



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OPM-0668

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: New Renewal/Update

Manufacturer Information

Manufacturer: Herman Miller, Inc.

Manufacturer's Technical Representative: Nathan Sweeney

Mailing Address: 855 E Main Ave, Mail Stop 441, PO Box 30, Zeeland, MI 494641366

Telephone: (123) 456-7890

Email: nathan_sweeney@hermanmiller.com

Product Information

Product Name: Herman Miller Canvas Wall System OPM-0668

Product Type: Floor-Mounted Workstation

Product Model Number: Canvas Wall System

General Description: Floor-Mounted Workstation

Applicant Information

Applicant Company Name: Herman Miller, Inc.

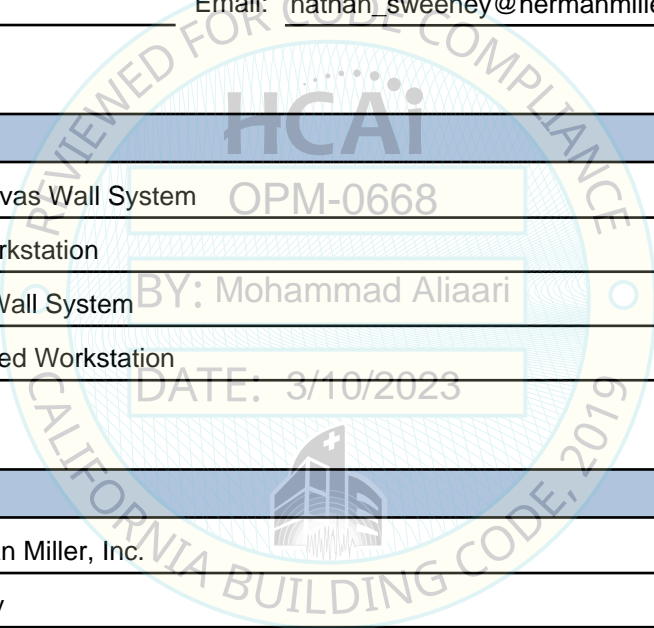
Contact Person: Nathan Sweeney

Mailing Address: 855 E Main St., Mail Stop 441, PO Box 30, Zeeland, MI 494641366

Telephone: (616) 260-5532

Email: nathan_sweeney@hermanmiller.com

Title: Codes & Standards Senior Engineer Building Codes and Product Conformance



"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: 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

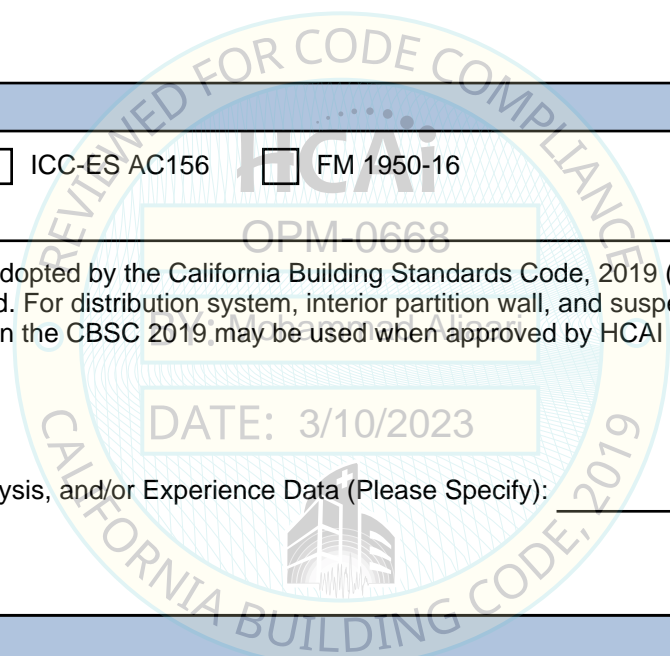
Other(s) (Please Specify): _____

*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: 3/10/2023

Name: Mohammad Aliaari Title: Senior Structural Engineer

Condition of Approval (if applicable): _____

“Access to Safe, Quality Healthcare Environments that Meet California’s Diverse and Dynamic Needs”

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY



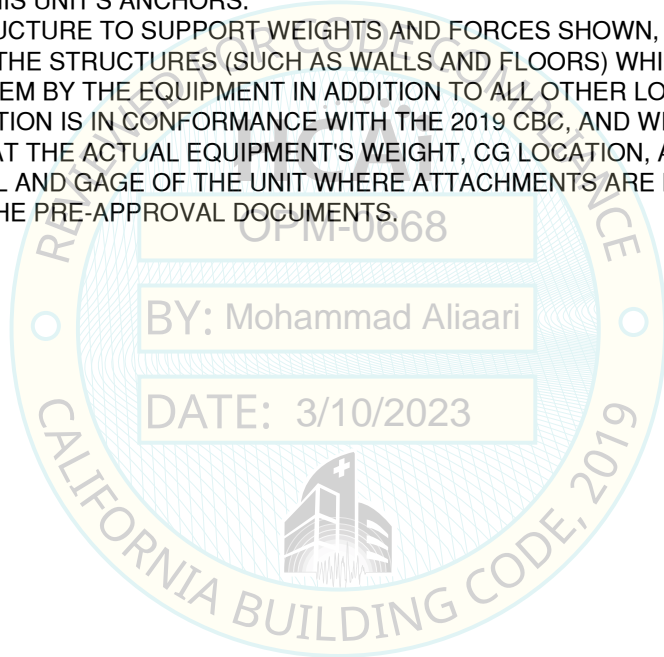
ANCHORAGE PRE-APPROVAL

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

EQUIPMENT MANUFACTURER: MILLERKNOLL
 EQUIPMENT TYPE: CANVAS WALL™ SYSTEM

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER:

1. VERIFY THAT PROJECT SPECIFIC VALUES OF S_{DS} & z/h RESULT IN SEISMIC FORCES (E_h , E_v) THAT DO NOT EXCEED THE VALUES ON THE DETAILS.
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 $6h_{ef}$ 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.
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.



OPM-0668
 BY: Mohammad Aliaari
 DATE: 3/10/2023



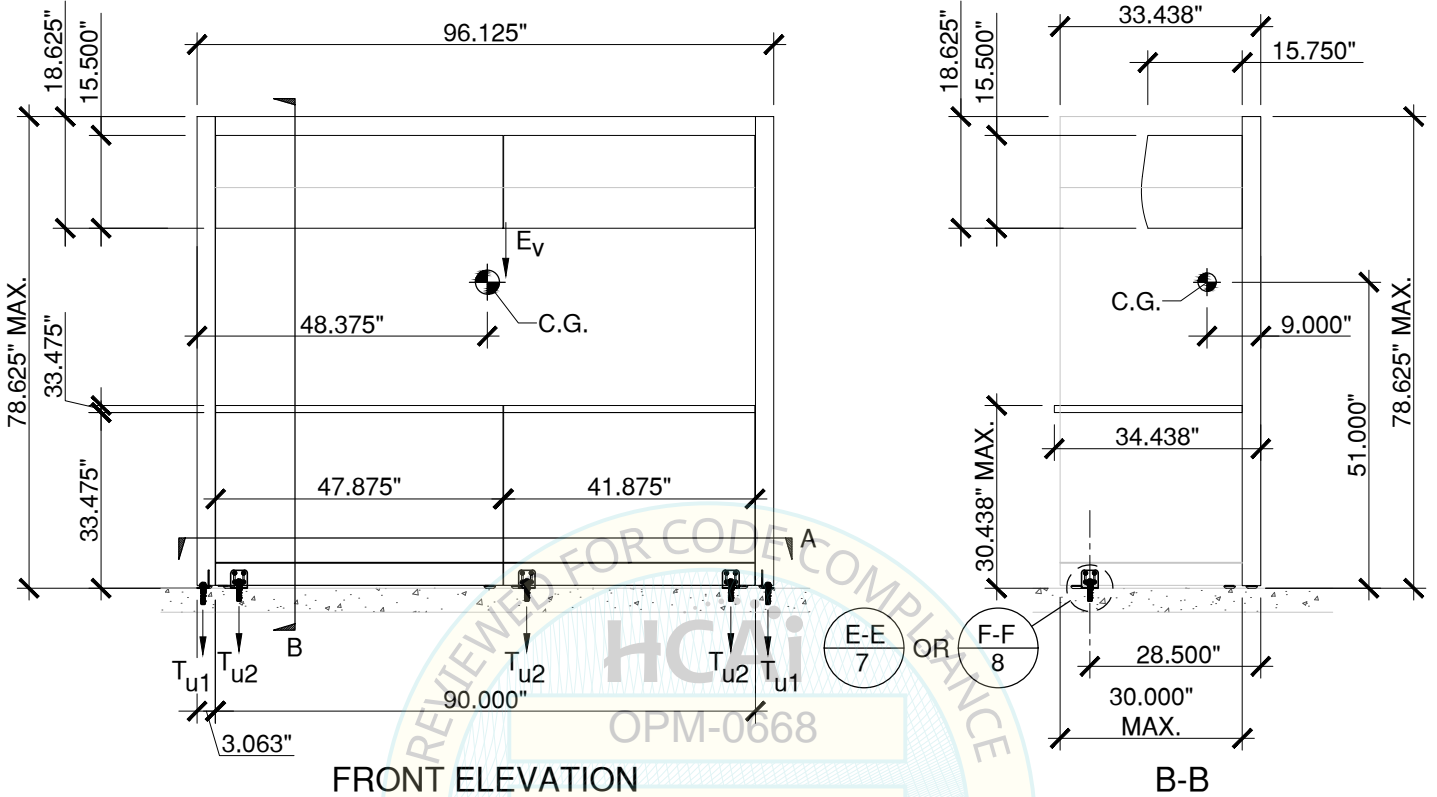
MILLERKNOLL
 CANVAS WALL™ SYSTEM
 ANCHORAGE



REVISIONS	DATE
DATE: 02-09-2023	
PROJECT: 21-613	
ENGINEER: JG	
DRAFTER: MC	

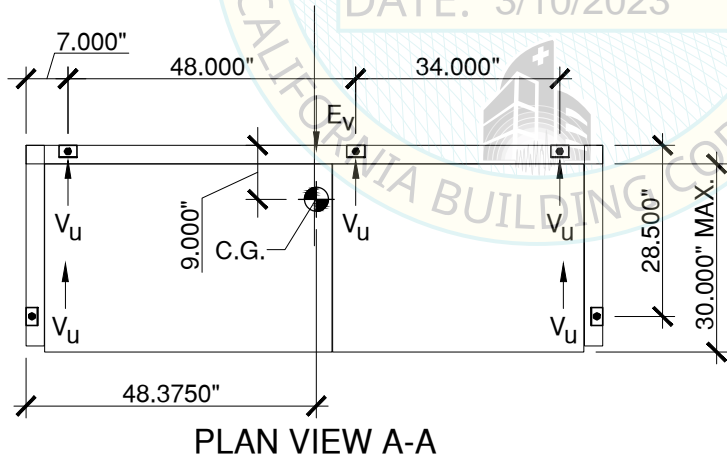
1BV2LR

CONFIGURATION A: 33" DEEP WORKSURFACE AND CABINETS WITH TWO (2) RETURN WALLS

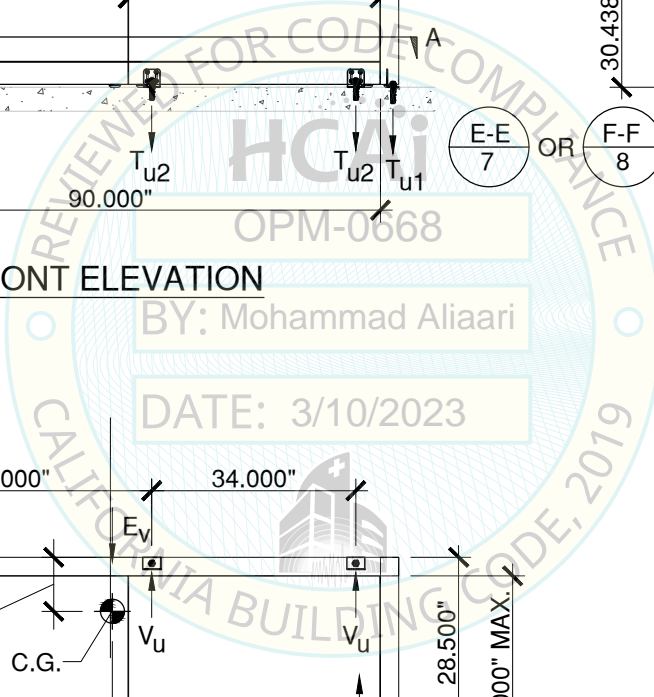


FRONT ELEVATION

B-B



PLAN VIEW A-A



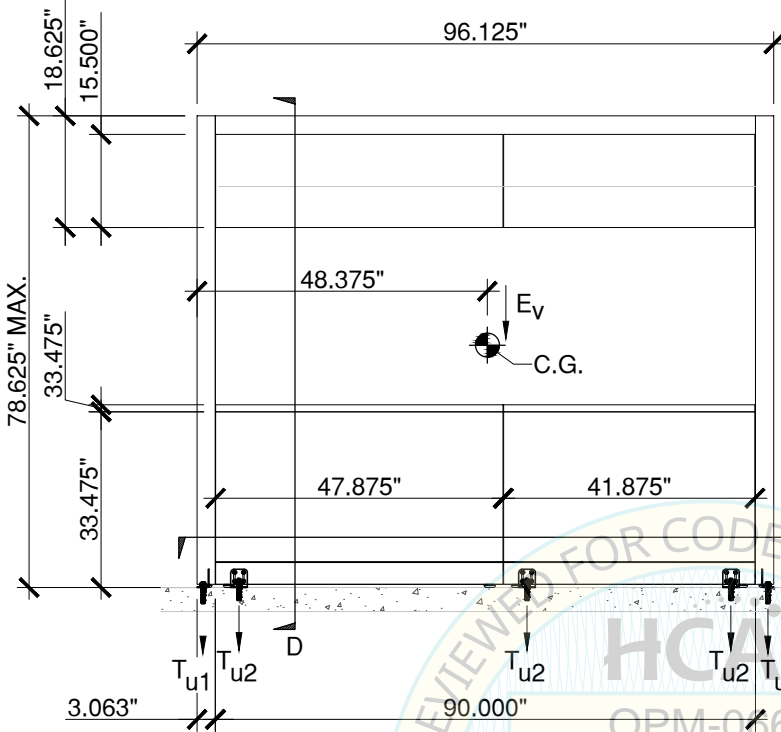
MILLERKNOLL
CANVAS WALL™ SYSTEM
ANCHORAGE



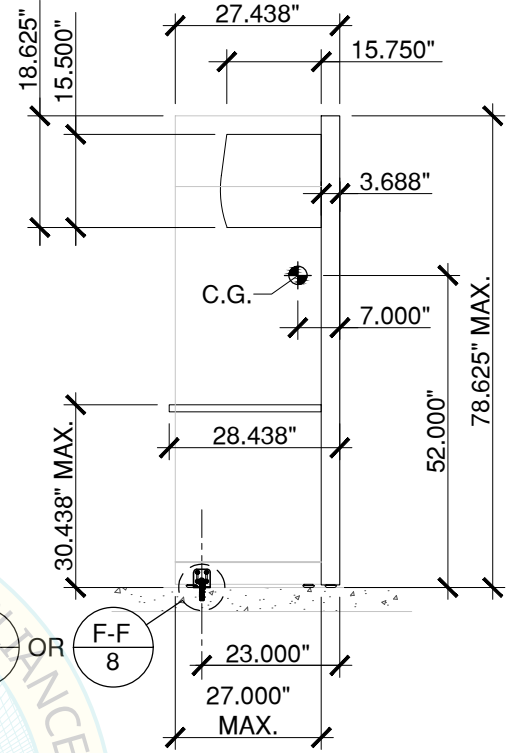
REVISIONS	DATE
	DATE: 02-09-2023
	PROJECT: 21-613
	ENGINEER: JG
	DRAFTER: MC

1BV2LP

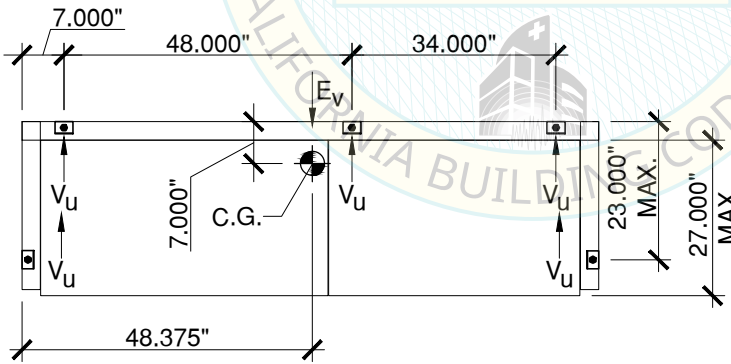
CONFIGURATION B: 27" DEEP WORKSURFACE AND CABINETS WITH TWO (2) RETURN WALLS



FRONT ELEVATION

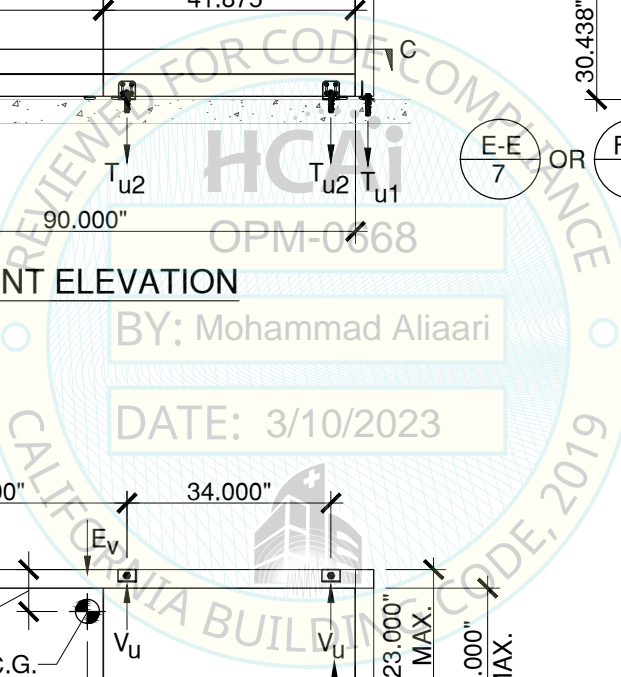


D-D



PLAN VIEW C-C

REVIEWED FOR CODE COMPLIANCE
 BY: Mohammad Aliaari
 DATE: 3/10/2023



MILLERKNOLL
 CANVAS WALL™ SYSTEM
 ANCHORAGE



REVISIONS	DATE
	DATE: 02-09-2023
	PROJECT: 21-613
	ENGINEER: JG
	DRAFTER: MC

CONFIGURATION A: 33" DEEP WORKSURFACE AND CABINETS WITH TWO (2) RETURN WALLS

SETTING A - MODULE SUMMARY:

LABEL	DESCRIPTION	PART No.	WEIGHT
			(LBS.)
F1A	FRAME ASSEMBLY	IBV2LR	764
S1A	48" SHELF CABINET	X3730.48	21
S2A	42" SHELF CABINET	X3730.42	19
W1A	48" WORK STATION	FTS10_3048L	43
W2A	42" WORK STATION	FTS10_3042L	37

WORKSTATION ASSEMBLY							
LABEL	ASSEMBLY	UNLOADED MODULE WEIGHT (LBS.)	MODULE WEIGHT ¹ , W _w (LBS.)	WIDTH, W (IN.)	DEPTH, D (IN.)	HEIGHT, H (IN.)	No. OF BRACKETS
A1	F1A+S1A +S2A+W1A+W2A	884	1180	96	33	79	5

CONFIGURATION B: 27" DEEP WORKSURFACE AND CABINETS WITH TWO (2) RETURN WALLS

SETTING B - MODULE SUMMARY:

LABEL	DESCRIPTION	PART No.	WEIGHT
			(LBS.)
F1B	FRAME ASSEMBLY	IBV2LP	705
S1B	48" SHELF CABINET	X3730.48	21
S2B	42" SHELF CABINET	X3730.42	19
W1B	48" WORK STATION	FTS10_2448L	34
W2B	42" WORK STATION	FTS10_2442L	30

WORKSTATION ASSEMBLY							
LABEL	ASSEMBLY	UNLOADED MODULE WEIGHT (LBS.)	MODULE WEIGHT ¹ , W _w (LBS.)	WIDTH, W (IN.)	DEPTH, D (IN.)	HEIGHT, H (IN.)	No. OF BRACKETS
B1	F1B+S1B +S2B+W1B+W2B	809	1127	96	27	79	5

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.



**MILLERKNOLL
CANVAS WALL™ SYSTEM
ANCHORAGE**



REVISIONS	DATE
DATE:	02-09-2023
PROJECT:	21-613
ENGINEER:	JG
DRAFTER:	MC

**CONFIGURATION A: MAXIMUM ANCHORAGE FORCES
ANCHORAGE INTO CONCRETE SLAB**

z/h	MAX. S _{DS}	MIN. THICKNESS, t ₃ (IN.) ⁴	BRACKET TO CONCRETE FLOOR			BRACKET TO MODULE BASE ²	
			SHEAR ¹ , V _U (LB.)	T _{U1} (LB.) ¹	T _{U2} (LB.) ¹	V (LB.)	T (LB.)
1.00	2.00	5.50	680	4306	3464	340	1519

ANCHORAGE INTO TOPSIDE OF CONCRETE OVER METAL DECK

z/h	MAX. S _{DS}	MIN. SLAB THICKNESS, t ₁ (IN.) ³	MIN. UPPER FLUTE, t ₂ (IN.) ³	BRACKET TO CONCRETE FLOOR			BRACKET TO MODULE BASE ²	
				SHEAR ¹ , V _U (LB.)	T _{U1} (LB.) ¹	T _{U2} (LB.) ¹	V (LB.)	T (LB.)
0.9 ≤ z/h ≤ 1.0	1.10	4.50	3.00	374	2304	2022	187	781
0.8 ≤ z/h < 0.9	1.15			365	2247	1975	182	764
0.7 ≤ z/h < 0.8	1.25			368	2272	1985	184	764
0.6 ≤ z/h < 0.7	1.35			367	2268	1974	184	763
0.5 ≤ z/h < 0.6	1.45			361	2235	1941	181	753
0.4 ≤ z/h < 0.5	1.60			363	2247	1938	181	760
0.3 ≤ z/h < 0.4	1.80			367	2282	1948	184	777
z/h < 0.3	2.00			367	2260	1915	181	773

**CONFIGURATION B: MAXIMUM ANCHORAGE FORCES
ANCHORAGE INTO CONCRETE SLAB**

z/h	MAX. S _{DS}	MIN. THICKNESS, t ₃ (IN.) ⁴	BRACKET TO CONCRETE FLOOR			BRACKET TO MODULE BASE ²	
			SHEAR ¹ , V _U (LB.)	T _{U1} (LB.) ¹	T _{U2} (LB.) ¹	V (LB.)	T (LB.)
1.00	2.00	5.50	646	5000	3893	323	1734

ANCHORAGE INTO TOPSIDE OF CONCRETE OVER METAL DECK

z/h	MAX. S _{DS}	MIN. SLAB THICKNESS, t ₁ (IN.) ³	MIN. UPPER FLUTE, t ₂ (IN.) ³	BRACKET TO CONCRETE FLOOR			BRACKET TO MODULE BASE ²	
				SHEAR ¹ , V _U (LB.)	T _{U1} (LB.) ¹	T _{U2} (LB.) ¹	V (LB.)	T (LB.)
0.9 ≤ z/h ≤ 1.0	1.10	4.50	3.00	355	2689	2254	178	893
0.8 ≤ z/h < 0.9	1.15			347	2623	2201	173	870
0.7 ≤ z/h < 0.8	1.25			350	2652	2215	175	882
0.6 ≤ z/h < 0.7	1.35			349	2647	2203	174	882
0.5 ≤ z/h < 0.6	1.45			343	2608	2167	172	870
0.4 ≤ z/h < 0.5	1.60			344	2621	2165	172	878
0.3 ≤ z/h < 0.4	1.80			349	2661	2180	174	896
z/h < 0.3	2.00			344	2634	2144	172	890

- NOTES:**
- 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 a_p=1.0, R_p=2.5 AND Ω_o=2.0 FOR ANCHORAGE INTO CONCRETE.
 - HORIZONTAL FORCE (E_h) = Ω_o*[0.4*a_p*S_{DS}*(1+2*(z/h)) / (R_p/I_p)]
VERTICAL FORCE (E_v) = Ω_o*(0.2*S_{DS})
 - SUPPORTS & ATTACHMENTS DESIGN PER 2019 CBC AND SCE 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 a_p=1.0, R_p=2.5 AND Ω_o DOES NOT APPLY FOR ANCHORAGE INTO STEEL.
 - HORIZONTAL FORCE (E_h) = 0.4*a_p*S_{DS}*(1+2*(z/h)) / (R_p/I_p)
VERTICAL FORCE (E_v) = 0.2*S_{DS}
 - FOR DESCRIPTION OF t₁ AND t₂, SEE DETAIL E-E/7.
 - FOR DESCRIPTION OF t₃, SEE DETAIL F-F/8.
 - STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS.



**MILLERKNOLL
CANVAS WALL™ SYSTEM
ANCHORAGE**



REVISIONS	DATE
DATE: 02-09-2023	
PROJECT: 21-613	
ENGINEER: JG	
DRAFTER: MC	

