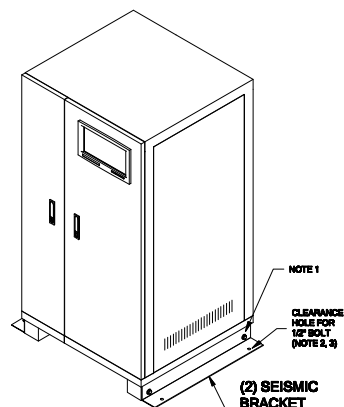
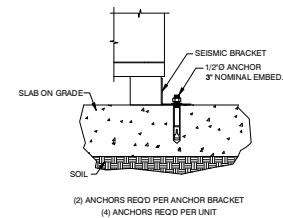




**INVERTER CABINET
(10KVA THRU 60 KVA)**

TITLE										ANCHORING BRACKET INSTALLATION													
CADD:		S.S.		01/4/12		SIZE		DWG		6001-277										REV		B	
CHKD:		SHERRIE S.		01/4/12		B																	
APPV:		R. VERA		01/4/12		SCALE:				EST. BY:				SHEET 1 OF									



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

$F_p [13.3-1] = 0.4 \times a_p \times S_{D08} \times W_p / (R_p / I_p)$	0.234 x Wp	
$F_p [13.3-2] = 1.6 \times S_{D08} \times I_p \times W_p$	2.336 x Wp	SHALL NOT BE GREATER THAN
$F_p [13.3-3] = 0.3 \times S_{D08} \times I_p \times W_p$	0.428 x Wp	SHALL NOT BE LESS THAN

SITE CLASS = D
 $F_a = 1.2$
 $S_z = 1.88$
 $S_{DS} = 1.48$
 $I_p = 1.00$
 $R_p = 2.5$
 $a_p = 1$

ASCE 7-16 Table 13.5-1
 ASCE 7-16 Table 13.5-1

$$\begin{aligned} 0.7F_p &= 0.7 \cdot 0.43 \\ &= 0.31 \cdot 25 \\ &= 767 \text{ LB} \end{aligned}$$

OVERTURNING ANALYSIS:

CABINET HEIGHT, $H_c = 83.0$ IN
ANCHORS SPACING, $D = 25.0$ IN

$$\begin{aligned} \text{Mot} &= V_{\text{total}} * (1/2 Ht) \\ &= 767 \text{ LB} * 63 \text{ IN} * \end{aligned}$$

$$\begin{aligned} M_{st} &= W_p \cdot D/2 \\ &= 2500 \text{ LB} \cdot 25 \text{ IN}/2 \\ &= 31,250 \text{ IN-LB} \end{aligned}$$

$$\begin{aligned} \text{Puplift} &= (\text{Mst} + 0.6 * \text{Mst}) / D \\ &= (24145 \text{ IN-LB} + 0.6 * 31250 \text{ IN-LB}) / 25 \text{ IN} \\ &= 216 \text{ LB} \quad \leftarrow \text{UPLIFT} \end{aligned}$$

ANCHORS

ANCHORS
ALLOWABLE CAPACITY PER ICC REPORT AND ACI 318-14 CHAPTER 17

PULLOUT: 1170 LB
SHEAR: 2390 LB

$$\text{COMBINED STRESS} = (216 \text{ LB}/2340 \text{ LB}) + (767 \text{ LB}/9560 \text{ LB})$$

$$= 0.17 \quad \ll 1.2 \text{ OK}$$

USE 1/2"Ø x 3"MIN. EMBED. HILTI KB-T22 (ICC ESR-4266) OR APPROVED EQUAL
(4) PER CABINET

(9) *Reference*

NOTES:

1. DESIGNED PER THE 2021 IBC / 2022 CBC / 2023 IABC.
Fa = 1.2 & Ss = 1.82
2. STORAGE CAPACITY: **2,500 # MAX. WEIGHT.**
3. ANCHORS: HILTI HWIK BOLT T 2.
4. ICC #ESR-4266 W/ LABC SUPPLEMENT
5. CONCRETE: 8" THICK x **2,500 PSI.**
6. SOIL BEARING PRESSURE: **500 PSF (MIN. REQ'D)**
7. EVALUATION BASED ON NORTHRIDGE LOCATION
(ONE OF THE HIGHEST LA FAULT AREAS)
WITH THE FOLLOWING CALCULATION AS A TYPICAL EXAMPLE.
(ASSUMED GROUND FLOOR INSTALLATION)

POWER COMPANY
9301 TAMPA AVE.
NORTHBRIDGE, CA 91324

DESCRIPTION

BY

DATE _____

REV.



EST. 1985
SEIZMIC
ENGINEERING, INC.
1130 E. Cypress St.
Covina, California
91724
Tel. (909) 866-0889

DRAWN BY: M.V. / T.C

DATE: 01/25/2

LAST REV. BY:

REV. DATE:

TYPE:	
SCALE:	NTC

APPRVD BY: SALE. FATEE



EXPIRES
12-31-2021

DESCRIPTION

1

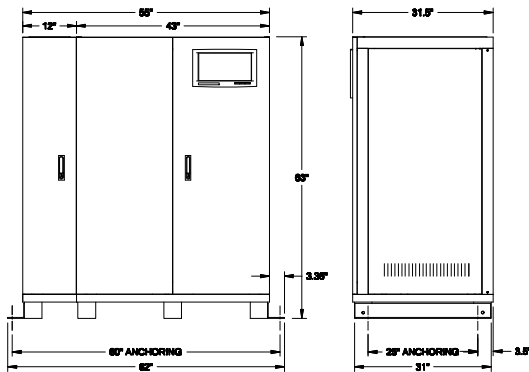
CABI

DETA

1

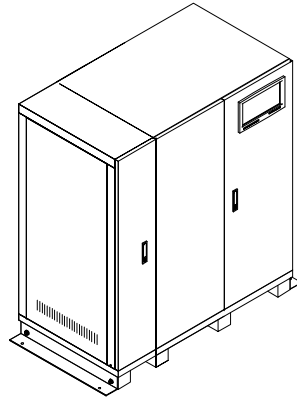
DRAWING NUMBER

CALCULATIONS

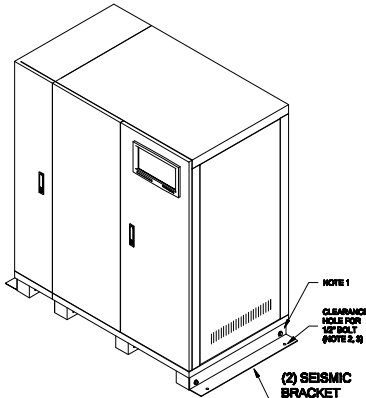


FRONT

SIDE



ISO FRONT LEFT

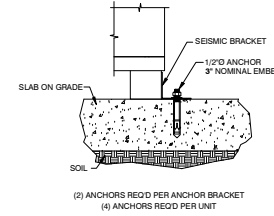


ISO FRONT RIGHT

(80KVA THRU 180 KVA)

- NOTES:
- 1) ASSEMBLE SEISMIC BRACKETS TO CABINET USING SUPPLIED 1/8-13 HEX BOLT, PRIOR TO INSTALLING CABINET TO FINAL LOCATION.
 - 2) INDICATED MOUNTING HARDWARE TO BE SUPPLIED BY CUSTOMER. REFER TO LOCAL CODES FOR BOLT TYPE AND LENGTH.

REV	DATE	DESCRIPTION
B	0601-277	B
SCALE	DR. WTS.	SHEET 1 OF 2



1 ANCHOR DETAIL

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 IABC

$F_p (13.3-1) = 0.4 \times ap \times S_{ap} \times W_p / (R_p \times I_p)$	$0.234 \times W_p$	SHALL NOT BE GREATER THAN
$F_p (13.3-2) = 1.6 \times S_{ap} \times I_p \times W_p$	$2.336 \times W_p$	
$F_p (13.3-3) = 0.3 \times S_{ap} \times I_p \times W_p$	$0.438 \times W_p$	SHALL NOT BE LESS THAN

SITE CLASS = D
 $F_a = 1.2$
 $S_1 = 1.83$
 $S_{a1} = 1.46$
 $I_p = 1.00$
 $R_p = 2.5$
 $R_p = 1$
ASCE 7-16 Table 13.5-1
ASCE 7-16 Table 13.5-1

$W_p = 4000 \text{ LB}$

$$0.7F_p = 0.7 \times 0.438 \times W_p = 0.317 \times 4000 \text{ LB} = 1,226 \text{ LB}$$

OVERTURNING ANALYSIS:
CABINET HEIGHT, H = 63.0 IN
ANCHORS SPACING, D = 25.0 IN

$$M_{ot} = V_{o1} \times H / (1/2 \times H) = 1226 \text{ LB} \times 63 \text{ IN} \times 1/2 = 38,632 \text{ IN-LB}$$

$$M_{ot} = W_p \times D / 2 = 4000 \text{ LB} \times 25 \text{ IN} / 2 = 50,000 \text{ IN-LB}$$

$$P_{uplift} = (M_{ot} - 0.6 \times M_{ot}) / D = (38632 \text{ IN-LB} - 0.6 \times 50000 \text{ IN-LB}) / 25 \text{ IN} = 345 \text{ LB} \quad \text{or UPLIFT}$$

ANCHORS
ALLOWABLE CAPACITY PER ICC REPORT AND ACI 318-14 CHAPTER 17
PULLOUT: 1170 LB $V_{allowable, pull}$
SHEAR: 2390 LB $V_{allowable, shear}$
COMBINED STRESS = $(345 \text{ LB} / 2340 \text{ LB}) + (1226 \text{ LB} / 9560 \text{ LB}) = 0.28 + 1.2 \text{ OK}$

USE 1/2"Ø x 3" MIN. EMBED. HLTI K8-T22 (ICC ESR-4266) OR APPROVED EQUAL
(4) PER CABINET

- NOTES:
1. DESIGNED PER THE 2021 IBC / 2022 CBC / 2023 IABC, $F_a = 1.2$ & $S_e = 1.82$.
 2. STORAGE CAPACITY: 4,000# MAX. WEIGHT.
 3. ANCHORS: HLTI K8-BOLT T22, ICC #ESR-4266 W/ IABC SUPPLEMENT
 4. CONCRETE: 6" THICK x 2,800 PSI.
 5. SOIL BEARING PRESSURE: 800 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)

POWER COMPANY
NORTHBRIDGE, CA 91324

ADDRESS

DESCRIPTION

BY

DATE

REV

DATE

REV

DATE

REV

DATE

TYPE

SCALE

APPROVED BY

DATE

COPIES

DESCRIPTION

CABINET

DRAWING NUMBER

24-0186-D