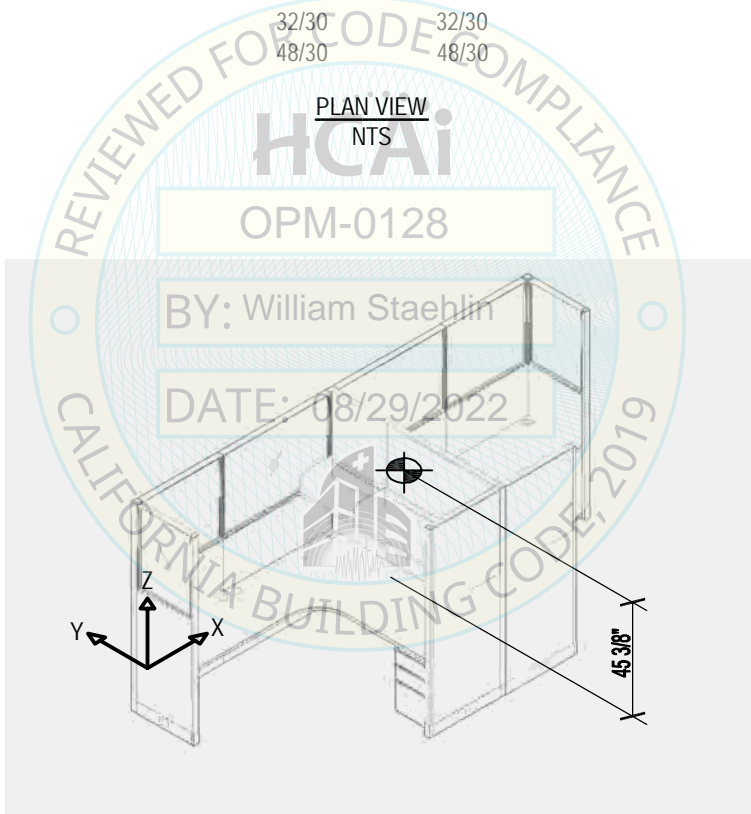
SEISMIC ANCHOR LOCATIONS
WORKSTATION 1B, POD 2, 80" HEIGHT



 <p>Structural Engineers</p> <p>www.RSGSE.com</p>	<p>4516 Wyman Drive Sacramento, CA 95821</p> <p>P: (916) 716-5286</p>	<p align="center">KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE CABINET SEISMIC SUPPORTS & ATTACHMENTS</p>	<p align="right">SHEET 26 OF 49</p>
	<p align="center">8/29/2022 OPM-0128: Reviewed for Code Compliance by William Staehlin 29 of 51</p>		

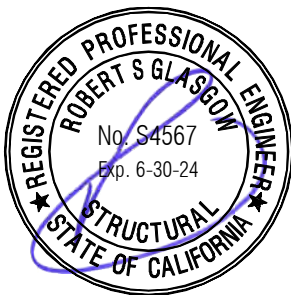


CENTER OF GRAVITY
(WT=1206#)



ISOMETRIC VIEW
NTS

**WEIGHT AND CENTER OF GRAVITY
WORKSTATION 1B, POD 2, 80" HEIGHT**

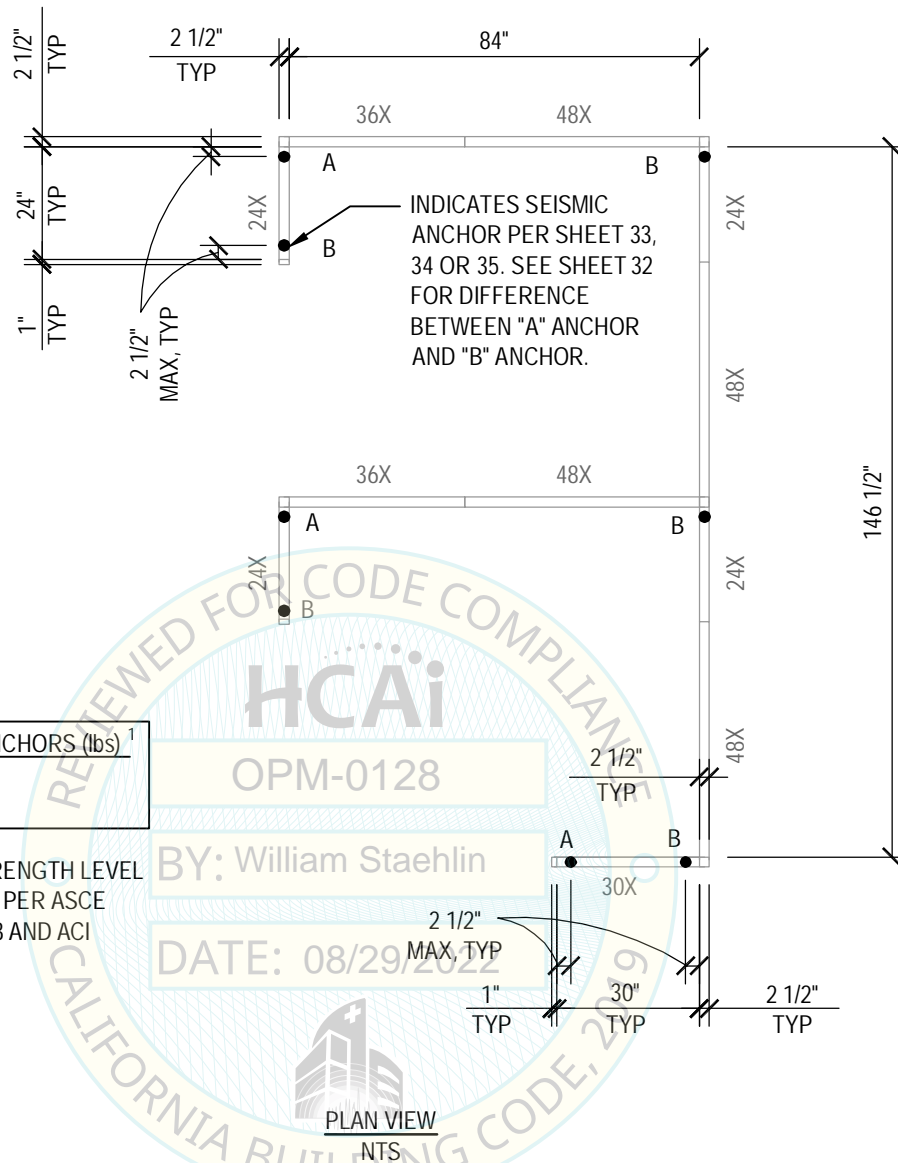


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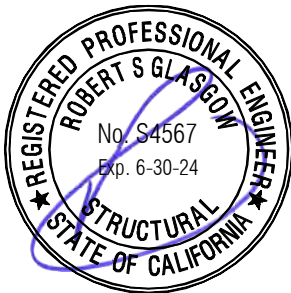
KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 27 OF 49



MAX REACTION AT ANCHORS (lbs) ¹ V=736 T=1121
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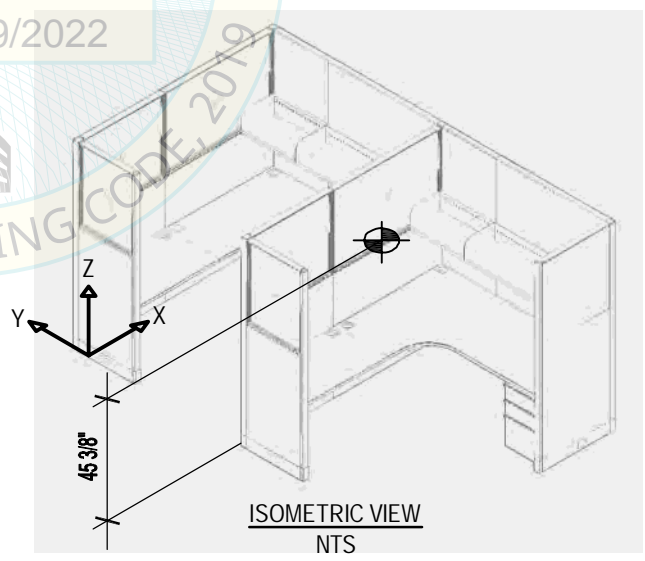
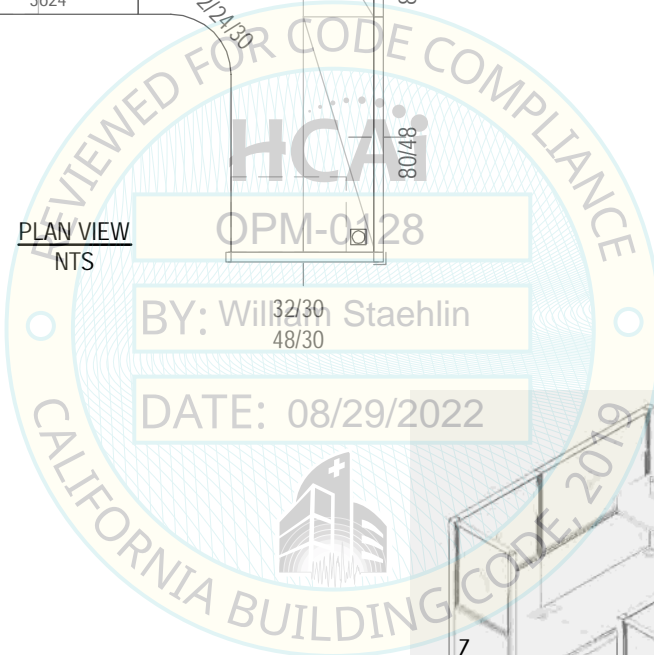
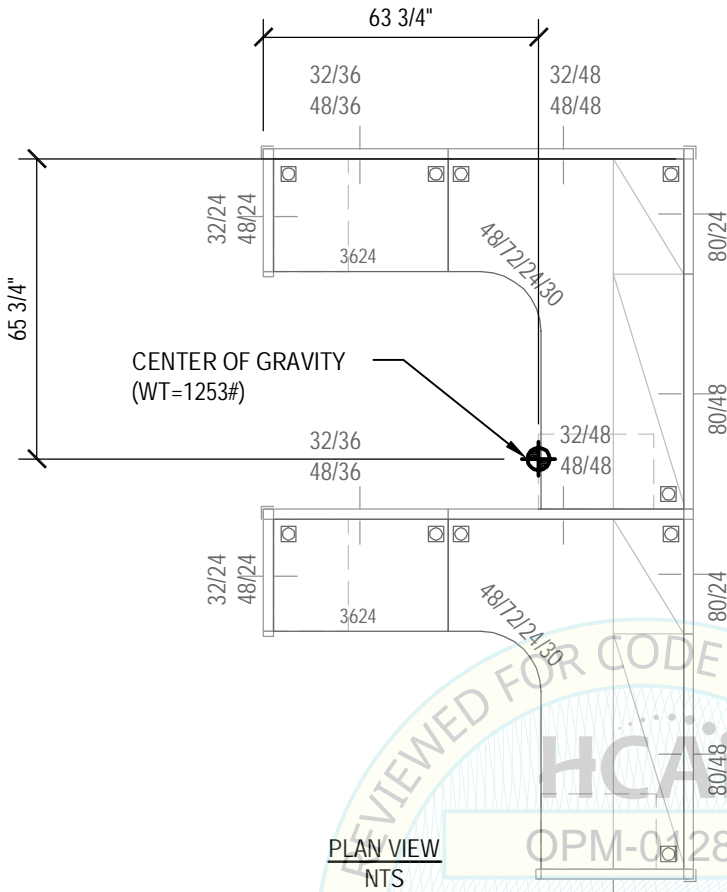
- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14



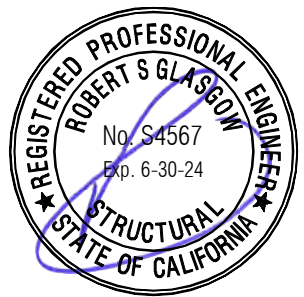
SEISMIC ANCHOR LOCATIONS
WORKSTATION 1B, POD 3, 80" HEIGHT

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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE CABINET SEISMIC SUPPORTS & ATTACHMENTS
SHEET 28 OF 49

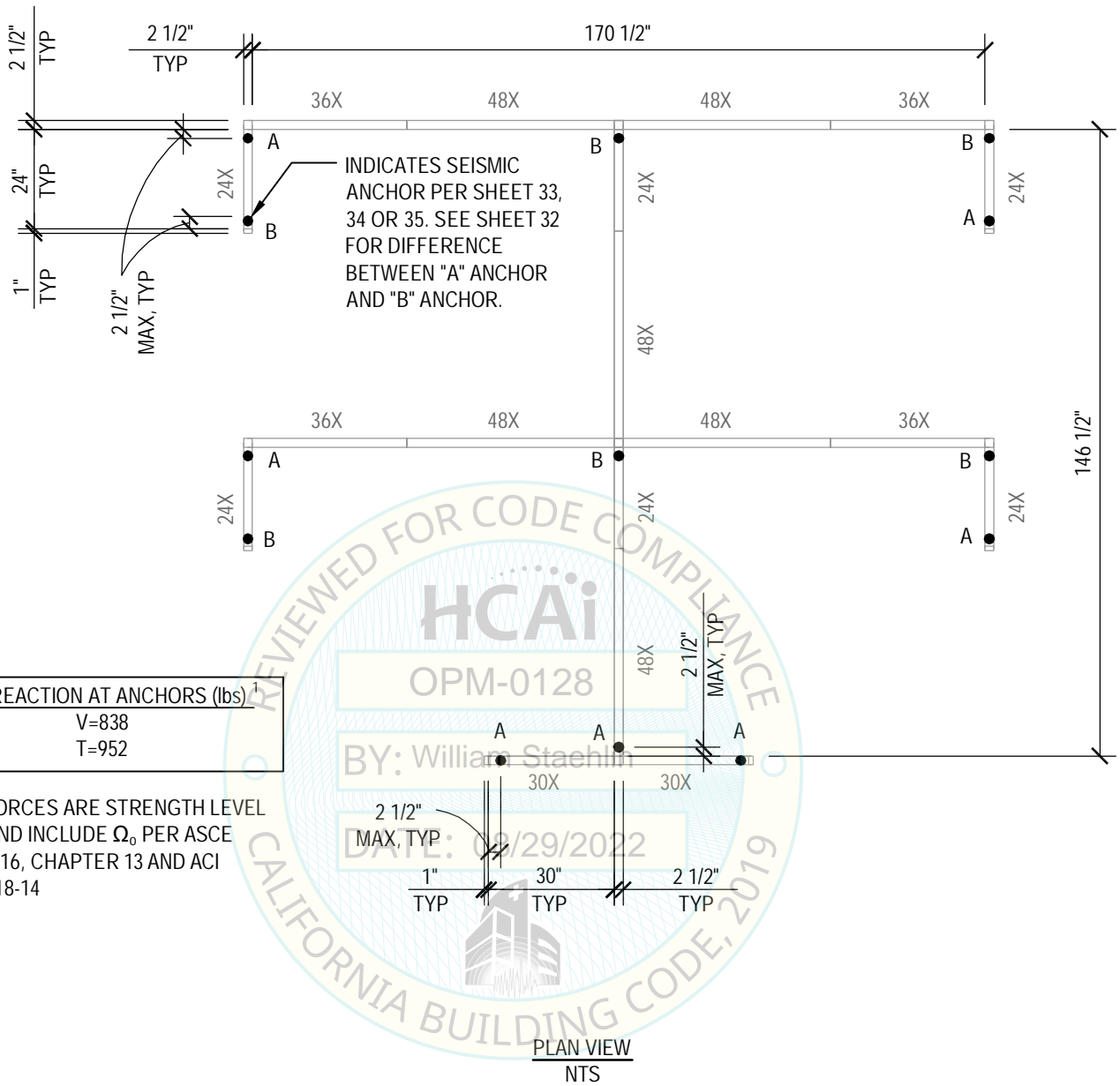


**WEIGHT AND CENTER OF GRAVITY
WORKSTATION 1B, POD 3, 80" HEIGHT**



 <p>Structural Engineers www.RSGSE.com</p>	<p>4516 Wyman Drive Sacramento, CA 95821</p>
	<p>P: (916) 716-5286</p>

<p>KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE CABINET SEISMIC SUPPORTS & ATTACHMENTS</p>	<p>SHEET 29 OF 49</p>
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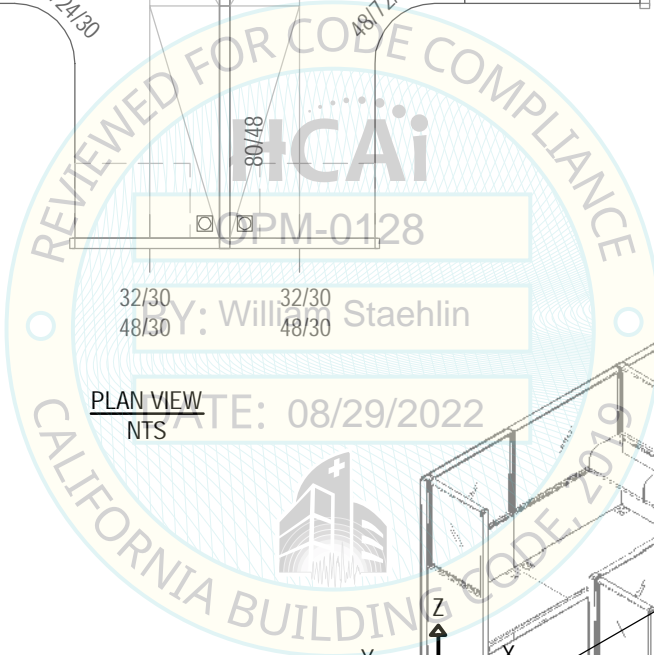
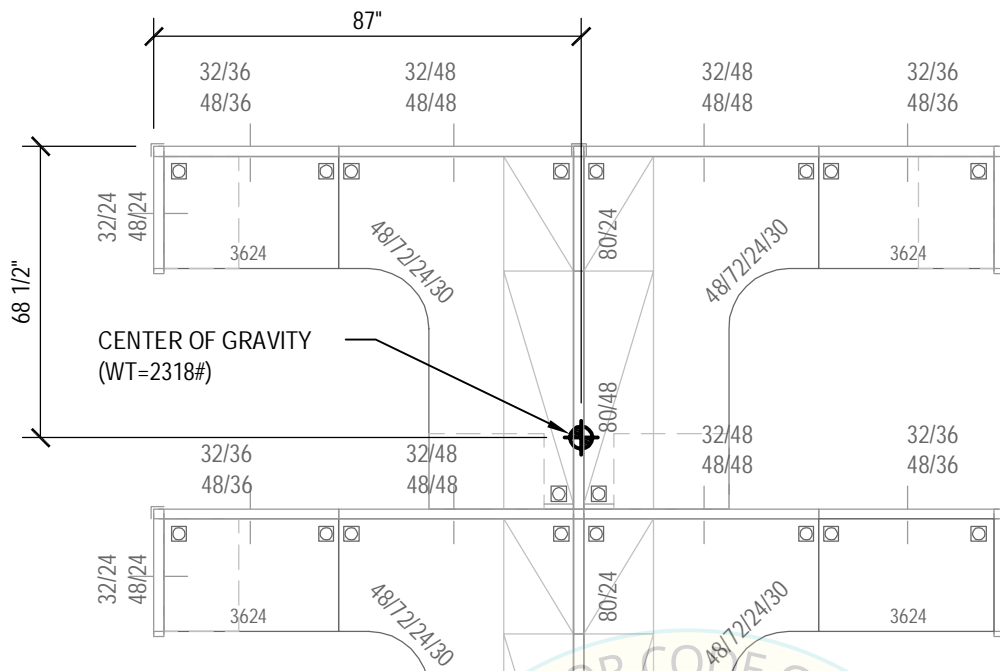


SEISMIC ANCHOR LOCATIONS
WORKSTATION 1B, POD 4, 80" HEIGHT

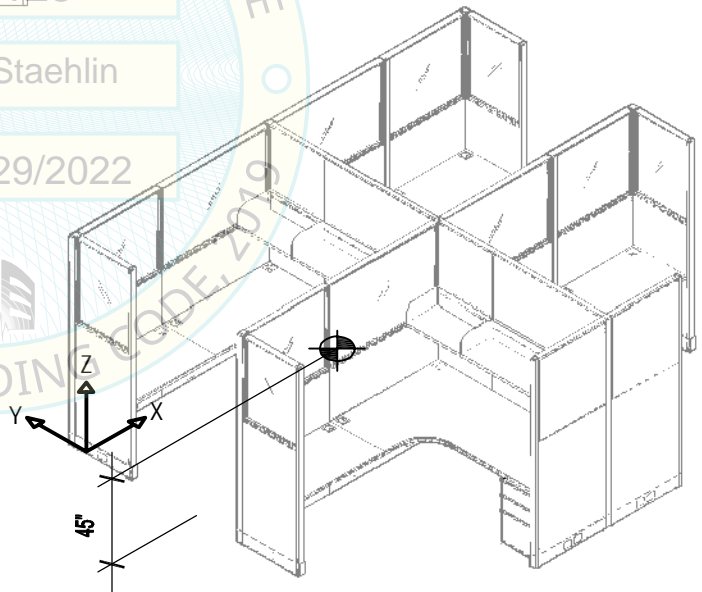
	4516 Wyman Drive Sacramento, CA 95821
	P: (916) 716-5286

KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

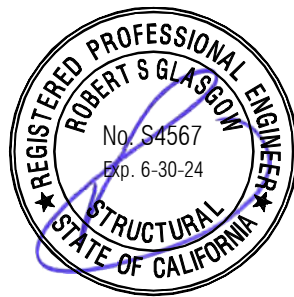
SHEET 30 OF 49



PLAN VIEW
NTS



ISOMETRIC VIEW
NTS



**WEIGHT AND CENTER OF GRAVITY
WORKSTATION 1B, POD 4, 80" HEIGHT**

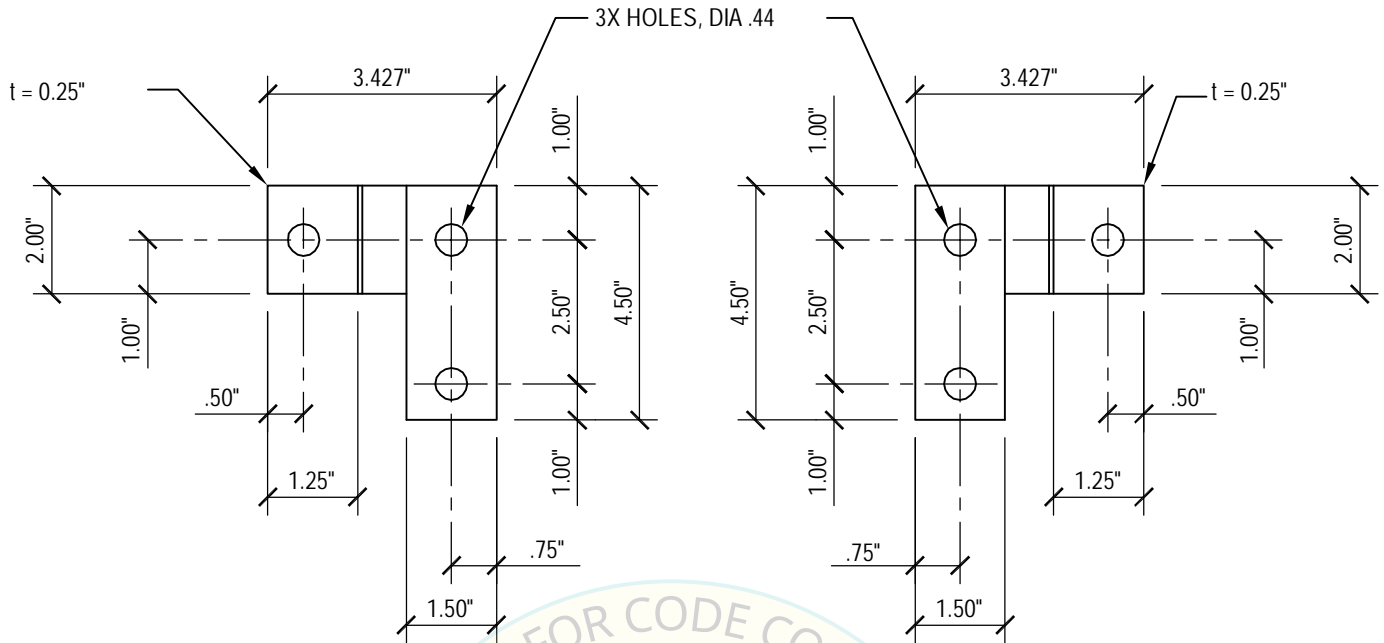


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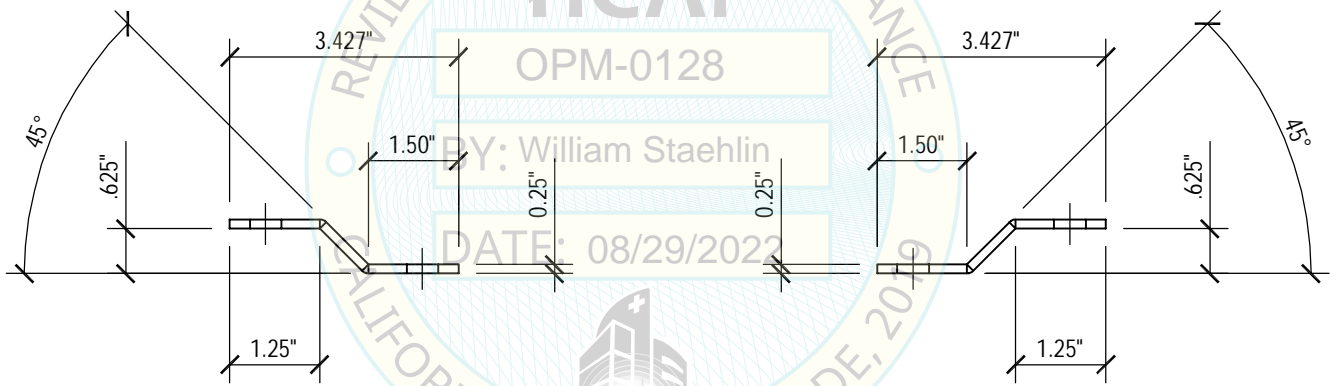
**KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS**

SHEET 31 OF 49



PLAN VIEW

PLAN VIEW



ELEVATION

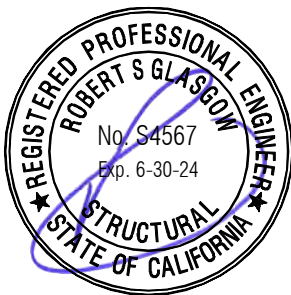
ELEVATION

"A": KNOLL PART NO. 1C59681-A

"B": KNOLL PART NO. 1C59681-B

SEISMIC ANCHOR PLATES

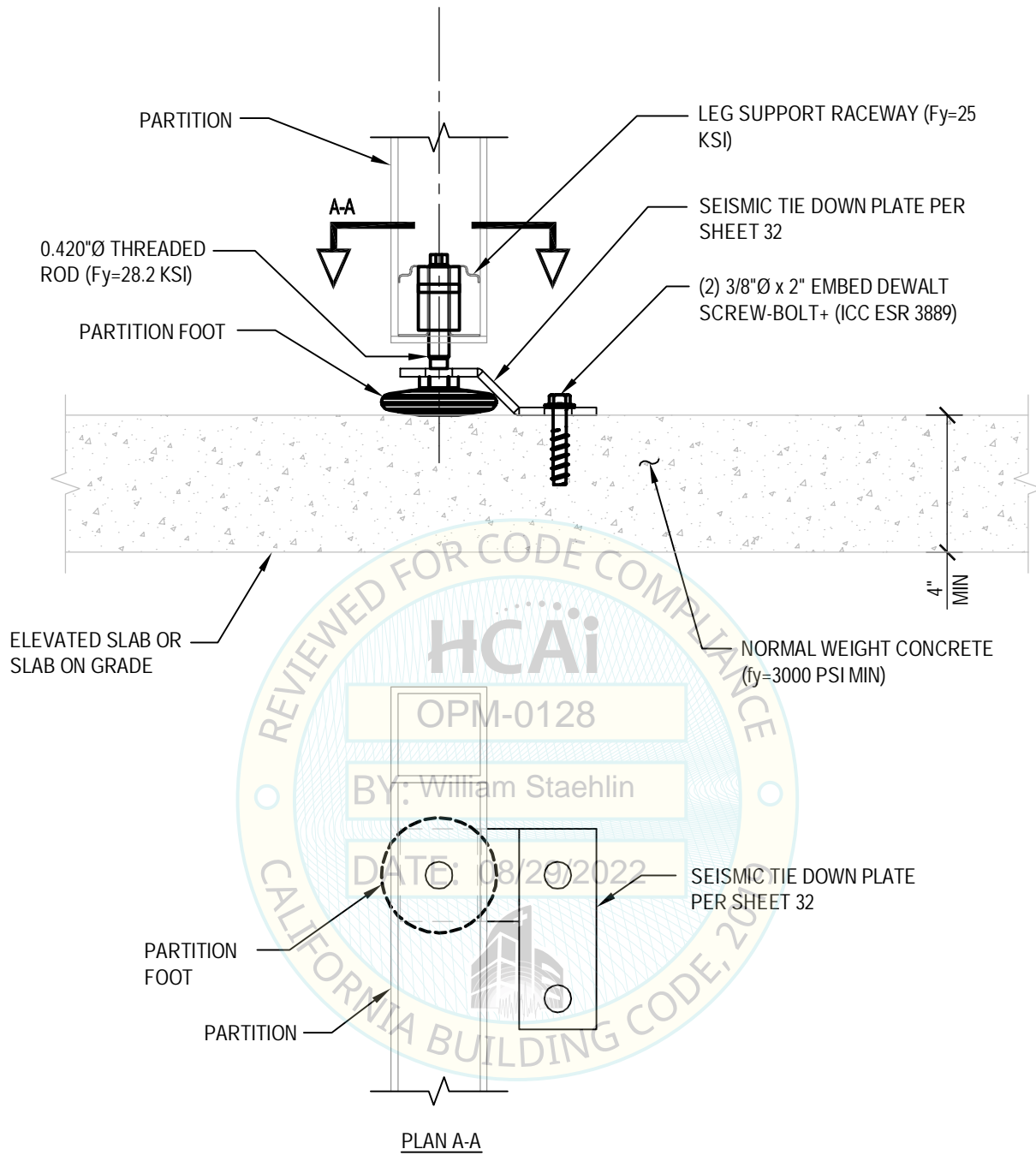
1. ALL SEISMIC ANCHOR PLATES SHALL BE ASTM A36 (Fy= 36 KSI)



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 Sacramento, CA 95821
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
 CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 32 OF 49



SEISMIC ANCHOR CONNECTION - CONDITION 1
(NORMAL WEIGHT CONCRETE)

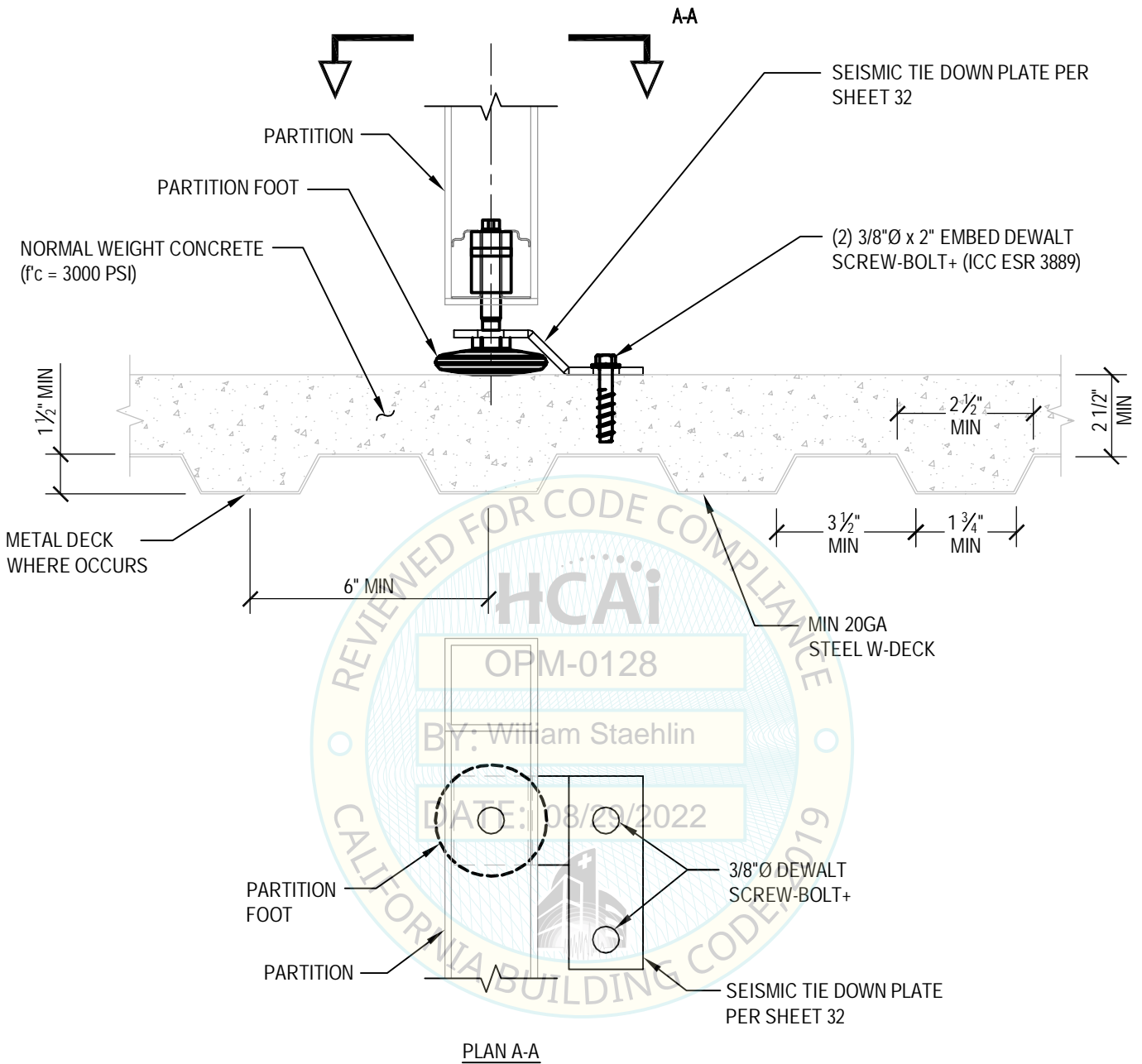
$a_p = 1.0, R_p = 2.5, S_{DS} = 2.5, I_p = 1.5; z/h \leq 1.0$ (AT ELEV CONDITION); $z/h = 0.0$
(AT SLAB ON GRADE OR SLAB AT BASEMENT LEVEL CONDITION)



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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
 CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 33 OF 49



**SEISMIC ANCHOR CONNECTION - CONDITION 2
(NORMAL WEIGHT CONCRETE)**

$a_p = 1.0, R_p = 2.5, S_{DS} = 2.5, I_p = 1.5; z/h \leq 1.0$ (AT ELEV CONDITION)

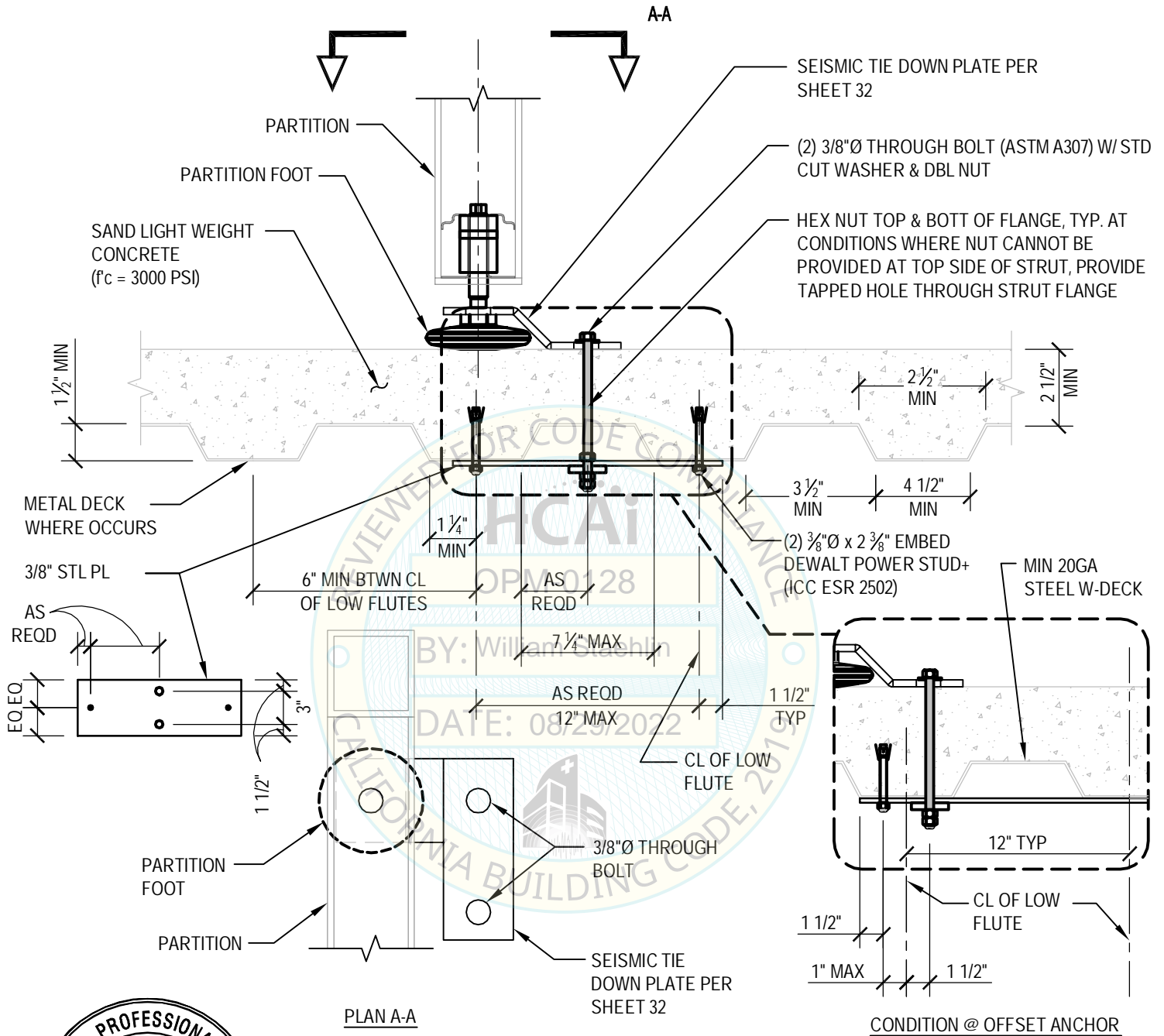


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**KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS**

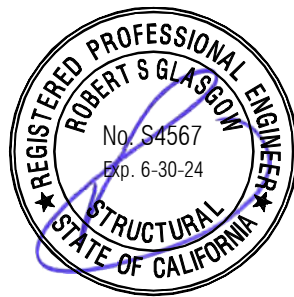
SHEET 34 OF 49



PLAN A-A

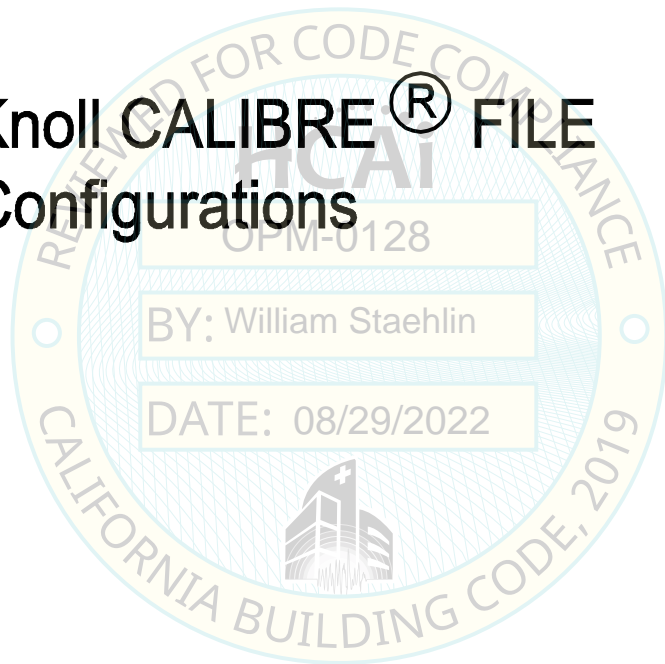
SEISMIC ANCHOR CONNECTION - CONDITION 3
(SAND LIGHT WEIGHT CONCRETE)

$a_p = 1.0, R_p = 2.5, S_{DS} = 2.5, I_p = 1.5; z/h \leq 1.0$ (AT ELEV CONDITION)



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	<p>P: (916) 716-5286</p>	<p>SHEET 35 OF 49</p>

Knoll CALIBRE® FILE Configurations



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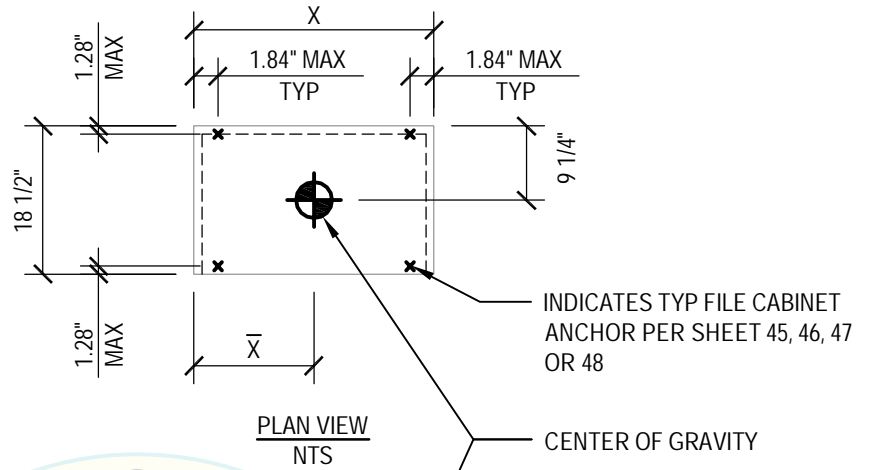
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 36 OF 49

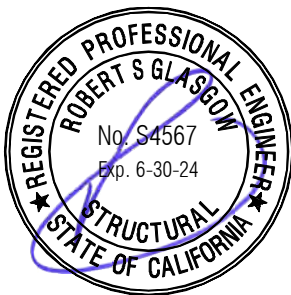
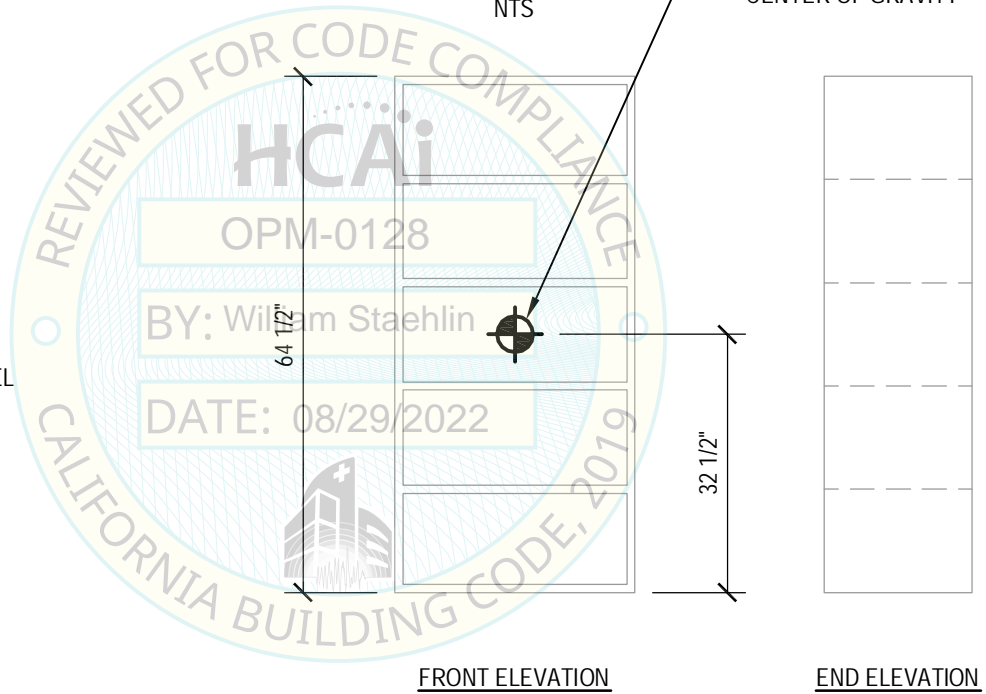
Knoll CALIBRE - FILE CONDITION #1 SINGLE
FILE CABINET

MODEL	X (in)	\bar{X} (in)	CABINET WEIGHT (lbs)	LL WEIGHT (lbs)
30" CALIBRE	30	15	207	461
36" CALIBRE	36	18	229	564
42" CALIBRE	42	21	250	666



MAX REACTION AT ANCHORS ¹		
MODEL	V (lbs)	T (lbs)
30" CALIBRE	491	3039
36" CALIBRE	582	2352
42" CALIBRE	673	2664

- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14



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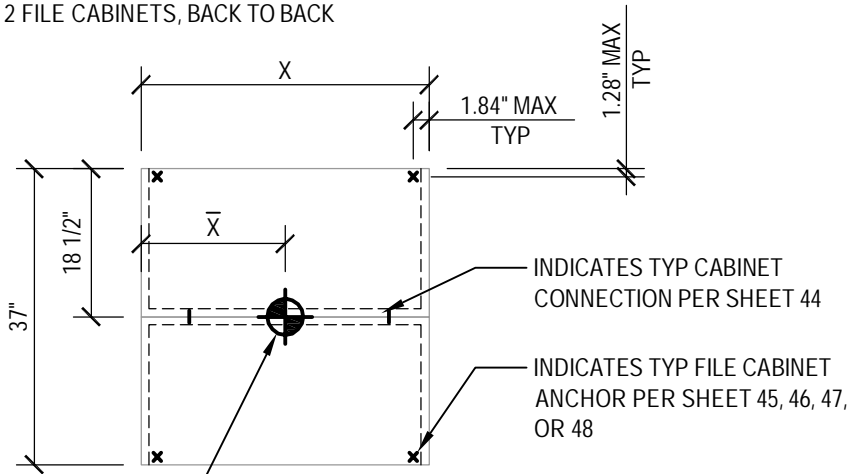
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 37 OF 49

Knoll CALIBRE - FILE CONDITION #2
2 FILE CABINETS, BACK TO BACK

MODEL	X (in)	\bar{X} (in)	CABINET WEIGHT (lbs)	LL WEIGHT (lbs)
30" CALIBRE	30	15	414	923
36" CALIBRE	36	18	459	1128
42" CALIBRE	42	21	500	1333

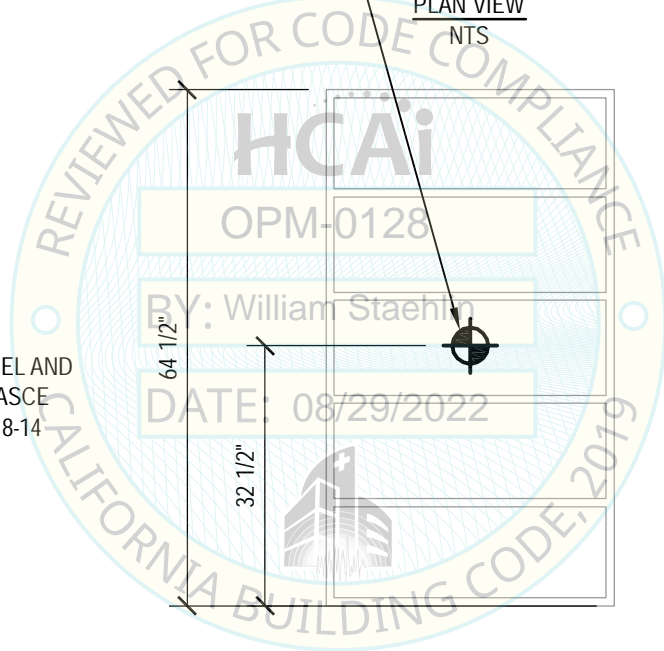


CENTER OF GRAVITY

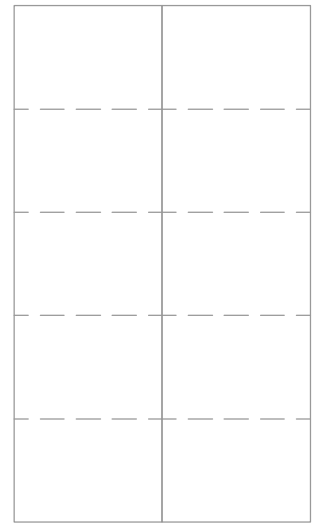
PLAN VIEW
NTS

MAX REACTION AT ANCHORS ¹		
MODEL	V (lbs)	T (lbs)
30" CALIBRE	981	2492
36" CALIBRE	1164	3296
42" CALIBRE	1345	2765

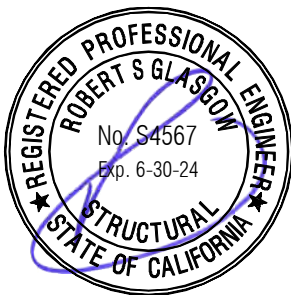
- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 AS REQD PER ASCE 7-16, CHAPTER 13 AND ACI 318-14



FRONT ELEVATION



END ELEVATION



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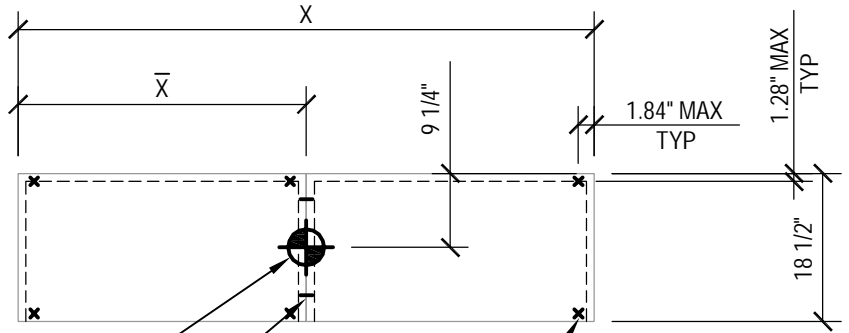
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 38 OF 49

Knoll CALIBRE - FILE CONDITION #3
2 FILE CABINETS, SIDE TO SIDE

MODEL	X (in)	\bar{X} (in)	CABINET WEIGHT (lbs)	LL WEIGHT (lbs)
30" CALIBRE	60	30	414	974
36" CALIBRE	72	36	459	1179
42" CALIBRE	89	42	500	1384

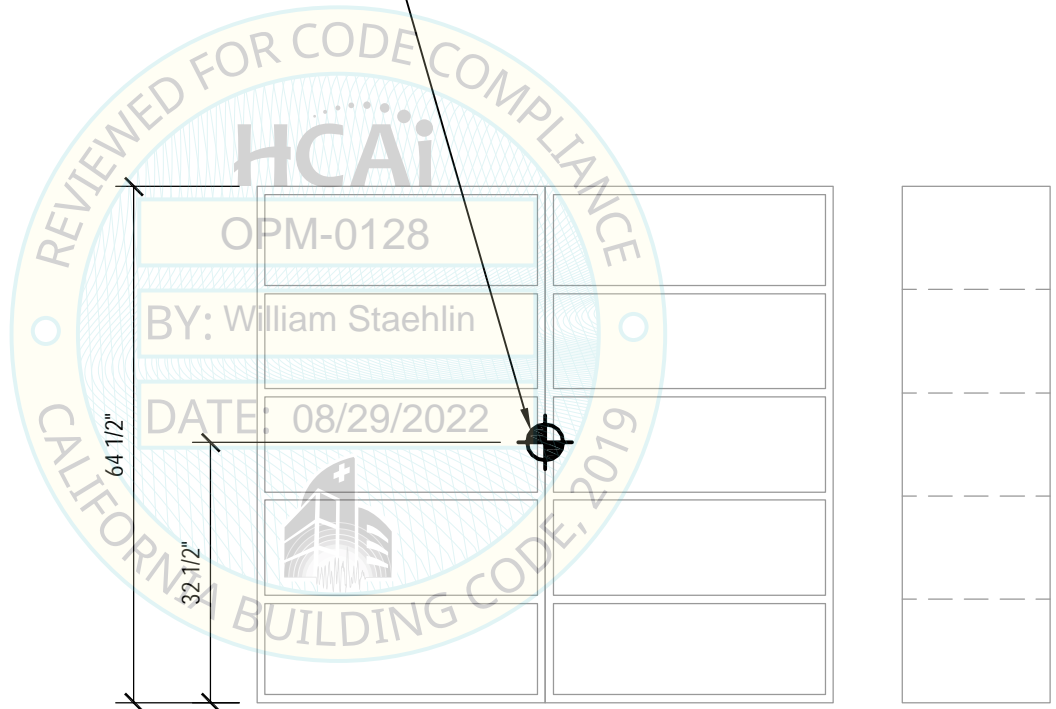


CENTER OF GRAVITY
INDICATES TYP CABINET CONNECTION PER SHEET 44
PLAN VIEW
NTS

INDICATES TYP FILE CABINET ANCHOR PER SHEET 45, 46, 47, OR 48

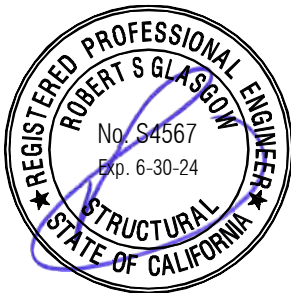
MAX REACTION AT ANCHORS ¹		
MODEL	V (lbs)	T (lbs)
30" CALIBRE	679	2687
36" CALIBRE	801	3105
42" CALIBRE	922	3519

- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14



FRONT ELEVATION

END ELEVATION



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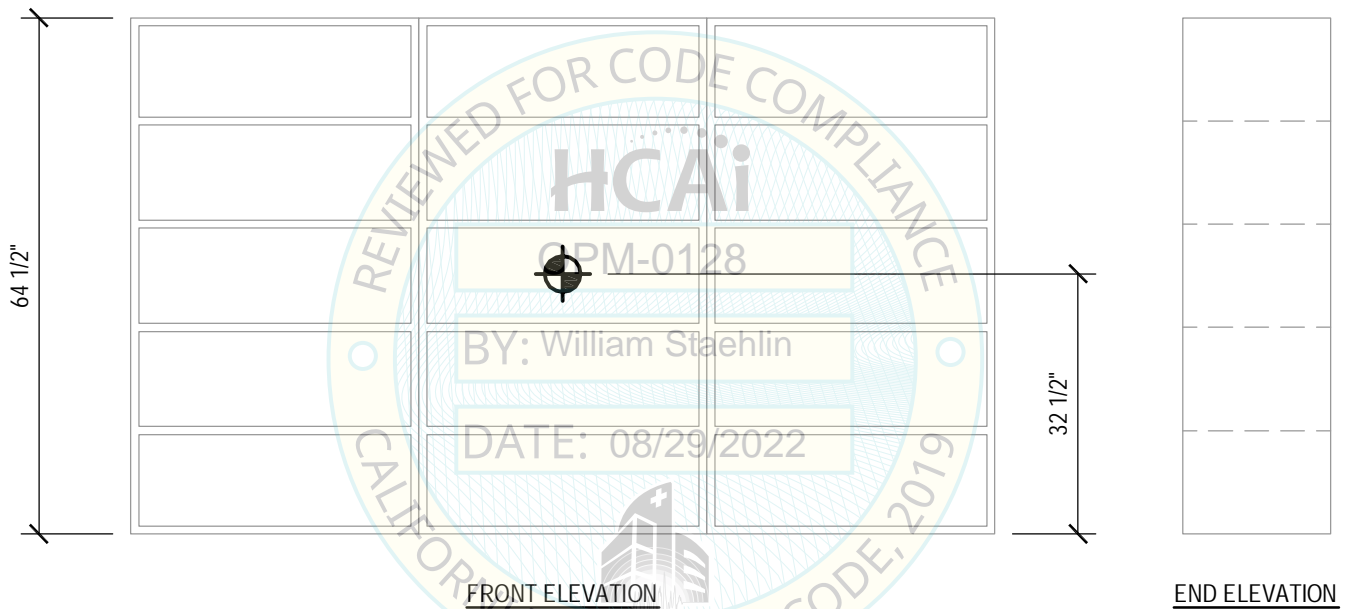
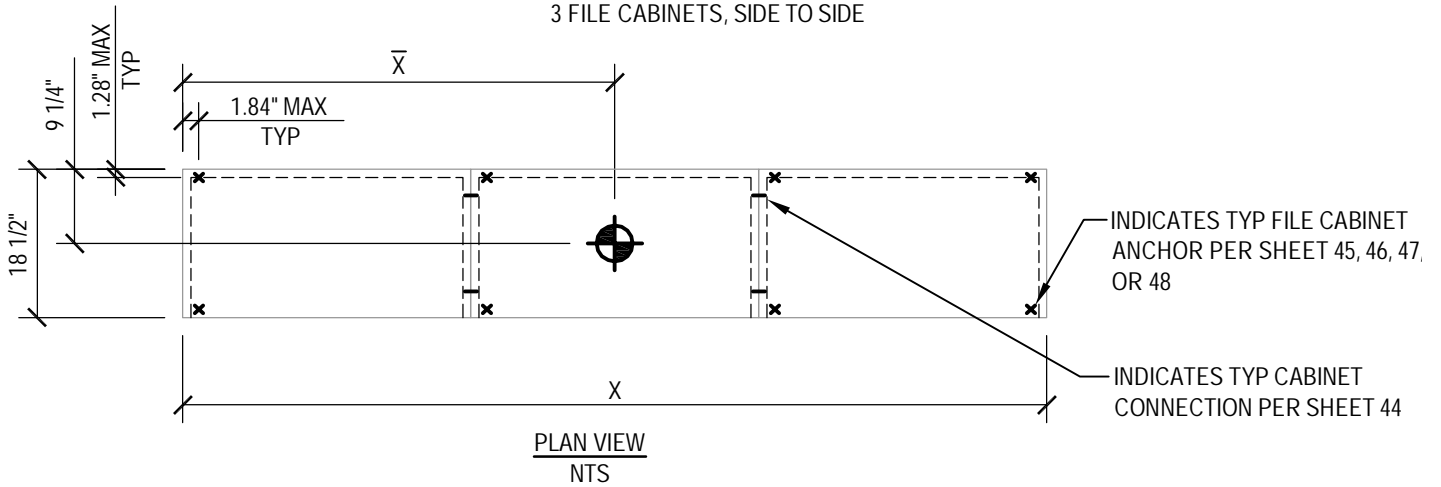
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 39 OF 49

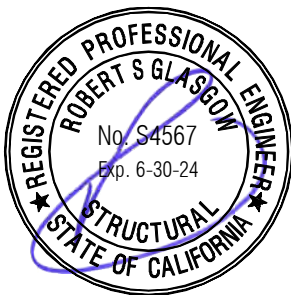
Knoll CALIBRE - FILE CONDITION #4
3 FILE CABINETS, SIDE TO SIDE



MAX REACTION AT ANCHORS ¹		
MODEL	V (lbs)	T (lbs)
30" CALIBRE	773	3000
36" CALIBRE	911	3468
42" CALIBRE	1047	3932

MODEL	X (in)	\bar{X} (in)	CABINET WEIGHT (lbs)	LL WEIGHT (lbs)
30" CALIBRE	90	45	621	1486
36" CALIBRE	108	54	688	1794
42" CALIBRE	126	63	750	2101

- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14



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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 40 OF 49

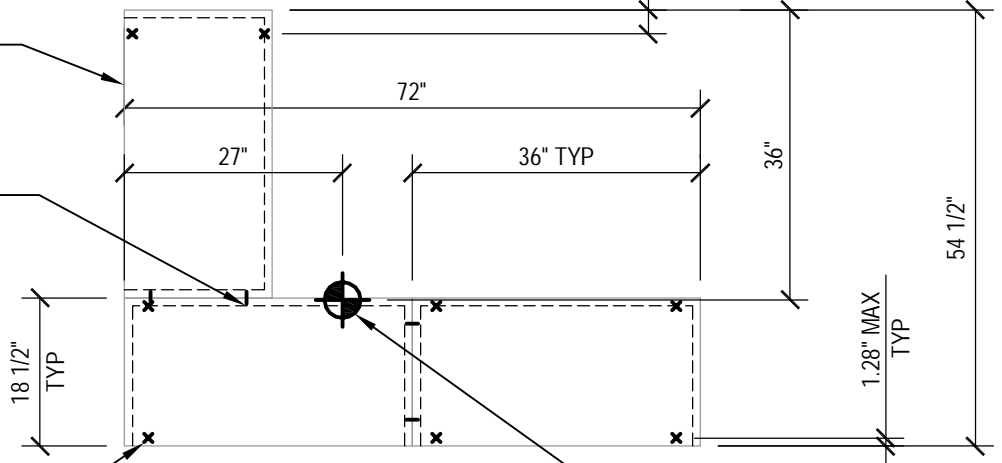
Knoll CALIBRE - FILE CONDITION #5
3 FILE CABINETS, WRAPPING WALL CORNER

INDICATES 36" CALIBRE FILE CABINET, TYP

INDICATES TYP CABINET CONNECTION PER SHEET 44

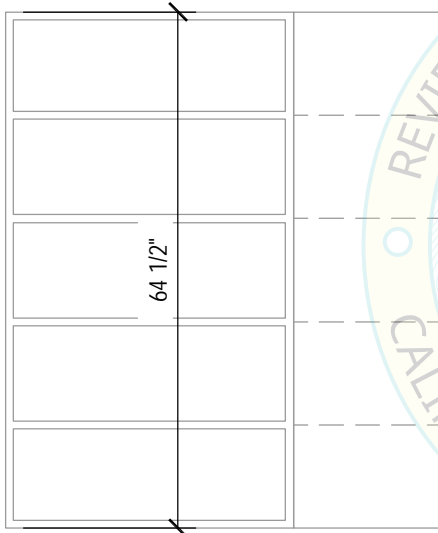
INDICATES TYP FILE CABINET ANCHOR PER SHEET 45, 46, 47, OR 48

1.84" MAX TYP

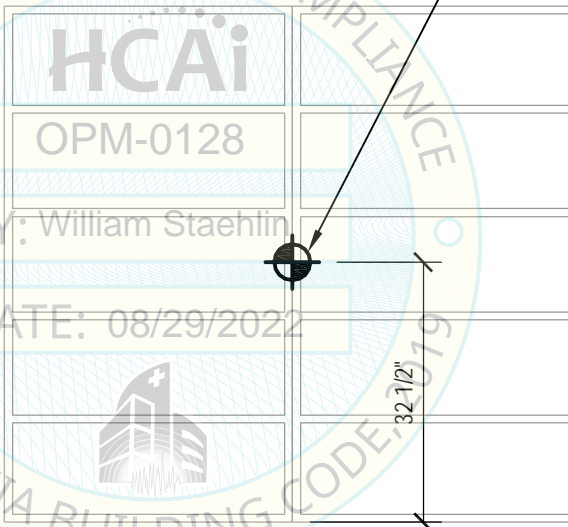


PLAN VIEW
NTS

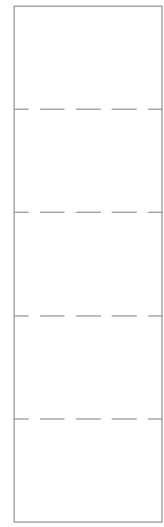
CENTER OF GRAVITY
CABINET WT = 687#
LL WEIGHT = 1692#



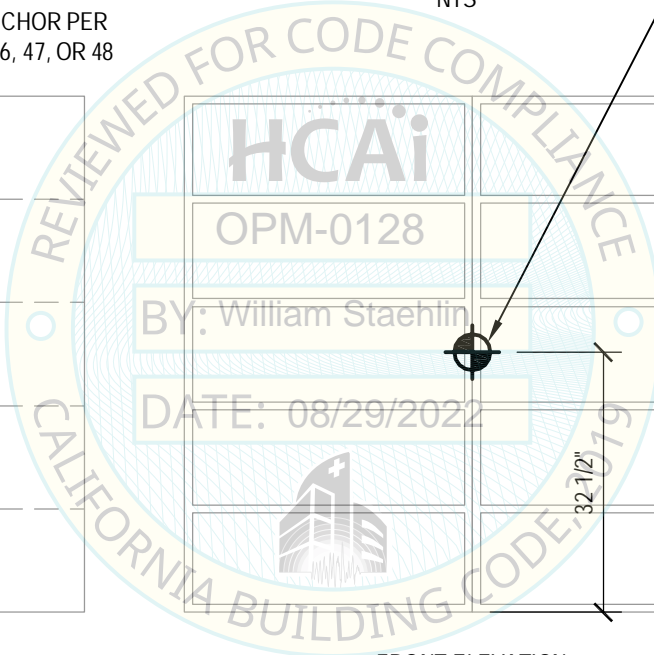
SIDE ELEVATION



FRONT ELEVATION



END ELEVATION



MAX REACTION AT ANCHORS ¹		
MODEL	V (lbs)	T (lbs)
36" CALIBRE	524	1124

- FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14



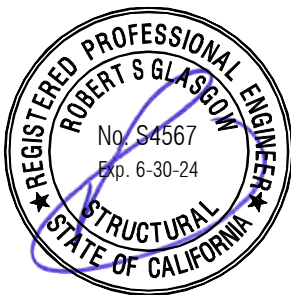
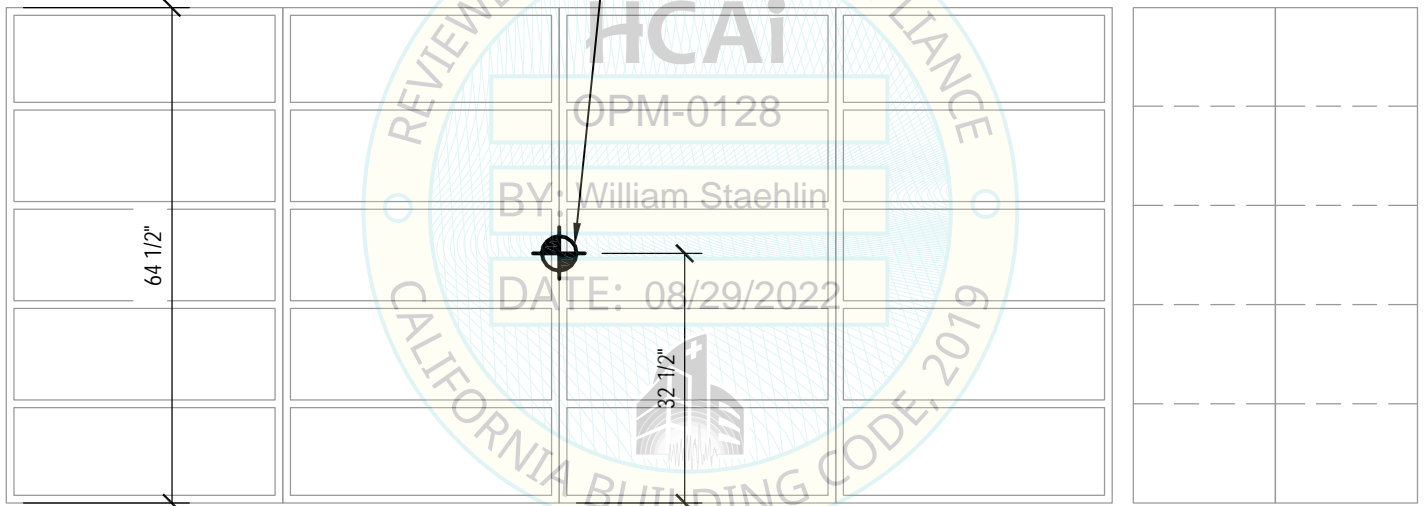
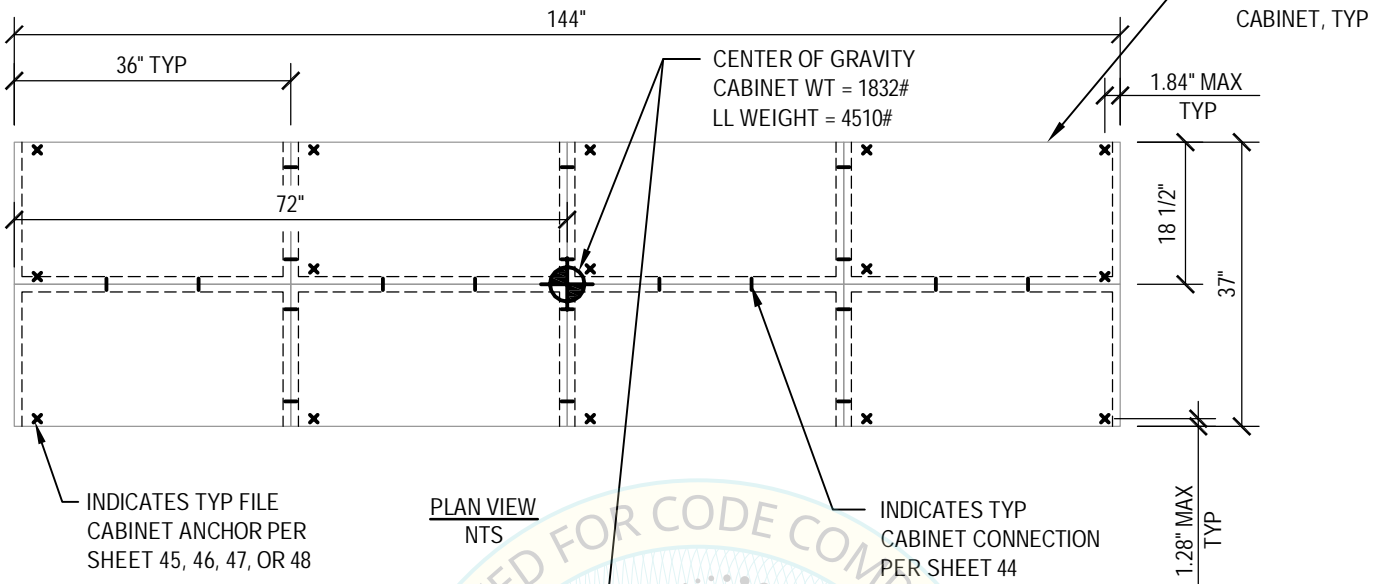
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 41 OF 49

Knoll CALIBRE - FILE CONDITION #6
8 FILE CABINETS, BACK TO BACK



MAX REACTION AT ANCHORS ¹		
MODEL	V (lbs)	T (lbs)
36" CALIBRE	1241	3255

1. FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_o PER ASCE 7-16, CHAPTER 13 AND ACI 318-14



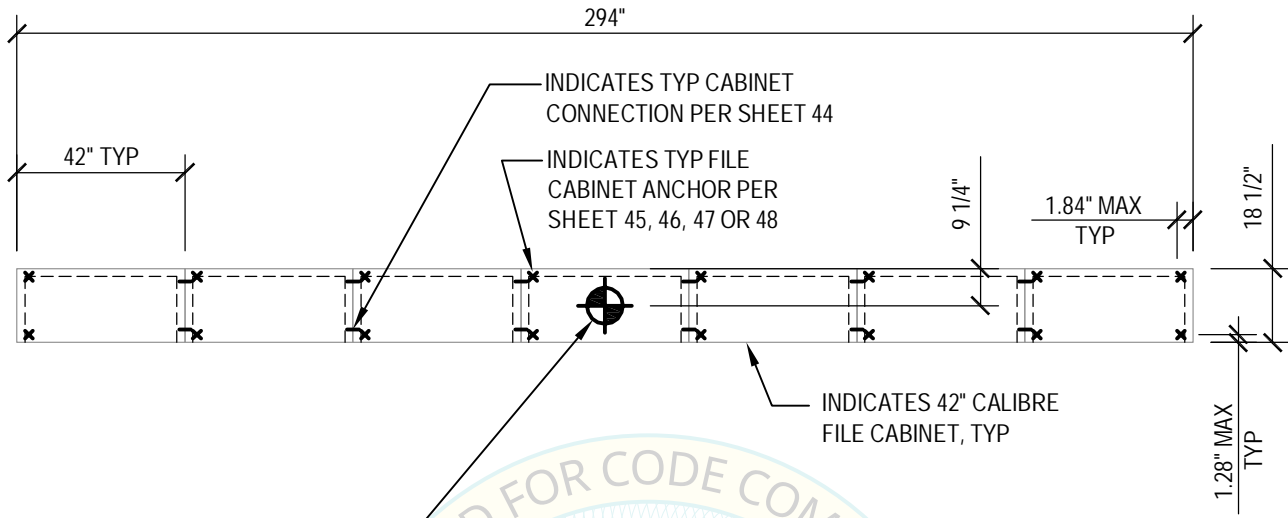
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

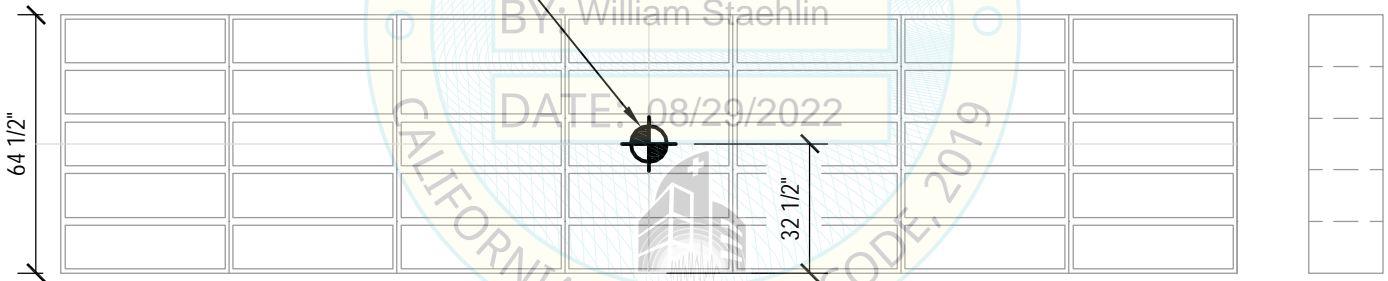
SHEET 42 OF 49

Knoll CALIBRE - FILE CONDITION #7
7 FILE CABINETS



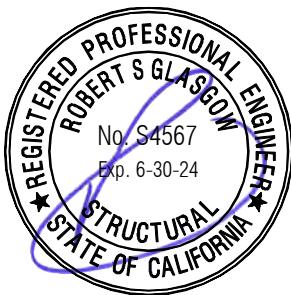
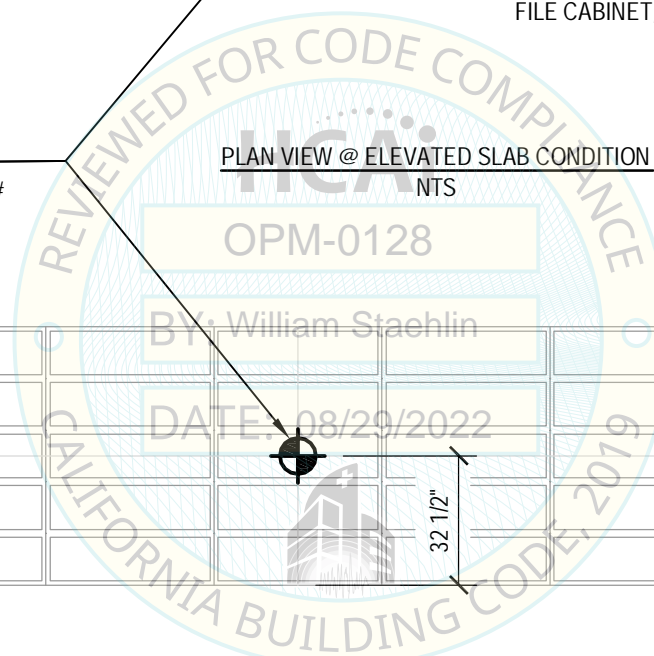
CENTER OF GRAVITY
CABINET WEIGHT = 1750#
LL WEIGHT = 4664#

PLAN VIEW @ ELEVATED SLAB CONDITION
NTS



FRONT ELEVATION

END ELEVATION



MAX REACTION AT ANCHORS ¹		
MODEL	V (lbs)	T (lbs)
42" CALIBRE	1177	4274

1. FORCES ARE STRENGTH LEVEL AND INCLUDE Ω_0 PER ASCE 7-16, CHAPTER 13 AND ACI 318-14



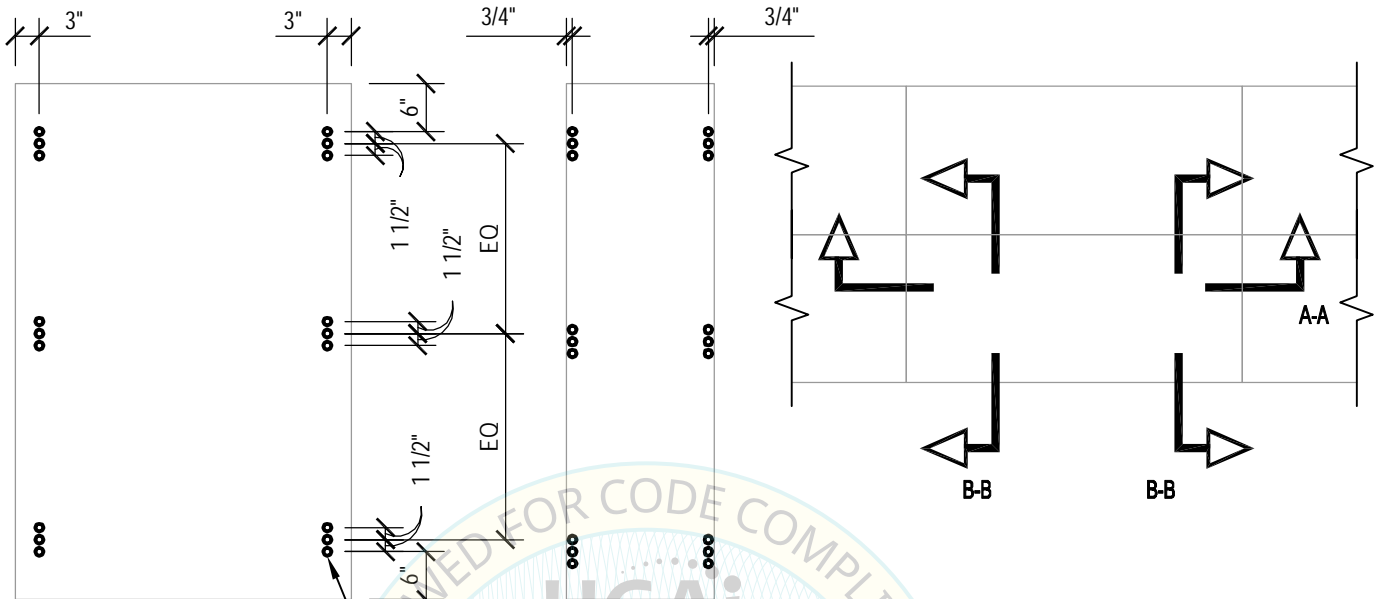
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 43 OF 49

Knoll CALIBRE - FILE CABINETS
ANCHOR LAYOUT & CABINET CONNECTIONS

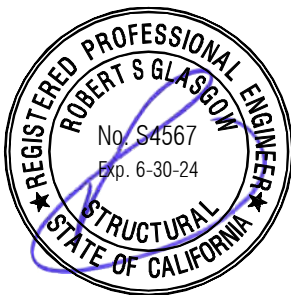
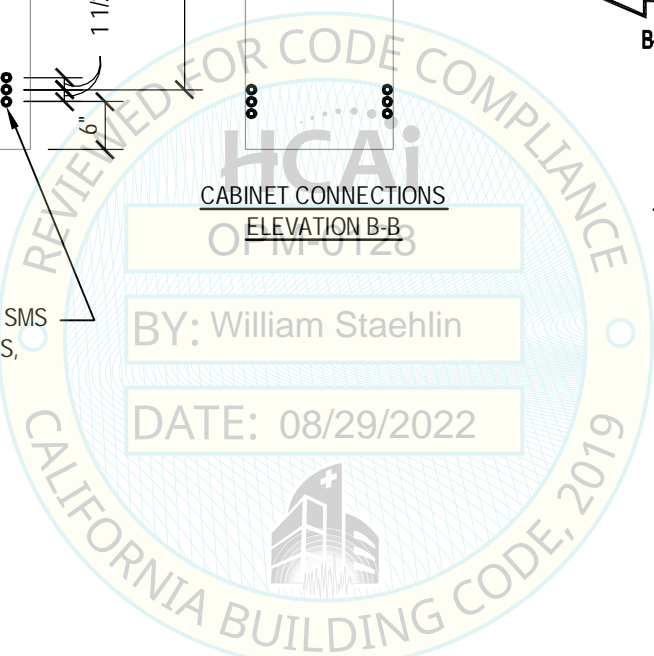


CABINET CONNECTIONS
ELEVATION A-A

CABINET CONNECTIONS
ELEVATION B-B

CABINET CONNECTIONS
PLAN VIEW

INDICATES TYP (3) #10 SMS
CABINET CONNECTORS,
LOCATIONS PER PLAN



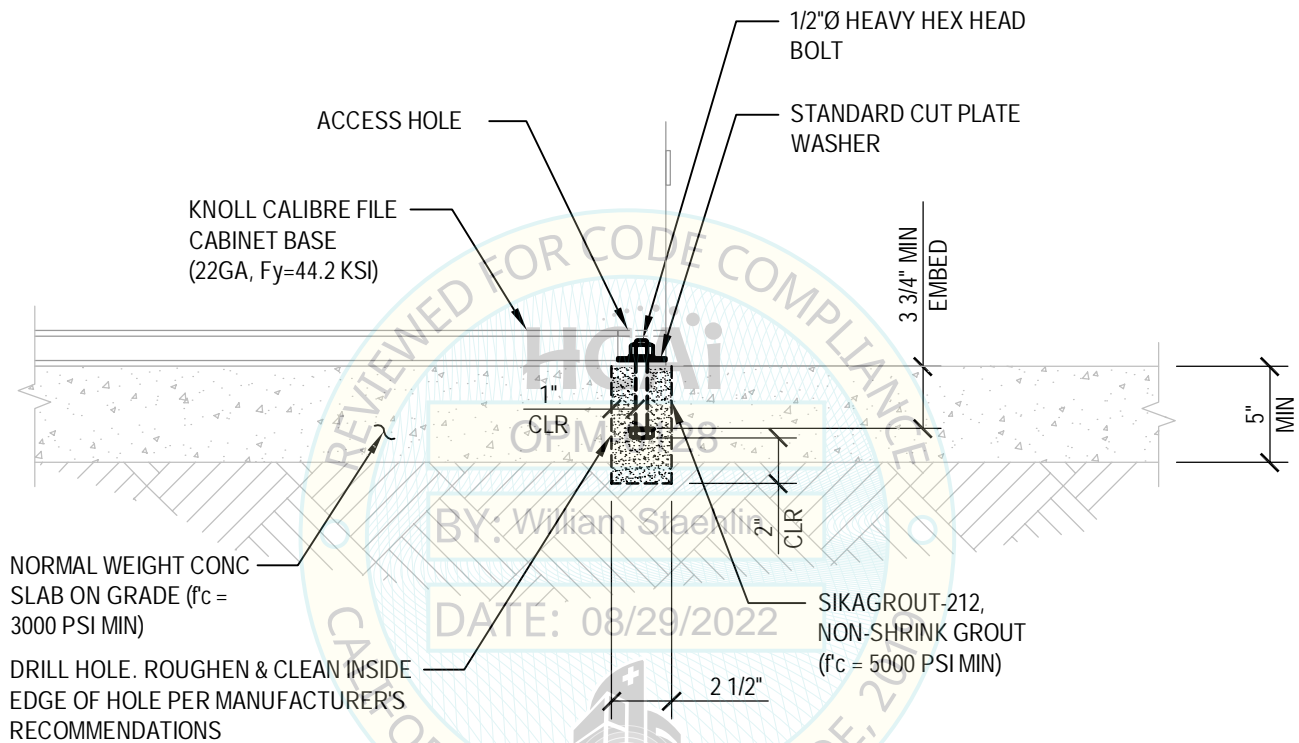
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 44 OF 49

Knoll CALIBRE - FILE CABINETS
ANCHOR AT SLAB ON GRADE

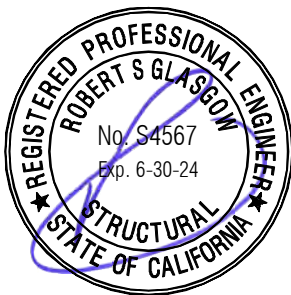


SEISMIC ANCHOR CONNECTION - CONDITION 1a

$a_p = 1.0, R_p = 2.5, S_{DS} = 2.5, I_p = 1.5, z/h = 0.0$ (AT SLAB ON GRADE CONDITION)

NOTES:

1. LOCATE EXISTING REINFORCING IN CONCRETE SLAB ON GRADE.
2. DO NOT DAMAGE EXISTING REINFORCING WHILE DRILLING HOLE.
3. DRILL HOLE AS SHOWN.
4. FILL HOLE WITH NON-SHRINK GROUT TO HEAD OF ANCHOR AND LET PARTIALLY SET.
5. PLACE HEX HEADED ANCHOR AND REMAINING NON-SHRINK GROUT.



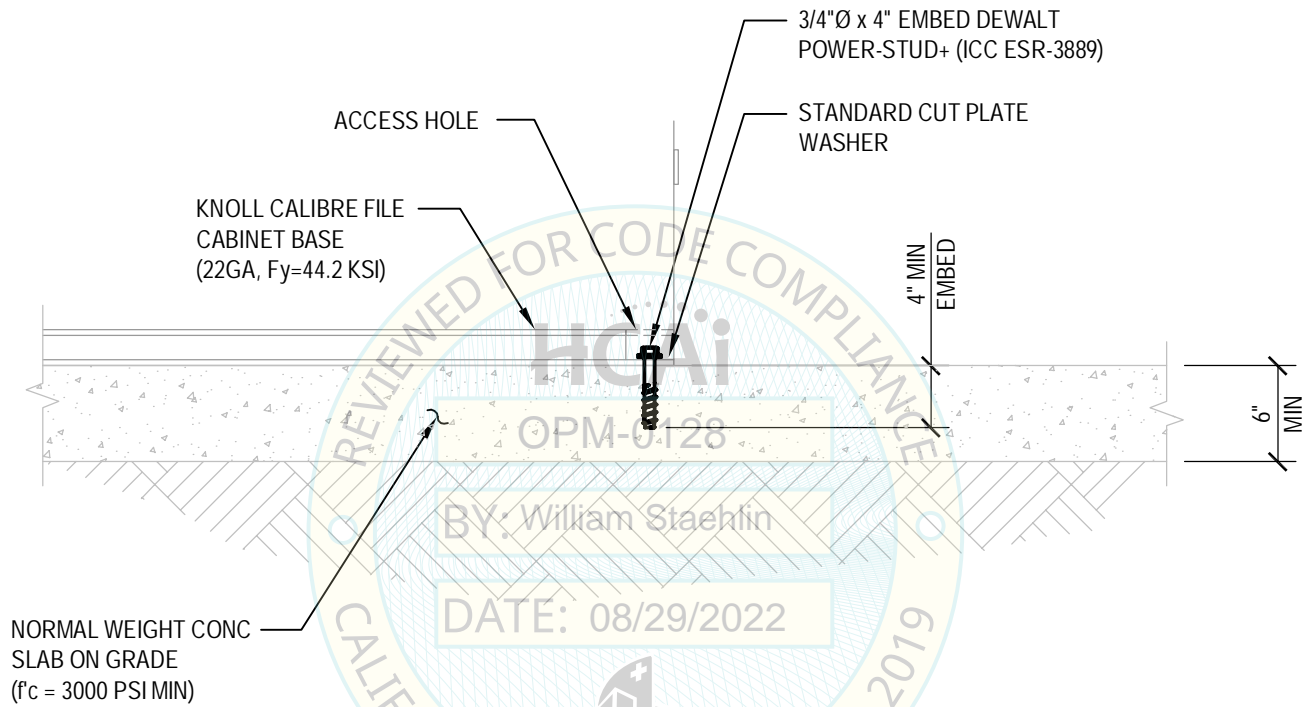
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

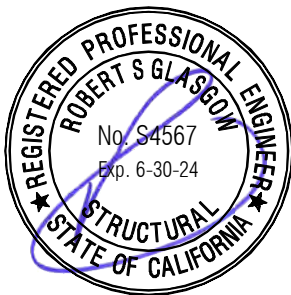
SHEET 45 OF 49

Knoll CALIBRE - FILE CABINETS
ANCHOR AT SLAB ON GRADE



SEISMIC ANCHOR CONNECTION - CONDITION 1b

$a_p = 1.0, R_p = 2.5, S_{DS} = 2.5, I_p = 1.5, z/h = 0.0$ (AT SLAB ON GRADE CONDITION)

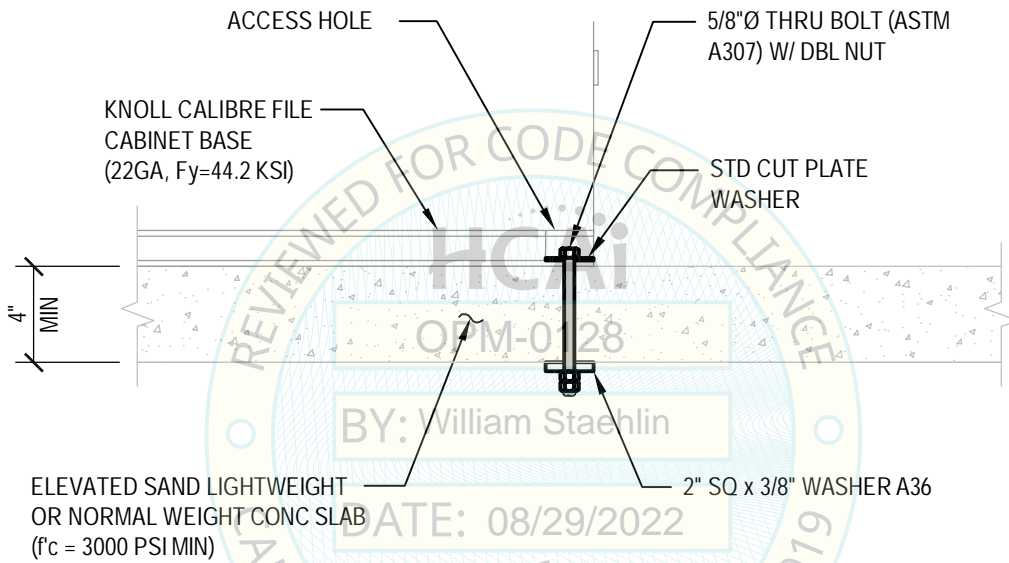


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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

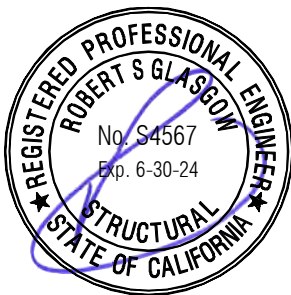
SHEET 46 OF 49

Knoll CALIBRE - FILE CABINETS
ANCHOR AT ELEVATED SLAB



SEISMIC ANCHOR CONNECTION - CONDITION 2

$a_p = 1.0, R_p = 2.5, S_{DS} = 2.5, I_p = 1.5, z/h \leq 1.0$ (AT ELEV CONDITION)



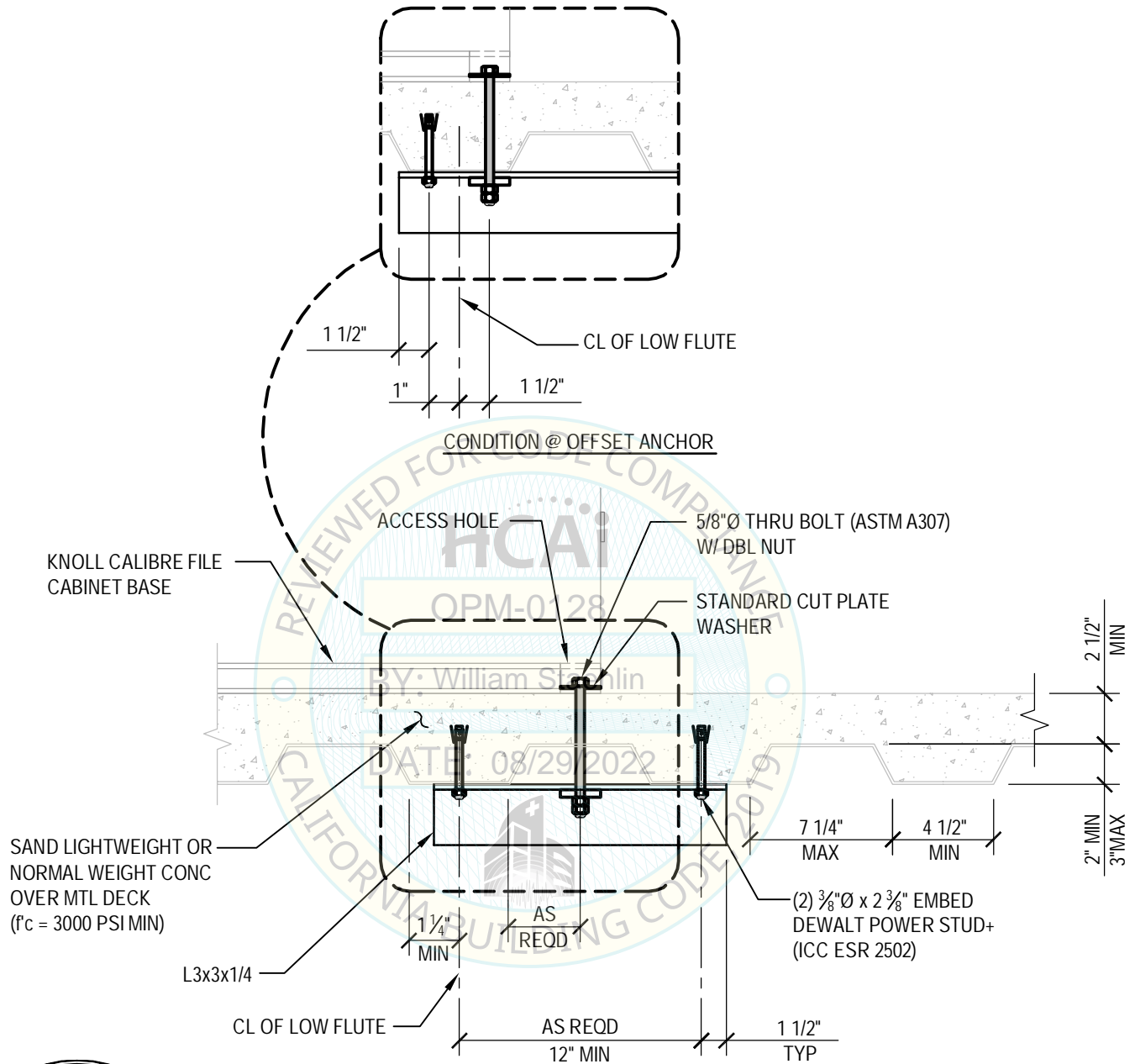
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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

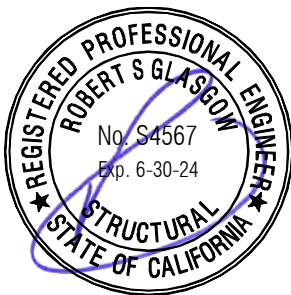
SHEET 47 OF 49

Knoll CALIBRE - FILE CABINETS
ANCHOR AT CONCRETE OVER METAL DECK



SEISMIC ANCHOR CONNECTION - CONDITION 3

$a_p = 1.0, R_p = 2.5, S_{DS} = 2.5, I_p = 1.5; z/h \leq 1.0$ (AT ELEV CONDITION)



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KNOLL MORRISON PARTITION & KNOLL CALIBRE FILE
CABINET SEISMIC SUPPORTS & ATTACHMENTS

SHEET 48 OF 49