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

OFFICE USE ONLY

APPLICATION #: OPM-0617

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: [X] New [ ] Renewal/Update

Manufacturer Information

Manufacturer: Herman Miller Inc

Manufacturer's Technical Representative: Daniel Teich

Mailing Address: 855 E Main Ave Mail Stop 441, PO Box 302, Zeeland, MI 494641366

Telephone: (616) 654-3807 Email: dan_teich@hermanmiller.com

Product Information

Product Name: Herman Miller Commend System

Product Type: Floor-Mounted Workstations/Nurse Stations

Product Model Number: Commend System

General Description: Floor-Mounted Workstations/Nurse Stations

Applicant Information

Applicant Company Name: Herman Miller Inc

Contact Person: Daniel Teich

Mailing Address: 855 E Main Ave Mail Stop 441, PO Box 302, Zeeland, MI 494641366

Telephone: (616) 654-3807 Email: dan_teich@hermanmiller.com

Title: Sr. Codes Engineer

Registered Design Professonal Preparing Engineering Recommendations

Company Name: CRITICAL STRUCTURES

Name: Eric Stovner California License Number: S4204

Mailing Address: 1350 Coronado Ave., Long Beach, CA 90804

Telephone: (310) 530-3050 Email: estovner@critical-structures.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: 10/25/2022

Name: Haeseong Lim Title: Senior Structural Engineer

Condition of Approval (if applicable):

SUPPORTS & ATTACHMENTS PRE-APPROVAL OPM-0617

THIS PRE-APPROVAL CONFORMS TO THE 2019 CALIFORNIA BUILDING CODE (CBC)

EQUIPMENT MANUFACTURER: MILLERKNOLL
EQUIPMENT TYPE: COMMEND™ SYSTEM

GENERAL NOTES:

1. THIS HCAI PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2019. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM MUST BE BASED ON THE CBC 2019.
2. WORKSTATION ANCHORS:
   2.a. EXPANSION ANCHORS: 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. NOMINAL EMBED.	MIN. SPACING	MIN. CONC. THICK	INSTALLATION TORQUE
½"	NORMAL WEIGHT	3,000	SIMPSON STRONG BOLT2	ESR-3037	3"	3¼"	4½"	60 FT-LBS

   2.b. THRU-BOLTS THROUGH CONCRETE ON METAL DECK
      2.b.i. ATTACHMENT IS TO BE MADE WITH ½" DIAMETER (A307) THREADED ROD WITH DOUBLE-NUT ATTACHED TO UNISTRUT P5500, 16½" MIN. LENGTH BENEATH CONCRETE FLOOR SYSTEM (f'c=3,000 PSI). MINIMUM ANCHOR SPACING IS 3¼" THRU 2" MIN. CONCRETE THICKNESS.
      2.b.ii. BOLTS SHALL BE TORQUED BY ¾ 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.b.iii. THROUGH-BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE - BOLT SIZE +1/16") FOR CONCRETE.
      2.b.iv. THROUGH-BOLTS IN CONCRETE SHALL RECEIVE SPECIAL INSPECTION AND TESTING (THROUGH-BOLTS WITH STEEL TO STEEL CONNECTION TENSION DO NOT REQUIRE TENSION TESTING) IN ACCORDANCE WITH REQUIREMENTS FOR POST-INSTALLED ANCHORS.
   2.c. FULL THREAD ENGAGEMENT OF NUT AND WASHER FOR THE ANCHOR IS REQUIRED.
3. 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. AT LEAST 50% OF THE ANCHORS SHALL BE TESTED BY EITHER TORQUE BASED OR DIRECT PULL TENSION. IF ANY ANCHOR FAILS, TEST UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME THE INITIAL TEST FREQUENCY.
   3.a. TEST LOADS:
      TORQUE BASED: 60 FT.-LBS.
      DIRECT PULL TEST: 2,230 LB. TENSION LOAD.
   3.b. ACCEPTANCE CRITERIA:
      TORQUE BASED: ANCHORS TESTED WITH A CALIBRATED TORQUE WRENCH SHALL ATTAIN THE SPECIFIED TORQUE WITHIN 1/2 TURN OF THE NUT.
      DIRECT PULL TEST: ANCHORS TESTED SHALL MAINTAIN THE TEST LOAD FOR A MINIMUM OF 15 SECONDS AND SHALL EXHIBIT NO DISCERNIBLE MOVEMENT DURING THE TENSION TEST, E.G. AS EVIDENCED BY LOOSENING OF THE WASHER UNDER THE NUT.
4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE $S_{DS} \leq 2.0$, $a_p=1.0$, $R_p = 2.5$, $\Omega_0=2.0$, AND $z/h=1.0$ AT CONCRETE SLAB FOR 42" MAXIMUM HEIGHT COMMEND WORKSTATIONS.
5. THIS PRE-APPROVAL CONFORMS TO THE 2019 CBC WHERE S_{DS} IS NOT GREATER THAN 2.0.

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MILLERKNOLL
COMMEND™ SYSTEMS
SUPPORTS & ATTACHMENTS
1BVF9C, 1BVF9B, 1BVF9F, 1BVF97, 1BVF96, 1BVF9D, 1BVF9G

REVISIONS	DATE
DATE: 04-18-2022	
PROJECT: 20-626	
ENGINEER: RO	
DRAFTER: MC	

SUPPORTS & ATTACHMENTS PRE-APPROVAL OPM-0617

THIS PRE-APPROVAL CONFORMS TO THE 2019 CALIFORNIA BUILDING CODE (CBC)

EQUIPMENT MANUFACTURER: MILLERKNOLL.
EQUIPMENT TYPE: COMMEND™ SYSTEM

GENERAL NOTES (CONTINUED):

6. THIS PRE-APPROVAL COVERS ONLY THE ANCHORAGE OF THE WORKSTATION TO THE BUILDING'S STRUCTURE.
7. ALL ANCHOR FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.
8. WORK SURFACE LIVE LOADS PER BIFMA NOT CONSIDERED IN GLOBAL OVERTURNING / SLIDING ANALYSIS. EXCLUSION OF LIVE LOADS RESULTED IN WORST-CASE CONDITION.
9. GLAZING SHALL BE $\frac{3}{8}$" THICK TEMPERED, MEETING THE REQUIREMENTS OF 2019 CBC SECTION 2403.2. SHOP DRAWINGS SHOWING COMPLIANCE WITH THIS SECTION SHALL BE PROVIDED BY THE INSTALLER AND/OR S.E.O.R.

9.a. $\frac{1}{2}$" MIN. FRAME LAP REQUIRED PER 2019 CBC TABLE 2403.2.1

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER:

1. VERIFY THAT PROJECT SPECIFIC VALUES OF S_{DS} & z/h RESULT IN SEISMIC FORCES (Eh, Ev) THAT DO NOT EXCEED THE VALUES ON THE DETAILS.
2. VERIFY THAT THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR AND SPECIFICATIONS ON SHEET 1.
3. VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS (SEE SPECIFICATIONS ON SHEET 1).
4. VERIFY THAT ALL NEW OR EXISTING ANCHORS ARE AN ADEQUATE DISTANCE FROM THE ANCHORS SHOWN IN THIS PRE-APPROVAL. SEOR SHALL VERIFY THAT THERE IS NO ADVERSE INTERACTION WHERE OTHER ANCHORS ARE WITHIN 18" OR 6hef FROM THIS UNIT'S ANCHORS.
5. PROVIDE SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS. VERIFY THE ADEQUACY OF THE STRUCTURES (SUCH AS WALLS AND FLOORS) WHICH SUPPORT THE EQUIPMENT FOR THE LOADS IMPOSED ON THEM BY THE EQUIPMENT IN ADDITION TO ALL OTHER LOADS. VERIFY THE SOFFIT IS DESIGNED FOR INTERSTORY DRIFTS.
6. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2019 CBC, AND WITH THE DETAILS SHOWN IN THIS PRE-APPROVAL. VERIFY THAT THE ACTUAL EQUIPMENT'S WEIGHT, CG LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, AND THE MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PRE-APPROVAL DOCUMENTS.
7. VERIFY GLAZING ASSEMBLY IS IN COMPLIANCE WITH 2019 CBC SECTION 2403.2.

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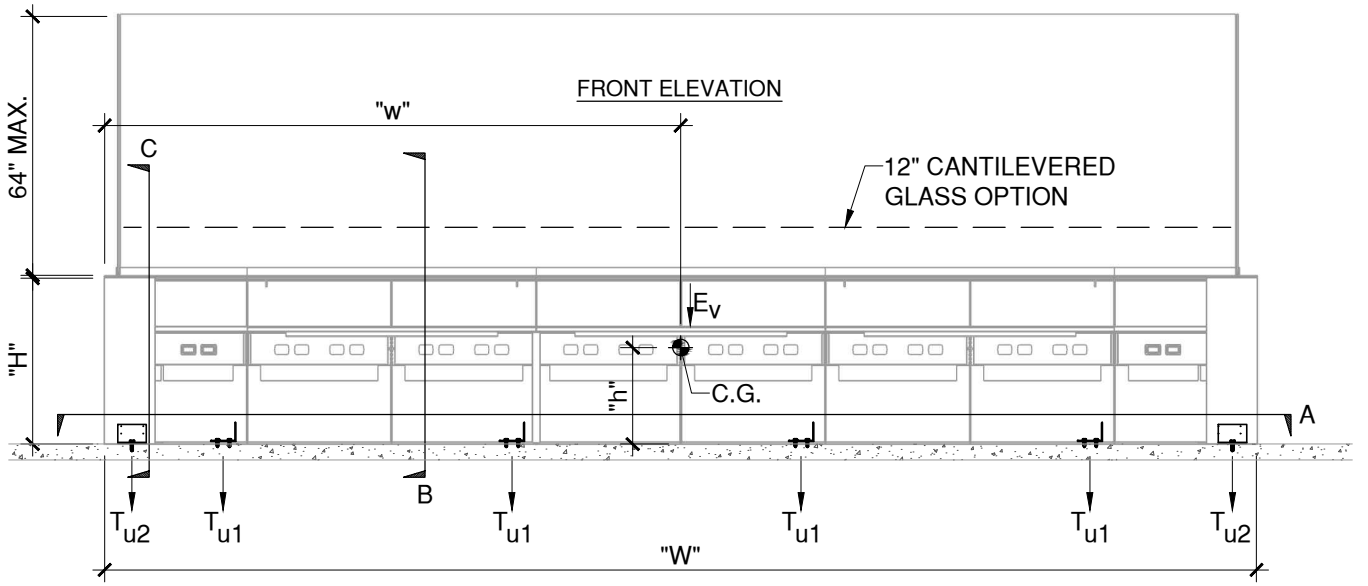
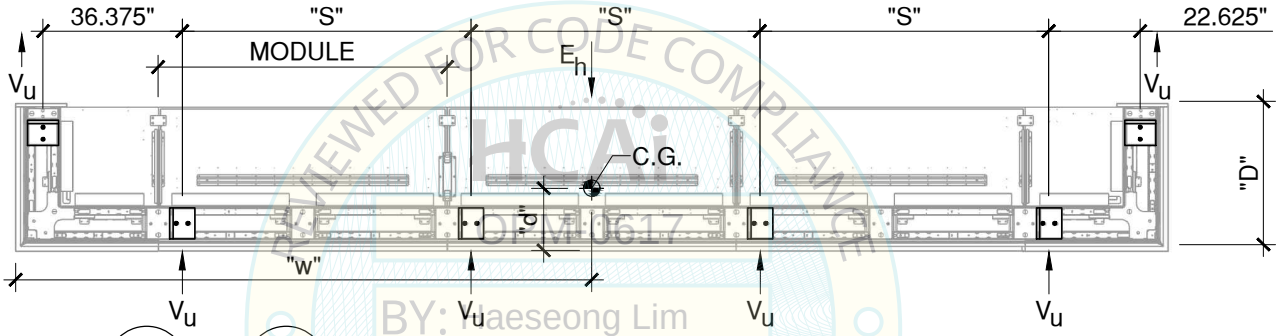
REVISIONS	DATE
DATE: 04-18-2022	
PROJECT: 20-626	
ENGINEER: RO	
DRAFTER: MC	

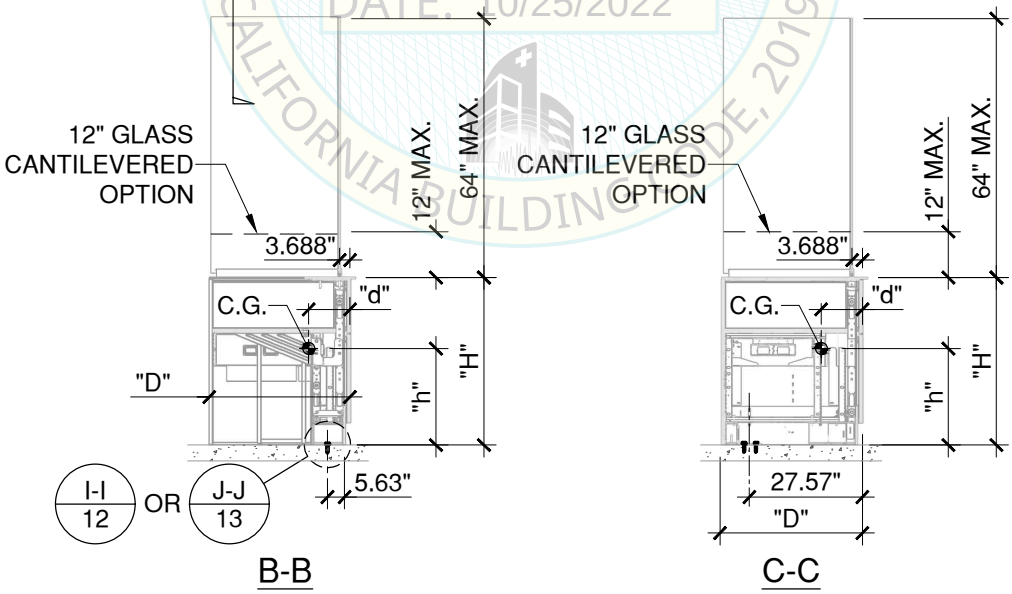
SETTING A: WORKSTATION WITH WORKSURFACE AND RETURN CORNERS





PLAN VIEW A-A

L-L / 14 OR K-K / 14



I-I / 12 OR J-J / 13

B-B C-C

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MILLERKNOLL COMMEND™ SYSTEMS SUPPORTS & ATTACHMENTS

1BVF9C, 1BVF9B, 1BVF9F, 1BVF97, 1BVF96, 1BVF9D, 1BVF9G

REVISIONS	DATE
DATE: 04-18-2022	
PROJECT: 20-626	
ENGINEER: RO	
DRAFTER: MC	

SETTING A: WORKSTATION SCHEDULE

SETTING A - GLASS SUMMARY (3/8" THICK):

LABEL	DESCRIPTION	PART No.	WEIGHT	CENTER OF GRAVITY		
			(LBS.)	w (IN.)	d (IN.)	h (IN.)
G6	6 FT. MODULE	1BVF9C	157.4	36.00	3.69	72.00
G4	4 FT. MODULE	1BVF9B	104.9	24.00	3.69	72.00
G3	3 FT. CORNER	1BVF9F	138.6	19.27	19.32	76.02

SETTING A - MODULE SUMMARY (EXCLUDING GLASS 3/8" THICK):

LABEL	DESCRIPTION	PART No.	WEIGHT	CENTER OF GRAVITY		
			(LBS.)	w (IN.)	d (IN.)	h (IN.)
M6	6 FT. MODULE	1BVF9C	499	37.29	9.27	23.33
M4	4 FT. MODULE	1BVF9B	282	24.70	8.20	22.61
CA3	3 FT. CORNER	1BVF9F	325	16.61	15.81	9.84

WORKSTATION ASSEMBLY

LABEL	ASSEMBLY	MODULE WEIGHT[1], W_M(LBS.)	GLASS WEIGHT[1], W_G(LBS.)	WIDTH, W (IN.)	DEPTH, D (IN.)	HEIGHT, H (IN.)	ANCHOR SPACING, S (FT.)	No. OF BRACKETS	CENTER OF GRAVITY[2]		
									w (IN.)	d (IN.)	h (IN.)
A1	(3)M6+(2)CA3 +(3)G6+(2)G3	2150	749	288.98	36.49	43.91	6	5	144.49	11.25	19.25
A2	(2)M6+(2)CA3 +(2)G6+(2)G3	1650	592	216.98	36.49	43.91	6	4	108.49	11.85	18.02
A3	(4)M4+(2)CA3 +(4)G4+(2)G3	1782	697	271.45	36.49	43.91	4	6	135.73	10.98	17.95
A4	(3)M4+(2)CA3 +(3)G4+(2)G3	1499	592	221.83	36.49	43.91	4	5	110.92	11.5	17.07

NOTES:

1. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS SHOWN IN ADDITION TO ALL OTHER LOADS.
2. CENTER OF GRAVITY (C.G.) IS FOR WORKSTATION ONLY.

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REVISIONS	DATE
DATE: 04-18-2022	
PROJECT: 20-626	
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SETTING A: ANCHORAGE FORCES

	LABEL	ANCHOR SPACING, S (FT.)	No. OF BRACKETS	BRACKET TO CONCRETE FLOOR						BRACKET TO MODULE BASE	
				SHEAR, V (LB.)[1]	TENSION[1]		ANCHOR BOLT		WEDGE ANCHOR	V (LB.)[2]	T (LB.)[2]
					T1 (LB.)	T2 (LB.)	MIN. SLAB THICKNESS, t_1 (IN.)[4]	MIN. UPPER FLUTE, t_2 (IN.)[4]	MIN. SLAB THICKNESS, t_3 (IN.)[5]		
$1.2<S_{DS}\leq2.0$	A1	6	5	1122	3135	1326	4	2.75	N/A	1404	592
	A2	6	4	1036	2274	960	4	2.50	4.50	1067	544
	A3	4	6	805	2507	830	4	2.00	4.50	1133	428
	A4	4	5	790	218	835	4	2.00	4.50	916	418
$S_{DS}\leq1.2$	A1	6	5	673	1794	578	4	2.75	4.50	917	355
	A2	6	4	621	1290	549	4	2.50	4.50	830	326
	A3	4	6	483	1437	346	4	2.00	4.50	737	257
	A4	4	5	474	1148	344	4	2.00	4.50	604	251

NOTES:

1. SUPPORTS & ATTACHMENTS DESIGN PER 2019 CBC AND ASCE 7-16. STRENGTH DESIGN IS USED. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE $S_{DS}\leq2.0$, $a_P=1.0$, $R_P=2.5$, $z/h=1.0$ AND $\Omega_o=2.0$ FOR ANCHORAGE INTO CONCRETE.
   - 1.a. $1.2<S_{DS}\leq2.0$: HORIZONTAL FORCE (Eh) = $2.88W_p$; VERTICAL FORCE (Ev) = $0.40W_p$
   - 1.b. $S_{DS}\leq1.2$: HORIZONTAL FORCE (Eh) = $1.73W_P$; VERTICAL FORCE (Ev) = $0.24W_P$
2. SUPPORTS & ATTACHMENTS DESIGN PER 2019 CBC AND ASCE 7-16. STRENGTH DESIGN IS USED. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3 WHERE $S_{DS}\leq2.0$, $a_p=1.0$, $R_p=2.5$, $z/h=1.0$ AND Ω_o DOES NOT APPLY FOR ANCHORAGE INTO STEEL.
   - 2.a. $1.2<S_{DS}\leq2.0$: HORIZONTAL FORCE (EH) = $1.44W_P$; VERTICAL FORCE (Ev) = $0.40W_P$
   - 2.b. $S_{DS}\leq1.2$: HORIZONTAL FORCE (EH) = $0.86W_P$; VERTICAL FORCE (EV) = $0.24W_P$
3. SEISMIC EFFECT OF THE GLASS IS APPLIED AS A SEISMIC FORCE AT THE TOP OF THE WORKSTATION. SEISMIC FORCE IS DETERMINED BASED ON ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 WHERE $S_{DS}\leq=2.0$, $a_P=1.0$, $R_P=2.5$, $z/h=1.0$ AND Ω_O DOES NOT APPLY FOR ANCHORAGE INTO COLD-FORMED STEEL.
   - 3.a. $1.2<S_{DS}\leq2.0$: HORIZONTAL FORCE (EH) = $1.44W_P$; VERTICAL FORCE (EV) = $0.40W_P$
   - 3.b. $S_{DS}\leq1.2$: HORIZONTAL FORCE (EH) = $0.86W_P$; VERTICAL FORCE (EV) = $0.24W_P$
4. FOR DESCRIPTION OF t_1 AND t_2, SEE DETAIL J/13.
5. FOR DESCRIPTION OF t_3, SEE DETAIL I/12.
6. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS.

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MILLERKNOLL
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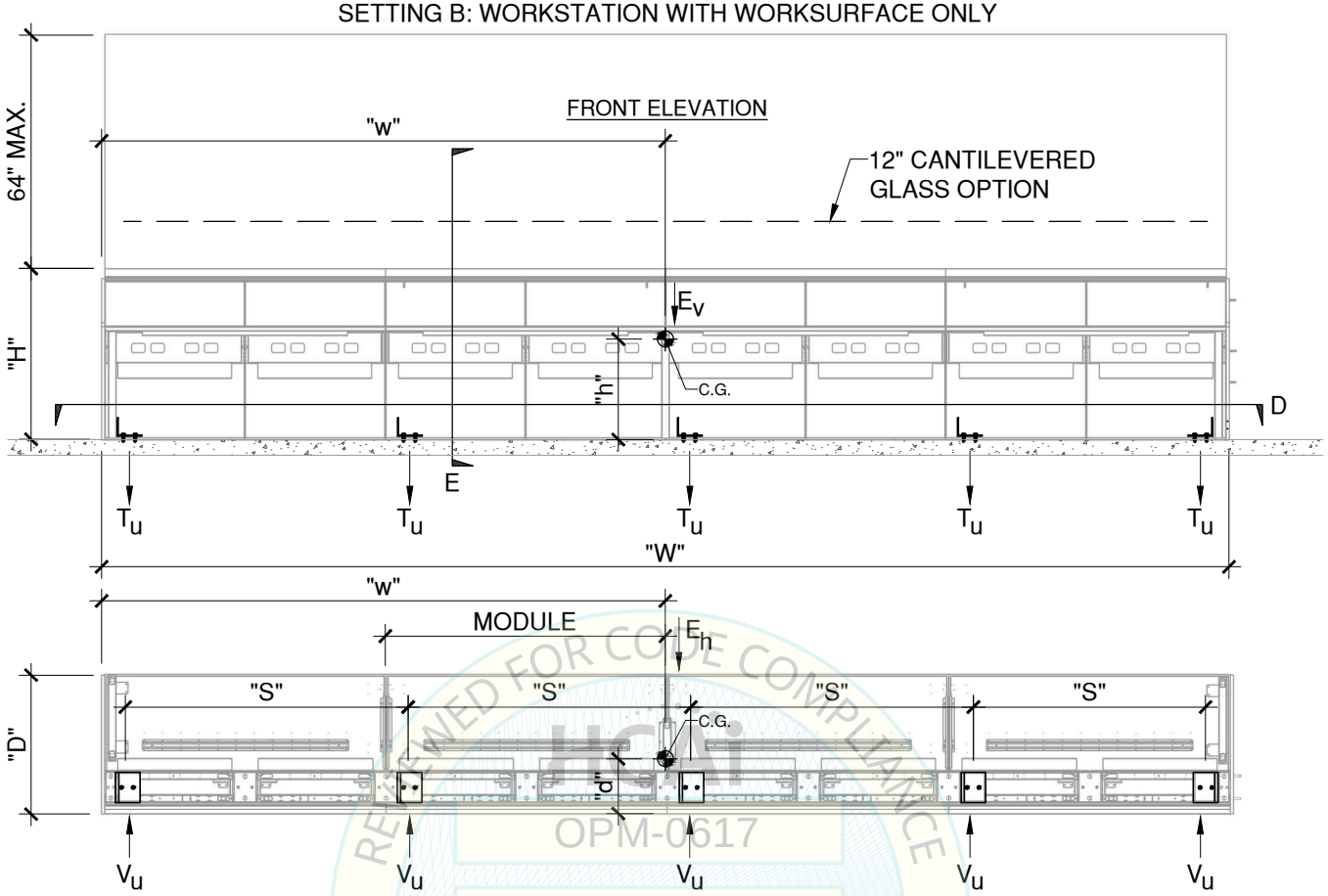
SUPPORTS & ATTACHMENTS

1BVF9C, 1BVF9B, 1BVF9F, 1BVF97, 1BVF96, 1BVF9D, 1BVF9G

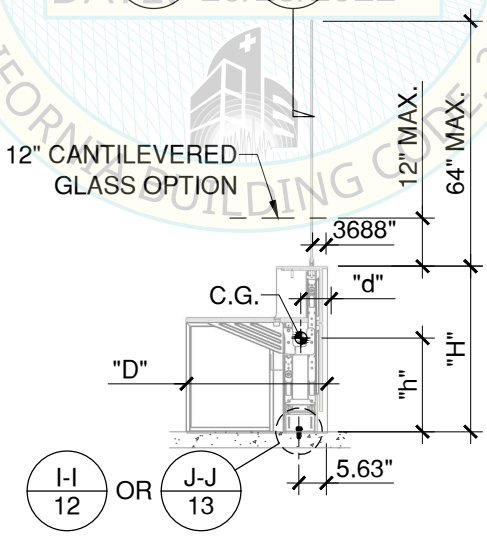
REVISIONS	DATE
DATE: 04-18-2022	
PROJECT: 20-626	
ENGINEER: RO	
DRAFTER: MC	

SETTING B: WORKSTATION WITH WORKSURFACE ONLY



PLAN VIEW D-D

L-L / 14 OR K-K / 14



I-I / 12 OR J-J / 13

E-E

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MILLERKNOLL COMMEND™ SYSTEMS SUPPORTS & ATTACHMENTS

1BVF9C, 1BVF9B, 1BVF9F, 1BVF97, 1BVF96, 1BVF9D, 1BVF9G

REVISIONS	DATE
DATE: 04-18-2022	
PROJECT: 20-626	
ENGINEER: RO	
DRAFTER: MC	

SETTING B: WORKSTATION SCHEDULE

SETTING B - GLASS SUMMARY (3/8" THICK):

LABEL	DESCRIPTION	PART No.	WEIGHT	CENTER OF GRAVITY		
			(LBS.)	w (IN.)	d (IN.)	h (IN.)
G6	6 FT. MODULE	1BVF9C	157.4	36.00	3.69	72.00
G4	4 FT. MODULE	1BVF9B	104.9	24.00	3.69	72.00

SETTING B - MODULE SUMMARY (EXCLUDING GLASS 3/8" THICK):

LABEL	DESCRIPTION	PART No.	WEIGHT	CENTER OF GRAVITY		
			(LBS.)	w (IN.)	d (IN.)	h (IN.)
M6	6 FT. MODULE	1BVF9C	499.8	37.29	9.27	23.33
M4	4 FT. MODULE	1BVF9B	282.8	24.70	8.20	22.61
ME6	6 FT. MODULE w/END PANEL	1BVF97	518.9	37.28	9.22	23.76
ME4	4 FT. MODULE w/END PANEL	1BVF96	302.0	26.52	8.11	23.52

WORKSTATION ASSEMBLY

LABEL	ASSEMBLY	MODULE WEIGHT[1], W_M(LBS.)	GLASS WEIGHT[1], W_G(LBS.)	WIDTH, W (IN.)	DEPTH, D (IN.)	HEIGHT, H (IN.)	ANCHOR SPACING, S (FT.)	No. OF BRACKETS	CENTER OF GRAVITY[2]		
									w (IN.)	d (IN.)	h (IN.)
B1	(2)M6+(2)ME6+(4)G6	2037.5	629.6	288.00	35.83	39.81	6	5	144.00	9.24	23.55
B2	(1)M6+(2)ME6+(3)G6	1537.7	472.2	216.00	35.83	39.81	6	4	108.00	9.23	23.62
B3	(4)M4+(2)ME4+(6)G4	1735.2	629.4	297.71	35.80	39.81	4	7	148.85	8.17	22.92
B4	(3)M4+(2)ME4+(5)G4	1452.4	524.5	524.50	35.80	39.81	4	6	124.05	8.16	22.99

NOTES:

1. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS SHOWN IN ADDITION TO ALL OTHER LOADS.
2. CENTER OF GRAVITY (C.G.) IS FOR WORKSTATION ONLY.

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REVISIONS	DATE
DATE: 04-18-2022	
PROJECT: 20-626	
ENGINEER: RO	
DRAFTER: MC	

SETTING B: ANCHORAGE FORCES

	LABEL	ANCHOR SPACING, S (FT.)	No. OF BRACKETS	BRACKET TO CONCRETE FLOOR					BRACKET TO MODULE BASE
				SHEAR, V (LB.)[1]	TENSION, T (LB.)[1]	ANCHOR BOLT		WEDGE ANCHOR	
						MIN. SLAB THICKNESS, t_1 (IN.)[4]	MIN. UPPER FLUTE, t_2 (IN.)[4]	MIN. SLAB THICKNESS, t_3 (IN.)[5]	V (LB.)[2]
$1.2<S_{DS}\leq 2.0$	B1	6	5	1264	4019	4	3.25	N/A	1928
	B2	6	4	1192	3800	4	3.00	N/A	1821
	B3	4	7	779	2450	4	2.00	4.50	1217
	B4	4	6	760	2397	4	2.00	4.50	1190
$S_{DS}\leq 1.2$	B1	6	5	759	2201	4	3.25	4.50	963
	B2	6	4	715	2082	4	3.00	4.50	910
	B3	4	7	467	1353	4	2.00	4.50	621
	B4	4	6	456	1324	4	2.00	4.50	608

NOTES:

1. SUPPORTS & ATTACHMENTS DESIGN PER 2019 CBC AND ASCE 7-16. STRENGTH DESIGN IS USED. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3, WHERE $S_{DS} \leq 2.0$, $a_P=1.0$, $R_P=2.5$, $z/h=1.0$ AND $\Omega_o=2.0$ FOR ANCHORAGE INTO CONCRETE.
   - 1.a. $1.2<S_{DS}\leq 2.0$: HORIZONTAL FORCE (Eh) = $2.88W_p$; VERTICAL FORCE (Ev) = $0.40W_p$
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5. FOR DESCRIPTION OF t_3, SEE DETAIL I/12.
6. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS.

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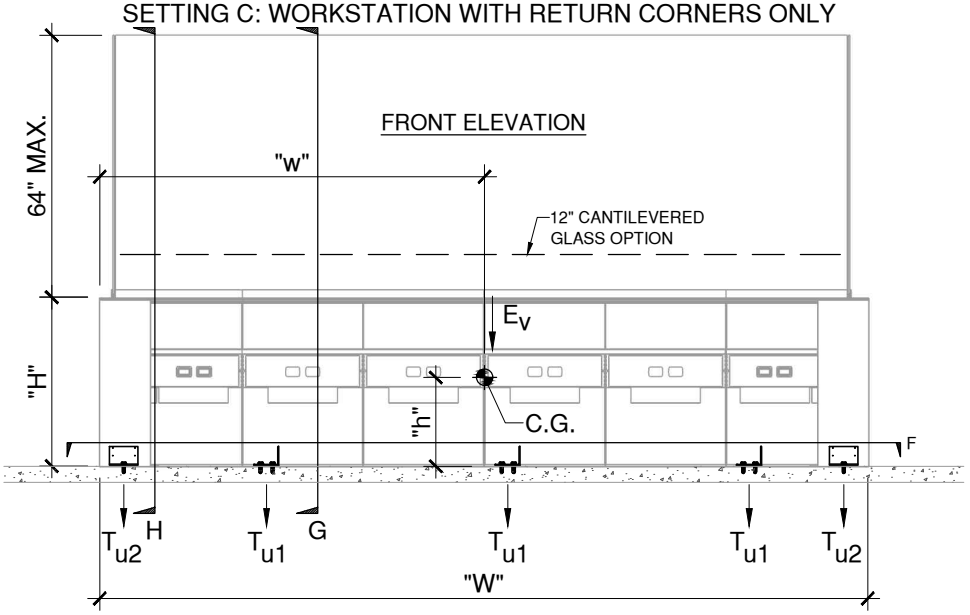
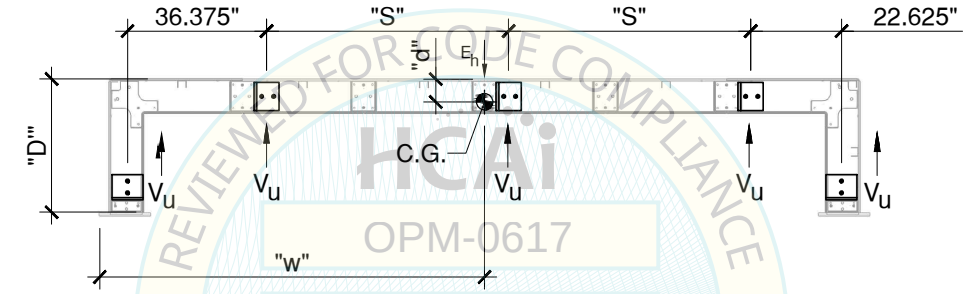
MILLERKNOLL COMMEND™ SYSTEMS SUPPORTS & ATTACHMENTS

1BVF9C, 1BVF9B, 1BVF9F, 1BVF97, 1BVF96, 1BVF9D, 1BVF9G

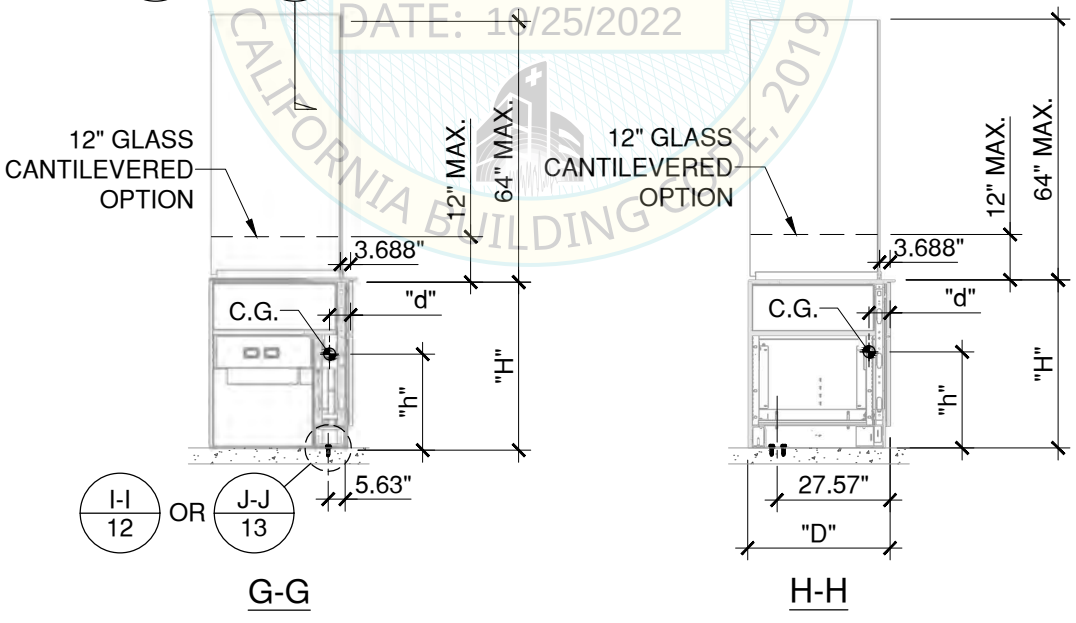
REVISIONS	DATE
DATE: 04-18-2022	
PROJECT: 20-626	
ENGINEER: RO	
DRAFTER: MC	

SETTING C: WORKSTATION WITH RETURN CORNERS ONLY





L-L / 14 OR K-K / 14



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REVISIONS	DATE
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SETTING C: WORKSTATION SCHEDULE

SETTING C - GLASS SUMMARY (3/8" THICK):

LABEL	DESCRIPTION	PART No.	WEIGHT	CENTER OF GRAVITY		
			(LBS.)	w (IN.)	d (IN.)	h (IN.)
G6	6 FT. MODULE	1BVF9D	157.40	36.00	3.69	72.00
G3	3 FT. MODULE	1BVF9G	138.60	19.27	19.32	76.02

SETTING C - MODULE SUMMARY (EXCLUDING GLASS 3/8" THICK):

LABEL	DESCRIPTION	PART No.	WEIGHT	CENTER OF GRAVITY		
			(LBS.)	w (IN.)	d (IN.)	h (IN.)
MC6	6 FT. MODULE	1BVF9D	335.90	37.62	6.41	21.98
CC3	3 FT. MODULE	1BVF9G	294.80	17.46	2.48	30.77

WORKSTATION ASSEMBLY

LABEL	ASSEMBLY	MODULE WEIGHT[1], W_M(LBS.)	GLASS WEIGHT[1], W_G(LBS.)	WIDTH, W (IN.)	DEPTH, D (IN.)	HEIGHT, H (IN.)	ANCHOR SPACING, S (FT.)	No. OF BRACKETS	CENTER OF GRAVITY[2]		
									w (IN.)	d (IN.)	h (IN.)
C1	(3)MC6+(2)CC3 +(3)G6+(2)G3	1597.4	749.4	288.98	36.49	43.91	6	6	144.49	4.96	25.23
C2	(2)MC6+(2)CC3 +(2)G6+(2)G3	1261.5	592.0	216.98	36.49	43.91	6	5	108.49	4.57	26.09

NOTES:

1. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS SHOWN IN ADDITION TO ALL OTHER LOADS.
2. CENTER OF GRAVITY (C.G.) IS FOR WORKSTATION ONLY.

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SETTING C: ANCHORAGE FORCES

	LABEL	ANCHOR SPACING, S (FT.)	No. OF BRACKETS	BRACKET TO CONCRETE FLOOR						BRACKET TO MODULE BASE	
				SHEAR, V (LB.)[1]	TENSION[1]		ANCHOR BOLT		WEDGE ANCHOR		
					T1 (LB.)	T2 (LB.)	MIN. SLAB THICKNESS, t_1 (IN.)[4]	MIN. UPPER FLUTE, t_2 (IN.)[4]	MIN. SLAB THICKNESS, t_3 (IN.)[5]	V (LB.)[2]	T (LB.)[2]
$1.2<S_{DS}\leq 2.0$	C1	6	6	857	3214	1285	4	2.00	N/A	1342	459
	C2	6	5	812	2615	1047	4	2.00	N/A	1080	360
$S_{DS}\leq 1.2$	C1	6	6	514	1949	549	4	2.00	4.50	826	276
	C2	6	5	487	1589	451	4	2.00	4.50	664	216

NOTES:

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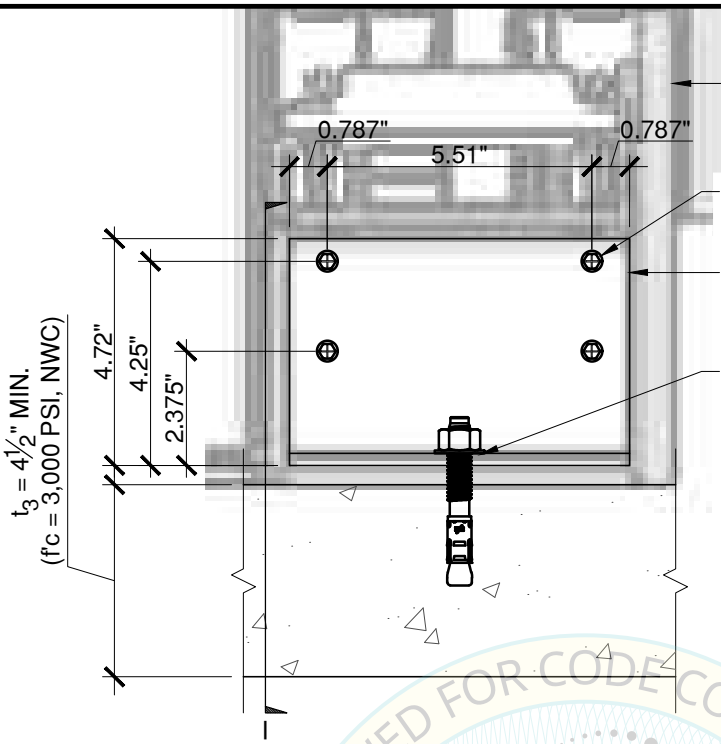
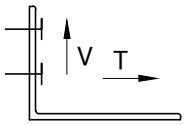


PRE-MANUFACTURED A1008 Gr.33 MODULE BASE, $\frac{1}{8}$" THICK (Fy=33 KSI, Fu=48 KSI)

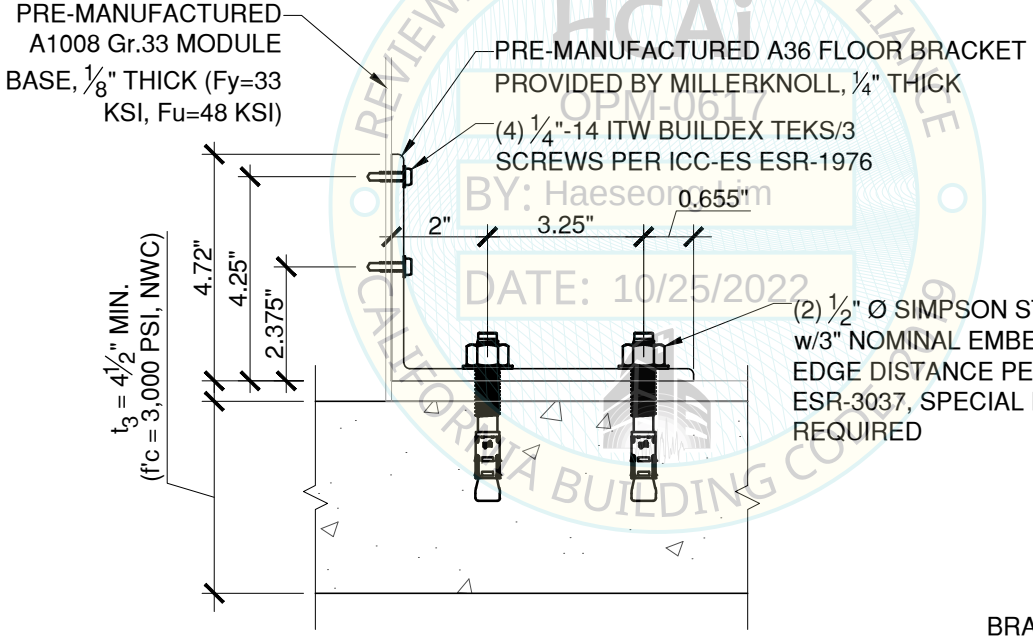
(4) $\frac{1}{4}$"-14 ITW BUILDEX TEKS/3 SCREWS PER ICC-ES ESR-1976

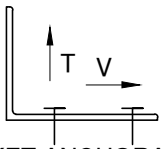
PRE-MANUFACTURED A36 FLOOR BRACKET PROVIDED BY MILLERKNOLL, $\frac{1}{4}$" THICK

(2) $\frac{1}{2}$" Ø SIMPSON STRONG BOLT 2 w/3" NOMINAL EMBED. & 11" MIN. EDGE DISTANCE PER ICC-ES ESR-3037, SPECIAL INSPECTION REQUIRED



BRACKET ANCHORAGE TO MODULE BASE FORCE DIAGRAM





BRACKET ANCHORAGE TO CONCRETE FLOOR FORCE DIAGRAM

I-I

ANCHORAGE DETAIL @ CONC. SLAB

NOTES:

1. ANCHORAGE DESIGNED TO RESIST THE LOADS V_u AND T_u PER RESPECTIVE WORKSTATION SETTING. SEE MAX. LOADS ON SHEET(S) 5, 8 OR 11.

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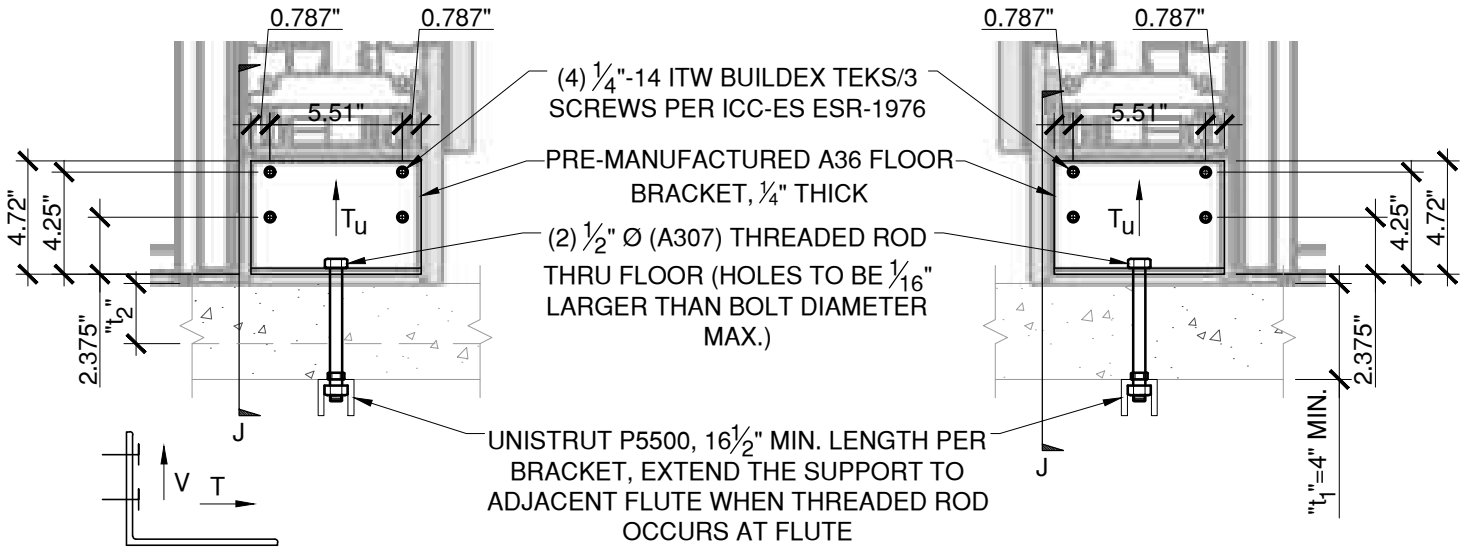
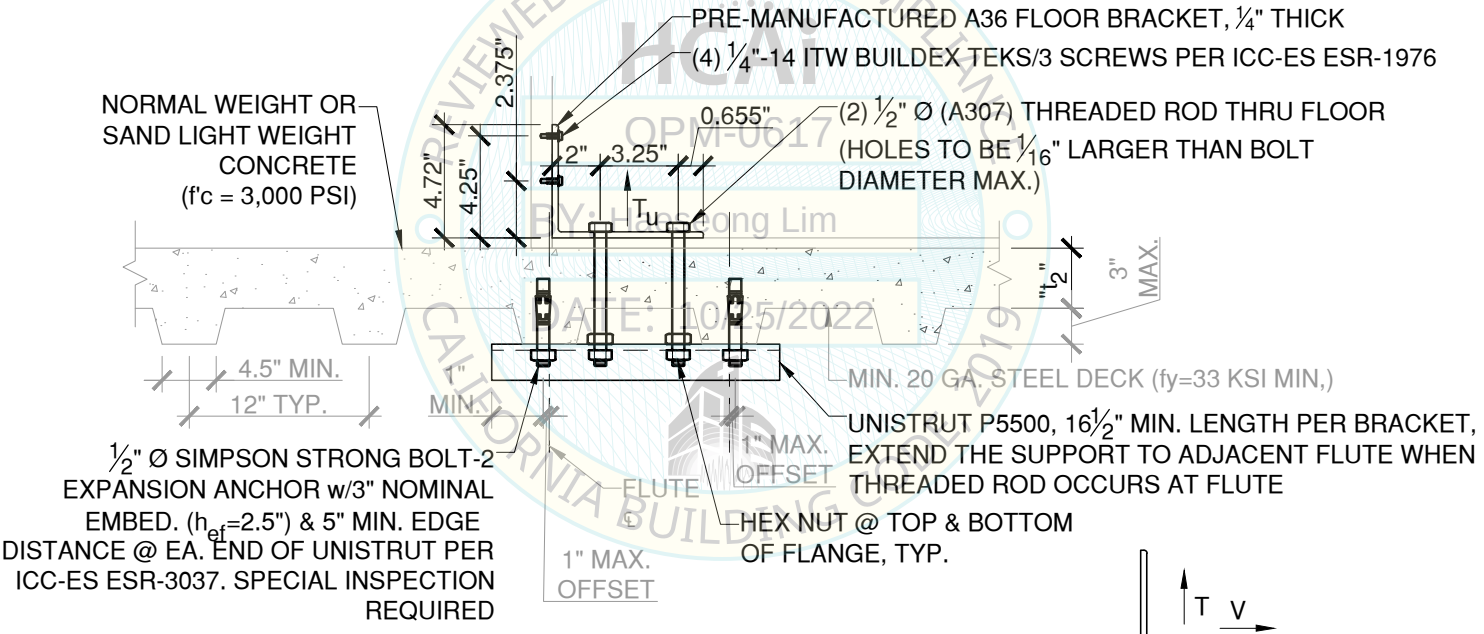


BRACKET ANCHORAGE TO
MODULE BASE FORCE DIAGRAM



J-J

ANCHORAGE DETAIL @ CONC.
OVER METAL DECK

BRACKET ANCHORAGE TO
CONCRETE FLOOR FORCE DIAGRAM

NOTES:
1. AT CONDITIONS WHERE NUT CANNOT BE PROVIDED AT TOPSIDE OF STRUT, PROVIDE TAPPED HOLE THROUGH STRUT FLANGE.

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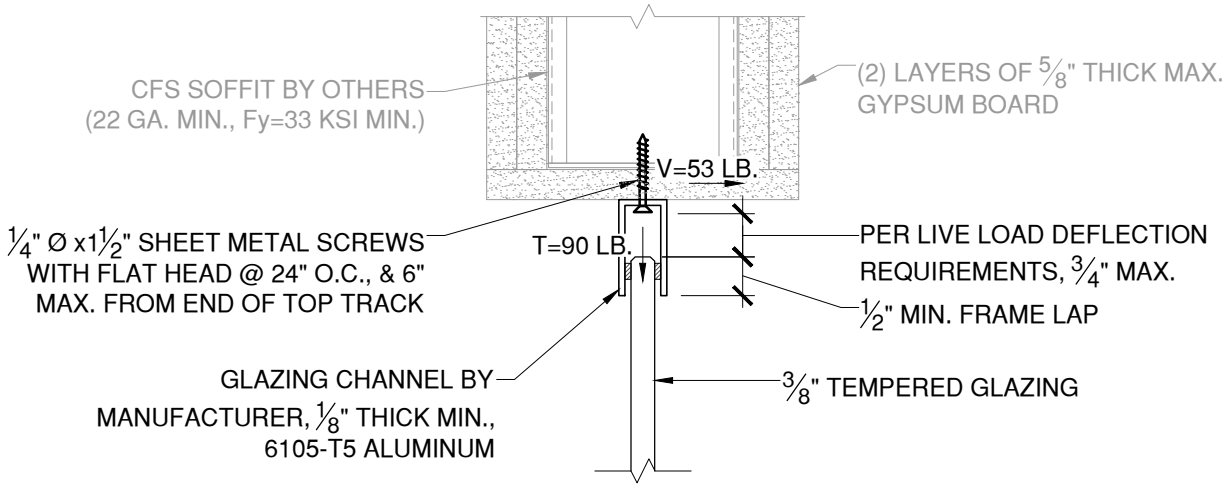
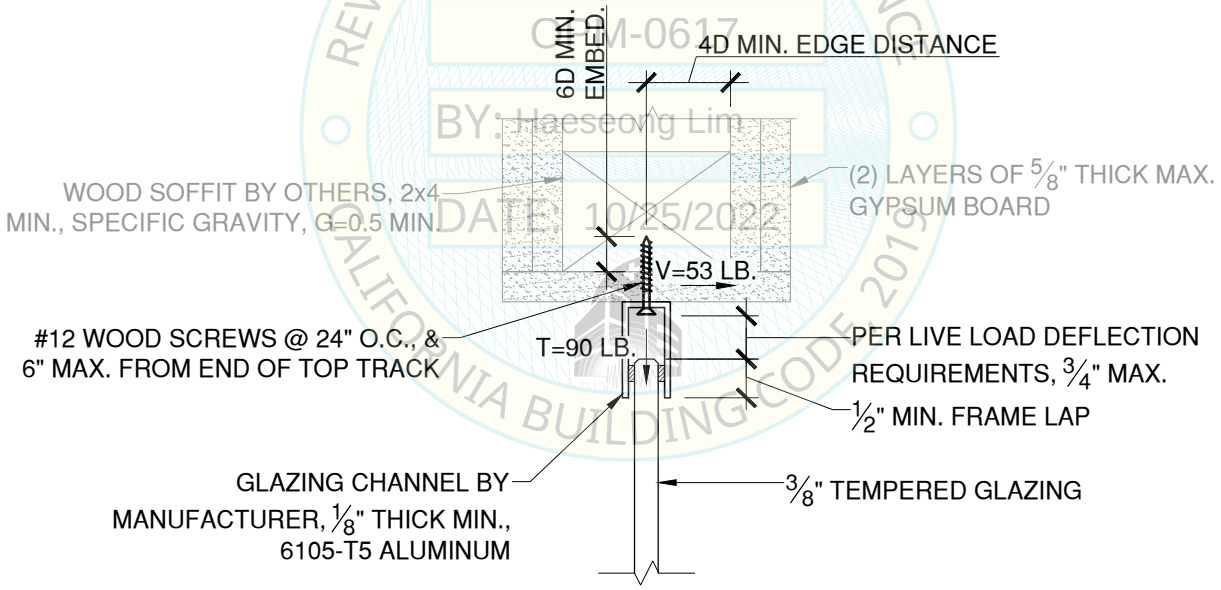


NOTES:
1. MINIMUM EDGE DISTANCE OF SCREWS = 1.5 x ANCHOR DIAMETER
2. PENETRATION OF SCREWS THROUGH JOINED MATERIAL SHALL HAVE 3 EXPOSED THREADS, MIN.
3. MINIMUM (2) ANCHORS AT GIVEN MAX. O.C. SPACING PER TOP TRACK SECTION.

K-K
STEEL SOFFIT



NOTES:
1. MINIMUM EDGE DISTANCE OF SCREWS = 4 x ANCHOR DIAMETER
2. MINIMUM (2) ANCHORS AT GIVEN MAX. O.C. SPACING PER TOP TRACK SECTION.

L-L
WOOD SOFFIT

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