

APPLICATION FOR OSHPD PREAPPROVAL

OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT **FACILITIES DEVELOPMENT DIVISION**

OFFICE USE ONLY

OF MANUFACTURER'S CERTIFICATION (OPM) APPLICATION #: OPM-0067-13								
OSHPD Preapproval of Manufacturer's Certification (OPM)								
Type: ☐ New ☐ Renewal ☐ Update to Pre-CBC 2013 OPA Number:								
Manufacturer Information								
Manufacturer: Enthermics Medical Systems								
Manufacturer's Technical Representative: Peter Chandler								
Mailing Address: W164 N9221 Water St., Menomonee Falls, WI								
Telephone: 262-251-8356 Email: Deterc@enthermics.com								
Product Information								
Product Name: EC Series Warming Cabinets								
Product Type: Warming Cabinets OPM-0067-13								
Addition of EC1850BL to previously approved EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140BL								
General Description: Addition of EC1850BL warming cabinet to current approval.								
DATE: 05/15/2019								
Applicant Information								
Applicant Company Name: Enthermics Medical Systems DING								
Contact Person: Peter Chandler								
Mailing Address: W164 N9221 Water St., Water St., Menomonee Falls, WI								
Telephone: 262-251-8356 Email: peterc@enthermics.com								
I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.								
Signature of Applicant: Date: 11/6/2018								
Title: Design Engineer Company Name: Enthermics Medical Systems								

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







OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT **FACILITIES DEVELOPMENT DIVISION**

Registered Design Professional Preparing Engineering Recommendations							
Company Name: IDS Group, Inc.							
Name: Rami Elhassan California License Number: SE3930							
Mailing Address: 1 Peters Canyon Rd., Suite 130, Irvine, CA 92606							
Telephone: 949-387-8500 Email: Rami.Elhassan@idsgi.com							
OSHPD Special Seismic Certification Preapproval (OSP)							
 □ Special Seismic Certification is preapproved under OSP- (Separate application for OSP is required) □ Special Seismic Certification is not preapproved 							
Certification Method(s)							
 ☐ Testing in accordance with: ☐ Other* (Please Specify): ☐ ICC-ES AC156 ☐ FM 1950-16 ☐ FM 1950-16 							
ODM 0067 12							
*Use of criteria other than those adopted by the California Building Standards Code, 2016 (CBSC 2016) 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 2016 may be used when approved by OSHPD prior to testing.							
Analysis DATE: 05/15/2019							
Experience Data							
Combination of Testing, Analysis, and/or Experience Data (Please Specify):							
List of Attachments Supporting the Manufacturer's Certification							
List of Attachments Supporting the Manufacturer's Certification ☐ Test Report ☐ Drawings ☐ Calculations ☐ Manufacturer's Catalog ☐ Other(s) (Please Specify):							
OFFICE USE ONLY – OSHPD APPROVAL VALID FOR CBC 2016 & ALL PRE-2016 CODE BASED PROJECTS							
Signature: Date: 5/15/2019							
Print Name:							
Title: SE Condition of Approval (if applicable):							
Condition of Approval (if applicable):							

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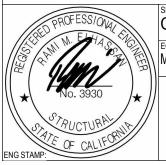
Office of Statewide Health, Planning and Development Pre-Approval of Manufacture's Certification (OPM)

OPM-0067-13

EQUIPMENT MANUFACTURER: Enthermics Medical Systems

EQUIPMENT TYPE: Warming Cabinets

Cabinet Models: 0067-13 EC 770 BY: Jeffrey **EC** 7770 Lo EC 1260 BL EC 1540 EC 1540 BL EC 1730 BL EC 2060 EC 2140 BL EC 1850 BL



SHEET TITLE: **COVER SHEET**

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL



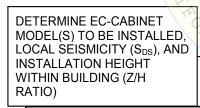
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8(1)	BRACKET TYPE A OR B ATTACHMENT TO BACK OF CABINET					
8.2	BRACKET TYPE A OR B ATTACHMENT TO SIDE OF CABINET					



BRACKET TYPE FROM SHEET 2.2 AND NUMBER OF **BRACKETS FROM** SHEET 2.3 LLDING **DETERMINE ADJACENT** SUPPORT STRUCTURE TO BE **USED**

DETERMINE THE RESTRAINT ATTACHMENT DETAIL FROM SHEET 2.4 OR 2.5

SEOR TO VERIFY (E) OR (N)STRUCTURE SEOR PROVIDE CONSTRUCTION **DOCUMENTS AS** REQUIRED PER SHEET 0.3

INSTALL CABINET PER CONSTRUCTION DOCUMENTS, OPM & MANUFACTURER'S **INSTRUCTIONS**



DRAWING INDEX/ FLOWCHART

EQUIPMENT INFORMATION:

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NARRATIVE

THE FOLLOWING OPM DOCUMENT DEFINES THE REQUIRED STRUCTURAL RESTRAINT FOR THE NOTED WARMING CABINETS. PLEASE SEE THE FOLLOWING GENERAL NOTES THAT OUTLINE THE DESIGN CRITERIA FOR THIS OPM DOCUMENT.

A FABRICATED ATTACHMENT BRACKET IS UTILIZED NEAR EACH OF THE FOUR WARMING CABINET CORNERS FOR ATTACHMENT TO ADJACENT SUPPORT STRUCTURE TO PROVIDE LATERAL RESTRAINT FOR THE CABINET. THE CUSTOM-FABRICATED ATTACHMENT ALLOWS FOR MOUNTING LOCATION FLEXIBILITY TO BOTH THE CABINET AND SUPPORT STRUCTURE.

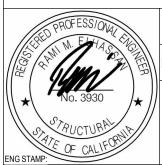
THE BRACKETS AND THE HARDWARE NEEDED TO ATTACH THE BRACKET TO BOTH THE CABINET AND TO THE EXTENSION (FOR TYPE B ONLY SHOWN ON SHEET 2.7) AS REQUIRED BY THIS DOCUMENT IS PROVIDED BY ENTHERMICS. THE SCREWS AND ANCHORS NEEDED TO CONNECT THE BRACKETS TO THE WALL AS REQUIRED BY THIS DOCUMENT SHALL BE PROVIDED BY THE CONTRACTOR. THE INSTALLATION OF THE CABINETS SHALL BE BY THE CONTRACTOR.

RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD

THE STRUCTURAL ENGINEER OF RECORD (SEOR) SHALL:

- 1. VERIFY THE ADEQUACY OF THE STRUCTURE (SUCH AS FLOORS, BEAMS, WALLS, ETC.) WHICH SUPPORT/RESTRAINT THE UNIT FOR THE LOADS/FORCES IMPOSED ON THEM BY THE UNIT AS WELL AS ALL OTHER LOADS.
- 2. PROVIDE ANY SUPPORTING STRUCTURE REQUIRED TO SUPPORT/RESTRAINT THE WEIGHTS AND FORCES SHOWN, IN ADDITION TO ALL OTHER LOADS.
- 3. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2016 CALIFORNIA BUILDING CODE 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.
- 4. SPECIFY THIS PRE-APPROVAL:

- a. IDENTIFY THE CABINETS BASED UPON THE JOB SPECIFIC CRITERIA.
- b. IDENTIFY THE ADJACENT SUPPORT STRUCTURE FOR EACH CABINET AND METHOD OF ATTACHMENTS.
- c. IDENTIFY THE CORRECT RESTRAINT ATTACHMENT DETAIL FOR EACH CABINET BASED UPON THE JOB SPECIFIC SEISMIC CRITERIA, AND LOCATION WITHIN BUILDING.
- 5. PROVIDE CONSTRUCTION DOCUMENTS AS NEEDED TO PROPERLY CONVEY THE MATERIALS AND DETAILS NEEDED FOR PROPER SYSTEM INSTALLATION, CONSTRUCTION DOCUMENTS SHALL INCLUDE THE FOLLOWING AT A MINIMUM:
 - a. PLAN SHOWING CABINET LOCATION WITHIN BUILDING. OUILDING
 - b. SITE SPECIFIC DESIGN CRITERIA.
 - c. PLAN VIEW OF ADJACENT STRUCTURE PROVIDING CABINET RESTRAINT.
 - d. LOCATION OF ANY SUPPLEMENTAL STRUCTURE SUPPORT/STRENGTHENING.
 - e. OPM SHEET REFERENCE FOR ALL DETAILS USED.



NARRATIVE AND DESIGN PROFESSIONAL NOTES

EQUIPMENT INFORMATION:

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GENERAL NOTES

- 1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2016. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2016.
- 2. THE CONTRACTOR SHALL NOTIFY OSHPD, INSPECTOR OF RECORD (IOR), AND THE STRUCTURAL ENGINER OR RECORD (SEOR) WHERE A CONFLICT OR DISCREPANCY OCCURS BETWEEN THE OPM AND ANY OTHER PORTION OF THE CONSTRUCTION DOCUMENTS, FIELD CONDITIONS OR WHERE ANY CONDITIONS ARISE NOT COVERED BY THESE DOCUMENTS WHEREIN WORK WILL NOT COMPLY WITH THE REQUIREMENTS OF THE CODES NOTED IN NOTE 1 ABOVE.
- 3. DESIGN CRITERIA:
 - a. CODE: 2016 CALIFORNIA BUILDING CODE (CBC).
 - b. LOAD COMBINATIONS: ALLOWABLE STRENGTH DESIGN (ASD) IN ACCORDANCE WITH ASCE 7-10 SECTION 12.4
 - c. SYSTEM WEIGHTS:

CABINET SELF WEIGHT SEE TABLE ON SHEET 2.1.

BLANKET WEIGHT IS 20 POUNDS PER CUBIC FOOT OF BLANKET AREA VOLUME IN THE CABINET PER 2016 CBC SECTION 1607A, TABLE 1607A.1 FOR OTHER MEDIA.

IV FLUID WEIGHT IS 2.2 POUNDS PER LITER

- d. USE OF ITEMS WITH REFERENCED RESEARCH REPORTS IS BASED UPON EACH REPORT'S SECTION "5.0 CONDITIONS OF USE"
- 4. SEISMIC CRITERIA:
 - a. THE DETAILS IN THIS PRE-APPROVAL MAY BE USED AT ANY LOCATION IN THE STATE OF CALIFORNIA WHERE $S_{DS} \le 2.5$.
 - b. FORCES PER ASCE 7-10 SECTION 13.3.1 (EQUATIONS 13.3-1, 13.3-2, 13.3-3)

WHERE:

ap = 1.0 (ASCE 7-10, TABLE 13.5-1, CABINETS).

Rp = 2.5 (ASCE 7-10, TABLE 13.5-1, CABINETS).

Ip = 1.5 (CBC 2016 SECTION 4616A.1).17).15 / 2019

Z/H = VARIABLE <= 1.0 (DETERMINED BY INSTALLATION WITHIN BUILDING).

Ωo = 1.0 (EXCEPT FOR ANCHORAGE TO CONCRETE = 2.0 PER ASCE 7-10 TABLE 13.5-1, CABINETS), (ASCE 7-10, SECTION 13.3.1).

S_{DS} = VARIABLE <= 2.5 (DETERMINED BY SPECIFIC LOCATION SEISMICITY).

 $Fv = 0.2*S_{DS}*D$ (ASCE 7-10, SECTION 13.3.1), APPLIED CONCURRENTLY WITH Fp.

Fp = SEISMIC DESIGN FORCE IN ACCORDANCE WITH ASCE 7-10 SECTION 13.3.1. THIS PRE-APPROVAL INCORPORATES Fp VALUES BASED ON THE SITE SPECIFIC Sps AND Z/H VARIABLES NOTED ABOVE. SEE SHEET 2.3 FOR THE NUMBER AND TYPE OF ATTACHMENT BRACKETS REQUIRED.



SHEET TITLE: GENERAL NOTES

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5. STRUCTURAL STEEL:

a. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING, UNLESS OTHERWISE NOTED (U.N.O.):

PLATES AND BARS: ASTM A36 (Fy=36ksi, Fu=58ksi)

BOLTS: ASTM A307, U.N.O.

NUTS: ASTM A563 WASHERS: ASTM F436

STAINLESS STEEL: ASTM A240 TYPE 304 OR BETTER (Fy=30ksi, Fu=75ksi)

- b. ALL STEEL (EXCEPT STAINLESS STEEL) SHALL BE SHOP PRIMED WITH ZINC OXIDE PRIMER UNLESS OTHERWISE NOTED.
- c. PAINT ALL STRUCTURAL STEEL WITH WEATHER/RUST RESISTANT PAINT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ARCHITECTURAL DETAILS UNLESS OTHERWISE NOTED.
- d. DIAMETER OF BOLT HOLE SHALL BE 1/16" LARGER THAN THE BOLT'S DIAMETER UNLESS OTHERWISE NOTED.
- e. PROVIDE A STANDARD WASHER AT ALL TURNING SURFACES. LOCK WASHERS MAY BE USED IN LIEU OF STANDARD WASHERS WHERE SPECIFIED.
- f. 1/2" DIA. FENDER WASHER SHALL HAVE A MINIMUM OUTSIDE DIAMETER OF 1 1/2" AND MINIMUM THICKNESS OF 7/64".
- a. ALL EXPOSED STEEL FINISH SHALL BE DETERMINED BY THE OWNER/END USER. IF UNKNOWN. PROVIDE STAINLESS STEEL.
- 6. STEEL STUDS, JOISTS AND ACCESSORIES:
 - a. STEEL STUDS, JOISTS AND ACCESSORIES SHALL BE MANUFACTURED BY MEMBERS OF STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA ICC-ES ESR-3064P PRODUCT TECHNICAL GUIDE).
 - b. STEEL STUDS, JOISTS AND ACCESSORIES SHALL BE FORMED FROM STEEL WITH A MINIMUM YIELD STRESS OF 50 KSI FOR 16 GAUGE AND HEAVIER ITEMS. OR 33 KSI FOR 18 GAUGE AND LIGHTER ITEMS.
 - c. STEEL STUDS, JOISTS AND ACCESSORIES SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A653, G60, UNLESS OTHERWISE NOTED.
 - d. ALL WELDS OF GALVANIZED STEEL STUDS, JOISTS AND ACCESSORIES SHALL BE TOUCHED UP WITH A ZINC RICH PAINT.
 - e. SHEET METAL SCREWS (SMS) SHALL COMPLY WITH THE REQUIREMENTS OF STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA) ICC-ES ESR-3064P AND MAY BE SELF-DRILLING AND/OR SELF-TAPPING AS DESIRED.
 - f. PENETRATION OF SCREWS THROUGH JOINED MATERIALS SHALL NOT BE LESS THAN 3 EXPOSED THREADS. SCREWS SHALL BE INSTALLED AND TIGHTENED IN ACCORDANCE WITH SCREW MANUFACTURER'S RECOMMENDATIONS.
 - g. SHEET METAL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.3. ELECTRODES SHALL CONFORM TO AWS A5.1 OR A5.5 AND TABLE 1.2 OF AWS D1.3.



SHEET TITLE: GENERAL NOTES

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7. WOOD:

- a. WOOD MEMBERS SHALL BE DOUGLAS FIR-LARCH PER WCLIB VISUALLY GRADED DIMENSION LUMBER AND SHALL BE SURFACED DRY (19% MOISTURE CONTENT MAXIMUM). STRUCTURAL FRAMING MEMBERS SHALL BE S4S AND GRADE MARKED AS No. 2 MINIMUM.
- b. NAILS SHALL BE COMMON WIRE NAILS (0.131" DIA. x 2 1/2" FOR 8d; 0.148" DIA. x 3" FOR 10d; 0.148" DIA. x 3 1/4" FOR 12d; 0.162" DIA. x 3 1/2" FOR 16d) OR FASTENERS PROVIDED WITH HARDWARE CONNECTORS SPECIFIED IN OPM.
- c. A34 CONNECTOR AND ACCESSORIES SHALL BE SIMPSON STRONG-TIE (IAPMO ER-112).
- d. WOOD SCREWS SHALL BE SCREWED. NOT DRIVEN. INTO WOOD MEMBER. WOOD SCREW SHALL BE SIMPSON STRONG-TIE SDS SCREW 1/4" DIA. x 3 1/2" MIN (ICC-ES ESR-2236) WITH 2 1/4" MIN PENETRATION INTO WOOD MEMBER.
- e. WOOD SCREW FINISH SHALL BE DETERMINED BY THE OWNER/END USER. IF UNKNOWN. PROVIDE STAINLESS STEEL.
- 8. POST-INSTALLED EXPANSION ANCHORS:
 - a. FOR ANCHORAGE TO CMU: ALLOWABLE STRENGTHS SHALL BE COMPARED TO ALLOWABLE STRESS DESIGN (ASD) LEVEL DEMAND IN ACCORDANCE WITH ASCE 7-10 SECTION 12.4 AND 2016 CALIFORNIA BUILDING CODE SECTIONS 2107A.

FOR ANCHORAGE TO CONCRETE: STRENGTH DESIGN IN ACCORDANCE WITH ASCE 7-10 SECTION 12.4 AND 2016 CALIFORNIA BUILDING CODE SECTIONS 1901A.3

- b. SHALL HAVE SPECIAL INSPECTION AND TESTING IN ACCORDANCE WITH THE 2016 CALIFORNIA BUILDING CODE SECTIONS 1705A.3 & 1910A.5.
- c. MINIMUM CONCRETE STRENGTH f'c = 3000 PSI OR MINIMUM SOLID GROUTED CMU STRENGTH f'm=1500 PSI. SEOR SHALL PROVIDE CALCULATIONS JUSTIFYING THE CMU WALL REMAINS ELASTIC.
- d. POST-INSTALLED ANCHORS SHALL NOT BE USED IN PRE-STRESSED CONCRETE UNLESS NON-DESTRUCTIVE TESTING METHODS ARE USED TO LOCATE STRAND AND REINFORCING PRIOR TO ANCHOR INSTALLATION.
- e. POST-INSTALLED ANCHOR INSTALLATION SHALL NOT NICK OR DAMAGE EXISTING REINFORCEMENT. SHOULD THIS OCCUR THE SEOR BE NOTIFIED IMMEDIATELY. EXPANSION ANCHORS SHALL BE INSTALLED 1" CLEAR OF EXISTING REINFORCEMENT.
- f. POST-INSTALLED ANCHORS SHALL BE INSTALLED PER TABLES 1.5A AND 1.5B ON SHEET 1.5.
- g. ALL POST-INSTALLED ANCHOR VALUES IN CONCRETE ARE FOR CRACKED CONCRETE.
- h. POST-INSTALLED ANCHOR FINISH SHALL BE DETERMINED BY THE END USER. IF UNKNOWN, PROVIDE STAINLESS STEEL.



SHEET TITLE: GENERAL NOTES

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POST INSTALLED EXPANSION ANCHORS CONT .:

i. CONCRETE ANCHORS AND ICC-ES REPORTS: HILTI KWIK BOLT TZ (KBTZ): ESR-1917

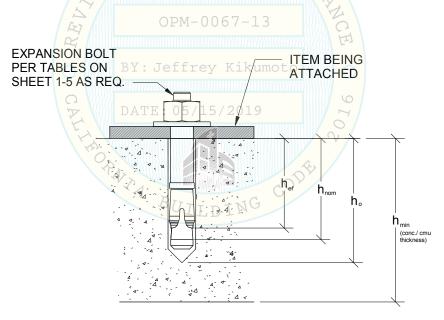
SIMPSON STRONG-TIE STRONG BOLT 2 (SB2): ESR-3037

DEWALT POWER-STUD+ SD1: ESR-2818 DEWALT POWER-STUD+ SD2: ESR-2502

j. CONCRETE MASONRY UNIT (CMU) ANCHORS AND ICC-ES REPORTS: HILTI KWIK BOLT 3 (KB3): ESR-1385

DEWALT POWER-STUD+ SD1: ESR-2966

- k. ANCHOR EMBEDMENT DEPTHS SHOWN IN TABLE 1.6b THROUGH 1.6b ARE THE MINIMUM REQUIRED TO MEET THE SPECIFIC LOADING REQUIREMENTS. SEE DIAGRAM BELOW FOR NOMENCLATURE.
- I. POST-INSTALLED ANCHORS SHALL BE TESTED PER 2013 CBC SECTION 1913A.7 TO TORQUE OR DIRECT-PULL TENSION VALUES NOTED FOR THE ANCHOR INSTALLED.
- m. ALL (100%) OF THE POST-INSTALLED ANCHORS SHALL BE TESTED. TESTING SHALL BE WITNESSED AND REPORTED BY THE INSPECTOR OF RECORD OR SPECIAL INSPECTOR. REPORTS OF TEST RESUTS TO BE SUBMITTED TO OSHPD.
- n. TEST ACCEPTANCE IS BY REACHING THE TORQUE WITHIN "1/2 TURN OF THE NUT" OR MAINTAINING THE TEST LOAD FOR AT LEAST 15 SECONDS AND SHALL EXHIBIT NO DISCERNABLE MOVEMENT.
- o. IF STAINLESS STEEL ANCHOR IS REQUIRED BY THE OWNER/END USER, UTILIZE MANUFACTURER'S SAME PRODUCT WITH TENSION TEST UNLESS INCLUDED IN ICC-ES REPORT.





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TABLE 1.5a

MINIMUM REQUIRED ANCHOR OPTIONS FOR CONCRETE WALL
(f'c = 3,000 PSI MIN AND hmin PER TABLE BELOW)
SEE SHEET 1.4 NOTE 8i FOR RELATED RESEARCH REPORT

ANCHOR SIZE	hef	hnom	ho	hmin	min edge distance	min spacing	INSTALLATION AND TESTING TORQUE	TENSION TEST LOAD REQUIREMENT
1/2" DIA KBTZ	3 1/4"	3 5/8"	4"	6"	4"	8"	40 ft-lb	3750 LB AT
1/2" DIA SB2	3 3/8"	3 7/8"	4 1/8"	6"	4"	8"	60 ft-lb	NORMAL WEIGHT
1/2" DIA SD2	3 1/4"	3 3/4"	4"	5 3/4"	4"	8"	40 ft-lb	CONCRETE
1/2" DIA SD1	3 1/4"	3 3/4"	4"	6"	4"	8"	40 ft-lb	

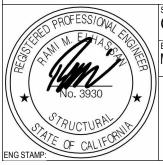
TABLE 1.5b

MINIMUM REQUIRED ANCHOR OPTIONS FOR SOLID GROUTED CMU WALL (f'm = 1.500 PSI MIN AND hmin PER TABLE BELOW) SEE SHEET 1.4 NOTE 8 FOR RELATED RESEARCH REPORT

ANCHOR SIZE	hnom	ho	ḥṃiṇ Je∶	min edge distance	<mark>⊩ min spac</mark> ing	INSTALLATION AND TESTING TORQUE	TENSION TEST LOAD REQUIREMENT
1/2" DIA KB3	3 1/2"	4"	6"nom _E	05/1 4 "/20	19 8"	25 ft-lb	1100 LB
1/2" DIA SD1	3 1/2"	4"	6" nom.	4"	8"	40 ft-lb	1100 LB

NOTES:

1. EXPANSION ANCHORS DESIGNED TO ICC-ES AC01 ARE LIMITED TO ALLOWABLE STRESS DESIGN ONLY, IN ACCORDANCE WITH AC01 1.2. HENCE, STRENGTH DESIGN VALUES ARE NOT ACCEPTABLE. ALLOWABLE STRESS VALUES CAN BE SHOWN PROVIDED, SEOR WILL VERIFY THAT: A) MASONRY IS NOT CRACKED AS DEFINED IN ICC-ES AC01 SECTION 2.3. SEOR SHALL PROVIDE CALCULATIONS TO SHOW THAT THE MASONRY WALL WOULD NOT CRACK UNDER THE DESIGN EARTHQUAKE LOADS UNDER ALL SERVICE LOAD CONDITIONS; THE WALL HAS TO REMAIN ELASTIC; B) MASONRY IS FULLY GROUTED IN ACCORDANCE WITH ESR-1385 AND ESR-2966 SECTION 3.2; C) CONDITION OF USE REQUIREMENTS IN ACCORDANCE WITH ESR-1385 AND ESR-2966 SECTION 5.0 IS SATISFIED.



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MODEL	Cabinet Weight (pounds)	Blanket Space (Cubic feet per MRF)	Blanket Weight (pounds)	Fluid Capacity (liters)	Fluid Weight (pounds)	Content Weight (pounds)	Wp (pounds)
EC770	178	7.7	154	n/a	n/a	154	332
EC770L	250	n/a	n/a	72	159	159	409
EC1260BL	433	8.7	174	18	40	214	647
EC1540	412	15.4	308	n/a	n/a	308	720
EC1540BL	414	7.7	154	72	159	313	727
EC1730BL	360	11.9	238	38	84	322	682
EC2060	356	20.7	414	n/a	n/a	414	770
EC2140BL	441	15.5	3100	25 F	55	365	806
EC1850BL	450	13.5	260	30 ^C O	y 67	327	777

NOTES:

- 1. SEE SHEET 2.3 FOR NUMBER OF ATTACHMENT BRACKETS.
- 2. SEE SHEET 2.4 AND 2.5 FOR ADJACENT SUPPORT STRUCTURE REFERENCE FOR ATTACHMENT DETAILING.
- 3. SEE SHEETS 2.6 AND 2.7 SHOWING REFERENCE MATERIAL FOR CUSTOM FABRICATED ATTACHMENT BRACKET ASSEMBLIES SUPPLIED BY ENTHERMICS:

TYPE A: ENTHERMICS MODEL 5017207 (OSHPD ASSEMBLY 2.5") TYPE B: ENTHERMICS MODEL 5017226 (OSHPD ASSEMBLY 5.0")

- 4. EACH CUSTOM FABRICATED ATTACHMENT BRACKET TYPE A OR B IS ATTACHED TO THE 20 GAGE MIN SHEET STEEL (FY = 33 KSI MIN.) CABINET FRAMING/SHELL (NOT IN OPM SCOPE) WITH ELEVEN (11) # 10 SHEET METAL SCREWS (9 SCREWS TO THE BACK OF THE CABINET, AND 2 SCREWS TO THE SIDE OF THE CABINET) SEE SHEETS 8.1 AND 8.2 FOR ADDITIONAL INFORMATION.
- 5. CUSTOM FABRICATED ATTACHMENT BRACKET TYPE B HAS SIX (6) #14 SMS FROM THE BOTTOM OF PART (b) TO THE SUPPORT TABS OF PART (d). ALSO, SIX (6) #10 SMS FROM THE SIDE TABS OF PART (d) TO THE SIDES OF PART (b).



SHEET TITLE:

CABINET CONTENTS AND WEIGHTS

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

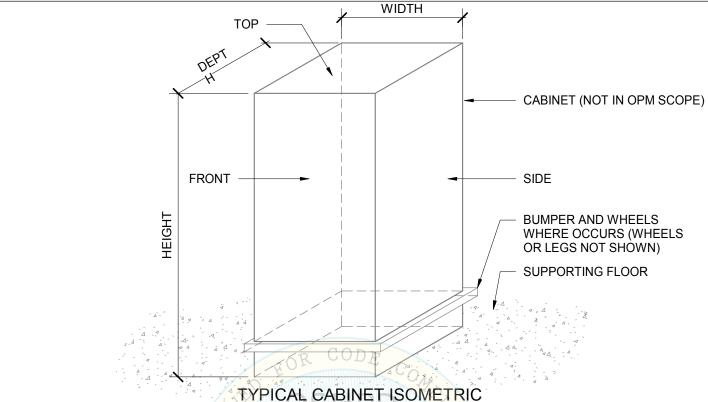


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MODEL	Width (inches)	Depth (inches)	Height (inches)	"B" (inches)	"T" (inches)	"S" (inches)	BRACKET	TOP BRACKET C.G., Z (in)	BOTTOM BRACKET C.G., Z (in)
EC770	22.2	28.8	40.3	12 ± 3	6 ± 3	2 1/2 ±	TYPE A	26.6	20.2
EC770L	22.2	28.0	8Y: Jei 40.7	12 ± 3	6 ± 3	5 ±	TYPE B	26.9	20.6
EC1260BL	30.1	20.2	D /69.2: (5 12 1 ± 3 2	0 112 ± 3	2 1/2 ±	TYPE A	45.7	34.6
EC1540	23.9	28.8	72.7	12 ± 3	6 ± 3	2 1/2 ±	TYPE A	48.0	36.4
EC1540BL	22.1	28.8	72.5	12 ± 3	6 ± 3	5 ±	TYPE B	47.8	36.2
EC1730BL	30.2	25.4	70.98	14 ± 3	N 8 ± 3	2 1/2 ±	TYPE A	46.8	35.4
EC2060	30.2	25.2	70.8	14 ± 3	8 ± 3	2 1/2 ±	TYPE A	47.2	35.4
EC2140BL	30.0	26.0	73.5	14 ± 3	8 ± 3	2 1/2 ±	TYPE A	48.9	36.7
EC1850BL	29.8	26.5	74.8	14 ± 3	8 ± 3	5 ±	TYPE B	49.8	37.4



CABINET CONFIGURATION AND DIMENSIONS

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL



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NOTES:

- 1. MODELS EC770 AND EC770L SHALL BE ATTACHED WITH 4 BRACKETS PER SHEET 2.4 FOR ALL Z/H \leq 1.0 AND ANY S_{DS} \leq 2.5
- 2. MODELS EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140BL AND EC1850BL SHALL BE ATTACHED WITH 4 BRACKETS (SHEET 2.4) EITHER 6 OR 8 BRACKETS (SHEET 2.5) PER THE TABLE BELOW.

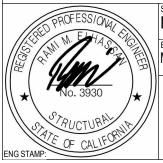
	NUMBER OF ATTACHMENT BRACKETS								
	Z/H	S _{DS} \	/ALUES	LESS TH	AN OR E	QUAL T	O 2.5		
	RATIO	<1.4	<=1.5	<=1.75	<=2.0	<=2.25	<=2.5		
	<=0.4	4	4	4	4	4	6		
	<=0.5	401	R 4C0	D.A.	4	6	6		
	<=0.6	4	4	4	60	6			
	<=0.8	4	4	6	6	SE SE	E		
4	0.8 < x <=1.0	4 0	PM 6 00	67613		TON	E 4		

Z = HEIGHT IN STRUCTURE OF POINT OF ATTACHMENT OF COMPONENT WITH RESPECT TO THE BASE, FOR ITEMS AT OR BELOW THE BASE, Z SHALL BE TAKEN AS 0. THE VALUE OF Z/H NEED NOT EXCEED 1.0

H = AVERAGE ROOF HEIGHT OF STRUCTURE WITH RESPECT TO THE BASE.

4. PROVIDE 6 CONNECTIONS (2 AT THE TOP AND 1 AT THE BOTTOM) TO NON CONCRETE OR MASONRY WALLS.

PROVIDE 8 CONNECTIONS (2 AT THE TOP AND 2 AT THE BOTTOM) TO CONCRETE OR MASONRY WALLS.



SHEET TITLE: NUMBER OF ATTACHMENT BRACKETS REQUIRED

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

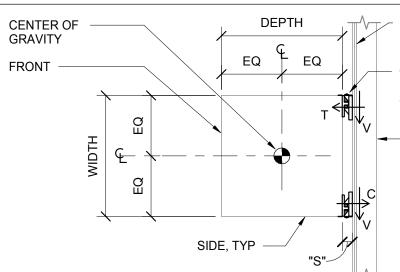


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1 OR 2 LAYERS OF 5/8" ARCHITECTURAL FINISH BY OTHERS WHERE OCCURS AT METAL OR WOOD STUD WALLS

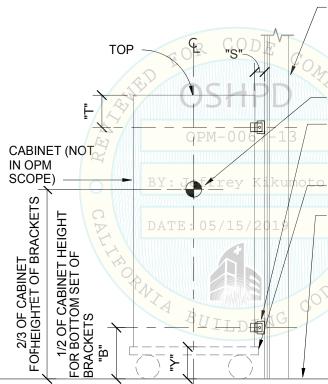
CUSTOM FABRICATED ATTACHMENT BRACKET, TYP OF 4 PER CABINET SEE TABLE ON SHEET 2.1

> ADJACENT SUPPORT **STRUCTURE**

MAXIMUM FORCE FROM ONE ATTACHMENT LOCATION TO SUPPORT WALL (S_{DS} = 1.39; z/h<= 1.0)

FORCE COMPONENT		STRENGTH DESIGN (SD)	STRENGTH
	(w/o Ωo)	(w/ Ωo)	DESIGN (ASD)
V	242 LBS	605 LBS	173 LBS
T/C	546 LBS	1365 LBS	382 LBS

TYPICAL CABINET PLAN VIEW



ADJACENT SUPPORT STRUCTURE;

- METAL STUD WALL SEE SHEET 3.1
- CONCRETE WALL SEE SHEET 4.1
- CMU WALL SEE SHEET 5.1
- SURFACE PLATE SEE SHEET 6.1
- WOOD STUD WALL SEE SHEET 7.1

CENTER OF GRAVITY FULLY LOADED

CUSTOM-FABRICATED ATTACHMENT BRACKET, TYP OF 4 PER CABINET SEE TABLE ON SHEET 2.1

BUMPER AND WHEELS/LEGS WHERE **OCCURS**

SUPPORTING FLOOR PER SEOR (NOT IN OPM SCOPE):

- 4" THICK MIN NWC SLAB ON GRADE OR ELEVATED SLAB (f'c=3,000 PSI MIN)
- 2" THICK MIN LWC OR NWC OVER 1 1/2" DEEP 20GA METAL DECK MIN (f'c = 3,000 PSI MIN)
- 5/8" THICK MIN PLYWOOD SHEATHING (WITH OR WITHOUT LWC TOPPING, f'c=3,000 PSI MIN WHERE OCCURS) WITH FLOOR JOIST SPACED TO MEET PLYWOOD SPAN REQUIREMENTS

NOTF:

TYPICAL CABINET SIDE ELEVATION

1. "Y" = 2.6" MIN, 6.9" MAX

2. MAXIMUM FORCES SHOWN ARE TO THE FACE OF ARCHITECTURAL FINISH. THE THICKNESS OF THE ARCHITECTURAL FINISH SHOULD BE TAKEN INTO ACCOUNT WHEN DESIGNING WALL STUDS.



4 ATTACHMENTS - CABINET TOP VIEW AND SIDE ELEVATION

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

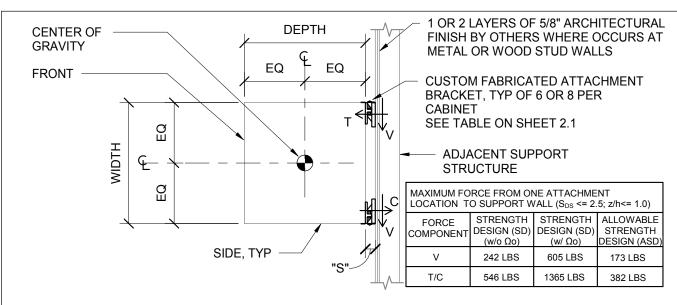


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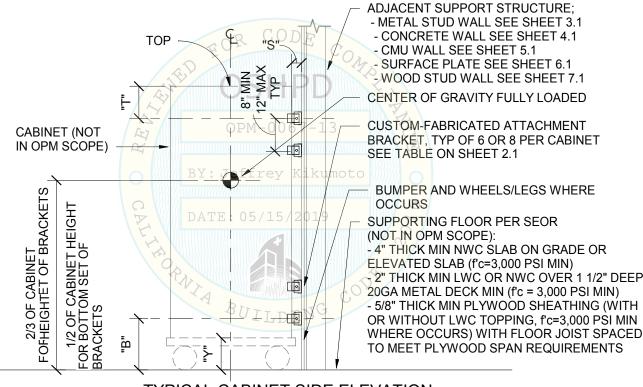


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TYPICAL CABINET PLAN VIEW



NOTE:

TYPICAL CABINET SIDE ELEVATION

2. MAXIMUM FORCES SHOWN ARE TO THE FACE OF ARCHITECTURAL FINISH. THE THICKNESS OF THE ARCHITECTURAL FINISH SHOULD BE TAKEN INTO ACCOUNT WHEN DESIGNING WALL STUDS.



1. "Y" = 2.6" MIN, 6.9" MAX

6 OR 8 ATTACHMENTS - CABINET TOP VIEW AND SIDE VIEW

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL



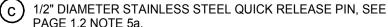
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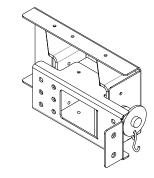
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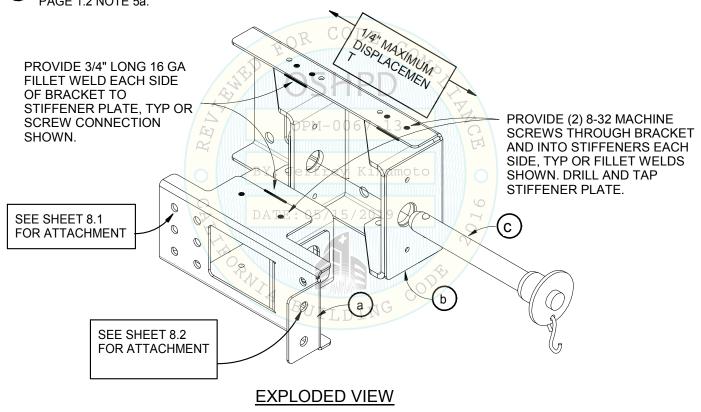
NOTES:

- 1. GENERAL ASSEMBLY INFORMATION PROVIDED. SPECIFIC PRODUCT INFORMATION AND INSTALLATION INSTRUCTIONS PER ENTHERMICS MEDICAL SYSTEMS.
- 2. SEE SHEETS 3.2, 4.2, OR 7.2 FOR HOLES UTILIZED FOR ATTACHMENT.
- 3. SEE SHEET 2.5 NOTES 4 AND 5 FOR REQUIRED CONNECTIONS BETWEEN ASSEMBLY.
- STAINLESS STEEL 16GA BRACKET WITH 11GA GUSSET (a) (SPOT WELDED). FIELD ATTACHED TO CABINET WITH PROVIDED SMS.
- STAINLESS STEEL 16GA BRACKET WITH 11GA GUSSET b) (SPOT WELDED) FIELD ATTACHMENT TO SUPPORT STRUCTURE WITH INSTALLER PROVIDED HARDWARE.





ASSEMBLY ISOMETRIC





REFERENCE BRACKET ASSEMBLY TYPE A

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

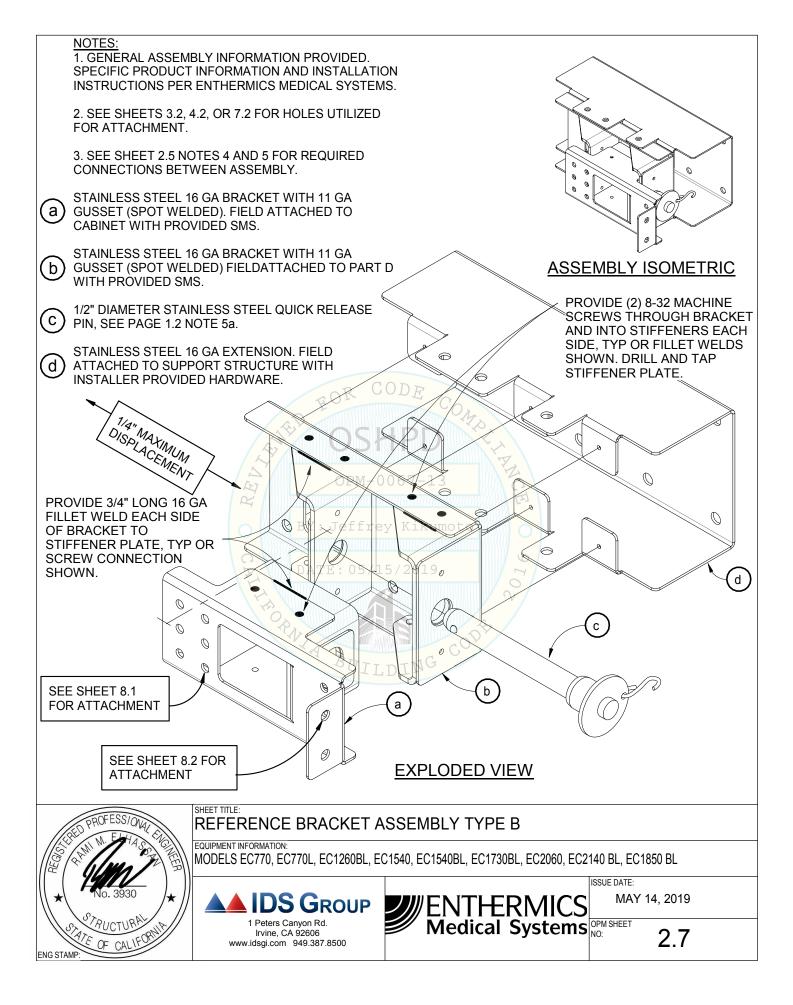


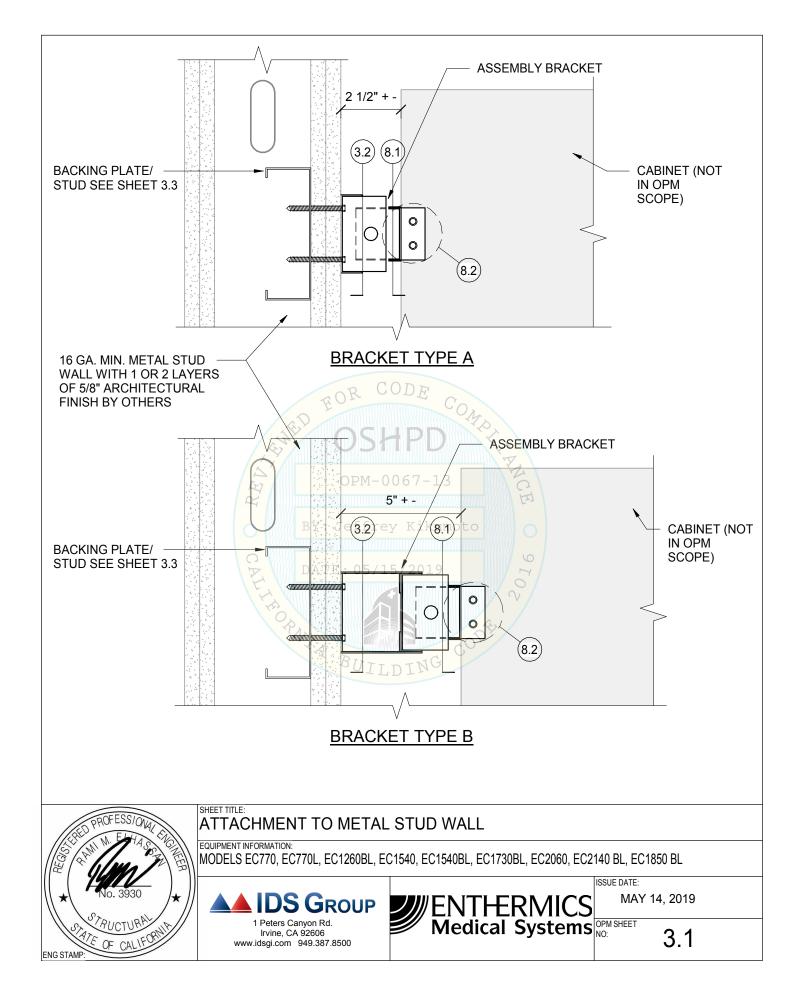
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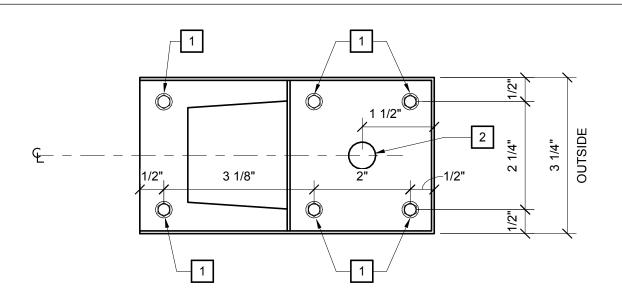


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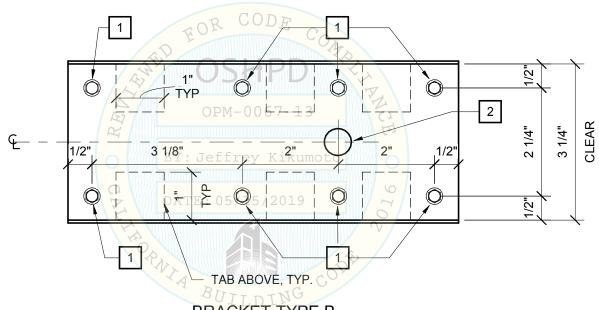
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BRACKET TYPE A



BRACKET TYPE B

KEY NOTES:

- # 14 (1/4" DIA.) SHEET METAL SCREW (SMS)
- 9/16" DIA. HOLE NOT USED



SHEET TITLE: **BRACKET TO SHEET METAL**

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

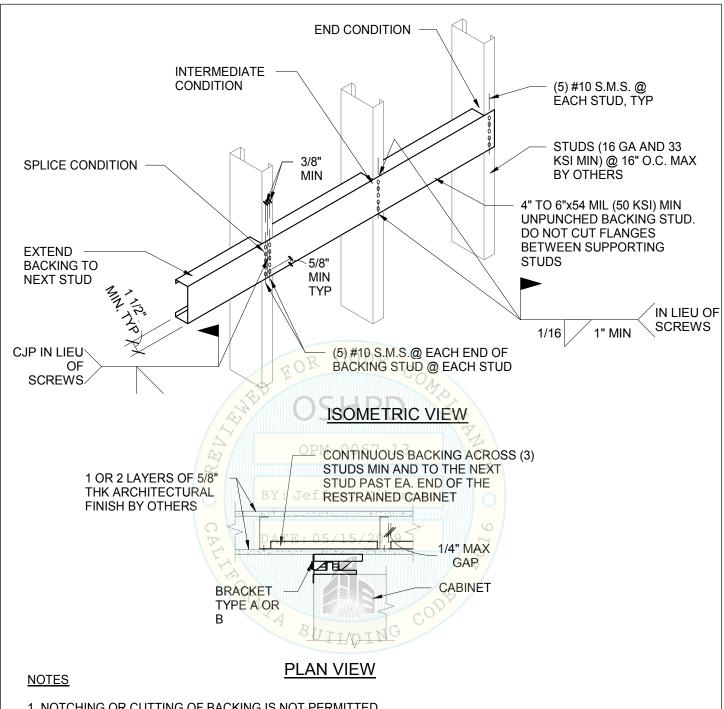
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- 1. NOTCHING OR CUTTING OF BACKING IS NOT PERMITTED
- 2. DO NOT ATTACH TWO BRACKETS IN SPACE BETWEEN STUDS (ONE STUD SPACING IS MINIMUM SPACING BETWEEN BRACKETS ON ADJACENT UNITS).



SHEET TITLE: BACKING TRACK CONFIGURATION

EQUIPMENT INFORMATION:

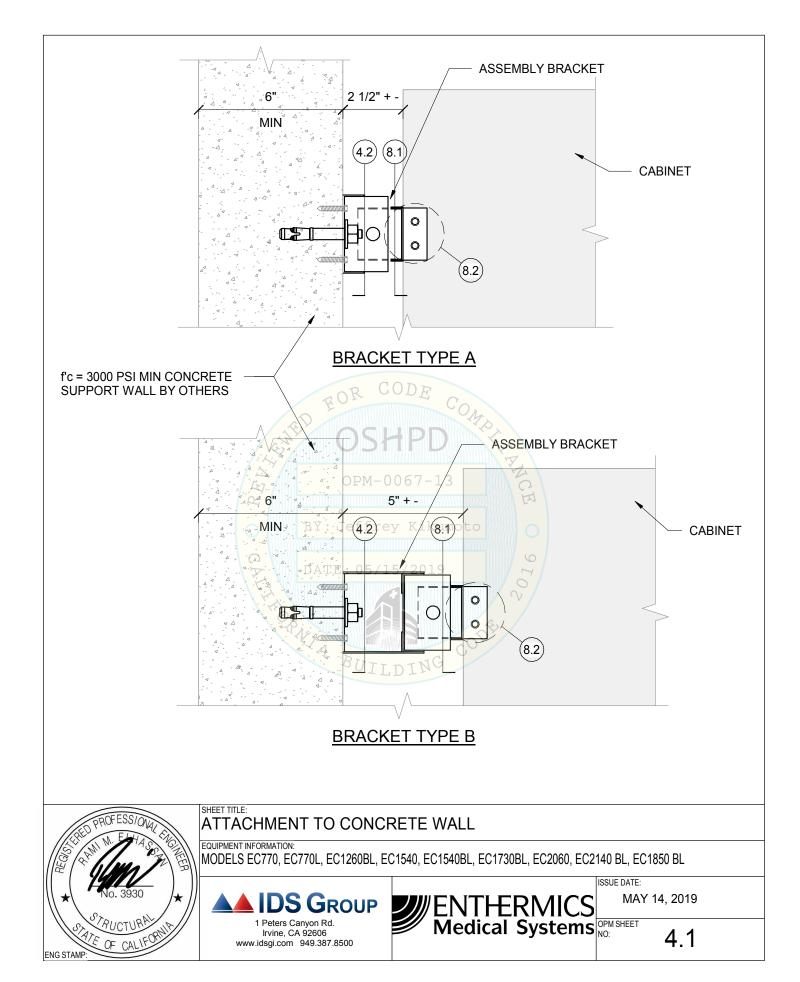
MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

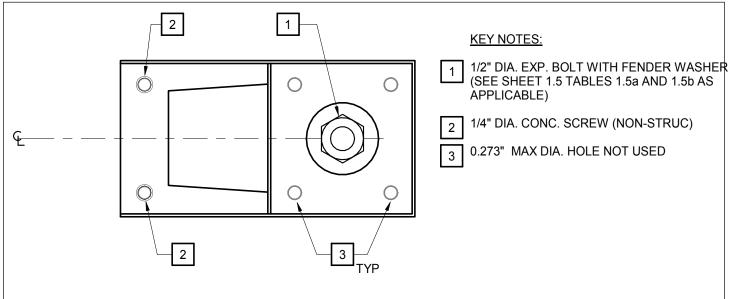


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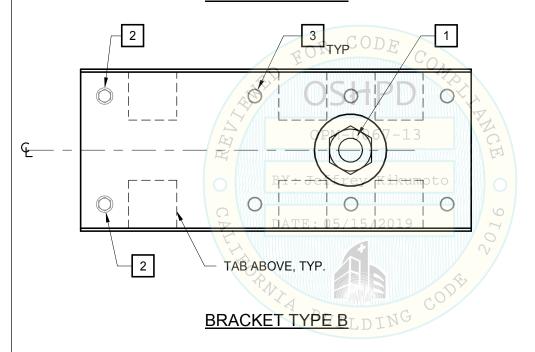
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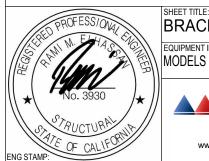


BRACKET TYPE A



NOTES:

1. SEE SHEET 3.2 FOR BRACKET HOLE LOCATION DIMENSIONS AND MATERIAL TYPE.



BRACKET TO CEMENTITIOUS MATERIAL

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

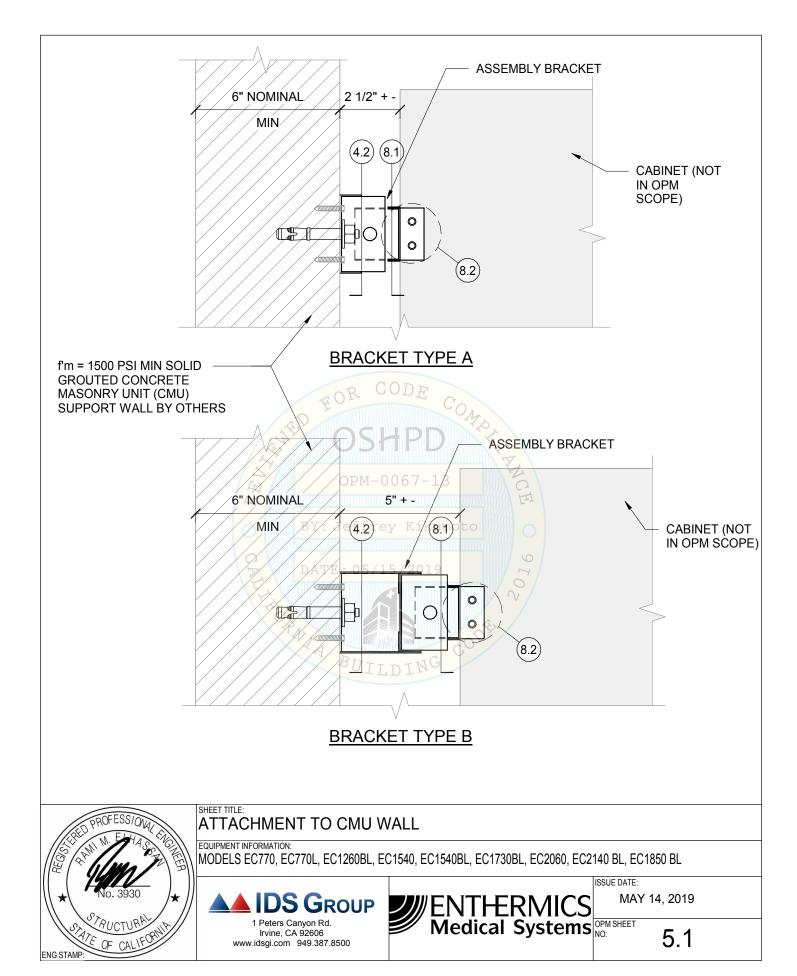


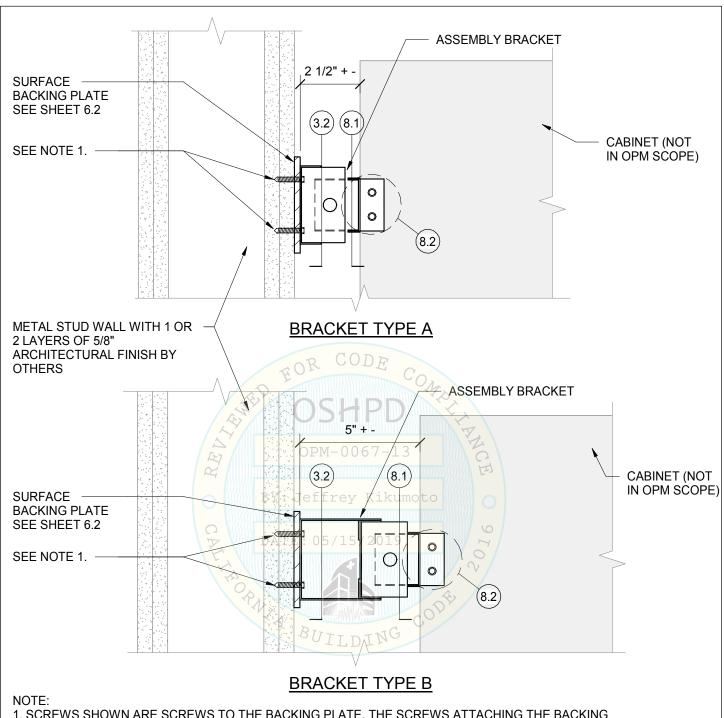
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1. SCREWS SHOWN ARE SCREWS TO THE BACKING PLATE. THE SCREWS ATTACHING THE BACKING PLATE TO THE METAL STUDS ARE NOT SHOWN FOR CLARITY. SEE SHEET 6.2 FOR SCREW REQUIRED TO ATTACH BACKING PLATE TO WALL STUDS.



SHEET TITLE: BRACKET TO SURFACE MOUNTED PLATE

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

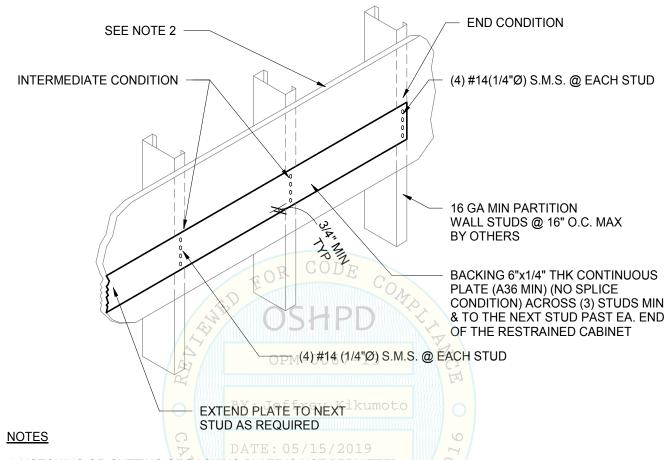


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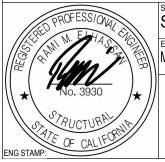


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- 1. NOTCHING OR CUTTING OF BACKING PLATE IS NOT PERMITTED
- 2. BACKING PLATE IS PLACED ON THE SURFACE OF 1 OR 2 LAYERS OF 5/8" ARCHITECTURAL FINISH.
- 3. DO NOT ATTACH TWO BRACKETS IN SPACE BETWEEN STUDS (ONE STUD SPACING IS THE MINIMUM SPACING BETWEEN BRCKETS ON ADJACENT UNITS).



SHEET TITLE: SURFACE PLATE CONFIGURATION

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

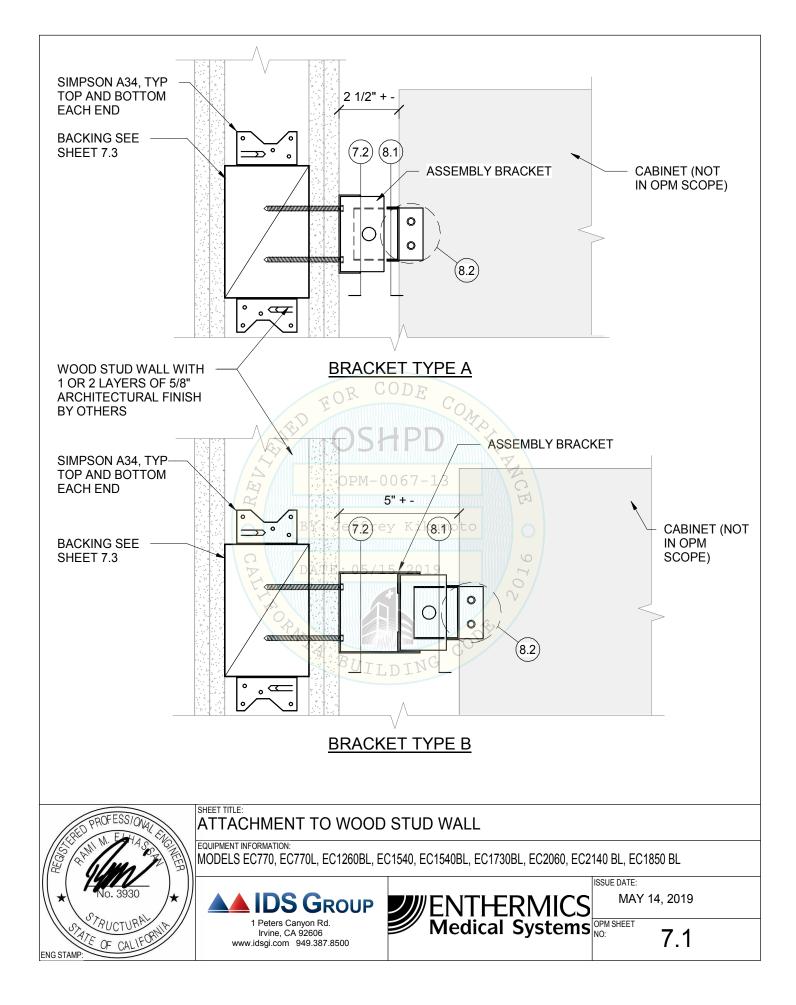


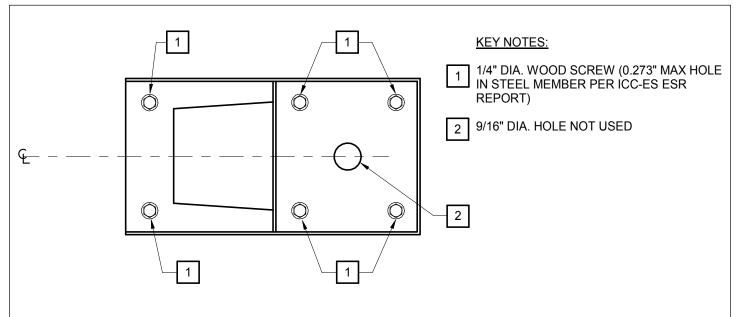
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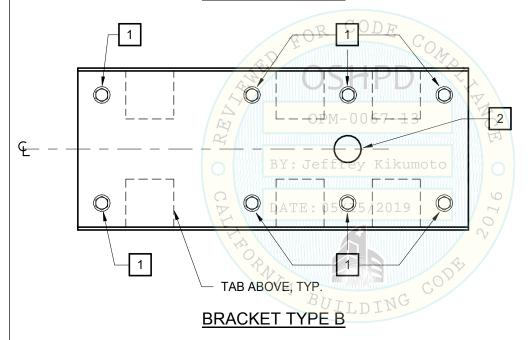
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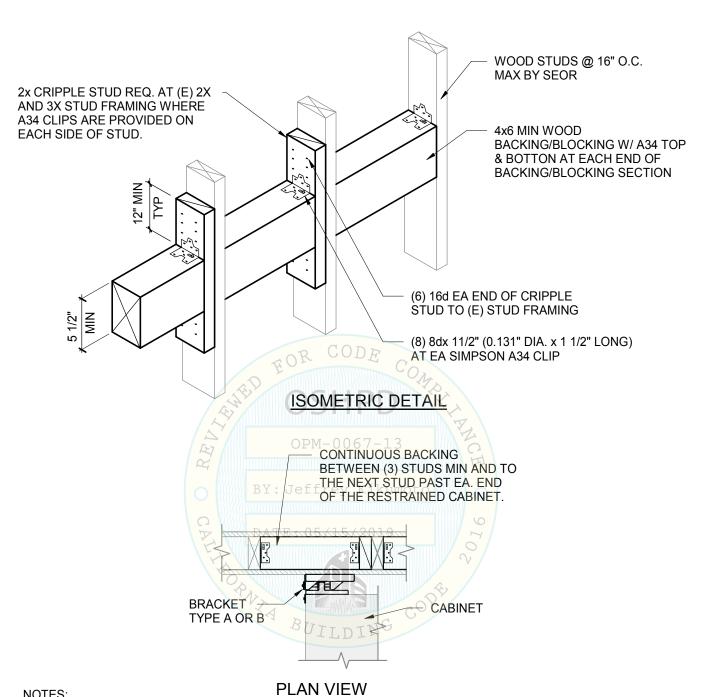
BRACKET TYPE A



NOTES:

1. SEE SHEET 3.2 FOR BRACKET HOLE LOCATION DIMENSIONS & MATERIAL TYPE.





NOTES:

1. DO NOT ATTACH TWO BRACKETS IN SPACE BETWEEN STUDS (ONE STUD SPACING IS MINIMUM SPACING BETWEEN BRACKETS ON ADJACENT UNITS).



SHEET TITLE: WOOD BACKING CONFIGURATION

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

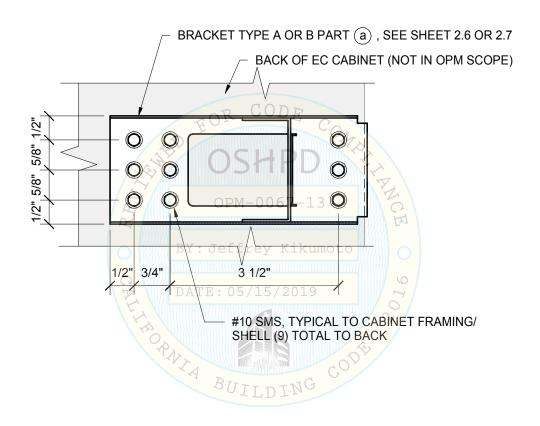


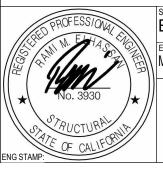
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SHEET TITLE:

BRACKET TYPE A OR B ATTACHMENT TO BACK OF CABINET

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL

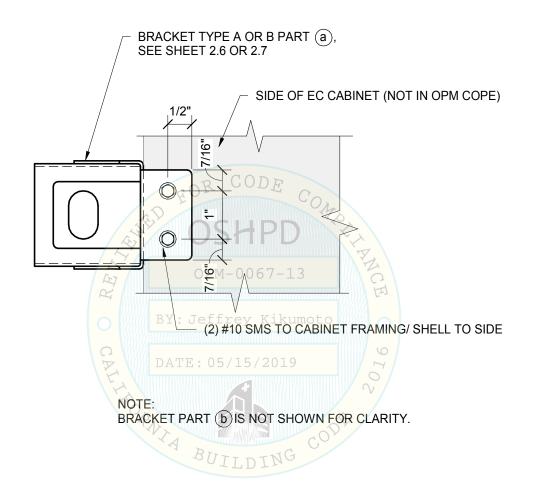


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SHEET TITLE:

BRACKET TYPE A OR B ATTACHMENT TO SIDE OF CABINET

EQUIPMENT INFORMATION:

MODELS EC770, EC770L, EC1260BL, EC1540, EC1540BL, EC1730BL, EC2060, EC2140 BL, EC1850 BL



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