

**APPLICATION FOR OSHPD PREAPPROVAL** 

OF MANUFACTURER'S CERTIFICATION (OPM)  APPLICATION #: OPM-0112-13										
OSHPD Preapproval of Manufacturer's Certification (OPM)										
Type:  ☐ New ☐ Renewal ☐ Update to Pre-CBC 2013 OPA Number:										
Manufacturer Information										
Manufacturer: Chatsworth Products Inc.										
Manufacturer's Technical Representative: Brandi Oldt										
Mailing Address: 3004 South Austin Ave., Georgetown, TX. 78626										
Telephone: (800) 834-4969 Email: Dboldt@chatsworth.com										
Product Information										
Product Name: Z4 Series Cabinet System										
Product Type: Computer OPM-0112-13										
Product Model Number: 40U (4 sizes) and 43U (4 sizes)										
BY: Jeffrey Y. Kikumoto										
General Description: Computer Data Storage – Storage Cabinet										
DATE: 10/09/2014										
Applicant Information										
Applicant Company Name: EASE Co.										
Contact Person: Jonathan Roberson, S.E.										
Mailing Address: _5877 Pine Ave. Suite 210, Chino Hills, CA. 91709										
Telephone: (909) 606-7622 Email: J.Roberson@EASECo.com  I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.										
Signature of Applicant: Date: 6/27/14										
Title: Principal Engineer Company Name: EASE Co.										

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



STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY OSH-FD-700 (REV 1/24/13)

Page 1 of 2

OFFICE USE ONLY



# OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT FACILITIES DEVELOPMENT DIVISION

Registered Design Professional Preparing Engineering Recommendations
Company Name: EASE Co.
Name: Jonathan Roberson, S.E. California License Number: S4197
Mailing Address: _5877 Pine Ave. Suite 210, Chino Hills, CA. 91709
Telephone: 909-606-7667 Email: J.Roberson@EASECo.com
OSHPD Special Seismic Certification Preapproval (OSP)
<ul> <li>□ Special Seismic Certification is preapproved under OSP-(Separate application for OSP is required)</li> <li>□ Special Seismic Certification is not preapproved</li> </ul>
Certification Method(s)
☐ Testing in accordance with: ☐ ICC-ES AC156 ☐ FM 1950-10 ☐ Other* (Please Specify): ☐
*Use of test criteria other than those adopted by the California Building Standards Code, 2013 (CBSC 2013) 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 2013 may be used when approved by OSHPD prior to testing.  Analysis  Experience Data  Combination of Testing, Analysis, and/or Experience Data (Please Specify):  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 2013 ONLY
Signature: Date: October 09, 2014  Print Name: Jeffrey Y. Kikumoto
Title: Senior Structural Engineer  Condition of Approval (if applicable):
Condition of Approval (if applicable):

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os Dpo

Page 2 of 2



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

Office of Statewide Health Planning and Development
PREAPPROVAL OF MANUFACTURER'S CERTIFICATION
OPM-0112-13

THIS PREAPPROVAL CONFORMS TO THE 2013 CALIFORNIA BUILDING CODE

MANUFACTURER: CHATSWORTH PRODUCTS, INC.

EQUIPMENT NAME: **Z4 Series Cabinet System** 

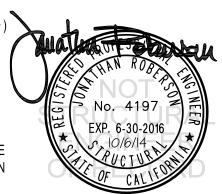
### Sheet: 1 of 10 Date: 10/6/14

#### **GENERAL NOTES**

- 1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE 2013 CBC. THE DEMANDS (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE 2013 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 2013 CALIFORNIA BUILDING CODE WHERE SDS IS NOT GREATER THAN 2.5, 2.20, 180 & 1.40. SEE DETAIL FOR APPLICABILITY
- 4. FORCES PER ASCE 7-10 SECTION 13.3.1, EQUATIONS 13.3-1, 13.3-2 & 13.3-3,
  - WHERE SDS = 1.40,  $A_p = 2.5$ ,  $I_p = 1.5$ ,  $R_p = 6.0$ , z/h = 0 AT CONCRETE SLAB. SEE FOLLOWING SHEETS FOR  $\Omega_0$
  - WHERE SDS = 1.80,  $a_p = 2.5$ ,  $I_p = 1.5$ ,  $R_p = 6.0$ , z/h = 0 AT CONCRETE SLAB. SEE FOLLOWING SHEETS FOR  $\Omega_o$
  - WHERE SDS = 2.20,  $a_D$  = 2.5,  $I_D$  = 1.5,  $R_D$  = 6.0, z/h = 0 AT CONCRETE SLAB. SEE FOLLOWING SHEETS FOR  $\Omega_0$
  - WHERE SDS = 2.5,  $\mathbf{a}_P$  = 2.5,  $\mathbf{I}_P$  = 1.5,  $\mathbf{R}_P$  = 6.0,  $\mathbf{z}/h$  = 0 AT CONCRETE SLAB &  $\mathbf{z}/h \le 1$  AT CONCRETE SLAB ON METAL DECK. SEE FOLLOWING SHEETS FOR  $\Omega_0$
- 5. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
- 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 < 1)
- 8. CONCRETE SLAB ON GRADE DETAIL VALID FOR DEMANDS SHOWN AT ANY ELEVATION BELOW GRADE. (i.e. z/h < 0)

#### 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 2013 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 SDS & z/h RESULT IN SEISMIC FORCES (Eh, Ev) 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.
- 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 6hef FROM THIS UNIT'S ANCHORS.



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## CHATSWORTH PRODUCTS, INC.

DES. J. ROBERSON 11-1426 JOB NO. 10/6/14 DATE

\* ASTM A193 GRADE B7

**Z4 Series Cabinet System** 

#### 10. POST-INSTALLED ANCHORS:

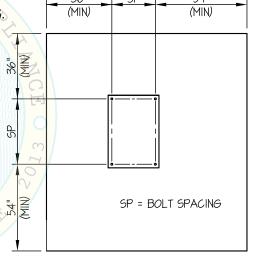
A. ATTACHMENT IS TO BE MADE WITH THE ANCHORS LISTED BELOW AND INSTALLED AS DESCRIBED IN THE CORRESPONDING ICC REPORT.

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
3/8"	Sand Light Weight	3000	Hilti Kwik Bolt TZ	ESR-1917	2"	N/A	N/A	See Pg 10 of 10	25 FT-LB	1186 lb
M12	Normal Weight	3000	Hilti HSL-3	ESR-1545	3.15"	12"	36"	6"	44 FT-LB	4478 lb
3/4" *	Normal Weight	3000	Hilti HIT-HY	ESR-3187	6"	12"	36"	8"	N/A	5912 lb

B. THIS PREAPPROVAL ALLOWS FOR UP TO A MAXIMUM OF 2 ADJACENT CONCRETE SLAB EDGES, 36" AWAY MINIMUM (i.e. - CORNER). SEE ADJACENT DETAIL FOR ADDITIONAL MINIMUM ALLOWABLE CONCRETE EDGE DISTANCES.

(MIN)

- C. TESTING OF POST-INSTALLED ANCHORS PER 2013 CBC, 1913A.7: TESTING SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO OSHPD
  - (i) AFTER AT LEAST 24 HOURS HAVE ELAPSED SINCE INSTALLATION, to DIRECT PULL TENSION TEST (OR APPLY MANUFACTURER'S RECOMMENDED INSTALLATION TORQUE PER ICG-ES-ESR) AT 0.1.4 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.
- 11. BOLTS THROUGH CONCRETE ON METAL DECK
  - A. BOLTS SHALL BE TORQUED BY 3/4 TURN OF THE NUTS AFTER THE SNUG TIGHT (THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT) CONDITION IS ACHIEVED, UNLESS OTHERWISE NOTED.
  - B. THROUGH BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16) FOR CONCRETE.
  - C. THROUGH-BOLTS IN CONCRETE SHALL RECEIVE SPECIAL INSPECTION AND TESTING (THROUGH BOLTS WITH STEEL TO STEEL CONNECTION IN TENSION DO NOT REQUIRE TENSION TESTING) IN ACCORDANCE WITH REQUIREMENTS FOR POST-INSTALLED ANCHORS.



TYPICAL CONCRETE EDGE DETAIL



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CHATSWORTH PRODUCTS, INC.

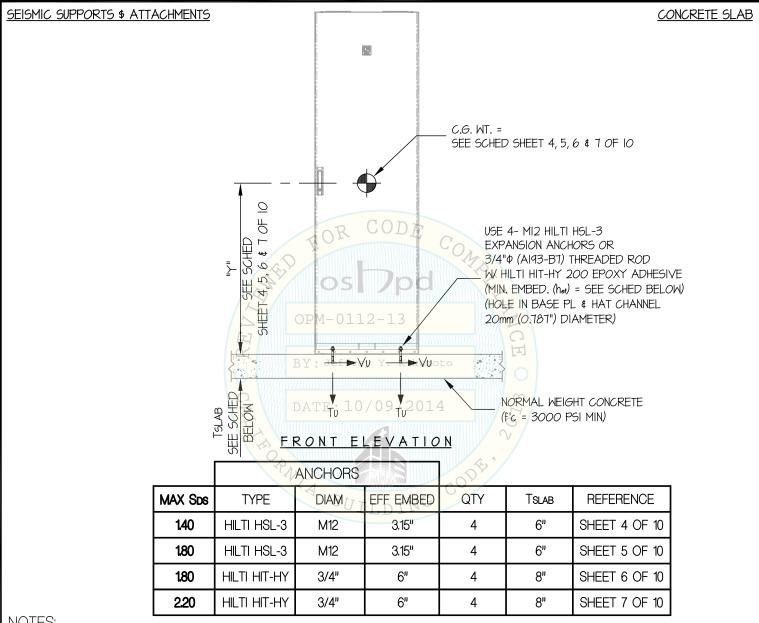
11-1426 JOB NO.

DES. J. ROBERSON

SHEETS

**Z4 Series Cabinet System** 

10/6/14 DATE



#### NOTES:

1. FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10 STRENGTH DESIGN IS USED. (ap = 2.5, lp = 1.5, Rp = 6.0,  $\Omega_0$  = 2.5, z/h = 0)

2. CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASS ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.

3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.

4. SEE GENERAL NOTES: SHEETS 1 AND 2



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## CHATSWORTH PRODUCTS, INC.

DES. J. ROBERSON 11-1426 JOB NO.

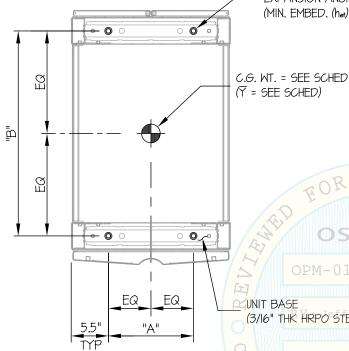
DATE

10/6/14

SHEETS

## **Z4 Series Cabinet System**

MAX Sps ≤ 1.40 USE 4- MI2 HILTI HSL-3 EXPANSION ANCHORS (MIN. EMBED. (het) = 3.15")



PLAN AT BASE

SEISMIC SUPPORTS \$ ATTACHMENTS

UNI	T NUMBER	RACK WEIGHT (lb.)	TOTAL WEIGHT ** (lb.)	"Y" (in.)	"A" (in.)	"B" (in.)	Tu (lb.)	Vu (lb.)
400	Jx600x1050	446	2046	33.76	12.6	37.1	3139	808
40L	Jx600x1200	472	2072	33.76	12.6	43	3117	818
43L	Jx600x1050	466	2066	34.67	12.6	37.1	3264	816
431	Jx600x1200	493	2093	34.67	12.6	43	3243	827

TOTAL WT. = MAX OPERATING WT = RACK WT + CONTENT WT

EOR

**WUNIT BASE** 

(3/16" THK HRPO STEEL, AIOII SS GR 30, Fy = 30 KSI MIN)



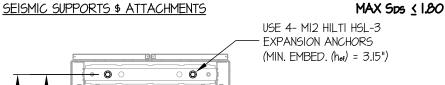
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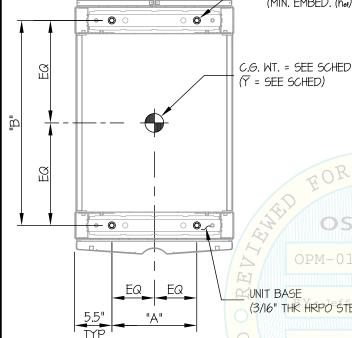
## CHATSWORTH PRODUCTS, INC.

DES. J. ROBERSON 11-1426 JOB NO. 10/6/14 DATE

**Z4** Series Cabinet System

CONCRETE SLAB





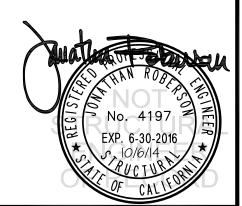
PLAN AT BASE

UNIT NUMBER	RACK WEIGHT (lb.)	TOTAL WEIGHT ** (lb.)	"Y" (in.)	"A" (in.)	"B" (in.)	Tu (lb.)	Vu (lb.)
40Ux800x1050	512	2112	33.76	20.5	37.1	3075	1072
40Ux800x1200	539	2139	33.76	20.5	43	3033	1086
43Ux800x1050	535	2135	34.67	20.5	37.1	3209	1084
43Ux800x1200	563	2163	34.67	20.5	43	3167	1098

\*\* TOTAL WT. = MAX OPERATING WT = RACK WT + CONTENT WT

UNIT BASE

(3/16" THK HRPO STEEL, AIOII SS GR 30, Fy = 30 KSI MIN)



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## CHATSWORTH PRODUCTS, INC.

DES. J. ROBERSON 11-1426 JOB NO. 10/6/14 DATE

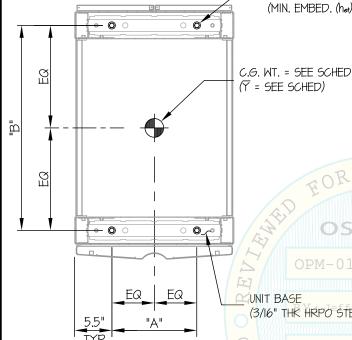
**Z4 Series Cabinet System** 

CONCRETE SLAB

SHEETS



USE 4- 3/4" (AI93-BT) THREADED ROD W/ HILTI HIT-HY 200 EPOXY ADHESIVE (MIN. EMBED.  $(h_{ef}) = 6"$ )



PLAN AT BASE

SEISMIC SUPPORTS \$ ATTACHMENTS

	UNIT NUMBER	RACK WEIGHT (lb.)	TOTAL WEIGHT ** (lb.)	"Y" (in.)	"A" (in.)	"B" (in.)	Tu (lb.)	Vu (lb.)
	40Ux600x1050	446	2046	33.76	12.6	37.1	4164	1038
	40Ux600x1200	472	2072	33.76	12.6	43	4138	1052
	43Ux600x1050	466	2066	34.67	12.6	37.1	4326	1048
١	43Ux600x1200	493	2093	34.67	12.6	43	4301	1062

TOTAL WT. = MAX OPERATING WT = RACK WT + CONTENT WT

UNIT BASE

(3/16" THK HRPO STEEL, AIOII SS GR 30, Fy = 30 KSI MIN)



No. 4197 EXP. 6-30-2016

SEISMIC SUPPORTS \$ ATTACHMENTS

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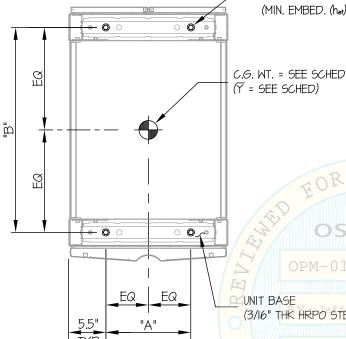
CONCRETE SLAB

SHEETS

## **Z4** Series Cabinet System

1.80 < MAX Sps < 2.20 USE 4- 3/4" (AI93-BT) THREADED ROD

W/ HILTI HIT-HY 200 EPOXY ADHESIVE (MIN. EMBED.  $(h_{ef}) = 6"$ )



PLAN AT BASE

UNIT NUMBER	RACK WEIGHT (lb.)	TOTAL WEIGHT ** (lb.)	"Y" (in.)	"A" (in.)	"B" (in.)	Tu (lb.)	Vu (lb.)
40Ux800x1050	512	2112	33.76	20.5	37.1	3873	1309
40Ux800x1200	539	2139	33.76	20.5	43	3823	1326
43Ux800x1050	535	2135	34.67	20.5	37.1	4027	1324
43Ux800x1200	563	2163	34.67	20.5	43	3977	1341

\*\* TOTAL WT. = MAX OPERATING WT = RACK WT + CONTENT WT

UNIT BASE

(3/16" THK HRPO STEEL, AIOII SS GR 30, Fy = 30 KSI MIN)





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**Z4 Series Cabinet System** 

DES. J. ROBERSON 11-1426 JOB NO. 10/6/14

DATE

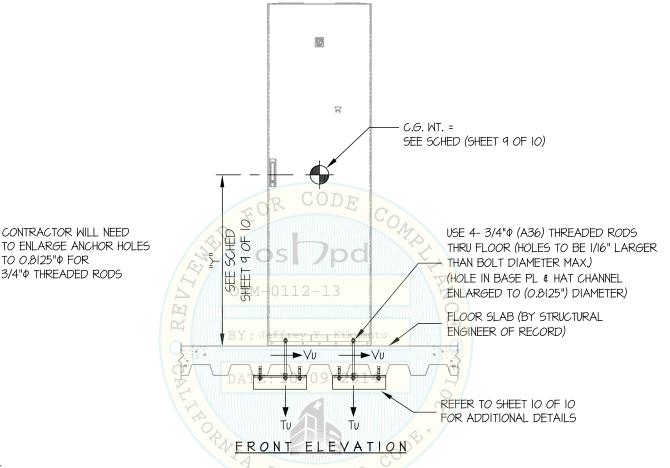
SEISMIC SUPPORTS \$ ATTACHMENTS

NOTE: CONTRACTOR WILL NEED

TO 0.8125"Φ FOR

3/4" THREADED RODS

CONCRETE SLAB ON METAL DECK

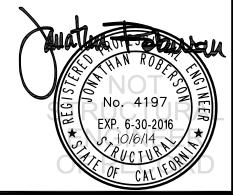


NOTES:

1. FORCES ARE DETERMINED PER 2013 CALIFORNIA BUILDING CODE AND ASCE 7-10. STRENGTH DESIGN IS USED. (SDS = 2.5,  $\Delta p$  = 2.5, |p| = 1.5, Rp = 6.0,  $\Omega_0$  = 2.5,  $z/h \le 1$ )

> HORIZONTAL FORCE (En) = 1.88 Wp HORIZONTAL FORCE (Emh) = 4.69 Wp (FOR CONCRETE ANCHORAGE) VERTICAL FORCE (Ev) = 0.50 Wp

- CENTER OF GRAVITY (C.G.) AND WEIGHT ARE THE GOVERNING PARAMETERS FOR DESIGN. THIS PREAPPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
- 3. STRUCTURAL ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.
- 4. SEE GENERAL NOTES: SHEETS 1 AND 2



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CONCRETE SLAB ON METAL DECK

## CHATSWORTH PRODUCTS, INC.

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DATE

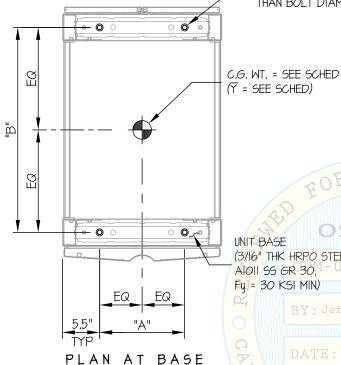
RACK TOTAL

10/6/14

SHEETS

## **Z4** Series Cabinet System

USE 4-3/4" (A36) THREADED RODS THRU FLOOR (HOLES TO BE 1/16" LARGER THAN BOLT DIAMETER MAX.)

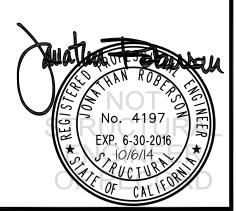


SEISMIC SUPPORTS \$ ATTACHMENTS

UNIT BASE (3/16" THK HRPO STEEL Aloll 55 GR 30, Fy = 30 KSI MIN)

UNIT NUMBER	WEIGHT (lb.)	WEIGHT **(lb.)	"Y" (in.)	"A" (in.)	"B" (in.)	Tu (lb.)	Vu (lb.)
40Ux600x1050	446	2046	33.76	12.6	37.1	3908	962
40Ux600x1200	472	2072	33.76	12.6	43	3884	974
43Ux600x1050	466	2066	34.67	12.6	37.1	4058	971
43Ux600x1200	493	2093	34.67	12.6	43	4035	984
40Ux800x1050	512	2112	33.76	20.5	37.1	2909	993
40Ux800x1200	539	2139	33.76	20.5	43	2870	1005
43Ux800x1050	535	2135	34.67	20.5	37.1	3025	1004
43Ux800x1200	563	2163	34.67	20.5	43	2987	1017

\*\* TOTAL WT. = MAX OPERATING WT = RACK WT + CONTENT WT



# EASE

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DES. J. ROBERSON

10/6/14

**ЈОВ NO.** 11-1426

DATE

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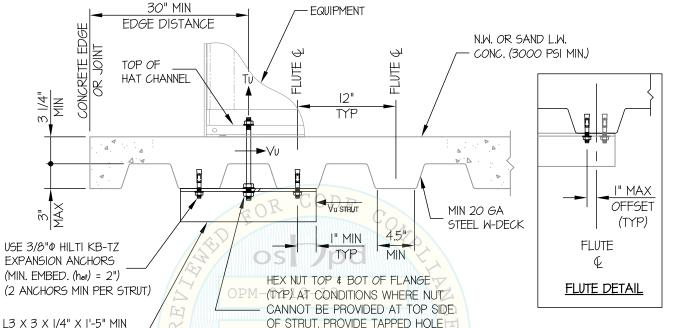
DE 10 SHEETS

BRACKET DETAILS

## **Z4 Series Cabinet System**

SEISMIC SUPPORTS \$ ATTACHMENTS

(A36) AT EACH ANCHOR



MIN STEEL DECK REQUIREMENTS AND STRUT DETAIL

BY: JEHROUGH STRUTUFLANGE,

