FAX Transmission

Number of pages including cover sheet 10

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From: TYSON

Company: Conscious Construction

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Structural Calculations

Skateboard Mural

De Fremery Park
Oakland, CA 94607

Project Number: 2009008
Permit Submittal Date: 2.17.09

REGISTERED PROFESSIONAL ENGINEER
GREGORY PAUL WALLACE
Exp. 3/31-09
S 3808
STRUCTURAL
STATE OF CALIFORNIA

2.26.09

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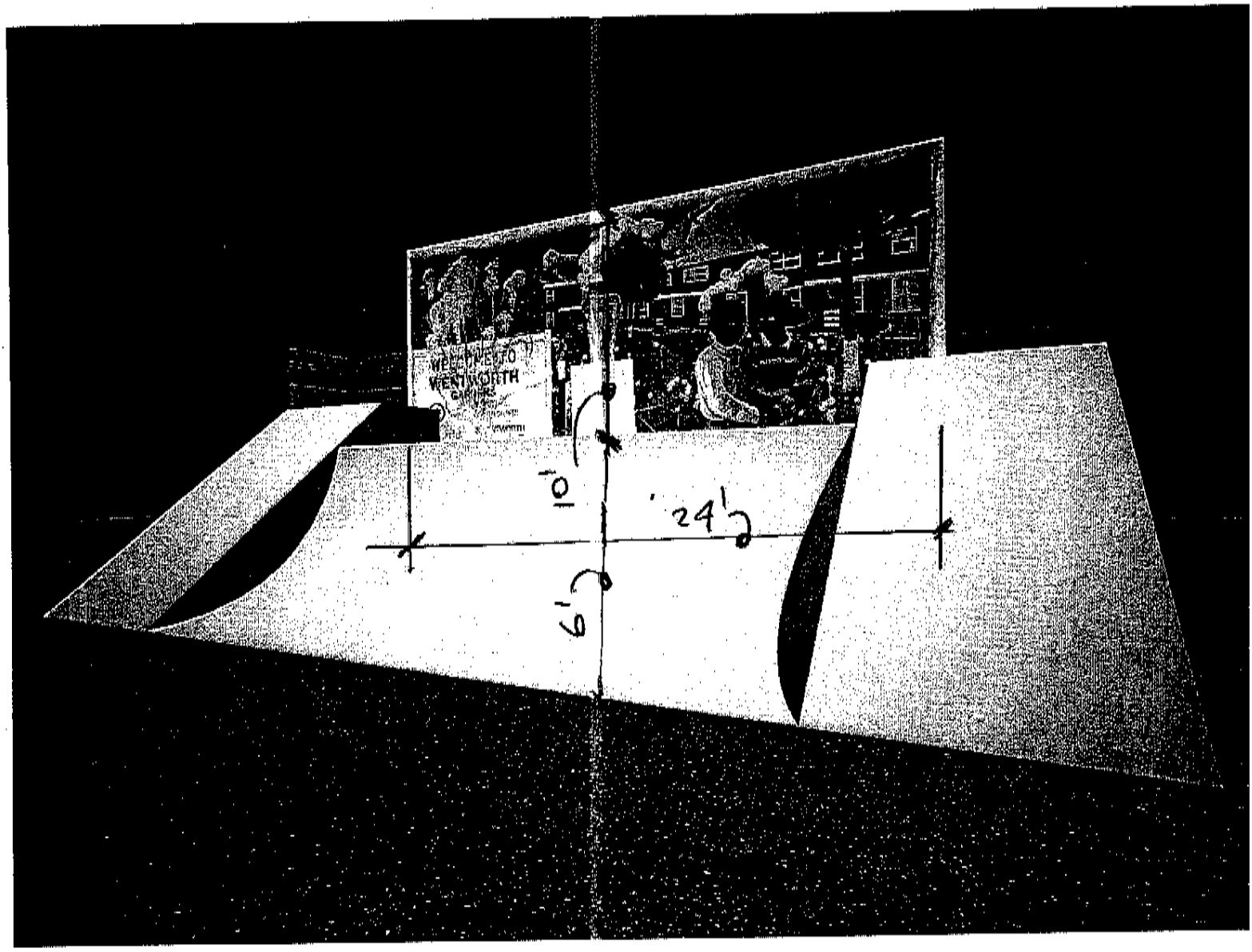
Date: 2.17.09
Job No: 2007008
Sheet: K1

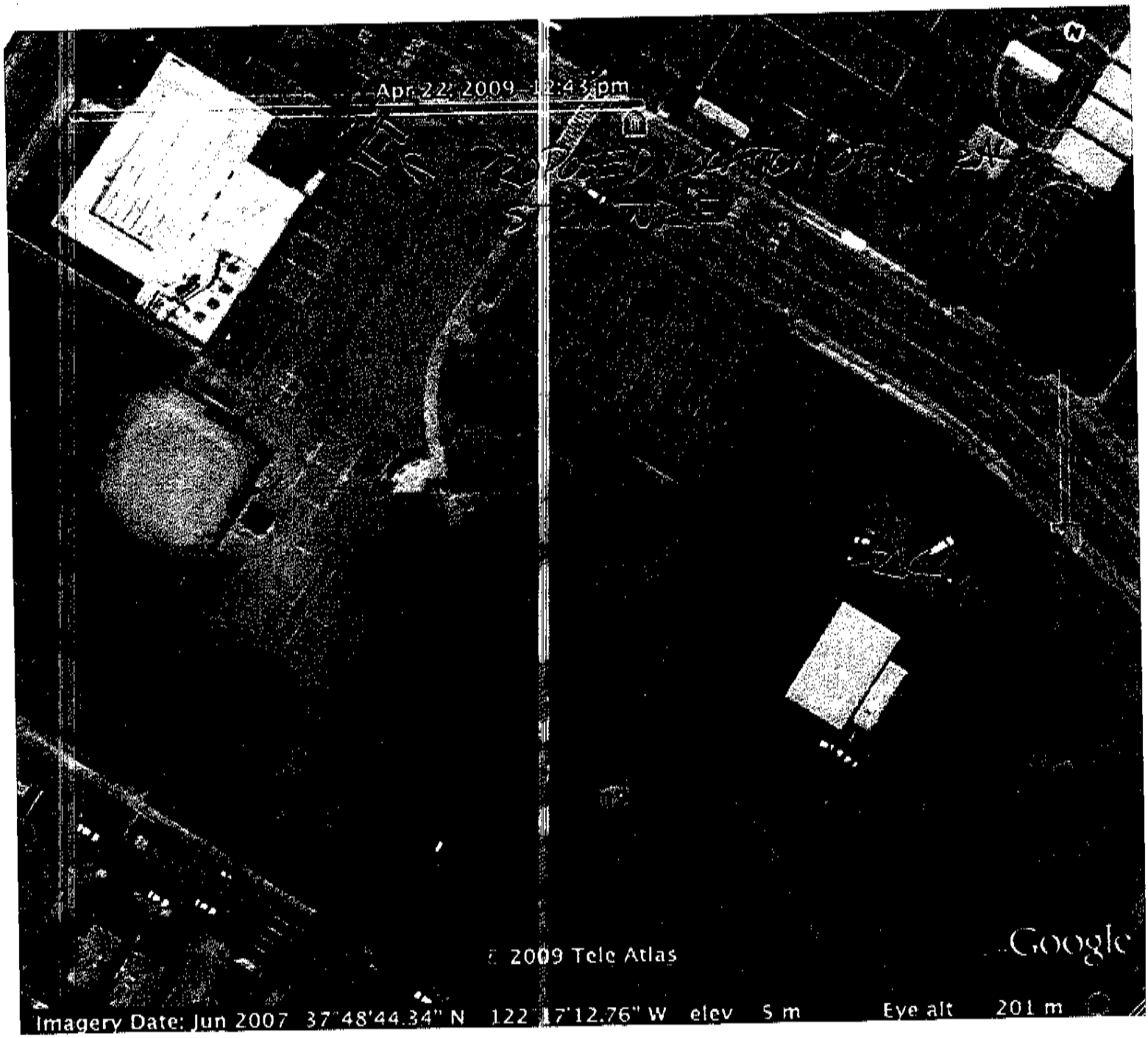
Project Description: Project consist of new 16' mural board behind a 6' skateboard ramp. Framing for the mural surface will be metal studs attached to an existing 40' standard container.

Building Construction: Type V - B

Building Classification: Type II

Date: 2.17.09
Job No: 20900
Sheet: B2




Apr 22, 2009 12:43 pm
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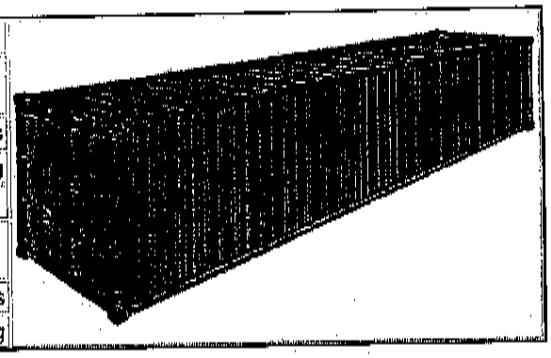
Google
Imagery Date: Jun 2007 37°48'44.34" N 122°17'12.76" W elev 5 m Eye alt 201 m

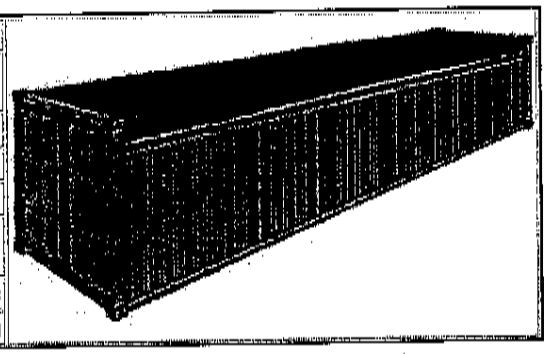
Date: 2·17·09
Job No: 2009008
Sheet: B3

STANDARD CONTAINERS:



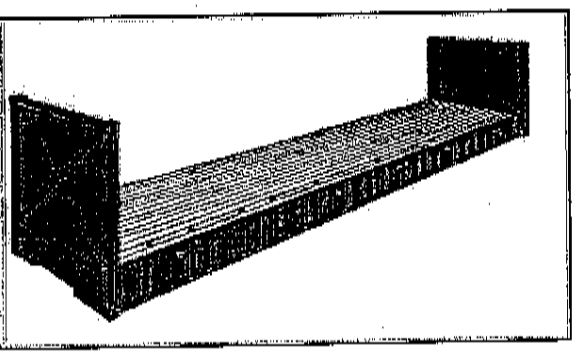
Standard 20'							
inside length	inside width	inside height	door width	door height	capacity	tare weight	maxi cargo
19'4"	7'8"	7'10"	7'8"	7'6"	1,172CuFt	4,916lbs	47,900lbs
5.900m	2.350m	2.393m	2.342m	2.280m	33.2CBM	2,230Kg	21,770Kg
Standard 40'							
inside length	inside width	inside height	door width	door height	capacity	tare weight	maxi cargo
39'5"	7'8"	7'10"	7'8"	7'6"	2,390CuFt	8,160lbs	59,040lbs
12.036m	2.350m	2.392m	2.340m	2.280m	67.7CBM	3,700Kg	26,780Kg

OPENTOP CONTAINERS:



Opentop 20'							
inside length	inside width	inside height	door width	door height	capacity	tare weight	maxi cargo
19'4"	7'7"	7'8"	7'6"	7'2"	1,136CuFt	5,280lbs	47,620lbs
5.894m	2.311m	2.354m	2.286m	2.184m	32.23CBM	2,400Kg	21,600Kg
Opentop 40'							
inside length	inside width	inside height	door width	door height	capacity	tare weight	maxi cargo
39'5"	7'8"	7'8"	7'8"	7'5"	2,350CuFt	8,490lbs	58,710lbs
12.028m	2.350m	2.345m	2.341m	2.274m	65.5CBM	3,850Kg	26,630Kg

FLATRACK CONTAINERS:



Flatrack 20'							
inside length	inside width	inside height	door width	door height	capacity	tare weight	maxi cargo
18'5"	7'3"	7'4"	-	-	-	5,578lbs	47,333lbs
5.620m	2.200m	2.233m	-	-	-	2,530Kg	21,470Kg
Flatrack 40'							
inside length	inside width	inside height	door width	door height	capacity	tare weight	maxi cargo
39'7"	6'10"	6'5"	-	-	-	12,081lbs	85,800lbs
12.080m	2.438m	2.103m	-	-	-	5,480Kg	39,000Kg

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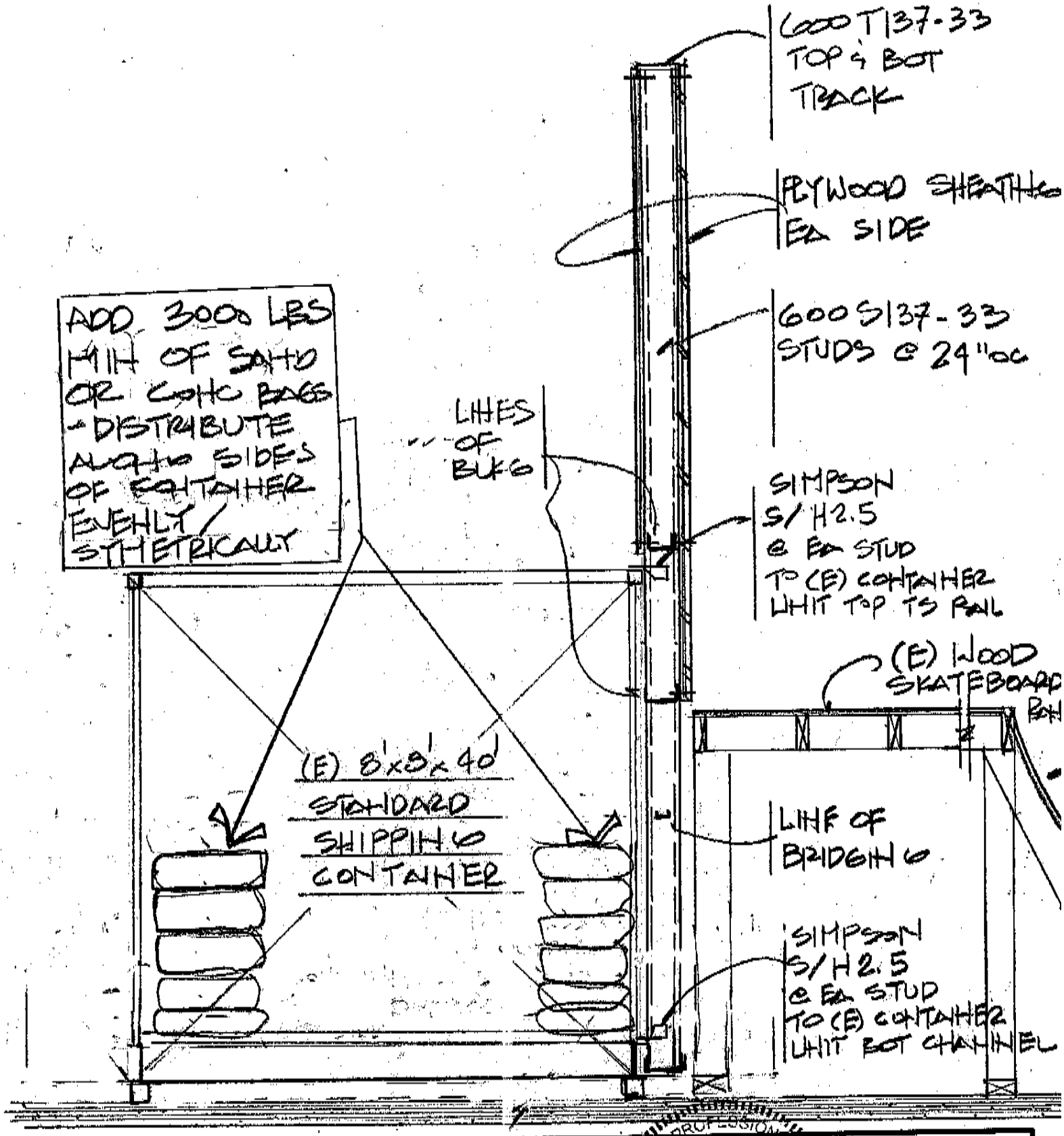
Date: 2.17.09
Job No: 2009008
Sheet: B1

LATERAL
LOADS

WIND

$p_{rms} = q_s K_z C_{rsm} (I K_t)$

q_s = 18.50	85 MPH ZONE	
K_z = 0.70	EXPOSURE B	URBAN SITE 0' - 30'
C_{rsm} = 0.92	MAXIMUM: NARROW OR LONG BUILDINGS	
K_t = 1.00	SUBURBAN SITE / FLAT	
I = 1.00	RESIDENCE/OFFICE/ASSEMBLY	
q = 12 PSF	0'-30'	



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Date:	2.17.09
Job:	2009008
Scale:	NTS
Sheet:	Ssk-1

2.26.09

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Date: 2.17.09
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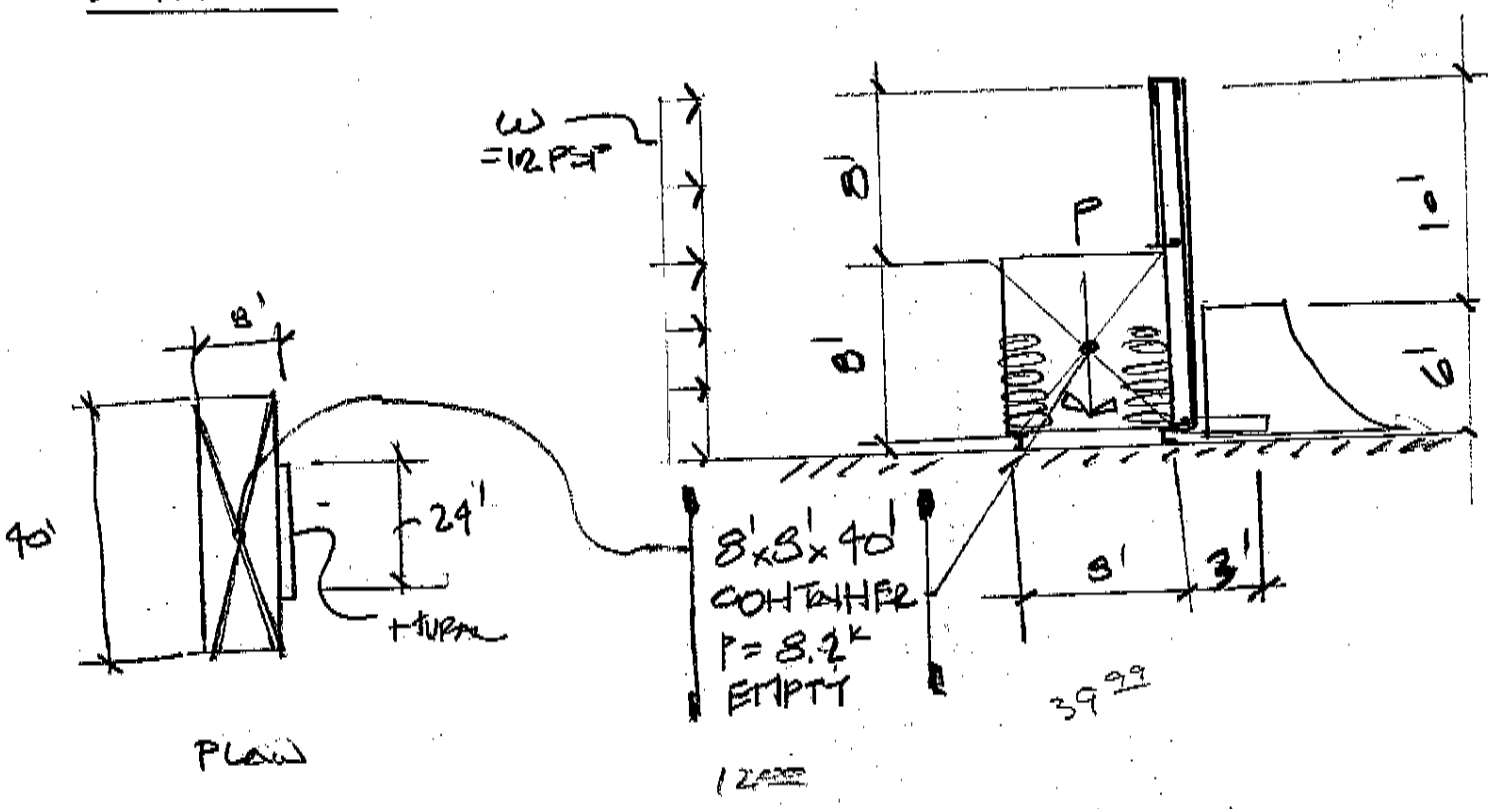
Sheet: P4

LATERAL



$M_{OT} = (12\,PSF)(8')(40')(4') + (12\,PSF)(8')(24')(12') = 43'^{K}$

$M_{R\,(MIN)} = (8.2^{k})(4') = 33'^{K} > M_{OT}$ N.G. → ADD SAND/CEMENT BAGS AS COUNTER WT

$M_{R\,(max)} = (11.2^{k})(4') = 45'^{K} > 43.0^{K}$

ADD 1K MIN DL TO CONTAINER FOR STABILITY & OVERTURNING

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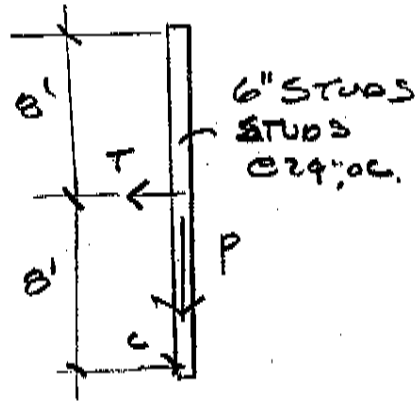
Date: 2.17.09
Job No: 2009008
Sheet: B.5

LATERAL



$$T = C = \frac{(12\,PSF)(16')^2}{(2)(8')}(2') = 384^{\#}$$

USE S/H2.5

$T_{all} = 415^{\#} > 384^{\#}$

$P = (5\,PSF)(2')(16') = 160^{\#}$

L30

$V_{all} = 200^{\#} > 160^{\#}$

STUDS

$M = (12\,PSF)(2')(8')^2/2 = 768'^{\#} \times 12 = 9.2''^{k}/STUD$

600S137 - 33 $\quad S_{xx} = 0.510 \quad I_{xx} = 1.58$

$M_R = 10.07''^{k} \times 1.33 = 13.4''^{k} > 9.2''^{k}/STUD$ OK

$\Delta = \frac{wL^4}{8EI} = .23'' = L/414 = 2L/828$ OK