



DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION
FACILITIES DEVELOPMENT DIVISION

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

OFFICE USE ONLY

APPLICATION #: OPM-0557

HCAI Preapproval of Manufacturer's Certification (OPM)

Type: New Renewal/Update

Manufacturer Information

Manufacturer: Cardinal Health dBA WaveMark

Manufacturer's Technical Representative: Robert Quinn

Mailing Address: 300 Baker Ave., Concord, MA 01742

Telephone: () - Email: robert.quinn@cardinalhealth.com

Product Information

Product Name: Wavemark HF3000 SmartCabinet

Product Type: Other Mechanical or Electrical Component

Product Model Number: HF3000

General Description: RFID Smart Cabinet the Monitors and Reports the Contents of the Cabinet for Inventory Management Purposes

Applicant Information

Applicant Company Name: EASE LLC.

Contact Person: Tiffany Tonn

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

Telephone: (406) 541-3273 Email: tiffany@easeco.com

Title: Office Manager

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

HCAI Special Seismic Certification Preapproval (OSP)

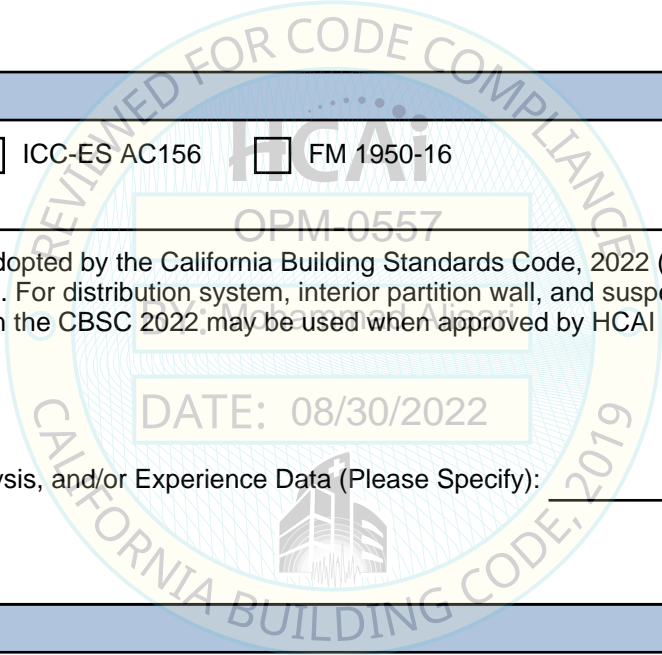
Special Seismic Certification is preapproved under OSP OSP Number: _____

Certification Method

Testing in accordance with: ICC-ES AC156 FM 1950-16
 Other(s) (Please Specify): _____

*Use of criteria other than those adopted by the California Building Standards Code, 2022 (CBSC 2022) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test criteria other than those adopted in the CBSC 2022 may be used when approved by HCAI prior to testing.

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

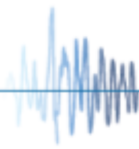


HCAI Approval

Date: 8/30/2022
Name: Mohammad Aliaari Title: Senior Structural Engineer
Condition of Approval (if applicable): _____

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STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY





**EQUIPMENT ANCHORAGE
& SEISMIC ENGINEERING**

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

The Department of Health Care Access and Information
PREAPPROVAL OF MANUFACTURER'S CERTIFICATION
OPM-0557

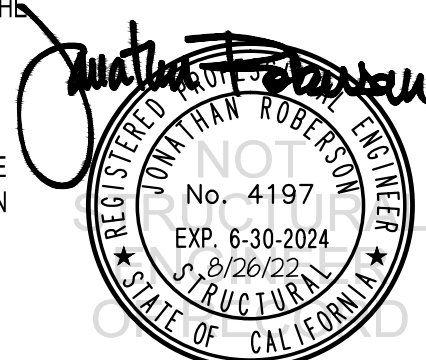
THIS PREAPPROVAL CONFORMS TO THE 2022 CALIFORNIA BUILDING CODE

MANUFACTURER: **CARDINAL HEALTH**
EQUIPMENT NAME: **WAVEMARK HF3000 SMARTCABINET**

Sheet: 1 of 10
Date: 8/26/22

GENERAL NOTES

1. THIS HCAI PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2022 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2022 CBC
2. THIS DOCUMENT MAY ONLY BE USED WITH THE EXPRESS WRITTEN CONSENT OF THE MANUFACTURER LISTED ABOVE FOR THE SPECIFIC PROJECT SITE AND INSTALLATION LOCATION. THIS DOCUMENT IS INVALID WITHOUT SUCH CONSENT.
3. THIS PREAPPROVAL CONFORMS TO THE 2022 CALIFORNIA BUILDING CODE WHERE S_{ds} IS NOT GREATER THAN 2.20. SEE DETAIL FOR APPLICABILITY
4. FORCES PER ASCE 7-16 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3,
WHERE $S_{ds} = 2.20$, $a_p = 1.0$, $I_p = 1.5$, $R_p = 2.5$, $z/h = 0$ AT CONCRETE SLAB & $z/h \leq 1$ AT CONCRETE SLAB ON METAL DECK.
SEE FOLLOWING SHEETS FOR Ω .
5. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
6. ALL DESIGN FORCES SHOWN ON THE DRAWINGS ARE FACTORED LOADS THAT SHALL BE USED FOR STRENGTH DESIGN.
7. CONCRETE SLAB ON METAL DECK DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION IN THE BUILDING. (i.e. $z/h \leq 1$)
8. CONCRETE SLAB DETAIL VALID FOR DEMANDS SHOWN AT OR BELOW GRADE. (i.e. $z/h = 0$)
9. **RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD OF THE BUILDING**
 - A. PROVIDE SUPPORTING STRUCTURE TO SUPPORT WEIGHTS AND FORCES SHOWN IN ADDITION TO ALL OTHER LOADS.
 - B. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2022 CBC AND WITH THE DETAILS, MATERIAL AND GAGE OF THE UNIT WHERE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN ON THE PREAPPROVAL DOCUMENTS.
 - C. VERIFY THAT PROJECT SPECIFIC VALUES OF S_{ds} & z/h RESULT IN SEISMIC FORCES (E_h , E_v) THAT DO NOT EXCEED THE VALUES ON THE DETAILS.
 - D. VERIFY THAT THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ANCHORED MEETS THE REQUIREMENTS OF THE APPLICABLE ICC ESR REPORT AND THIS OPM.
 - E. VERIFY THAT THE ANCHORS ARE AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS (SEE TYPICAL DETAIL ON SHEET 2).
 - F. VERIFY THAT ALL NEW OR EXISTING ANCHORS ARE AN ADEQUATE DISTANCE FROM THE UNIT ATTACHMENTS AND CHECK FOR INTERACTION WHERE OTHER ANCHORS ARE WITHIN 18" OR $6h_{ef}$ FROM THIS UNIT'S ANCHORS.



CARDINAL HEALTH

WAVEMARK HF3000 SMARTCABINET

DES. **J. ROBERSON**

JOB NO. **11-2209**

DATE **8/26/22**

SHEET

2

OF **10** SHEETS

10. EXPANSION ANCHORS:

A. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICC REPORT.

Anchor Diameter	Concrete Type	Min. f'c (psi)	Anchor Type	ICC Report No.	Min. Embed.	Min. Spacing	Min. Edge Dist.	Min. Conc. Thickness	Torque Test	Direct Tension Test
3/8"	Sand Light Weight	3000	Hilti Kwik Bolt TZ2	ESR-4266	2"	8"	16"	3.25"	30 FT-LB	1190 lb
3/8"	Normal Weight	3000	Hilti Kwik Bolt TZ2	ESR-4266	2"	8"	16"	4"	30 FT-LB	1983 lb

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 16" AWAY MINIMUM (i.e. - CORNER). SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

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

(i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, DIRECT PULL TENSION TEST OR TORQUE TEST AT LEAST 50% OF THE ANCHORS.

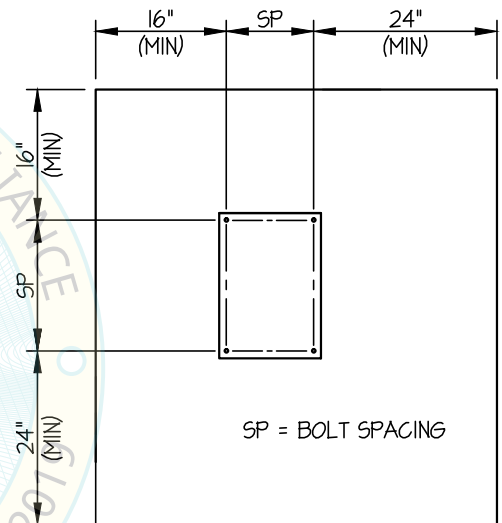
(ii) ACCEPTANCE CRITERIA:

- DIRECT TENSION TEST: THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE TEST LOAD. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER BECOMES LOOSE.
- TORQUE TEST: THE APPLICABLE TORQUE MUST BE ACHIEVED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE : 1/2 TURN OF THE NUT

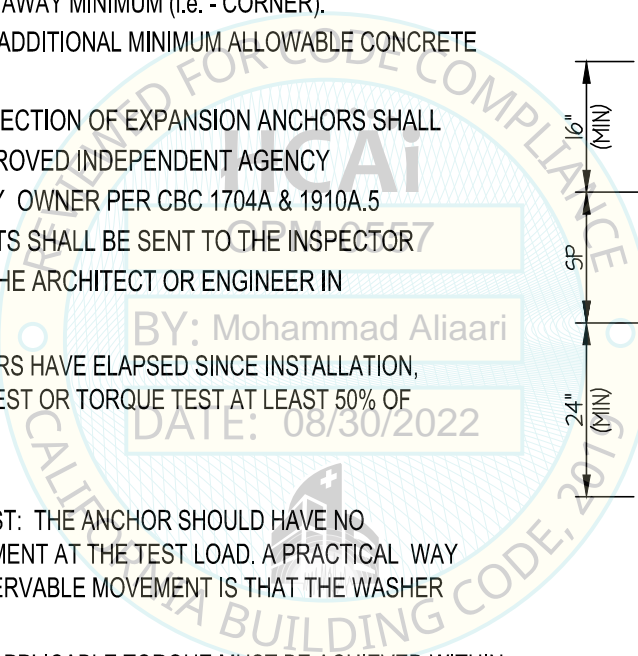
(iii) IF ANY ANCHOR FAILS, TEST ALL ANCHORS.

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

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



TYPICAL CONCRETE EDGE DETAIL



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CARDINAL HEALTH

DES. J. ROBERSON

SHEET

3

JOB NO. 11-2209

WAVEMARK HF3000 SMARTCABINET

DATE 8/26/22

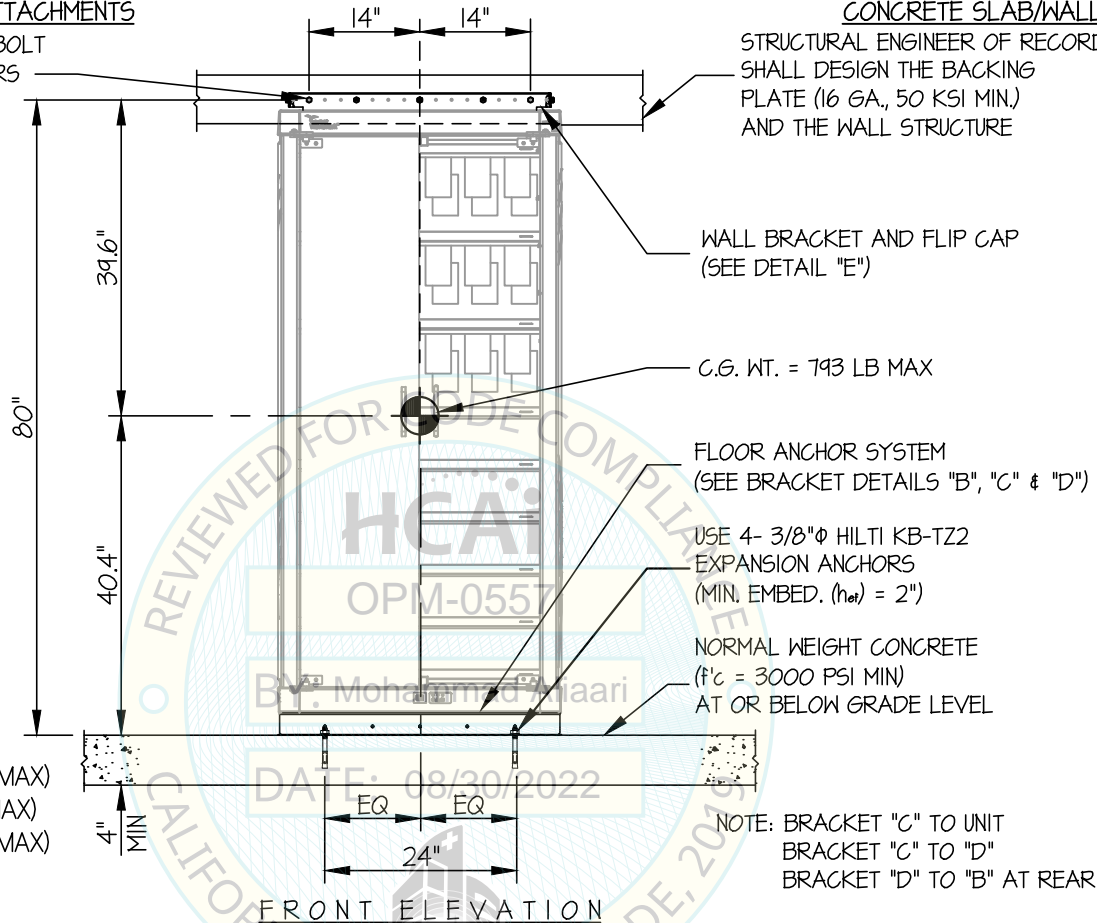
OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB/WALL MOUNTED

USE (5)- 1/4"φ (A307) BOLT
W/ STANDARD WASHERS
TO BACKING PLATE
(SEE DETAIL "E")

STRUCTURAL ENGINEER OF RECORD
SHALL DESIGN THE BACKING
PLATE (16 GA, 50 KSI MIN.)
AND THE WALL STRUCTURE



T_{U WALL} = 232 LB/BOLT (MAX)
V_{U WALL} = 79 LB/BOLT (MAX)
V_{U FLOOR} = 447 LB/BOLT (MAX)
(V_{U FLOOR} INCLUDE Ω)

NOTE: BRACKET "C" TO UNIT
BRACKET "C" TO "D"
BRACKET "D" TO "B" AT REAR

NOTES:

- FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED:

$$\begin{aligned} \text{HORIZONTAL FORCE (E}_h) &= 0.99 W_p \\ \text{HORIZONTAL FORCE (E}_{mh}) &= 1.98 W_p \text{ (FOR CONCRETE ANCHORAGE)} \\ \text{VERTICAL FORCE (E}_v) &= 0.44 W_p \end{aligned}$$

[EXAMPLE PARAMETERS: S_{ds} = 2.20, α_p = 1.0, I_p = 1.5, R_p = 2.5, Ω_o = 2.0, z/h = 0]

- THIS PREAPPROVAL ENCOMPASSES WEIGHTS AND VERTICAL CG POSITIONS UP TO THE VALUES SHOWN.
- THIS PREAPPROVAL WAS PREPARED WITHOUT KNOWLEDGE OF ANY SITE CONDITION. COMPATIBILITY FOR USE WITH A SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD OF THE INSTALLATION (SEOR). USE REQUIRES APPROVAL BY THE SEOR.
- STRUCTURAL ENGINEER OF RECORD FOR THE INSTALLATION SHALL VERIFY ALL CONDITIONS, EVALUATE INTERACTION WITH ADJACENT EQUIPMENT AND ANCHORS, AND PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
- SEE GENERAL NOTES: SHEETS 1 AND 2.



CARDINAL HEALTH

DES. J. ROBERSON

SHEET

4

JOB NO. 11-2209

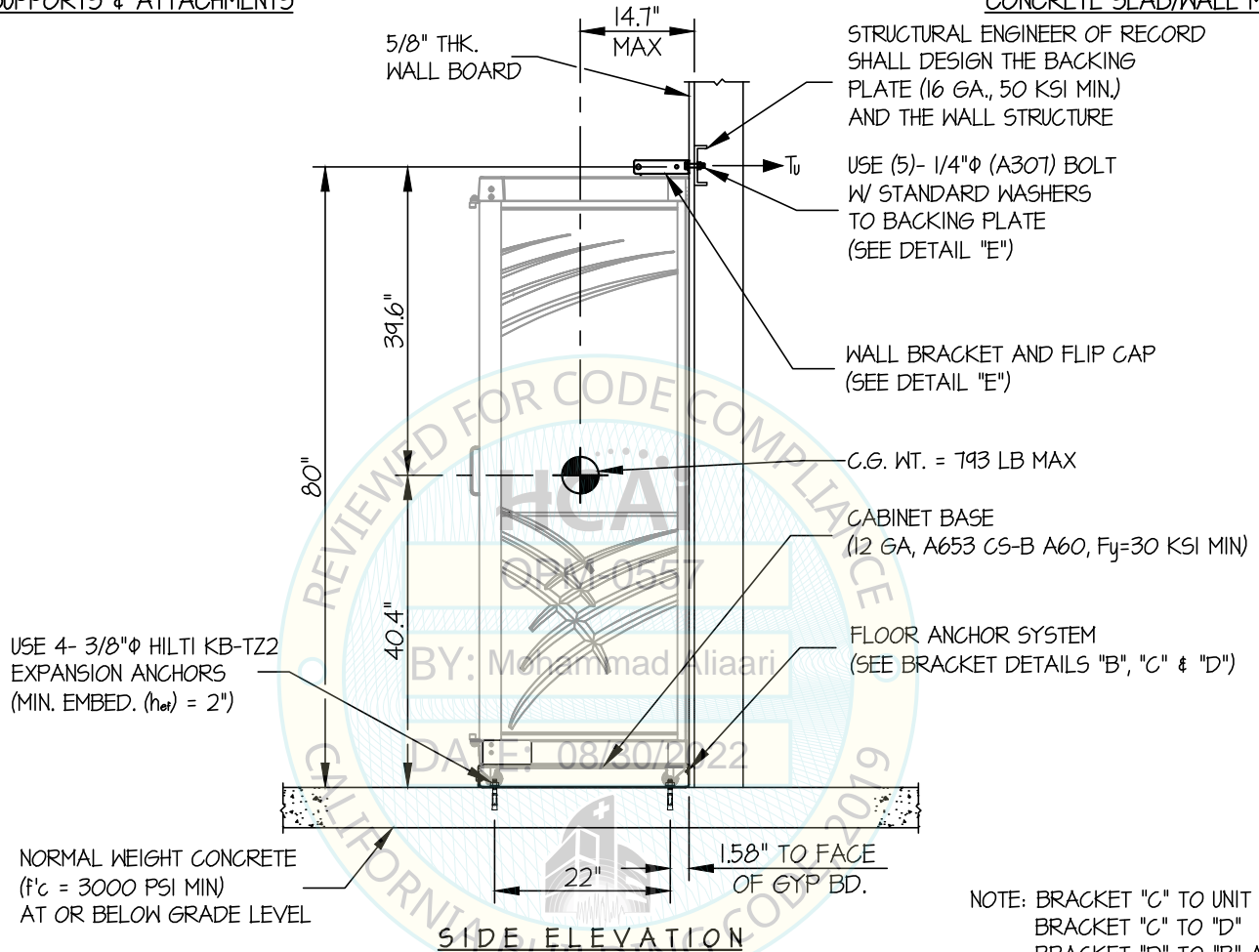
WAVEMARK HF3000 SMARTCABINET

DATE 8/26/22

OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB/WALL MOUNTED



CARDINAL HEALTH

DES. J. ROBERSON

SHEET

5

JOB NO. 11-2209

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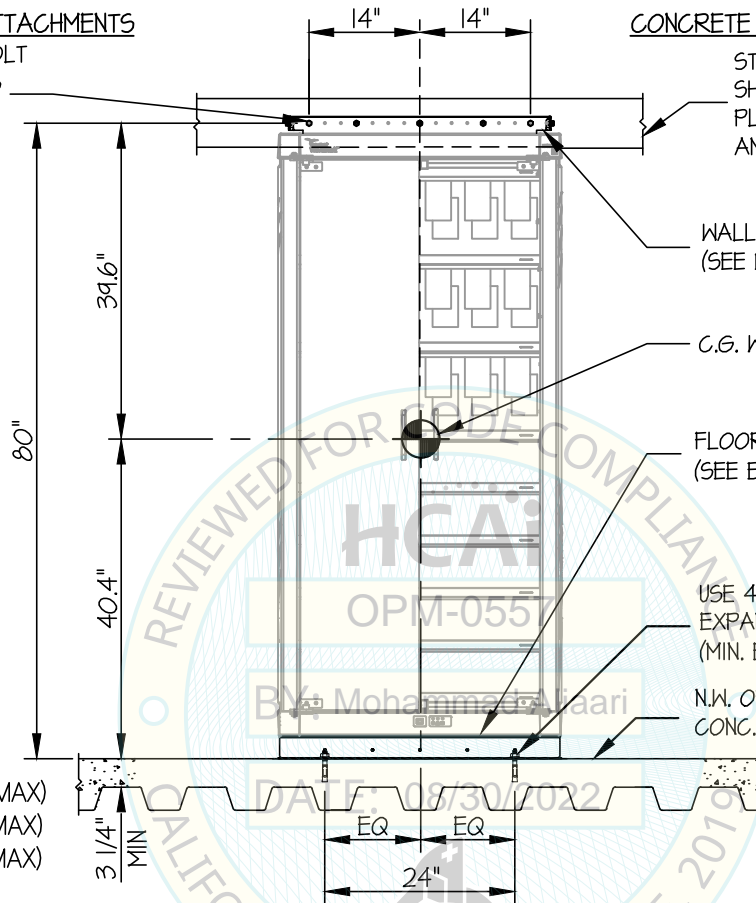
OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK / WALL MOUNTED

USE (5)- 1/4"φ (A307) BOLT
W/ STANDARD WASHERS
TO BACKING PLATE
(SEE DETAIL "E")

STRUCTURAL ENGINEER OF RECORD
SHALL DESIGN THE BACKING
PLATE (16 GA., 50 KSI MIN.)
AND THE WALL STRUCTURE



WALL BRACKET AND FLIP CAP
(SEE DETAIL "E")

C.G. WT. = 793 LB MAX

FLOOR ANCHOR SYSTEM
(SEE BRACKET DETAILS "B", "C" & "D")

USE 4- 3/8"φ HILTI KB-TZ2
EXPANSION ANCHORS
(MIN. EMBED. (h_{er}) = 2")

N.W. OR SAND L.W.
CONC. (3000 PSI MIN.)

T_{U WALL} = 370 LB/BOLT (MAX)
V_{U WALL} = 127 LB/BOLT (MAX)
V_{U FLOOR} = 713 LB/BOLT (MAX)
(V_{U FLOOR} INCLUDE Ω)

NOTE: BRACKET "C" TO UNIT
BRACKET "C" TO "D"
BRACKET "D" TO "B" AT REAR

FRONT ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED:

HORIZONTAL FORCE (E_h) = 1.58 W_p
HORIZONTAL FORCE (E_{mh}) = 3.16 W_p (FOR CONCRETE ANCHORAGE)
VERTICAL FORCE (E_v) = 0.44 W_p

[EXAMPLE PARAMETERS: S_{ds} = 2.20, α_p = 10, I_p = 15, R_p = 2.5, Ω_o = 2.0, z/h ≤ 1]

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- SEE GENERAL NOTES: SHEETS 1 AND 2.



CARDINAL HEALTH

DES. J. ROBERSON

SHEET

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JOB NO. 11-2209

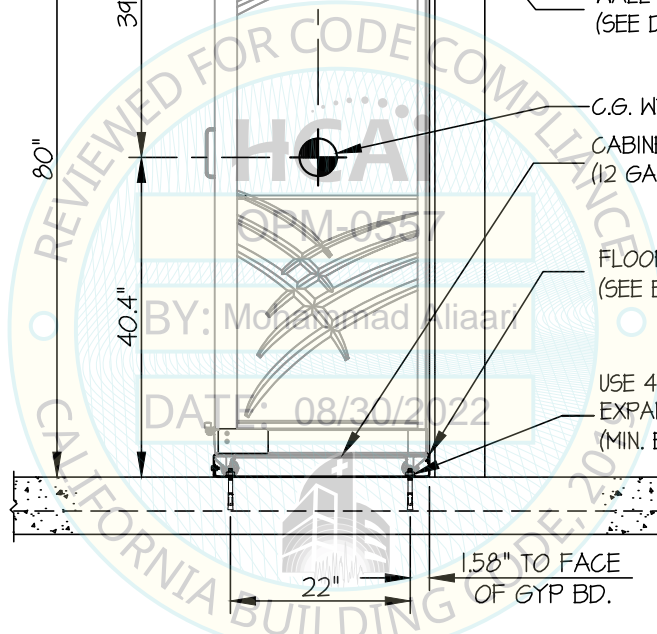
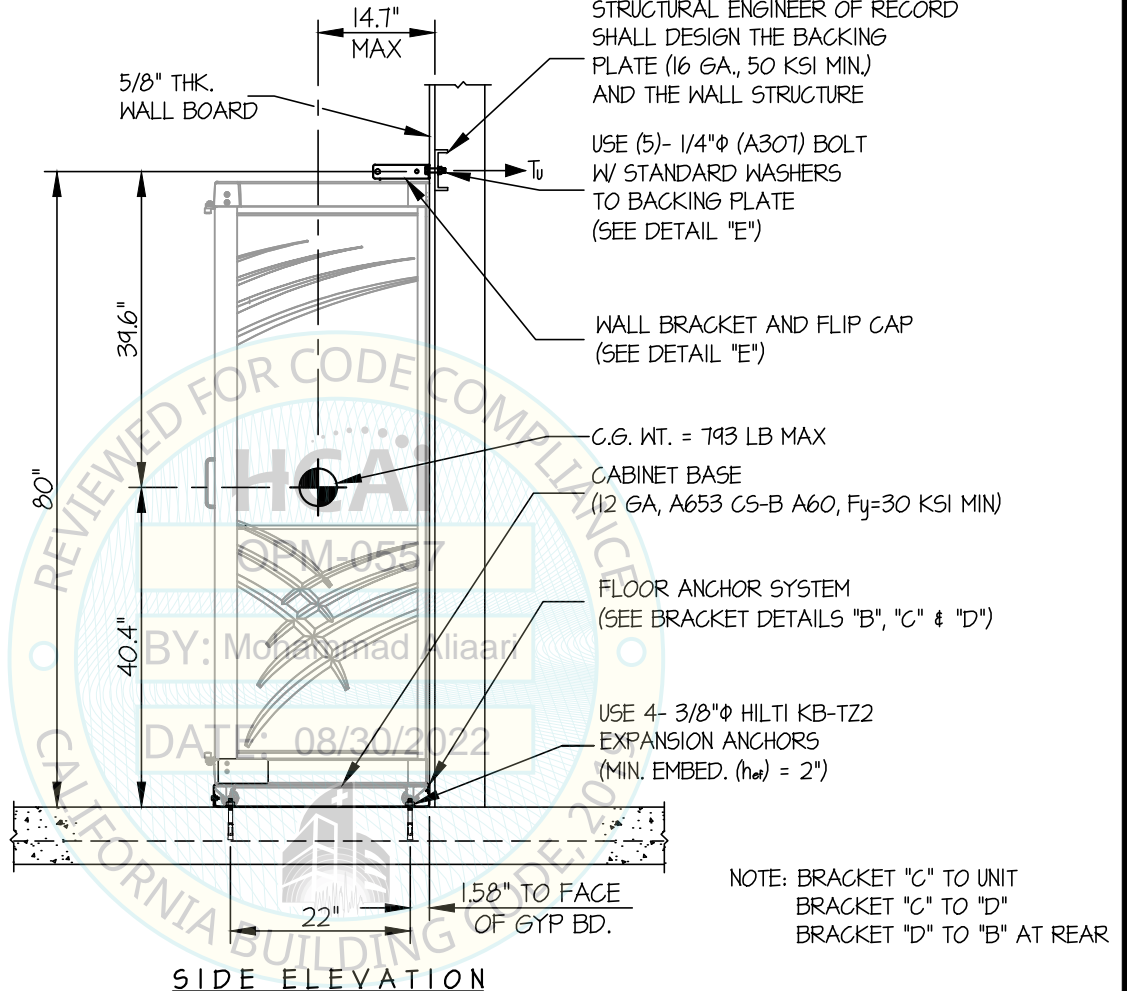
WAVEMARK HF3000 SMARTCABINET

DATE 8/26/22

OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CONCRETE SLAB ON METAL DECK / WALL MOUNTED



Jonathan Roberson

REGISTERED PROFESSIONAL ENGINEER
 JONATHAN ROBERSON
 No. 4197
 EXP. 6-30-2024
 8/26/22
 STRUCTURAL
 STATE OF CALIFORNIA

CARDINAL HEALTH

DES. **J. ROBERSON**

SHEET

7

JOB NO. **11-2209**

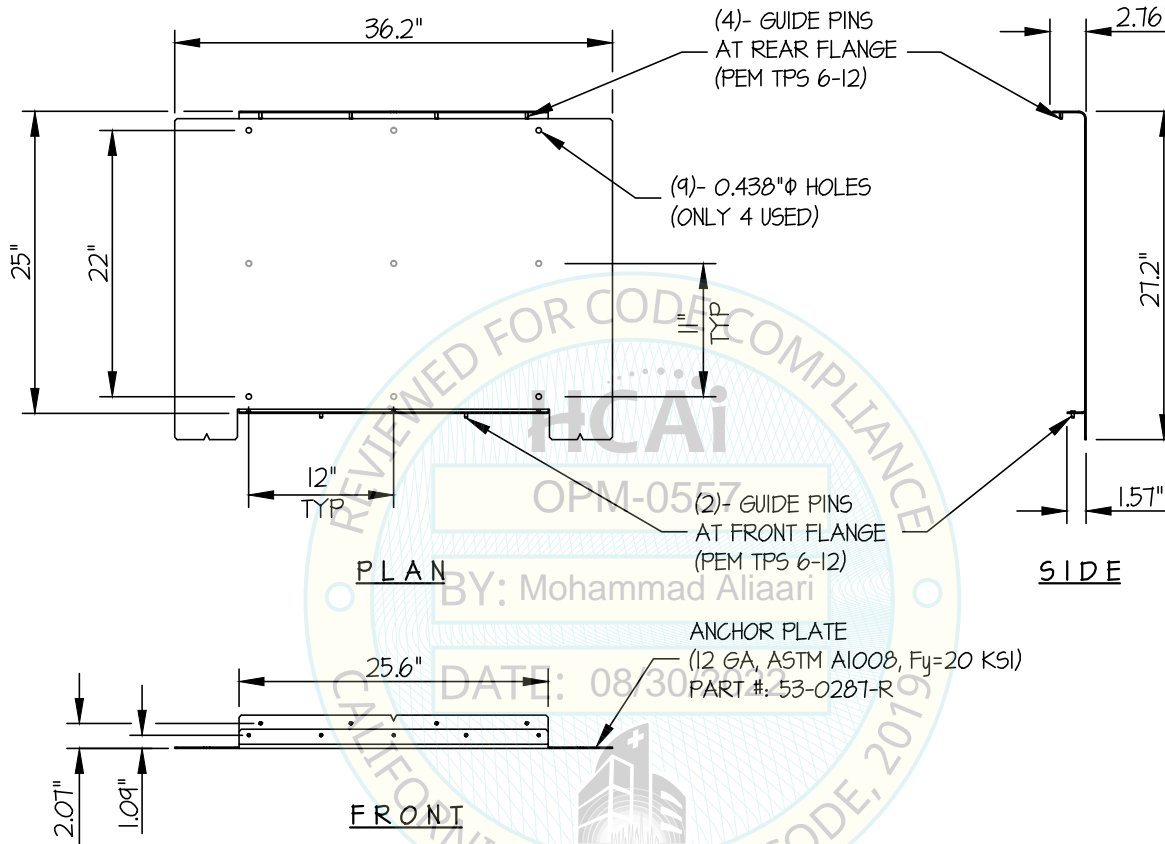
WAVEMARK HF3000 SMARTCABINET

DATE **8/26/22**

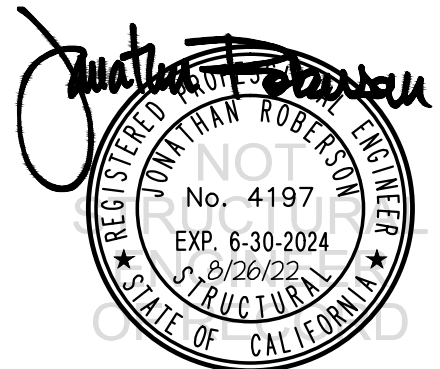
OF **10** SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAILS



BRACKET DETAIL (B)
(FLOOR ANCHOR PLATE)



CARDINAL HEALTH

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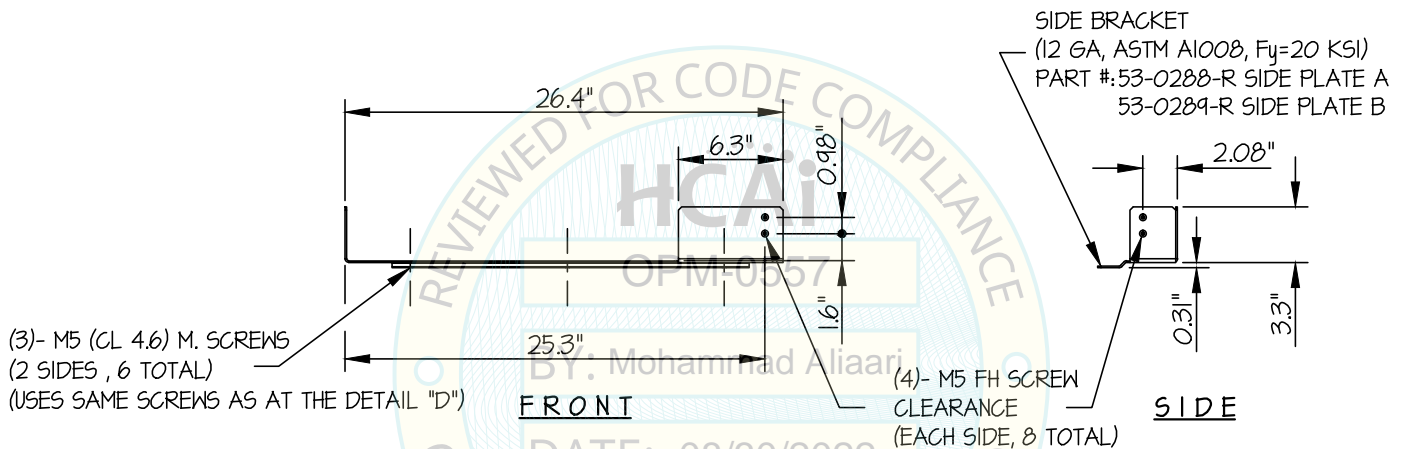
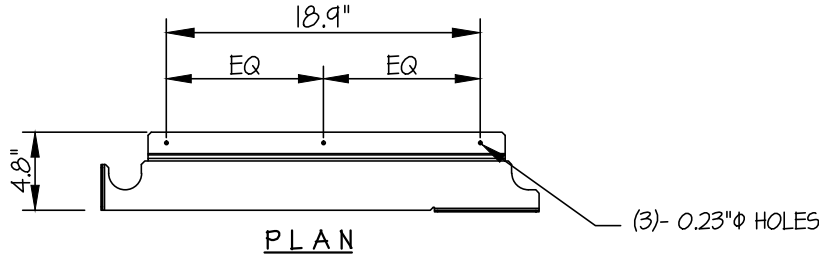
SHEET

8

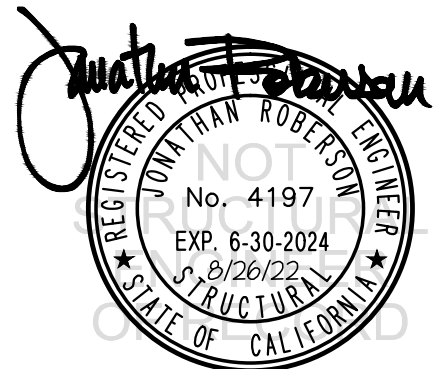
OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAILS



BRACKET DETAIL (C)
(SIDE BRACKET TO UNIT)
(SIDE BRACKET EACH SIDE)



CARDINAL HEALTH

DES. J. ROBERSON

SHEET

9

JOB NO. 11-2209

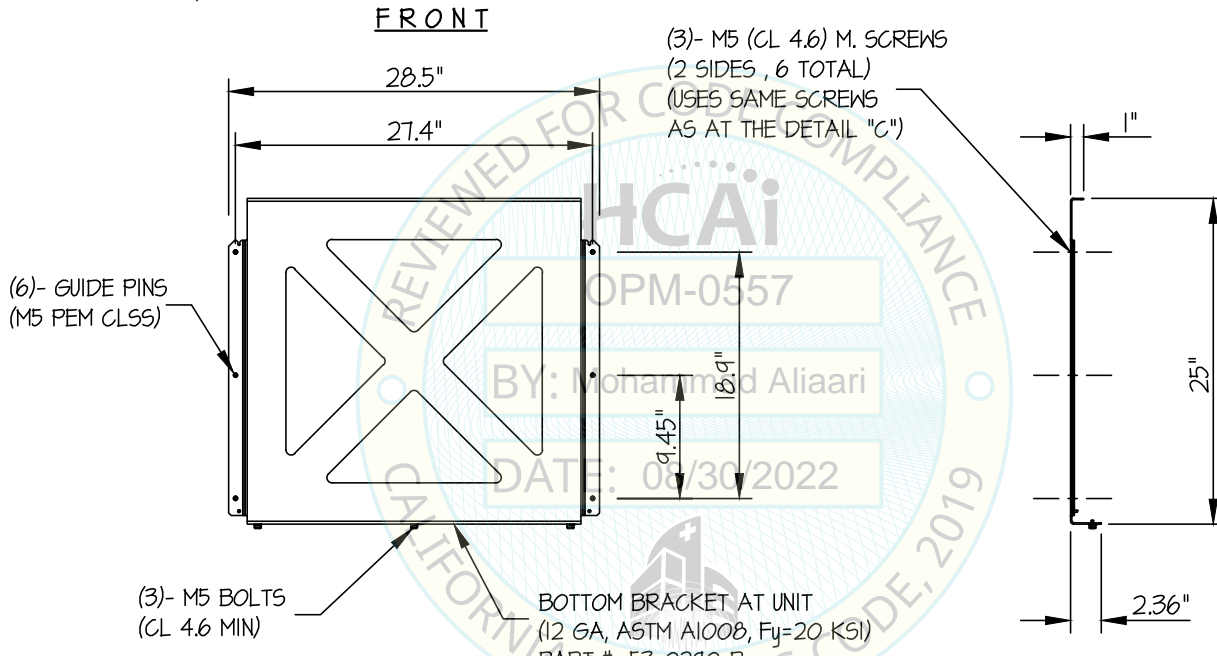
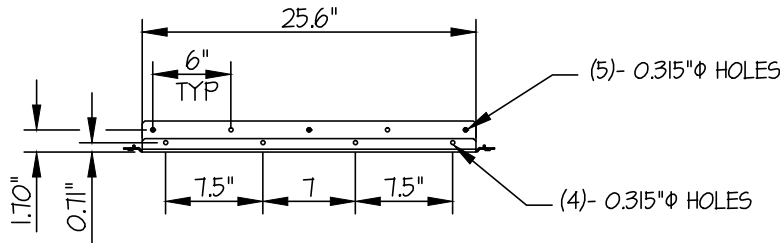
WAVEMARK HF3000 SMARTCABINET

DATE 8/26/22

OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAILS



BRACKET DETAIL (D)
(BOTTOM BRACKET AT UNIT)



CARDINAL HEALTH

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SHEET

10

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OF 10 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

BRACKET DETAILS

