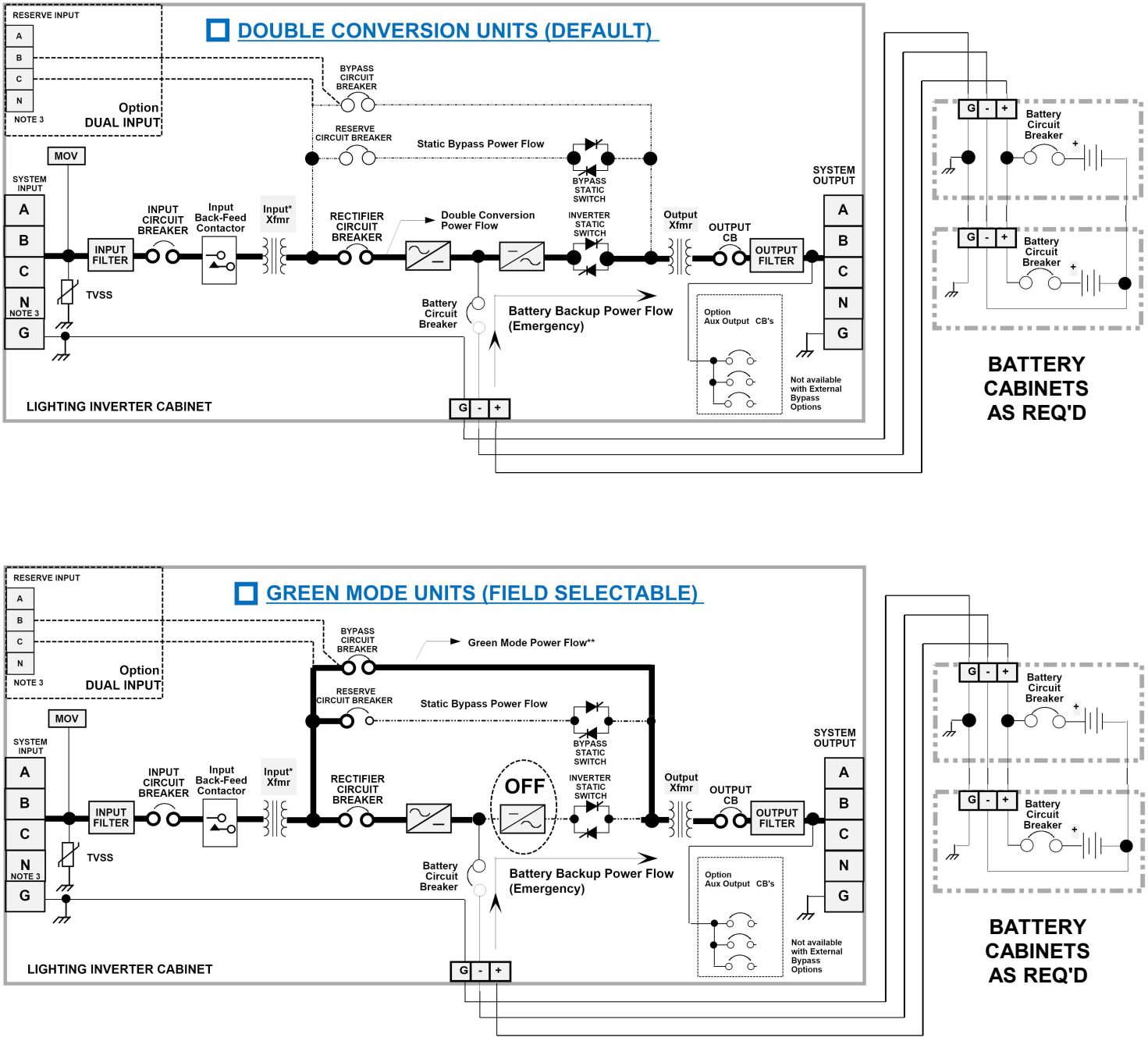
POWER WAVE 4
LIGHTING INVERTER TYPICAL SINGLE LINE DIAGRAM



NOTES:

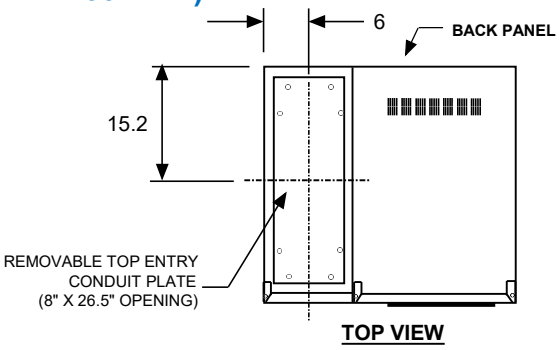
1. * Bypass and Inverter Static Switches will be powered from the *Input Transformer* for different input and output voltage configurations.
2. ** Power Flow is through Static Bypass Switch **(WHEN IN GREEN MODE)** during Input Power Drop
3. **Optional Delta Units are available. Neutral not required.**
4. Battery Cabinet Quantity might vary depending on the Battery type.

Line POWER		TYPICAL PW4 LIGHTING INVERTER SINGLE LINE DIAGRAM	
SDR : SS	4/17/24	DWG NO.: 120-TD-010	REV.: A
CHKD : BC	4/17/24		SHT 1 OF 1
APPVD : BC	4/17/24	SUBJECT TO CHANGE WITHOUT NOTICE	

POWER WAVE 4 CENTRAL LIGHTING INVERTER

ELECTRONIC CABINET ONLY (10 KVA - 60 KVA)

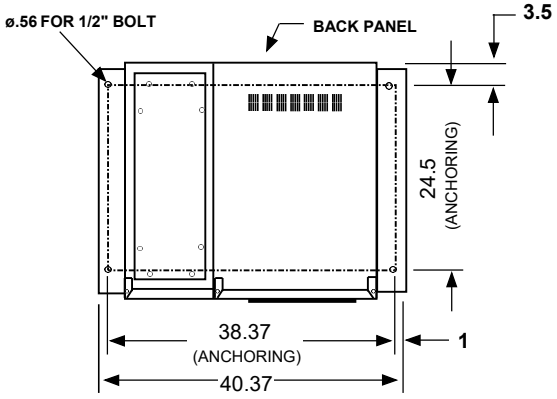
☐ STANDARD MOUNTING



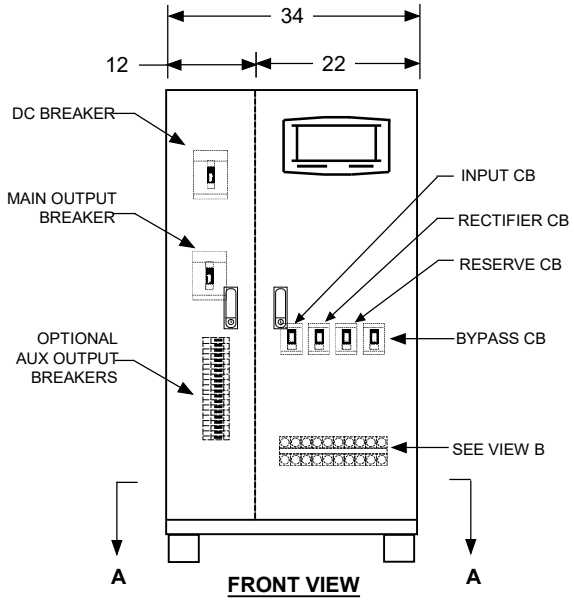
TOP VIEW

INSTALLATION WITH SEISMIC BRACKETS FOR ZONE 4

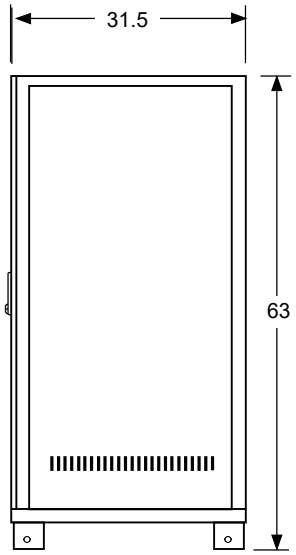
☐ SEISMIC MOUNTING



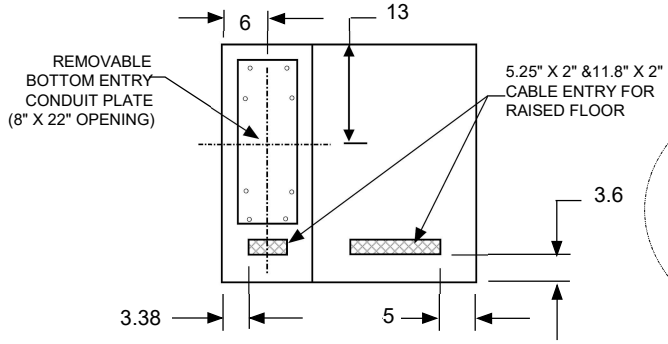
TOP VIEW



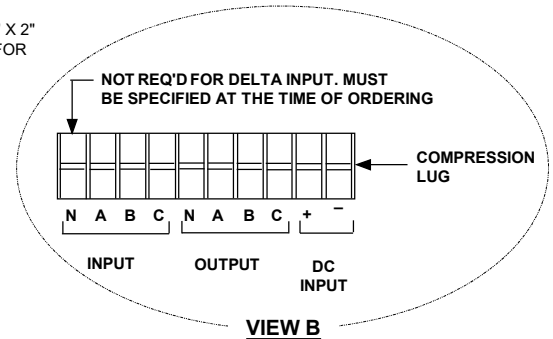
FRONT VIEW



SIDE VIEW



A-A VIEW



VIEW B

NOTES:

1) CONSTRUCTION: INDOOR, COLOR BLACK
2) KNOCKOUTS ON CONDUIT PLATES TO BE DONE BY INSTALLING CONTRACTOR
3) DIMENSIONS ARE IN INCHES

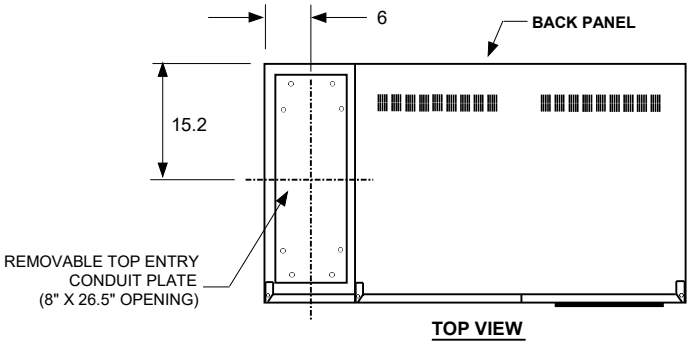
OnLine POWER		POWER WAVE 4 CENTRAL LIGHTING INVERTER	
SDR : SHERRI S.	04/17/24	DWG NO.: 120-TD-011	REV.: A
CHKD : M.T.	04/17/24		SHT 1 OF 1
APPVD : HN	04/17/24	SUBJECT TO CHANGE WITHOUT NOTICE	

POWER WAVE 4 CENTRAL LIGHTING INVERTER

ELECTRONIC CABINET ONLY (80 KVA - 160 KVA)

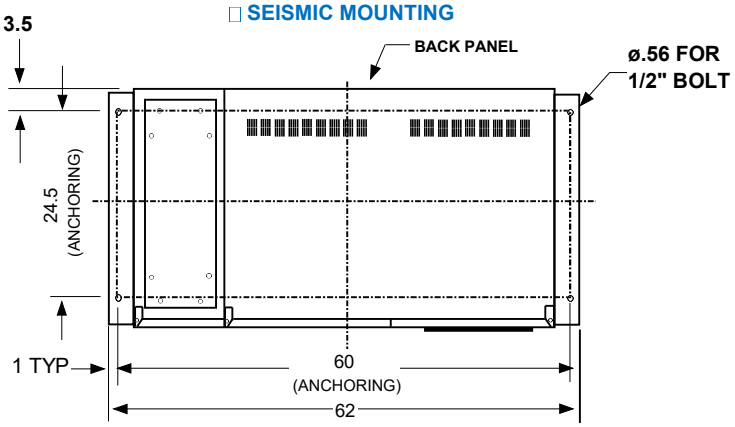
INSTALLATION WITH SEISMIC BRACKETS FOR ZONE 4

☐ STANDARD MOUNTING

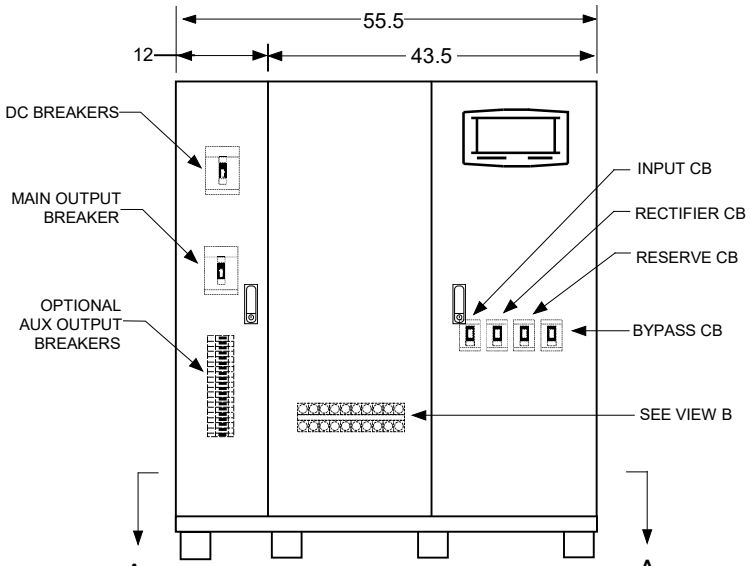


TOP VIEW

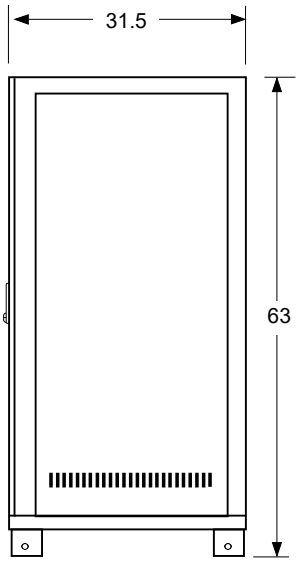
☐ SEISMIC MOUNTING



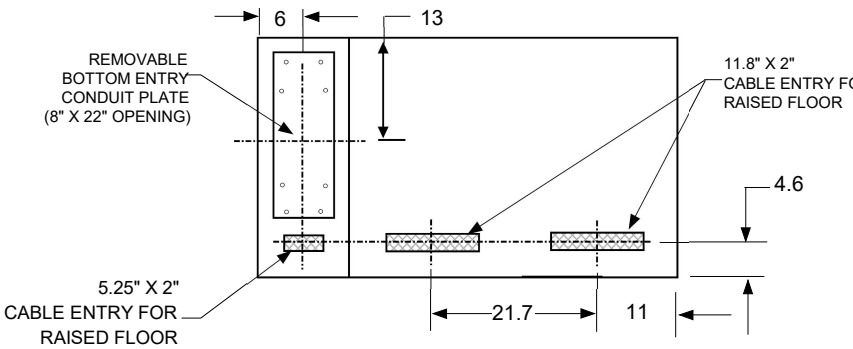
TOP VIEW



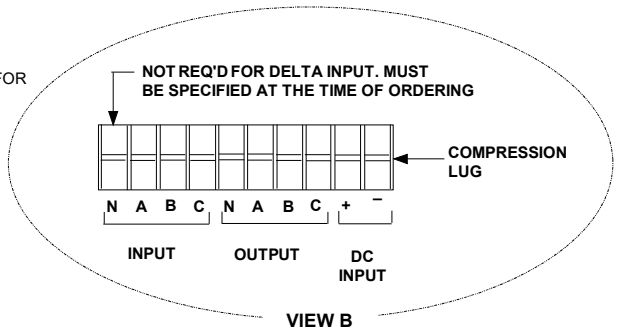
FRONT VIEW



SIDE VIEW



A-A VIEW



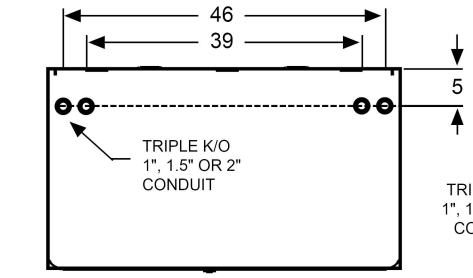
VIEW B

NOTES:

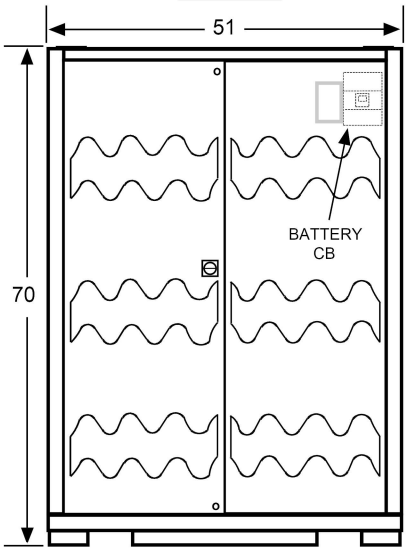
1) CONSTRUCTION: INDOOR, COLOR BLACK
2) KNOCKOUTS ON CONDUIT PLATES TO BE DONE BY INSTALLING CONTRACTOR
3) DIMENSIONS ARE IN INCHES

OnLine POWER		POWER WAVE 4 CENTRAL LIGHTING INVERTER	
SDR : SHERRI S.	04/17/24	DWG NO.: 120-TD-012	REV.: A
CHKD : M.T.	04/17/24		SHT 1 OF 1
APPVD : HN	04/17/24	SUBJECT TO CHANGE WITHOUT NOTICE	

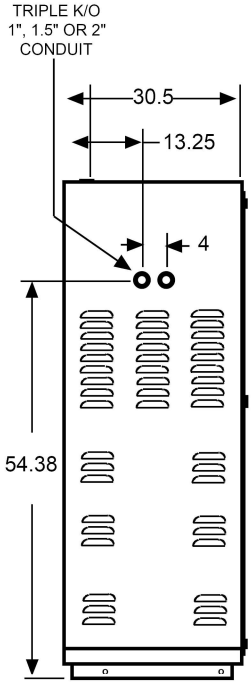
BATTERY CABINET (10 KVA - 60 KVA)
STANDARD VRLA BATTERY



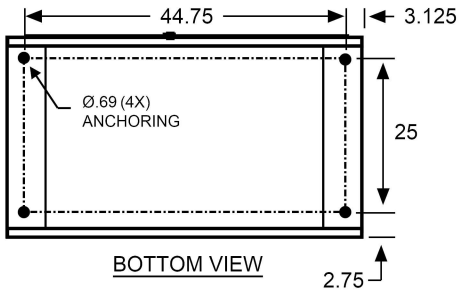
TOP VIEW



FRONT VIEW



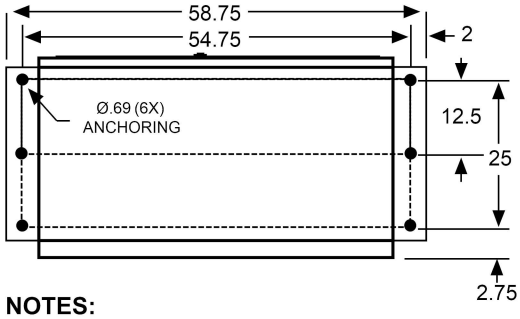
SIDE VIEW



BOTTOM VIEW

☐ STANDARD MOUNTING

INSTALLATION WITH SEISMIC BRACKETS FOR ZONE 4 BOTTOM VIEW



☐ SEISMIC MOUNTING *SEE NOTE #2*

NOTES:

1) CONSTRUCTION: NEMA1 INDOOR

2) OPTIONAL SEISMIC BRACKETS AVAILABLE:

ANCHORS FOR EXTERNAL SEISMIC BRACKET:

1. USE 1/2" DIA x 2-3/8"MIN. EMBED. HILTI KB- TZ. ICC ESR-1917 OR APPROVED EQUAL (6) TOTAL PER CABINET.
2. CONCRETE: 5" THICK x 2,500 PSI. (MIN. REQ'D).
3. SOIL BEARING PRESSURE: 500 PSF. (MIN. REQ'D).

FOR ALL DETAILS REFER TO SEISMIC DWG. FOR EACH CABINET MOUNTING

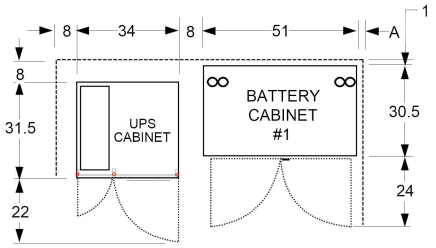
3) DIMENSIONS ARE IN INCHES

RECOMMENDED SYSTEM LAYOUTS

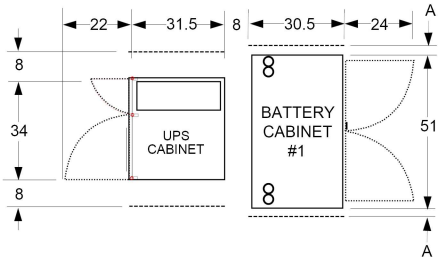
STANDARD VRLA BATTERY

KVA/KW	BATTERY CABINET QTY 90 MIN.	SELECTION BOX 90 MIN.	BATTERY CABINET QTY 120 MIN.	SELECTION BOX 120 MIN.
10KVA/8KW	1		1	
20KVA/16KW	1		1	
30KVA/24KW	1		1	
40KVA/32KW	2		2	
50KVA/40KW	2		2	
60KVA/48KW	2		2	

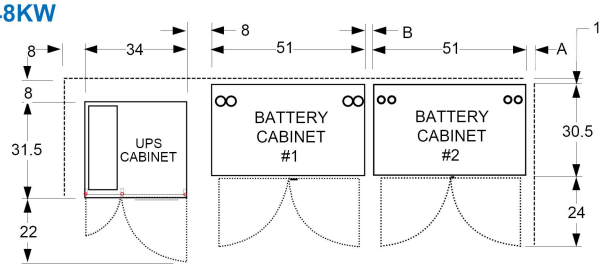
☐ 10KVA / 8KW
☐ 20KVA / 16KW
☐ 30KVA / 24KW



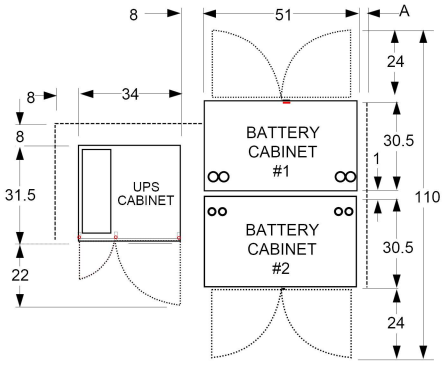
☐ 10KVA / 8KW
☐ 20KVA / 16KW
☐ 30KVA / 24KW



☐ 40KVA / 32KW
☐ 50KVA / 40KW
☐ 60KVA / 48KW



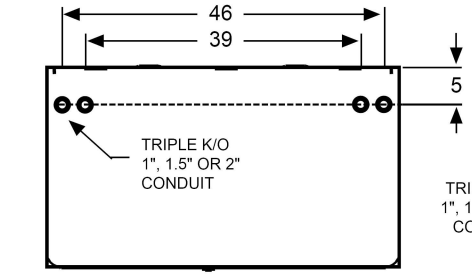
☐ 40KVA / 32KW
☐ 50KVA / 40KW
☐ 60KVA / 48KW



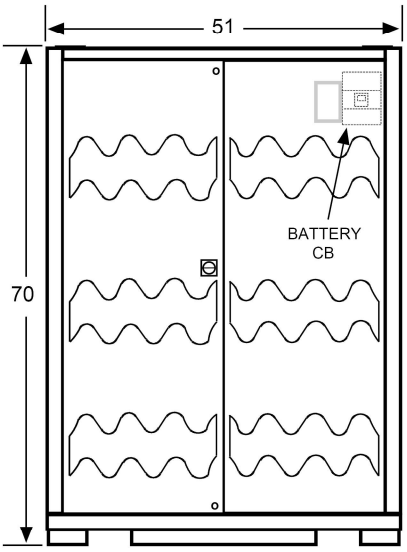
B	1.0"	8.0"
A	1.0"	4.0"
DIM	WITHOUT EXTERNAL SEISMIC	WITH EXTERNAL SEISMIC

OnLine POWER		POWER WAVE 4 BATT CAB, 51" WIDE	
SDR : SHERRI S.	04/17/24	DWG NO.: 120-TD-013	REV.: A
CHKD : M.T.	04/17/24		SHT 1 OF 1
APPVD : HN	04/17/24	SUBJECT TO CHANGE WITHOUT NOTICE	

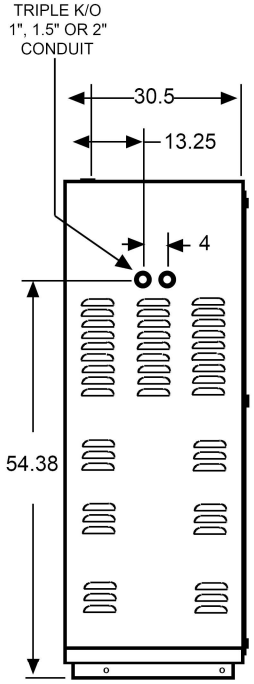
BATTERY CABINET (10 KVA - 60 KVA)
LONG LIFE BATTERY



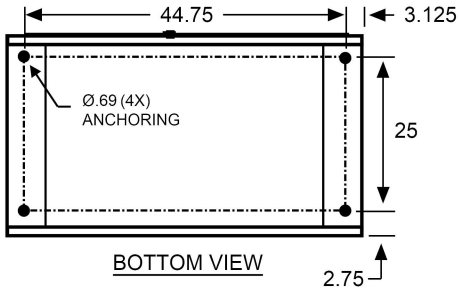
TOP VIEW



FRONT VIEW



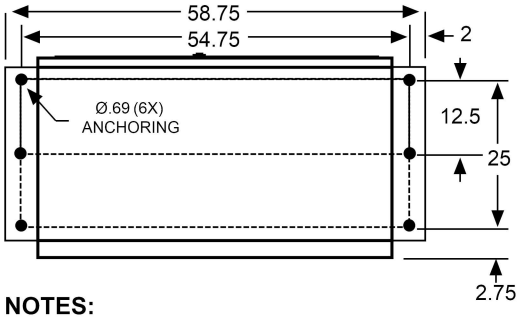
SIDE VIEW



BOTTOM VIEW

☐ **STANDARD MOUNTING**

INSTALLATION WITH SEISMIC BRACKETS FOR ZONE 4 BOTTOM VIEW



☐ **SEISMIC MOUNTING** *SEE NOTE #2*

NOTES:

1) CONSTRUCTION: NEMA1 INDOOR

2) OPTIONAL SEISMIC BRACKETS AVAILABLE:

ANCHORS FOR EXTERNAL SEISMIC BRACKET:

1. USE 1/2" DIA x 2-3/8"MIN. EMBED. HILTI KB-TZ, ICC ESR-1917 OR APPROVED EQUAL (6) TOTAL PER CABINET.
2. CONCRETE: 5" THICK x 2,500 PSI. (MIN. REQ'D).
3. SOIL BEARING PRESSURE: 500 PSF. (MIN. REQ'D).

FOR ALL DETAILS REFER TO SEISMIC DWG. FOR EACH CABINET MOUNTING

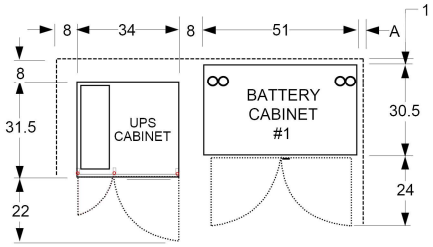
3) DIMENSIONS ARE IN INCHES

RECOMMENDED SYSTEM LAYOUTS

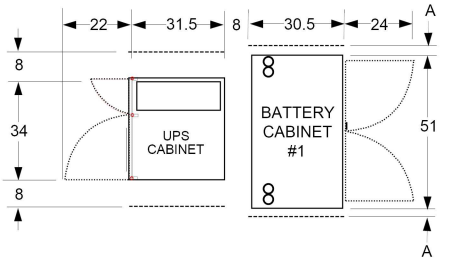
LONG LIFE BATTERY

KVA/KW	BATTERY CABINET QTY 90 MIN.	SELECTION BOX 90 MIN.	BATTERY CABINET QTY 120 MIN.	SELECTION BOX 120 MIN.
10KVA/8KW	1		1	
20KVA/16KW	1		1	
30KVA/24KW	1		1	
40KVA/32KW	1		2	
50KVA/40KW	2		2	
60KVA/48KW	2		2	

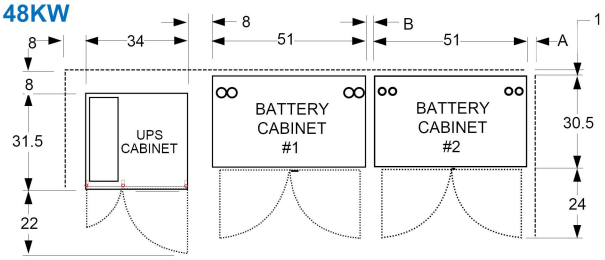
☐ 10KVA / 8KW
☐ 20KVA / 16KW
☐ 30KVA / 24KW
☐ 40KVA / 32KW



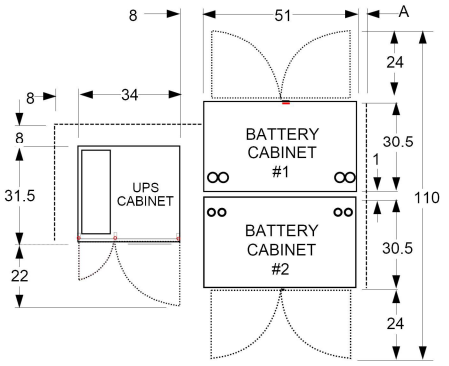
☐ 10KVA / 8KW
☐ 20KVA / 16KW
☐ 30KVA / 24KW
☐ 40KVA / 32KW



☐ 40KVA / 32KW
☐ 50KVA / 40KW
☐ 60KVA / 48KW



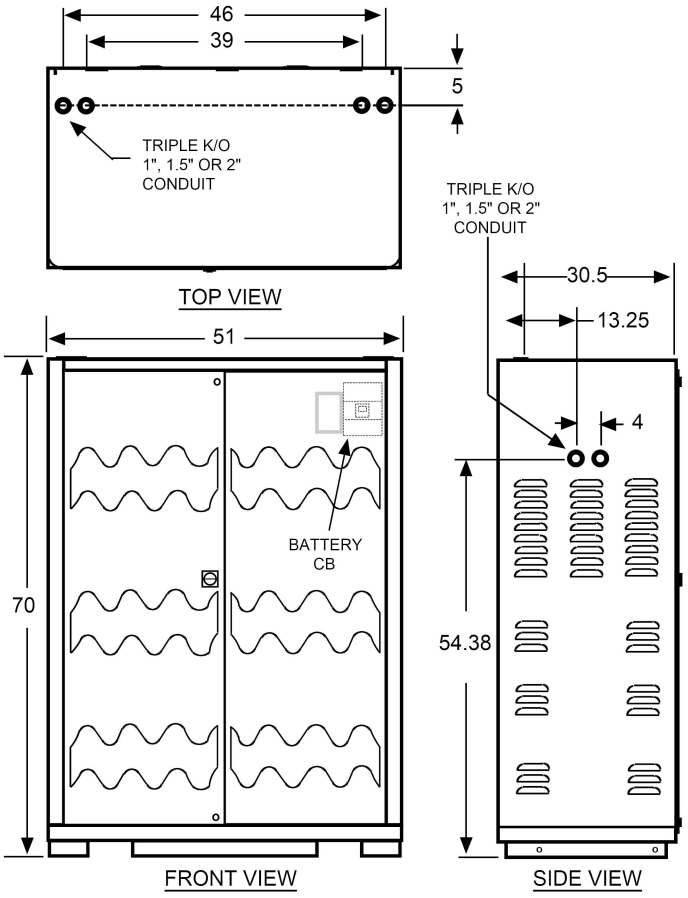
☐ 40KVA / 32KW
☐ 50KVA / 40KW
☐ 60KVA / 48KW

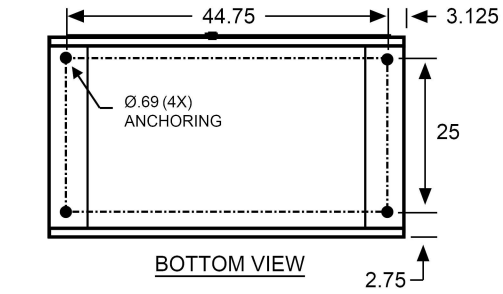


B	1.0"	8.0"
A	1.0"	4.0"
DIM	WITHOUT EXTERNAL SEISMIC	WITH EXTERNAL SEISMIC

OnLine POWER		POWER WAVE 4 BATT CAB, 51" WIDE	
SDR : SHERRI S.	04/17/24	DWG NO.: 120-TD-014	REV.: A
CHKD : M.T.	04/17/24		SHT 1 OF 1
APPVD : HN	04/17/24	SUBJECT TO CHANGE WITHOUT NOTICE	

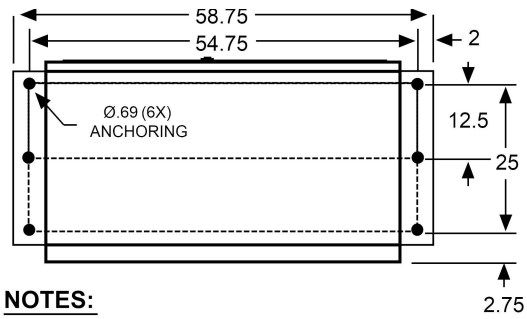
BATTERY CABINET (80 KVA - 160 KVA)
STANDARD VRLA BATTERY





☐ STANDARD MOUNTING

INSTALLATION WITH SEISMIC BRACKETS FOR ZONE 4 BOTTOM VIEW



☐ SEISMIC MOUNTING *SEE NOTE #2*

NOTES:

1) CONSTRUCTION:NEMA1 INDOOR

2) OPTIONAL SEISMIC BRACKETS AVAILABLE:

ANCHORS FOR EXTERNAL SEISMIC BRACKET:

1. USE 1/2" DIA x 2-3/8"MIN. EMBED. HILTI KB-TZ, ICC ESR-1917 OR APPROVED EQUAL (6) TOTAL PER CABINET.
2. CONCRETE: 5" THICK x 2,500 PSI. (MIN. REQ'D).
3. SOIL BEARING PRESSURE: 500 PSF. (MIN. REQ'D).

FOR ALL DETAILS REFER TO SEISMIC DWG. FOR EACH CABINET MOUNTING

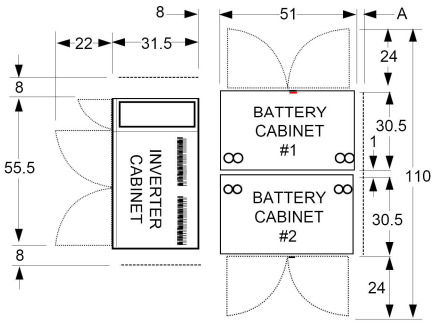
3) DIMENSIONS ARE IN INCHES

RECOMMENDED SYSTEM LAYOUTS

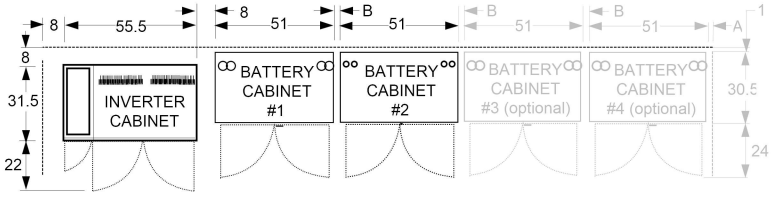
STANDARD VRLA BATTERY

KVA/KW	BATTERY CABINET QTY 90 MIN.	SELECTION BOX 90 MIN.	BATTERY CABINET QTY 120 MIN.	SELECTION BOX 120 MIN.
80KVA/64KW	2		3	
100KVA/80KW	3		4	
120KVA/96KW	4		4	
160KVA/128KW	LONG LIFE BATTERY ONLY		LONG LIFE BATTERY ONLY	

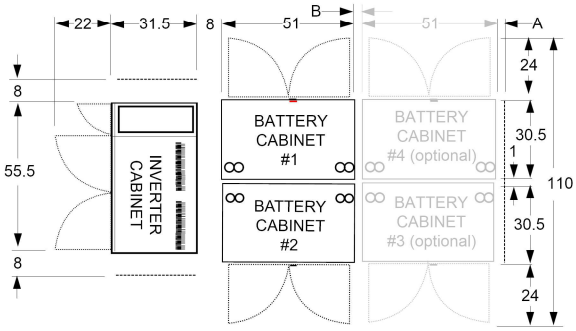
☐ 80KVA



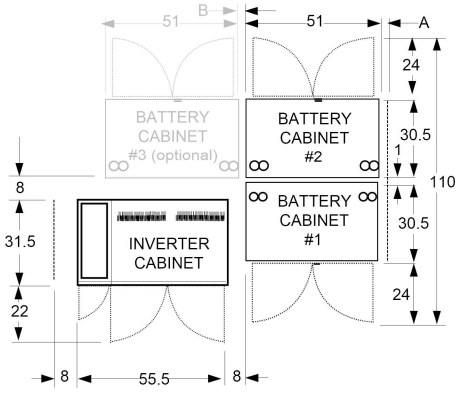
☐ 80KVA ☐ 100KVA ☐ 120KVA



☐ 80KVA
☐ 100KVA
☐ 120KVA



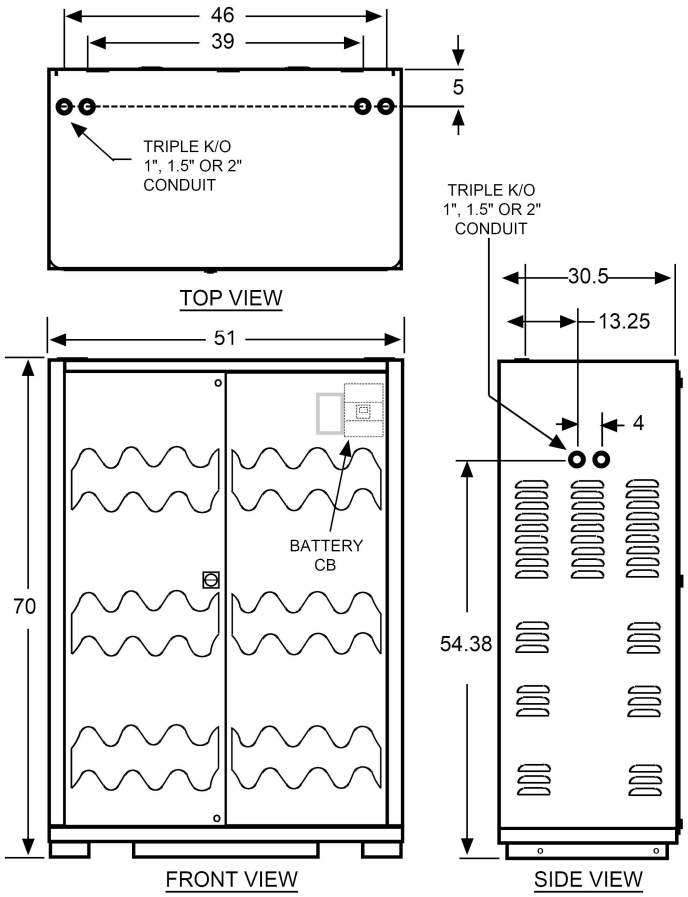
☐ 80KVA
☐ 100KVA

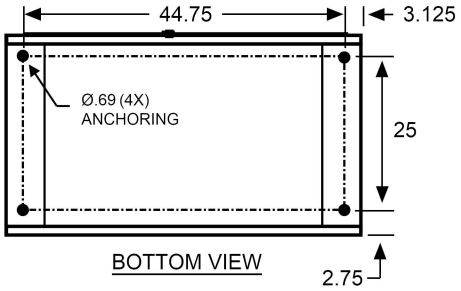


B	1.0"	8.0"
A	1.0"	4.0"
DIM	WITHOUT EXTERNAL SEISMIC	WITH EXTERNAL SEISMIC

Line POWER		POWER WAVE 4 BATT CAB, 51" WIDE	
SDR : SHERRI S.	04/17/24	DWG NO.: 120-TD-015	REV.: A
CHKD : M.T.	04/17/24		SHT 1 OF 1
APPVD : HN	04/17/24	SUBJECT TO CHANGE WITHOUT NOTICE	

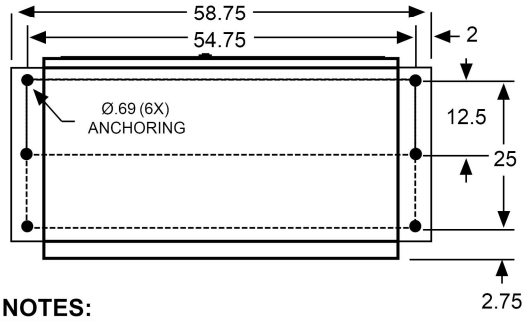
BATTERY CABINET (80 KVA - 160 KVA)
LONG LIFE BATTERY





☐ STANDARD MOUNTING

INSTALLATION WITH SEISMIC BRACKETS FOR ZONE 4 BOTTOM VIEW



☐ SEISMIC MOUNTING *SEE NOTE #2*

NOTES:

1) CONSTRUCTION:NEMA1 INDOOR

2) OPTIONAL SEISMIC BRACKETS AVAILABLE:

ANCHORS FOR EXTERNAL SEISMIC BRACKET:

1. USE 1/2" DIA x 2-3/8"MIN. EMBED. HILTI KB-TZ. ICC ESR-1917 OR APPROVED EQUAL (6) TOTAL PER CABINET.
2. CONCRETE: 5" THICK x 2,500 PSI. (MIN. REQ'D).
3. SOIL BEARING PRESSURE: 500 PSF. (MIN. REQ'D).

FOR ALL DETAILS REFER TO SEISMIC DWG. FOR EACH CABINET MOUNTING

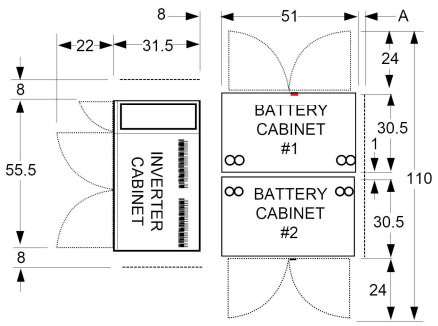
3) DIMENSIONS ARE IN INCHES

RECOMMENDED SYSTEM LAYOUTS

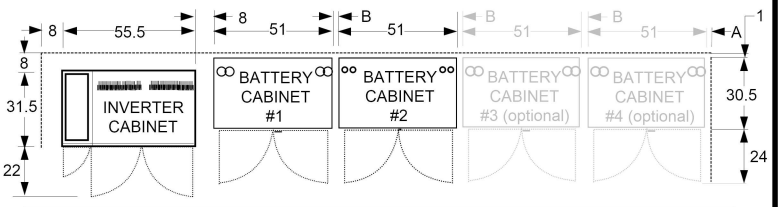
LONG LIFE BATTERY

KVA/KW	BATTERY CABINET QTY 90 MIN.	SELECTION BOX 90 MIN.	BATTERY CABINET QTY 120 MIN.	SELECTION BOX 120 MIN.
80KVA/64KW	2		3	
100KVA/80KW	3		3	
120KVA/96KW	3		4	
160KVA/128KW	4		5	

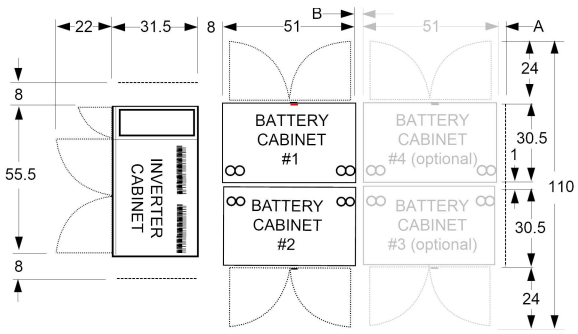
☐ 80KVA



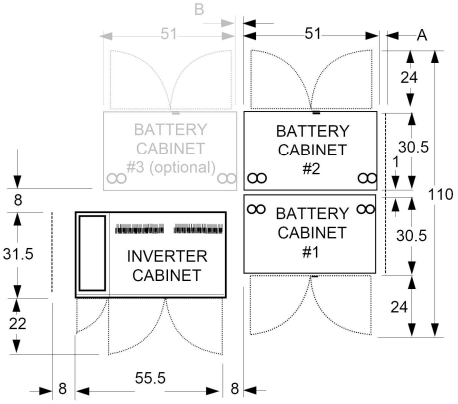
☐ 80KVA ☐ 100KVA ☐ 120KVA ☐ 160KVA



☐ 80KVA
☐ 100KVA
☐ 120KVA
☐ 160KVA



☐ 80KVA
☐ 100KVA
☐ 120KVA

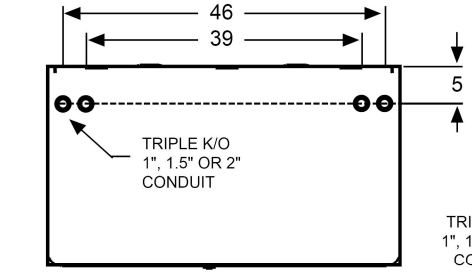


B	1.0"	8.0"
A	1.0"	4.0"
DIM	WITHOUT EXTERNAL SEISMIC	WITH EXTERNAL SEISMIC

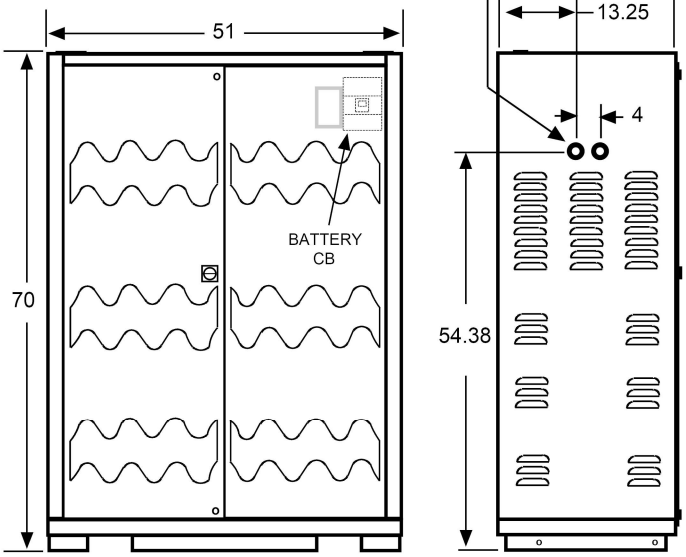
	POWER WAVE 4 BATT CAB, 51" WIDE		
SDR : SHERRI S.	04/17/24	DWG NO.: 120-TD-016	REV.: A
CHKD : M.T.	04/17/24		SHT 1 OF 1
APPVD : HN	04/17/24	SUBJECT TO CHANGE WITHOUT NOTICE	

BATTERY CABINET (10 KVA - 60 KVA)

INTEGRATED BRACKETS



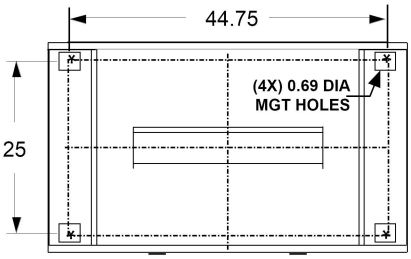
TOP VIEW



FRONT VIEW

SIDE VIEW

INSTALLATION WITH INTEGRATED SEISMIC MOUNTING FOR ZONE 4



BOTTOM VIEW

☐ INTEGRATED MOUNTING *SEE NOTE #1*

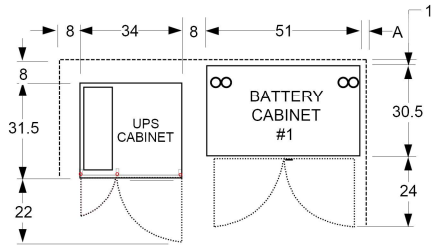
*- DENOTES ANCHOR LOCATION

RECOMMENDED SYSTEM LAYOUTS

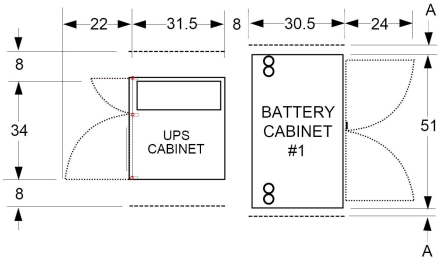
STANDARD VRLA BATTERY

KVA/KW	BATTERY CABINET QTY 90 MIN.	SELECTION BOX 90 MIN.	BATTERY CABINET QTY 120 MIN.	SELECTION BOX 120 MIN.
10KVA/8KW	1		1	
20KVA/16KW	1		1	
30KVA/24KW	1		1	
40KVA/32KW	2		2	
50KVA/40KW	2		2	
60KVA/48KW	2		2	

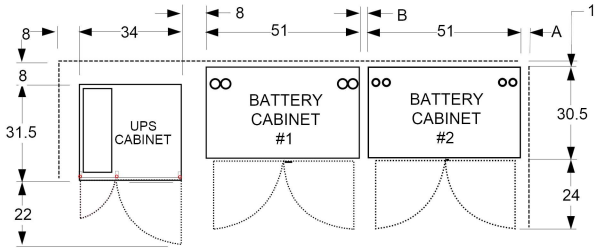
☐ 10KVA / 8KW
☐ 20KVA / 16KW
☐ 30KVA / 24KW



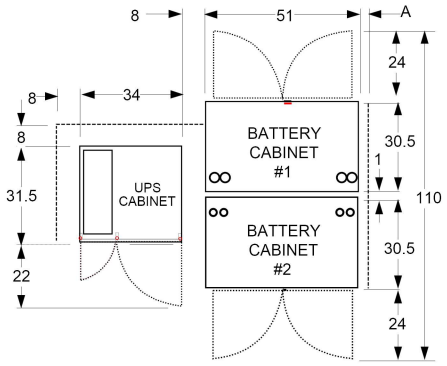
☐ 10KVA / 8KW
☐ 20KVA / 16KW
☐ 30KVA / 24KW



☐ 10KVA / 8KW ☐ 20KVA / 16KW ☐ 30KVA / 24KW
☐ 40KVA / 32KW ☐ 50KVA / 40KW ☐ 60KVA / 48KW



☐ 10KVA / 8KW
☐ 20KVA / 16KW
☐ 30KVA / 24KW
☐ 40KVA / 32KW
☐ 50KVA / 40KW
☐ 60KVA / 48KW



B	1.0"
A	1.0"
DIM	WITH INTEGRATED SEISMIC

NOTES:

1) CONSTRUCTION: NEMA1 INDOOR

ANCHORS FOR INTEGRATED SEISMIC MOUNTING:

1. USE 5/8"DIA x 3-3/4" MIN. EMBED HILTI KB-TZ ANCHORS, ICCESR-1917 (LARR#25701) OR APPROVED EQUAL (4) TOTAL PER CABINET, (2) PER ANCHOR BRACKET
2. CONCRETE 5" THICK x 2,500 PSI (MIN.REQ'D).
3. SOIL BEARING PRESSURE 500PSF (MIN. REQ'D)

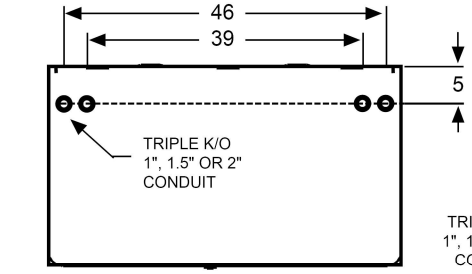
FOR ALL DETAILS REFER TO SEISMIC DWG. FOR EACH CABINET MOUNTING

2) DIMENSIONS ARE IN INCHES

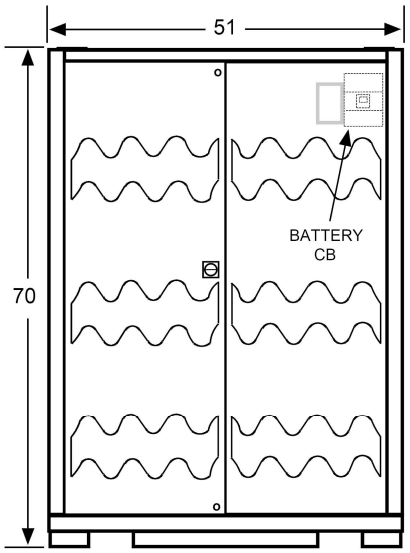
OnLine POWER		POWER WAVE 4 BATT CAB, 51" WIDE	
SDR : SHERRI S.	04/17/24	DWG NO.: 120-TD-017	REV.: A
CHKD : M.T.	04/17/24		SHT 1 OF 1
APPVD : HN	04/17/24	SUBJECT TO CHANGE WITHOUT NOTICE	

BATTERY CABINET (80 KVA - 160 KVA)

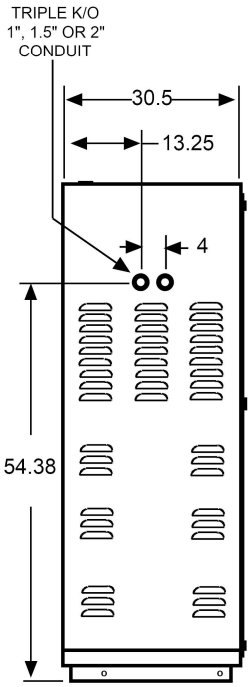
INTEGRATED BRACKETS



TOP VIEW

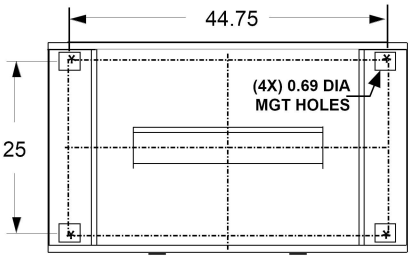


FRONT VIEW



SIDE VIEW

INSTALLATION WITH INTEGRATED SEISMIC MOUNTING FOR ZONE 4



BOTTOM VIEW

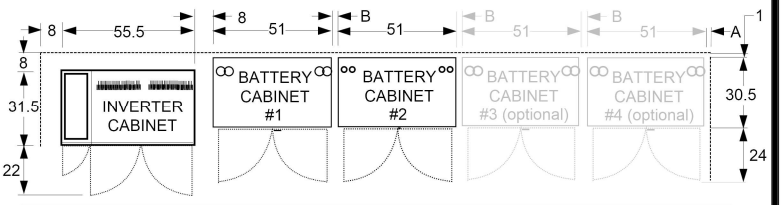
☐ **INTEGRATED MOUNTING** ***SEE NOTE #1***

*- DENOTES ANCHOR LOCATION

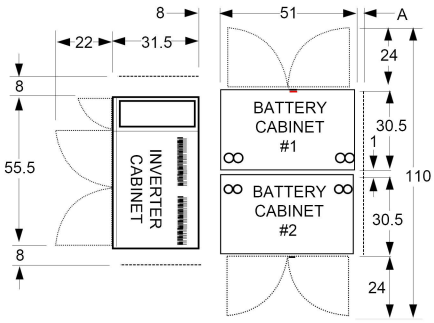
RECOMMENDED SYSTEM LAYOUTS

STANDARD VRLA BATTERY				
KVA/KW	BATTERY CABINET QTY 90 MIN.	SELECTION BOX 90 MIN.	BATTERY CABINET QTY 120 MIN.	SELECTION BOX 120 MIN.
80KVA/64KW	2		3	
100KVA/80KW	3		4	
120KVA/96KW	4		4	
160KVA/128KW	LONG LIFE BATTERY ONLY		LONG LIFE BATTERY ONLY	

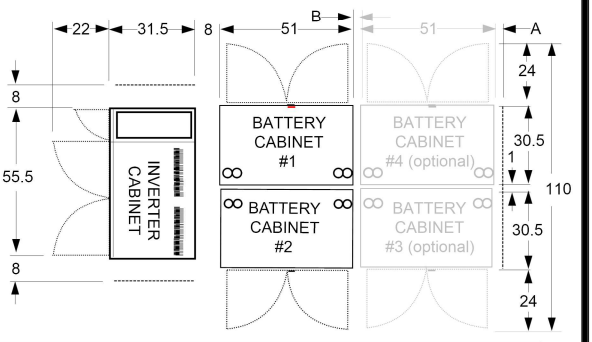
☐ **80KVA / 64KW** ☐ **100KVA / 80KW** ☐ **120KVA / 96KW**



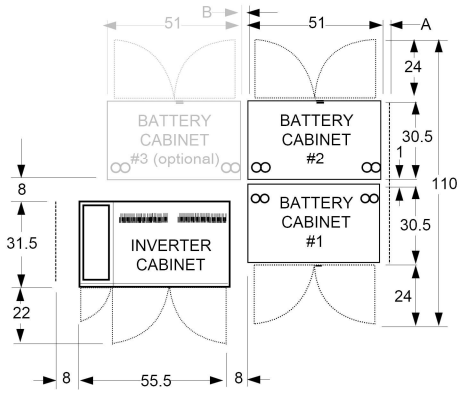
☐ **80KVA / 64KW**



☐ **80KVA / 64KW** ☐ **100KVA / 80KW** ☐ **120KVA / 96KW**



☐ **80KVA / 64KW**
☐ **100KVA / 80KW**



B	1.0"
A	1.0"
DIM	WITH INTEGRATED SEISMIC

NOTES:

1) CONSTRUCTION: NEMA1 INDOOR

ANCHORS FOR INTEGRATED SEISMIC MOUNTING:

1. USE 5/8"DIA x 3-3/4" MIN. EMBED HILTI KB-TZ ANCHORS, ICCESR-1917 (LARR«25701) OR APPROVED EQUAL (4) TOTAL PER CABINET, (2) PER ANCHOR BRACKET
2. CONCRETE 5" THICK x 2,500 PSI (MIN.REQ'D).
3. SOIL BEARING PRESSURE 500PSF (MIN. REQ'D)

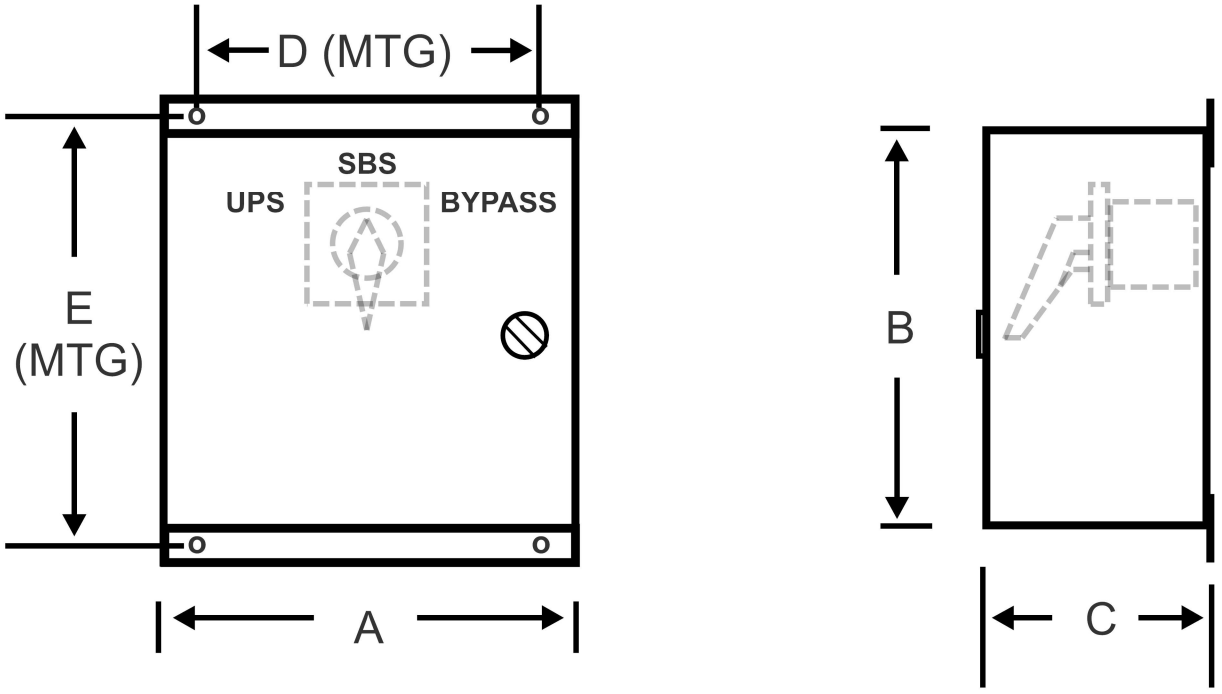
FOR ALL DETAILS REFER TO SEISMIC DWG. FOR EACH CABINET MOUNTING

2) DIMENSIONS ARE IN INCHES

		POWER WAVE 4 BATT CAB, 51" WIDE	
SDR : SHERRI S.	04/17/24	DWG NO.: 120-TD-018	REV.: A
CHKD : M.T.	04/17/24		SHT 1 OF 1
APPVD : HN	04/17/24	SUBJECT TO CHANGE WITHOUT NOTICE	

MAKE BEFORE BREAK
EXTERNAL WRAP AROUND
BY-PASS SWITCH

RATING	VOLTAGE	DIM A	DIM B	DIM C	DIM D (MTG)	DIM E (MTG)
350 AMPS	600V	30	36	16	28.5	34.5
240 AMPS	600V	30	30	12	28.5	28.5
175 AMPS	600V	20	20	12	18.5	18.5
110 AMPS	600V	14	16	10	12	16.75
55 AMPS	600V	14	16	8	12	16.75

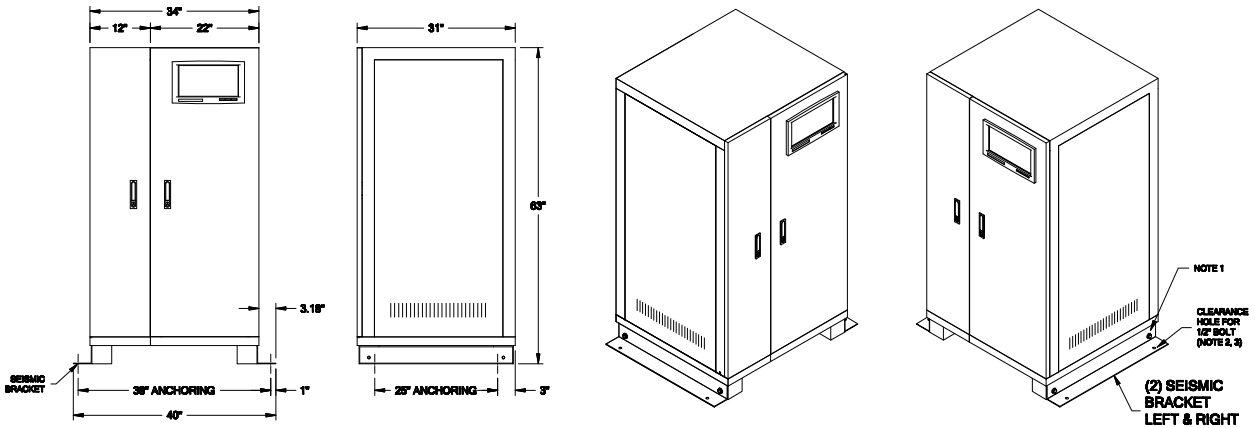


NOTES:

1) SWITCH CONTACTS ARE THREE PHASE L-NEUTRAL "MAKE BEFORE-BREAK"
2) CONTACTS MARKED "UPS" ARE CLOSED IN THE "UPS" POSITION
3) CONTACTS MARKED "BYPASS" ARE CLOSED IN THE "BYPASS" POSITION
4) CONTACTS MARKED "SBS" ARE CLOSED IN THE "SBS" POSITION
5) WRAP AROUND BY-PASS SWITCH IS FOR SAME INPUT/OUTPUT VOLTAGES ONLY
6) WRAP AROUND BY-PASS SWITCH CAN ONLY BE USED WITHOUT ANY BUILT-IN SECONDARY DISTRIBUTION CIRCUIT BREAKERS IN UPS

OnLine POWER		POWER WAVE 3 / 4 EXTERNAL WRAP AROUND BYPASS SWITCH	
SDR : SS	4/17/24	DWG NO.: 115-TD-016	REV.: A
CHKD : BC	4/17/24		SHT 1 OF 1
APPVD : HN	4/17/24	SUBJECT TO CHANGE WITHOUT NOTICE	

REVISION				
REV	ECO	DESCRIPTION	DATE	APP'D
X2		PRELIMINARY	1/15/14	H.N.
A	16869	NEW RELEASE	3/6/15	H.N.
B	11694	UPDATED FOR THE REVISED BASE	11/2/17	H.N.



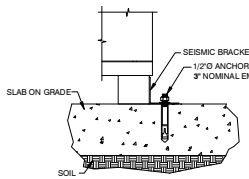
FRONT | SIDE | ISO FRONT LEFT | ISO FRONT RIGHT

NOTES:

1) ASSEMBLE SEISMIC BRACKETS TO CABINET USING SUPPLIED 1/2-13 HEX BOLT, PRIOR TO SECURING CABINET TO FINAL LOCATION.
2) INDICATED MOUNTING HARDWARE TO BE SUPPLIED BY CUSTOMER, REFER TO LOCAL CODES FOR BOLT TYPE AND LENGTH.

INVERTER CABINET (10KVA THRU 60 KVA)

TITLE: ANCHORING BRACKET INSTALLATION					
C-ADD:	S.S.	8/14/12	SIZE: B	DWG: 6001-277	REV: B
CHKD:	SHERRI S.	8/14/12			
APP'VD:	R. VERA	8/14/12	SCALE:	SHT: 1 OF 2	



(2) ANCHORS REQ'D PER ANCHOR BRACKET
(4) ANCHORS REQ'D PER UNIT

1 ANCHOR DETAIL

NOTES:
1. DESIGNED PER THE 2021 IBC / 2022 CBC / 2023 LABC, Fa = 1.2 & Ss = 1.82
2. STORAGE CAPACITY: **2,500#** MAX. WEIGHT.
3. ANCHORS: HILTI KWIK BOLT TZ 2, ICC **#ESR-4266** W/ LABC SUPPLEMENT
4. CONCRETE: **5"** THICK x **2,500** PSI.
5. SOIL BEARING PRESSURE: **500** PSF. (MIN. REQ'D).
6. EVALUATION BASED ON NORTHRIDGE LOCATION (ONE OF THE HIGHEST LA FAULT AREAS) WITH THE FOLLOWING CALCULATION AS A TYPICAL EXAMPLE. (ASSUMED GROUND FLOOR INSTALLATION)

LOADS & DISTRIBUTION: INVERTER CABINET

ANALYSIS BASED ON SECTION 13.3 OF THE ASCE 7-16 SPECIFICATION
REFERENCED IN CHAPTER 16 OF THE 2021 IBC/2022 CBC/2023 LABC

$Fp\ (13.3\text{-}1) = 0.4 \times a_p \times S_{DS} \times Wp / (Rp / Ip)$	0.234 x Wp	
$Fp\ (13.3\text{-}2) = 1.6 \times S_{DS} \times Ip \times Wp$	2.336 x Wp	SHALL NOT BE GREATER THAN
$Fp\ (13.3\text{-}3) = 0.2 \times S_{DS} \times Ip \times Wp$	0.438 x Wp	SHALL NOT BE LESS THAN

SITE CLASS = D
Fa = 1.2
S_S = 1.82
S_{DS} = 1.46
Ip = 1.00
Rp = 2.5 — ASCE 7-16 Table 13.5-1
a_p = 1 — ASCE 7-16 Table 13.5-1

Wp = **2500 LB**

0.7Fp = 0.7*0.438*Wp
= 0.31*2500 LB
= 767 LB

OVERTURNING ANALYSIS:

CABINET HEIGHT, Ht = 63.0 IN
ANCHORS SPACING, D = 25.0 IN

Mot = Vtotal*(1/2 Ht)
= 767 LB * 63 IN * 1/2
= 24,145 IN-LB

Mst = Wp*D/2
= 2500 LB * 25 IN/2
= 31,250 IN-LB

Puplift = (Mot - 0.6*Mst)/D
= (24145 IN-LB - 0.6 * 31250 IN-LB)/25 IN
= 216 LB <= UPLIFT

ANCHORS
ALLOWABLE CAPACITY PER ICC REPORT AND ACI 318-14 CHAPTER 17
PULLOUT : 1170 LB $T_{allowable,\ ASD}$
SHEAR : 2390 LB $V_{allowable,\ ASD}$

COMBINED STRESS = (216 LB/2340 LB) + (767 LB/9560 LB)
= 0.17 < 1.2 OK

USE 1/2"Ø x 3"MIN. EMBED. HILTI KB-TZ2 (ICC ESR-4266) OR APPROVED EQUAL
(4) PER CABINET

CALCULATIONS

POWER COMPANY
800 CYPRESS AVE.
NORTHRIDGE, CA 91324
ADDRESS:

REV.	DATE	BY	DESCRIPTION

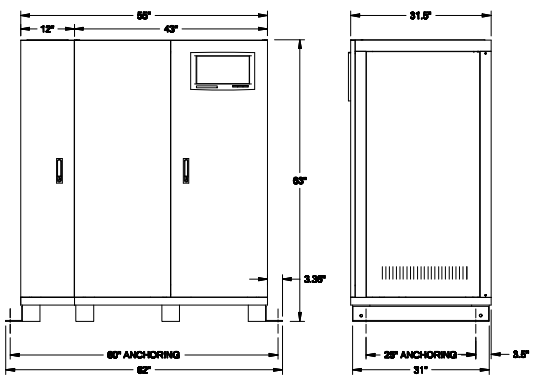
SEIZMIC
EST. 1985
SEIZMIC ENGINEERING, INC.
1130 E. Cypress St.
Covina, California 91724
Tel.(909)865-0989

DRAWN BY:	M.V. / T.C.
DATE:	01/25/24
LAST REV. BY:	
REV. DATE:	
TYPE:	
SCALE:	N.T.S.
APP'D BY:	SAL E. FATEEN

REGISTERED PROFESSIONAL ENGINEER — No. 25909 — CIVIL — STATE OF CALIFORNIA
EXPIRES 12-31-2025

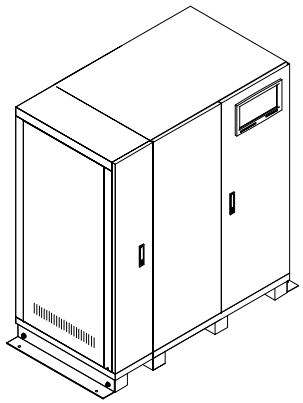
DESCRIPTION:
CABINET DETAILS

DRAWING NUMBER:
24-0186-C



FRONT

SIDE



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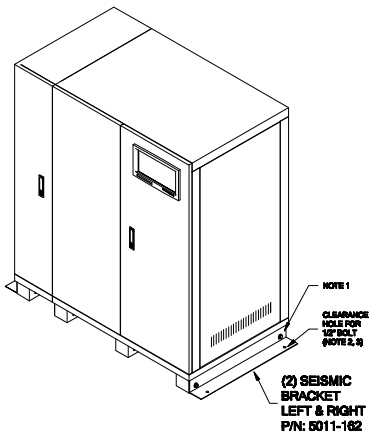


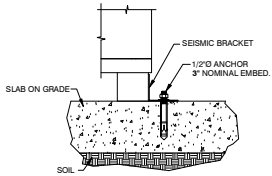
ISO FRONT RIGHT

(80KVA THRU 160 KVA)

NOTES:

1) ASSEMBLE SEISMIC BRACKETS TO CABINET USING SUPPLIED 1/2-13 HEX BOLT, PRIOR TO SECURING CABINET TO FINAL LOCATION.
2) INDICATED MOUNTING HARDWARE TO BE SUPPLIED BY CUSTOMER, REFER TO LOCAL CODES FOR BOLT TYPE AND LENGTH.

SIZE	DWG	REV
B	6001-277	B
SCALE:	SHT. WT:	SHT 2 OF 2



(2) ANCHORS REQ'D PER ANCHOR BRACKET
(4) ANCHORS REQ'D PER UNIT

1 ANCHOR DETAIL

NOTES:
1. DESIGNED PER THE 2021 IBC / 2022 CBC / 2023 LABC, Fa = 1.2 & Ss = 1.82
2. STORAGE CAPACITY: **4,000#** MAX. WEIGHT.
3. ANCHORS: HILTI KWIK BOLT-TZ 2, ICC **#ESR-4266** W/ LABC SUPPLEMENT
4. CONCRETE: **5"** THICK x **2,500** PSI.
5. SOIL BEARING PRESSURE: **500** PSF. (MIN. REQ'D).
6. EVALUATION BASED ON NORTHRIDGE LOCATION (ONE OF THE HIGHEST LA FAULT AREAS) WITH THE FOLLOWING CALCULATION AS A TYPICAL EXAMPLE. (ASSUMED GROUND FLOOR INSTALLATION)

LOADS & DISTRIBUTION: INVERTER CABINET

ANALYSIS BASED ON SECTION 13.3 OF THE ASCE 7-16 SPECIFICATION
REFERENCED IN CHAPTER 16 OF THE 2021 IBC/2022 CBC/2023 LABC

Fp (13.3-1)= 0.4 x ap x S_{DS} x Wp/ (Rp/ Ip) 0.234 x Wp
Fp (13.3-2)= 1.6 x S_{DS} x Ip x Wp 2.336 x Wp SHALL NOT BE GREATER THAN
Fp (13.3-3)= 0.3 x S_{DS} x Ip x Wp 0.438 x Wp SHALL NOT BE LESS THAN

SITE CLASS = D
Fa = **1.2**
Ss = **1.83**
S_{DS} = 1.46
Ip = 1.00
Rp = 2.5 ASCE 7-16 Table 13.5-1
ap = 1 ASCE 7-16 Table 13.5-1

Wp = **4000 LB**

0.7Fp = 0.7*0.438*Wp
= 0.31*4000 LB
= 1,226 LB

OVERTURNING ANALYSIS:

CABINET HEIGHT, Ht = 63.0 IN
ANCHORS SPACING, D = 25.0 IN

Mot = Vtotal*(1/2 Ht)
= 1226 LB * 63 IN * 1/2
= 38,632 IN-LB

Mst = Wp*D/2
= 4000 LB * 25 IN/2
= 50,000 IN-LB

Puplift = (Mot - 0.6*Mst)/D
= (38632 IN-LB - 0.6 * 50000 IN-LB)/25 IN
= 345 LB <= UPLIFT

ANCHORS
ALLOWABLE CAPACITY PER ICC REPORT AND ACI 318-14 CHAPTER 17
PULLOUT : 1170 LB $T_{allowable,\ ASD}$
SHEAR : 2390 LB $V_{allowable,\ ASD}$

COMBINED STRESS = (345 LB/2340 LB) + (1226 LB/9560 LB)
= 0.28 < 1.2 OK

USE 1/2"Ø x 3" MIN. EMBED. HILTI KB-TZ2 (ICC ESR-4266) OR APPROVED EQUAL
(4) PER CABINET

CALCULATIONS

ADDRESS:
POWER COMPANY
SWITCHGEAR
NORTHRIDGE, CA 91324

REV.	DATE	BY	DESCRIPTION

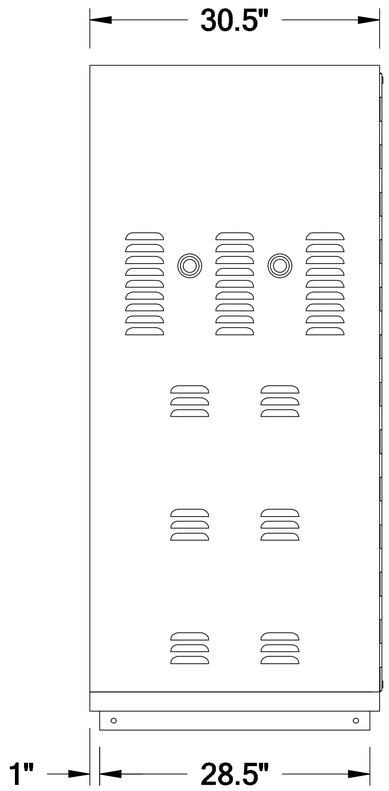
SEIZMIC
EST. 1985
SEIZMIC ENGINEERING, INC.
1130 E. Cypress St.
Covina, California 91724
Tel.(909)869-0989

DRAWN BY:	M.V. / T.C.
DATE:	01/25/24
LAST REV. BY:	
REV. DATE:	
TYPE:	
SCALE:	N.T.S.
APRV'D BY:	SAL E. FATEEN

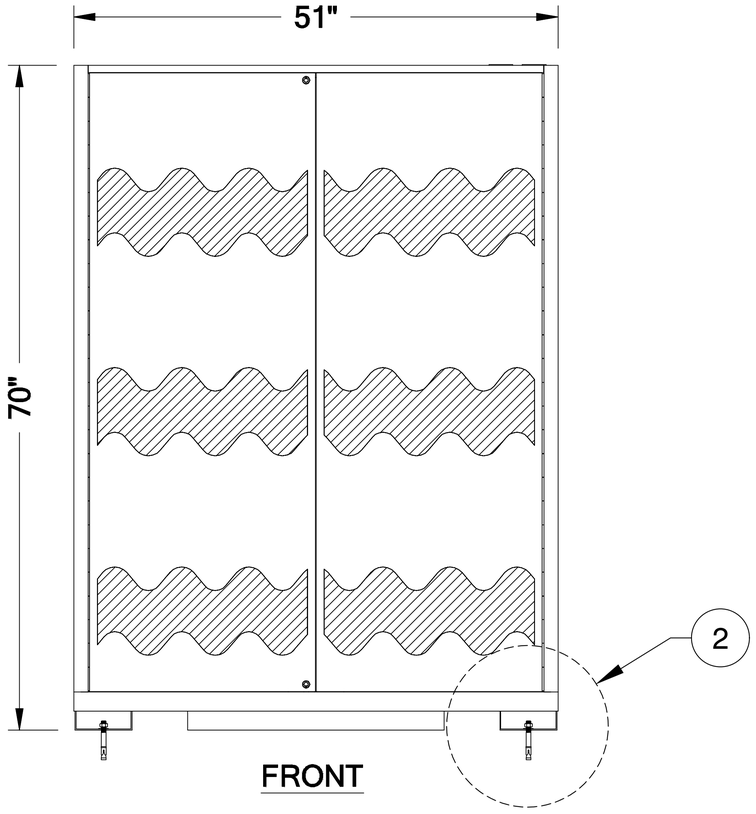
REGISTERED PROFESSIONAL ENGINEER SAL E. FATEEN No. 25989 CIVIL STATE OF CALIFORNIA
EXPIRES 12-31-2025

DESCRIPTION:
CABINET DETAILS

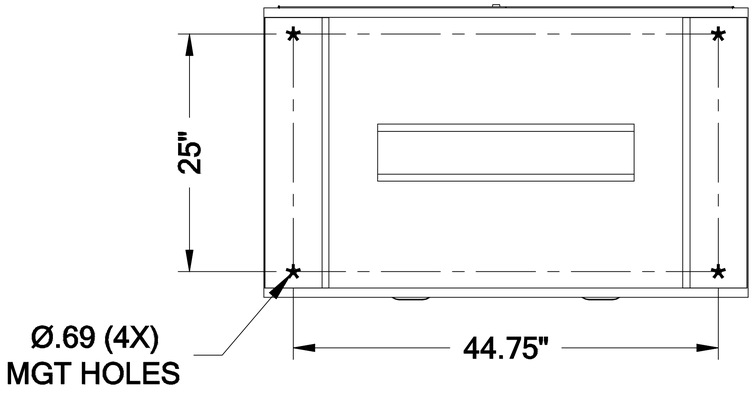
DRAWING NUMBER:
24-0186-D



SIDE

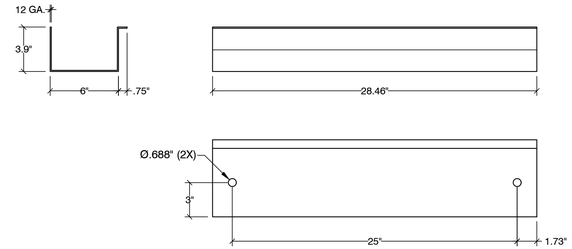


FRONT

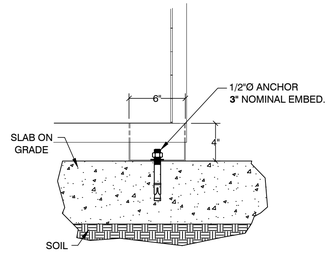


BOTTOM

✱ -DENOTES ANCHOR LOCATION



1 ANCHOR BRACKET DETAIL



(4) ANCHORS REQ'D PER UNIT

NOTES:
1. DESIGNED PER THE 2021 IBC / 2022 CBC / 2023 LABC, Fa = 1.2 & Ss = 1.82
2. STORAGE CAPACITY: **4,640#** MAX. WEIGHT.
3. ANCHORS: HILTI KWIK BOLT TZ 2, ICC **#ESR-4266** W/ LABC SUPPLEMENT
4. CONCRETE: **5"** THICK x **2,500** PSI.
5. SOIL BEARING PRESSURE: **500** PSF. (MIN. REQ'D).
6. EVALUATION BASED ON NORTHRIDGE LOCATION (ONE OF THE HIGHEST LA FAULT AREAS) WITH THE FOLLOWING CALCULATION AS A TYPICAL EXAMPLE. (ASSUMED GROUND FLOOR INSTALLATION)

2 ANCHOR DETAIL

LOADS & DISTRIBUTION:

ANALYSIS BASED ON SECTION 13.3 OF THE ASCE 7-16 SPECIFICATION
REFERENCED IN CHAPTER 16 OF THE 2021 IBC/2022 CBC/2023 LABC

Fp (13.3-1)= 0.4 x ap x S_{DS} x Wp/ [Rp/ Ip]	0.234 x Wp	
Fp (13.3-2)= 1.6 x S_{DS} x Ip x Wp	2.336 x Wp	SHALL NOT BE GREATER THAN
Fp (13.3-3)= 0.3 x S_{DS} x Ip x Wp	0.438 x Wp	SHALL NOT BE LESS THAN

SITE CLASS = D
Fa = **1.2**
Ss = **1.82**
S_{DS} = 1.46
Ip = 1.00
Rp = 2.5 ASCE 7-16 Table 13.5-1
ap = 1 ASCE 7-16 Table 13.5-1

Wp = **4640 LB**

0.7Fp = 0.7*0.438*Wp
= 0.31*4640 LB
= 1,423 LB

OVERTURNING ANALYSIS:

CABINET HEIGHT, Ht = 70.0 IN
ANCHORS SPACING, D = 25.0 IN

Mot = Vtotal*(1/2 Ht)
= 1423 LB * 70 IN * 1/2
= 49,792 IN-LB

Mst = Wp*D/2
= 4640 LB * 25 IN/2
= 58,000 IN-LB

Puplift = (Mot - 0.6*Mst)/D
= (49792 IN-LB - 0.6 * 58000 IN-LB)/25 IN
= 600 LB <= UPLIFT

ANCHORS
ALLOWABLE CAPACITY PER ICC REPORT AND ACI 318-19 CHAPTER 17
PULLOUT : 1170 LB $T_{allowable,\ ASD}$
SHEAR : 2390 LB $V_{allowable,\ ASD}$

COMBINED STRESS = (600 LB/2340 LB) + (1423 LB/9560 LB)
= 0.41 < 1.2 OK

USE 1/2"Ø x 3"MIN. EMBED. HILTI KB-TZ2 (ICC ESR-4266) OR APPROVED EQUAL
(4) PER CABINET

CABINET ELEVATIONS

CALCULATIONS

ADDRESS:
POWER COMPANY
9301 TAMPA AVE
NORTHRIDGE, CA 91324

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EST. 1985
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REGISTERED PROFESSIONAL ENGINEER
SAL E. FATEEN
No. 25069
CIVIL
STATE OF CALIFORNIA
EXPIRES
12-31-2025

DESCRIPTION:
CABINET DETAILS

DRAWING NUMBER:
23-0067-B