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Vantage Enclosure

Structural Calculations
For Seismic Anchorage

Prepared for:
Wright Line

April 20, 2001
RMJ Job No. 01166

RMJ

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Vantage Anchorage

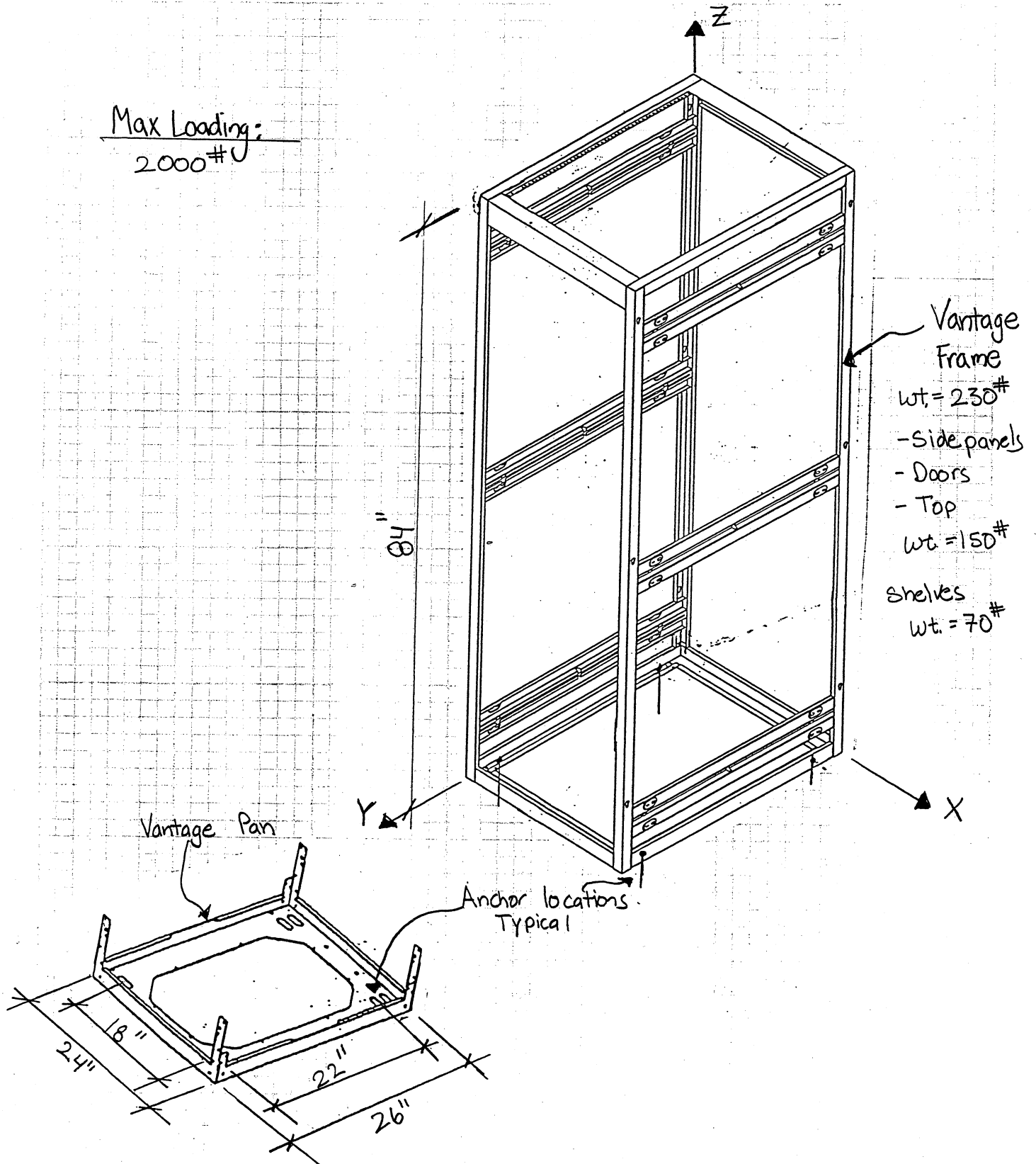
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Max Loading:
2000#



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Vantage Enclosures

Seismic Stability

Load Case: Single Unit/Fully Loaded/Lower Floors

Unit	
Width=	24 inches
Depth=	26 inches
Frame Height=	84 inches
Shelf Height=	N/A inches

Unit	Part	Weight (lbs)	X (in)	Y (in)	Z (in)
Paramt	Frame	230	12.0	13.0	42.0
	Accessories	150	12.0	13.0	42.0
	Shelves	70	12.0	13.0	42.0
	Live Load	2000	12.0	13.0	42.0

Seismic Force

$C_a = 0.66$ (Zone 4, $N_s = 1.3$)
 $I_p = 1.0$ (Importance)
 $a_p = 1.0$ (Cabinets)
 $R_p = 3.0$ (Cabinets)
 $h_x/h_t = 0.5$ (max)
 $W = 2450$ lbs

$F_p = 0.39$ $W = 963$ lbs
 $F_{pmin} = 0.33$ $W = 809$ lbs
 $F_{pmax} = 1.89$ $W = 4620$ lbs
 $F_p = 0.39$ $W = 963$ lbs

Longitudinal Anchorage Spacing= 18.0 in.
 Transverse Anchorage Spacing= 22.0 in.

Longitudinal Stability

Overturning moment= 40425 in-lbs
 0.9 X Resisting moment= 26460 in-lbs

Anchorage Force (lbs)

776

Transverse Stability (Backward)

Overturning moment= 40425 in-lbs
 0.9 X Resisting moment= 28665 in-lbs

Anchorage Force (lbs)

535

Transverse Stability (Forward)

Overturning moment= 40425 in-lbs
 0.9 X Resisting moment= 28665 in-lbs

Anchorage Force (lbs)

535

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Vantage Enclosures

Seismic Stability

Load Case: Single Unit/Fully Loaded/Upper Floors

Unit	
Width=	24 inches
Depth=	26 inches
Frame Height=	84 inches
Shelf Height=	N/A inches

Unit	Part	Weight (lbs)	X (in)	Y (in)	Z (in)
Paramt	Frame	230	12.0	13.0	42.0
	Accessories	150	12.0	13.0	42.0
	Shelves	70	12.0	13.0	42.0
	Live Load	2000	12.0	13.0	42.0

Longitudinal Anchorage Spacing= 18.0 in.
Transverse Anchorage Spacing= 22.0 in.

Seismic Force

$C_a = 0.66$ (Zone 4, $N_a = 1.3$)
 $I_p = 1.0$ (Importance)
 $a_p = 1.0$ (Cabinets)
 $R_p = 3.0$ (Cabinets)
 $h_x/h_t = 1.0$ (max)
 $W = 2450$ lbs

$F_p = 0.63 W = 1540$ lbs
 $F_{pmin} = 0.33 W = 809$ lbs
 $F_{pmax} = 1.89 W = 4620$ lbs
 $F_p = 0.63 W = 1540$ lbs

Longitudinal Stability

Overturning moment= 64680 in-lbs
0.9 X Resisting moment= 26460 in-lbs

Anchorage Force (lbs)

2123

Transverse Stability (Backward)

Overturning moment= 64680 in-lbs
0.9 X Resisting moment= 28665 in-lbs

Anchorage Force (lbs)

1637

Transverse Stability (Forward)

Overturning moment= 64680 in-lbs
0.9 X Resisting moment= 28665 in-lbs

Anchorage Force (lbs)

1637

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Vantage
Anchorage

Job No.

01166

Date

4/01

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Anchors

Use "Red Head" $\frac{3}{8}$ " $\emptyset$ Trubolt Wedge Anchors
(I.C.B.O. Report No. 1372) Embedded 3" into 3000 psi
regular wt. concrete at Lower Floors & $\frac{1}{2}$ " $\emptyset$ Trubolt Wedge
Anchor embedded 4" into 3000 psi at upper floors.

$$\frac{3}{8}" \emptyset \text{ Capacity} = 588^{\#} \times 1.33 = 784^{\#}$$

$$\frac{1}{2}" \emptyset \text{ Capacity} = 890^{\#} \times 1.33 = 1183^{\#}$$

At lower floors (less than 50% of building ht.)

Max Tension

$$\text{Single Unit Long.} = 776^{\#} / 2 \text{ Anchors} = 388^{\#}$$

$$\text{" Trans.} = 535^{\#} / 2 \text{ Anchors} = 267.5^{\#}$$

$$T_{\max} = 388^{\#} < 784^{\#} \therefore \text{OK}$$

Use $\frac{3}{8}" \emptyset$ Anchor ea. corner &
intermediate joint.

At upper floors (Greater than 50% of building ht.)

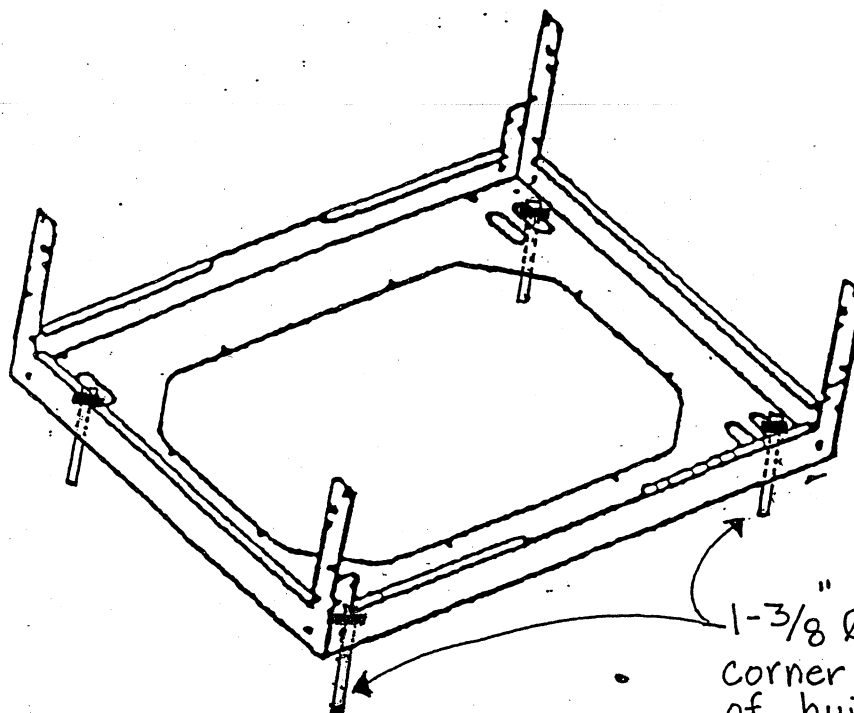
Max. Tension

$$\text{Single Unit Long.} = 2123^{\#} / 2 \text{ Anchors} = 1061.5^{\#}$$

$$\text{" Trans.} = 1637^{\#} / 2 \text{ Anchors} = 818.5^{\#}$$

$$T_{\max} = 1061.5^{\#} < 1183^{\#} \therefore \text{OK}$$

Use $\frac{1}{2}" \emptyset$ Anchor ea. corner
& intermediate joint.

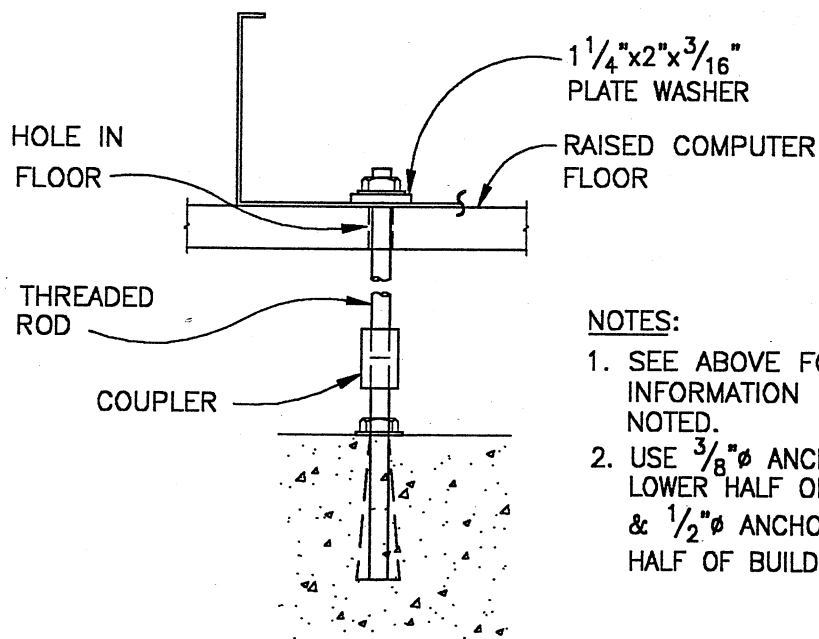
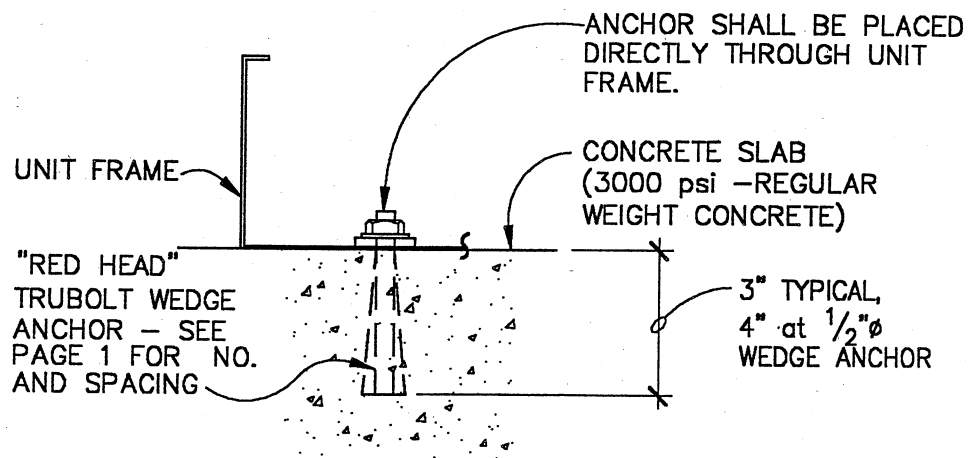


1-3/8" Ø Anchor each
corner at lower half
of building.
1-1/2" Ø Anchor each
corner at upper half
of building.

NOTES:

1. LOWER HALF OF BUILDING IS DEFINED AS THE ANCHORAGE LOCATION BEING LESS THAN OR EQUAL TO HALF THE TOTAL HEIGHT OF THE BUILDING. FOR INSTANCE THIS WOULD INCLUDE THE FOLLOWING:
ALL BASEMENT AND GROUND FLOOR INSTALLATIONS, THE FIRST AND SECOND FLOORS OF TWO AND THREE STORY BUILDING. THE FIRST, SECOND, AND THIRD FLOORS OF FOUR AND FIVE STORY BUILDING, ETC.
2. THE UPPER HALF OF BUILDING IS DEFINED AS THE ANCHORAGE LOCATION BEING GREATER THAN HALF THE TOTAL HEIGHT OF THE BUILDING, SEE NOTE 1

RMJ Structural Engineers Robinson Meier Jully & Associates 103 Linden Avenue So. San Francisco, CA 94080 650 871-2282 Fax 871-2459	WRIGHT LINE VANTAGE ENCLOSURE SEISMIC ANCHORAGE	Job No. 01166
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NOTES:

1. SEE ABOVE FOR INFORMATION NOT NOTED.
2. USE 3/8" ϕ ANCHOR AT LOWER HALF OF BUILDING & 1/2" ϕ ANCHOR AT UPPER HALF OF BUILDING.

ANCHORAGE SECTIONS
WRIGHT LINE SEISMIC ANCHORAGE

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**WRIGHT LINE
VANTAGE ENCLOSURE
SEISMIC ANCHORAGE**

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