

**CITY OF SACRAMENTO**

1231 I Street, Sacramento, CA 95814

Permit No: 0115711

Insp Area: 3

Thos Bros:

Sub-Type: NSTRCTRL

Housing (Y/N): N

Site Address: 5735 47TH AV SAC

Parcel No: 037-0310-027

**CONTRACTOR**

BROWN CONSTRUCTION INC  
1465 ENTERPRISE BLVD STE 100  
WEST SACRAMENTO, CA 95798

**OWNER**

SMITHS FOOD/DRUG CENTERS INC  
3100 ZINFANDEL DR #200  
RANCHO CORDOVA CA 95670

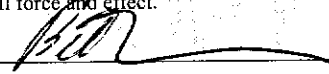
**ARCHITECT**

**Nature of Work:** TILT UP PANEL, ROOF STRUCTURE(DECK & TRUSSES), 2ND FLOOR DECKING

**CONSTRUCTION LENDING AGENCY :** I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name \_\_\_\_\_ Lender's Address \_\_\_\_\_

**LICENSED CONTRACTORS DECLARATION:** I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class \_\_\_\_\_ License Number 396120 Date 12/14/01 Contractor Signature 

**OWNER-BUILDER DECLARATION:** I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00);

I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

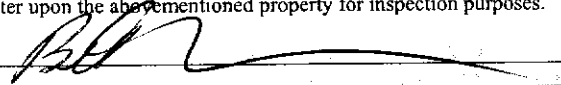
I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

I am exempt under Sec. \_\_\_\_\_ B & PC for this reason: \_\_\_\_\_

Date \_\_\_\_\_ Owner Signature \_\_\_\_\_

**IN ISSUING THIS BUILDING PERMIT,** the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 12/14/01 Applicant/Agent Signature 

**WORKER'S COMPENSATION DECLARATION:** I hereby affirm under penalty of perjury one of the following declarations:

I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

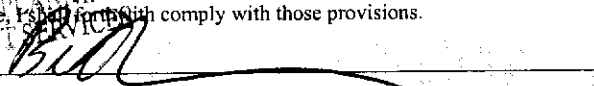
I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier STATE FUND

Policy Number 1625157-01

Exp Date 03/05/2002 

(This section need not be completed if the permit is for \$100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date 12/14/01 Applicant Signature 

**WARNING:** FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

**THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.**

**SIGNET**  
Testing Labs, Inc.

DATE: 3-13-02  
PROJECT NO. 11039  
PROJECT: SFOMA CENTER  
LOCATION: 5735-47<sup>TH</sup> AVE SACTO

DSA FILE/APPL. NO. \_\_\_\_\_  
OSHPD NO. \_\_\_\_\_  
PERMIT NO. \_\_\_\_\_  
WEATHER: sunny TEMP: 60°

**REBAR**     **PT TENDON**     **PT TENDON STRESSING**

Inspected the placement of REINFORCING STEEL / TENDONS / AB'S / HD'S / TIE DOWNS for the following location: \_\_\_\_\_

GROUND FLOOR LINE A + NORTH BETWEEN 4 + 6  
PROVIDED CLEARANCE @ CORNER JOINT  
2<sup>ND</sup> FLOOR A-L + 1-10 WWF - COLLISION BOARD  
REBAR COMPLETE

Observed post-tensioning operations, measured and recorded elongations of tendons for the following location: \_\_\_\_\_

**CONCRETE**     **CIP**     **PC**     **PT**     **SHOTCRETE**     **NS GROUT**

Inspected the batch plant operations. Batch Plant / Location: \_\_\_\_\_

Observed placement of **CONCRETE / SHOTCRETE / NON-SHRINK GROUT** at the following location: \_\_\_\_\_

Cast \_\_\_\_\_ set(s) of compressive strength samples. Mix # \_\_\_\_\_ Total cu. yds. placed \_\_\_\_\_

Slump(s): \_\_\_\_\_ % Air: \_\_\_\_\_ Unit wt(s): \_\_\_\_\_

Show up / Stand by time. Job Canceled / Delayed due to: \_\_\_\_\_

All non-compliance items were brought to the attention of: \_\_\_\_\_ at the job site.

**NON-COMPLIANCE REPORT ATTACHED**

NOTES: \_\_\_\_\_

To the best of my knowledge, the above WAS / WAS NOT performed in accordance with the approved plans, specifications, and regulatory requirements.

Superintendent/Representative: \_\_\_\_\_

Inspector: \_\_\_\_\_

*William A. Staff*



**MARR SHAFFER & MIYAMOTO**  
STRUCTURAL ENGINEERS, INC.

MSM Job No. 00320.00  
June 18, 2002

## STRUCTURAL CALCULATIONS

FOR:

# Sacramento City School Head Quarters Serna Center Mechanical Unit Anchorage Sacramento, CA

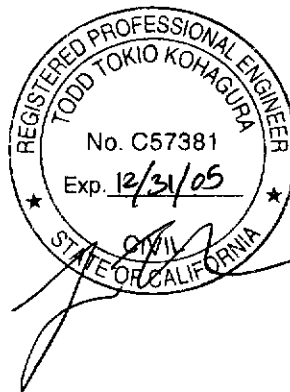
1450 HALYARD DRIVE  
SUITE ONE  
WEST SACRAMENTO, CA  
95691

916.373.1995  
*telephone*  
916.373.1466  
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H. KIT MIYAMOTO, M.S., S.E.  
ROBERT S. GLASGOW, M.S., S.E.  
LON M. DETERMAN, P.E.  
TODD T. KOHAGURA, M.S., P.E.  
JOANN K. MOFFETT  
GARY A. PARKER  
JOHN R. TAYLOR

JOHN M. SHAFFER, M.S., S.E.  
*of counsel*



**ISSUED**

JUN 18 2002

Sacramento Building Division

Permit No. 0115711

Address : 5735 47th Ave.

WE CONQUER CHALLENGES  
WITH CREATIVE OPTIONS

TOTAL LATERAL FORCE

SEISMIC ZONE 3  
SOIL PROFILE - S<sub>D</sub>

$a_p = 1.0$   
 $R_p = 3.0$   
 $C_a = 0.36$   
 $I_p = 1.0$   
 $W_p = 42000\#$   
 $\frac{h_x}{h_r} = 1.0$

This set of plans and specifications must be kept on the job at all times.

**ISSUED**

JUN 18 2002

Sacramento Building Division

$$F_p = \frac{a_p C_a I_p}{R_p} \left(1 + 3 \frac{h_x}{h_r}\right) W_p = 0.48 W_p = 20,160\#$$

$$F_p (ASD) = \frac{20,160\#}{1.4} = 14,400\#$$

$$0.7 C_a I_p W_p < F_p < 4.0 C_a I_p W_p$$

$$10584\# < F_p < 60,480\# \text{ OK!}$$

$$\text{OVER-TURNING MOMENT} = (14,400\#)(7\#) = 100,800\#-ft$$

$$\text{RESISTING MOMENT} = (5.7)(42000\#)(55ft) = 207,900\#-ft$$

$OTM < RM$ . SHEAR CONTROLS DESIGN

SHEAR CAPACITY OF 3/16" WEWDS @ 2'-6" O.C.

$$F_w = 11K/ft (56ft)(2) = 1230K > 14.4K \text{ OK!}$$

SHEAR CAPACITY OF #8 PLYWOOD SCREWS @ 6" O.C.

$$F_s = \frac{780\#/ft (56ft)(2)}{2.5} = 34.5K > 14.4K \text{ OK!}$$

SEE R1 & R2

SHEAR CAPACITY OF #12 SMS @ 6" OC.

$$F_s = \left( \frac{312\#}{\text{SCREEN}} \right) \left( \frac{2\text{SCREEN}}{4} \right) (56\text{ft}) (2) = 69.9\text{K} > 14.4\text{K} \text{ OK!}$$

↑ SEE R3

SHEAR CAPACITY OF BRACING @ 32" OC.

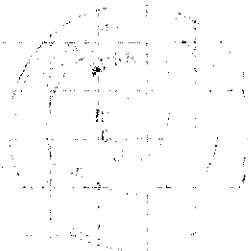
$$F_B = \left( \frac{830\#}{\text{BRACE}} \right) \left( \frac{1\text{BRACE}}{32\text{IN}} \right) \left( \frac{12\text{IN}}{1\text{ft}} \right) (56\text{ft}) = 17.4\text{K} > 14.4\text{K} \text{ OK!}$$

↑ SEE R4

SHEAR CAPACITY OF #12 SMS @ ENDS OF BRACING.

$$F_s = \left( \frac{222\#}{\text{SCREEN}} \right) \left( \frac{3\text{SCREENS}}{\text{BRACE}} \right) (1.33) = 886\# > 686\# \text{ OK!}$$

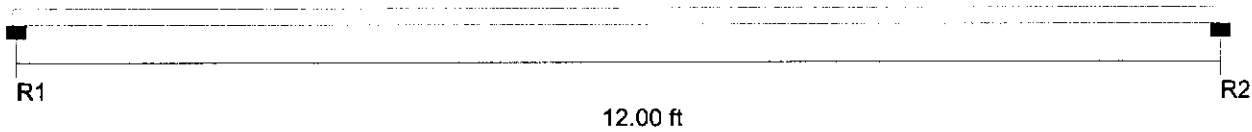
↑ SEE R3



R1

Marr Shaffer & Miyamoto, Inc.

Project:  
Date: 6/18/02



Section : 600S162-43 Single      Maxo = 1389.9 Ft-Lb  
Moment of Inertia, I = 2.32 in<sup>4</sup>      Va = 1328.0 lb

Wind or Earthquake Factor Included ?      No

Flexural and Deflection Check

Span	Mmax Ft-Lb	Mmax/ Maxo	Mpos Ft-Lb	Bracing (in)	Ma(Brc) Ft-Lb	Mpos/ Ma(Brc)	Deflection (in)	Ratio
Left Cantilever	0.0	0.000	0.0	Full	1389.9	0.000	0.000	L/O
Center Span	0.0	0.000	0.0	Full	1389.9	0.000	0.000	L/O
Right Cantilever	0.0	0.000	0.0	Full	1389.9	0.000	0.000	L/O

Combined Bending and Web Crippling

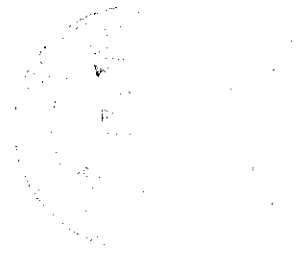
Reaction or Pt Load	Load P(lb)	Brng (in)	Pa (lb)	Mmax (Ft-Lb)	Intr. Value	Stiffen Req'd ?
R1	0.0	1.0	310.4	0.0	0.00	No
R2	0.0	1.0	310.4	0.0	0.00	No

Combined Bending and Shear

Reaction or Pt Load	Vmax (lb)	Mmax (Ft-Lb)	Va Factor	V/Va	M/Ma	Intr. Unstiffen	Intr. Stiffen
R1	0.0	0.0	1.00	0.00	0.00	0.00	NA
R2	0.0	0.0	1.00	0.00	0.00	0.00	NA

Combined Bending and Axial Load

Span	Axial Ld (lb)	Bracing (in)		Allow Ld (lb)	P/Pa	Intr. Value
		KyLy	KtLt			
Left Cantilever	0.0 (t)	None	None	7493.8 (t)	0.00	0.00
Center Span	686.0 (c)	None	None	830.3 (c)	0.83	0.83
Right Cantilever	0.0 (t)	None	None	7493.8 (t)	0.00	0.00



MSM # 00320.00

R2

## Division VIII—LATERAL RESISTANCE FOR STEEL STUD WALL SYSTEMS

### SECTION 2219 — GENERAL

Steel stud wall systems in which shear panels are used to resist lateral loads produced by wind or earthquake shall comply with the requirements of this section. The nominal shear value used to establish the allowable shear value or design shear value shall not exceed the values set forth in Table 22-VIII-A or Table 22-VIII-B for wind loads or Table 22-VIII-C for seismic loads. The allowable shear value (ASD) or design shear value (LRFD) shall be determined using the  $\phi$  or  $\Omega$  factors as set forth in Section 2219.3.

All boundary members and connections thereto shall be proportioned to transmit the induced forces. Framing members shall be of a minimum size, shape and of a minimum specified yield stress as listed in Table 22-VIII-A, 22-VIII-B or 22-VIII-C. Fasteners between framing members and between the panels and the framing members shall be as specified in Table 22-VIII-A, 22-VIII-B or 22-VIII-C. Fasteners along the edges in shear panels shall be placed not less than  $\frac{3}{8}$  inch (9.5 mm) in from panel edges. Screws shall be of sufficient length to ensure penetration into the steel stud by at least two full diameter threads.

Panel thickness shown in Tables 22-VIII-A and 22-VIII-B shall be considered as minimum.

No panels less than 12 inches (305 mm) wide shall be used. All panel edges shall be fully blocked. Where horizontal strap blocking is used, it shall be a minimum  $1\frac{1}{2}$  inches (38 mm) wide and of the same material and thickness as the track and studs. Studs shall be doubled (back to back) at shear wall ends.

The height to length ratio of wall systems listed in Tables 22-VIII-A, 22-VIII-B and 22-VIII-C shall not exceed 2:1.

**2219.1 Wood Structural Panel Sheathing.** As an alternative to the provisions in Tables 22-VIII-A and 22-VIII-C, steel stud wall systems sheathed with wood structural panels may be used to resist horizontal forces from wind or seismic loads where allowable shear loads may be calculated by the principles of mechanics without limitation by using the wood structural panel shear values in the code and approved fastener values. Where  $\frac{7}{16}$  inch (11 mm) OSB is specified,  $\frac{15}{32}$ -inch (12 mm) Structural 1 sheathing (plywood) may be substituted. Structural panels may be applied either parallel to or perpendicular to framing. No increase of the nominal loads shown in Tables 22-VIII-A and 22-VIII-C shall be permitted for duration of load nor shall an increase in nominal loads be permitted for installing sheathing on the opposite side unless indicated herein.

**2219.2 Gypsum Board Panel Sheathing.** Stud wall systems sheathed with gypsum board may be used to resist horizontal forces produced by wind loads when the nominal load used to establish the allowable shear value or design shear value does not exceed the nominal value set forth in Table 22-VIII-B.

The values listed in Table 22-VIII-B shall not be cumulative with the shear values of other materials applied to the same wall; values shown shall not be increased when applied to both sides of the same panel.

End joints of adjacent courses of gypsum board sheets shall not occur over the same stud. Gypsum board shall be applied perpendicular to studs in accordance with Table 22-VIII-B.

**2219.3 Design.** Where allowable stress design is used, the allowable shear value shall be determined by dividing the nominal shear value, shown in Tables 22-VIII-A and 22-VIII-B, by a factor of safety ( $\Omega$ ) which shall be taken as 3.0. The factor of safety ( $\Omega$ ) for the nominal loads shown in Table 22-VIII-C shall be taken as 2.5.

Where Load and Resistance Factor Design is used, the design shear value shall be determined by multiplying the nominal shear value, shown in Tables 22-VIII-A and 22-VIII-B, by a resistance factor ( $\phi$ ) which shall be taken as 0.45. The resistance factor ( $\phi$ ) for the nominal loads shown in Table 22-VIII-C shall be taken as 0.55.

### SECTION 2220 — SPECIAL REQUIREMENTS IN SEISMIC ZONES 3 AND 4

**2220.1 General.** In Seismic Zones 3 and 4, in addition to the requirements of Section 2219, steel stud wall systems may be used to resist the specified seismic forces in buildings not over five stories in height. Such systems shall comply with the following:

1. The  $l/r$  of the brace may exceed 200 and is unlimited.
2. All boundary members, chords and collectors shall be designed and detailed to transmit the induced axial forces.
3. Connection of the diagonal bracing member, top chord splices, boundary members and collectors shall be designed to develop the full tensile strength of the member or  $\Omega$ , times the otherwise prescribed seismic forces.
4. Vertical and diagonal members of the braced bay shall be anchored so the bottom track is not required to resist uplift forces by bending of the track web.
5. Both flanges of studs in a bracing panel shall be braced to prevent lateral torsional buckling. Wire-tied bridging shall not be considered to provide such restraint.
6. Screws shall not be used to resist lateral forces by pullout resistance.
7. Provision shall be made for pretensioning or other methods of installation of tension-only bracing to guard against loose diagonal straps.

**2220.2 Boundary Members and Anchorage.** Boundary members and the uplift anchorage thereto shall have the strength to resist the forces determined by the load combinations in Section 2213.5.1.

**2220.3 Wood Structural Panel Sheathing.** Where wood structural panels provide lateral resistance, the design and construction of such walls shall be in accordance with the additional requirements of this section. Perimeter members at openings shall be provided and shall be detailed to distribute the shearing stresses. Wood sheathing shall not be used to splice these members.

Wood structural panels shall be manufactured using exterior glue.

Wall studs and track shall have a minimum uncoated base metal thickness of not less than 0.033 inch (0.84 mm) and shall not have an uncoated base metal thickness greater than 0.043 inch (1.10 mm).

R3

**TABLE 22-VIII-A—NOMINAL SHEAR VALUES FOR WIND FORCES IN POUNDS PER FOOT FOR SHEAR WALLS FRAMED WITH COLD-FORMED STEEL<sup>1,2</sup>**

ASSEMBLY DESCRIPTION	FASTENER SPACING AT PANEL EDGES <sup>3</sup> (inches)				FRAMING SPACING (inches o.c.)
	× 25.4 for mm × 0.0146 for N/mm				
	6	4	3	2	
× 25.4 for mm					× 25.4 for mm
1/2-inch Structural 1 sheathing (4-ply) one side	1,065 <sup>4</sup>	—	—	—	24
1/2-inch rated sheathing (OSB) one side	910 <sup>4</sup>	1,410	1,735	1,910	24

<sup>1</sup>Nominal shear values shall be multiplied by the appropriate strength reduction factor,  $\Phi$ , to determine design strength or divided by the appropriate safety factor,  $\Omega$ , to determine allowable shear values as set forth in Section 2219.3.

<sup>2</sup>Unless otherwise shown, studs shall be a minimum 1 5/8 inches (41 mm) by 3 1/2 inches (89 mm) with a 3/8-inch (9.5 mm) return lip. Track shall be a minimum 1 1/4 inches (32 mm) by 3 1/2 inches (89 mm). Both studs and track shall have a minimum uncoated base metal thickness of 0.033 inch (0.84 mm) and shall be ASTM A 446 Grade A [or ASTM A 653, SQ, Grade 33 (new designation)]. Framing screws shall be No. 8 by 5/8-inch (16 mm) wafer head self-drilling. Plywood and OSB screws shall be approved and shall be a minimum No. 8 by 1-inch (25 mm) flat head with a minimum head diameter of 0.292 inch (7.4 mm). Stud spacing shown are maximums.

<sup>3</sup>Screws in the field of the panel shall be installed 12 inches o.c. (305 mm) unless otherwise shown.

<sup>4</sup>Where fully blocked gypsum board is applied to the opposite side of this assembly, per Table 22-VIII-B, these nominal values may be increased by 30 percent.

**TABLE 22-VIII-B—NOMINAL SHEAR VALUES FOR WIND FORCES IN POUNDS PER FOOT FOR SHEAR WALLS FRAMED WITH COLD-FORMED STEEL STUDS AND FACED WITH GYPSUM WALLBOARD<sup>1,2</sup>**

WALL CONSTRUCTION	ORIENTATION	SCREW SPACING (edge/field) (inches)		NOMINAL SHEAR VALUE (lbs/ft)
		× 25.4 for mm		
		× 25.4 for mm	× 0.0146 for N/mm	
1/2-inch gypsum board on both sides of wall with studs 24 inches o.c.	Gypsum board applied perpendicular to framing with strap blocking behind the horizontal joint and with solid blocking between the first two end studs.	7/7	—	585
		4/4	—	850

<sup>1</sup>Nominal shear values shall be multiplied by the appropriate strength reduction factor,  $\Phi$ , to determine design strength or divided by the appropriate safety factor,  $\Omega$ , to determine allowable shear values as set forth in Section 2219.3.

<sup>2</sup>Unless otherwise shown, studs shall be a minimum 1 5/8 inches (41 mm) by 3 1/2 inches (89 mm) with a 3/8-inch (9.5 mm) return lip. Track shall be a minimum 1 1/4 inches (32 mm) by 3 1/2 inches (89 mm). Both studs and track shall have a minimum uncoated base metal thickness of 0.033 inch (0.84 mm) and shall be ASTM A 446 Grade A [or ASTM A 653, SQ, Grade 33 (new designation)]. Framing screws shall be No. 8 by 5/8-inch (16 mm) wafer head self-drilling. Drywall screws shall be a minimum No. 6 by 1 inch (25 mm).

**TABLE 22-VIII-C—NOMINAL SHEAR VALUES FOR SEISMIC FORCES IN POUNDS PER FOOT FOR SHEAR WALLS FRAMED WITH COLD-FORMED STEEL STUDS<sup>1,2</sup>**

ASSEMBLY DESCRIPTION	FASTENER SPACING AT PANEL EDGES <sup>3</sup> (inches)				FRAMING SPACING (inches o.c.)
	× 25.4 for mm × 0.0146 for N/mm				
	6	4	3	2	
× 25.4 for mm					× 25.4 for mm
1 5/32-inch Structural 1 sheathing (4-ply) one side	780	990	1,465	1,625	24
7/16-inch (OSB) one side	700	915	1,275	1,625	24

<sup>1</sup>Nominal shear values shall be multiplied by the appropriate strength reduction factor,  $\Phi$ , to determine design strength or divided by the appropriate safety factor,  $\Omega$ , to determine allowable shear values as set forth in Section 2219.3.

<sup>2</sup>Unless otherwise shown, studs shall be a minimum 1 5/8 inches (41 mm) by 3 1/2 inches (89 mm) with a 3/8-inch (9.5 mm) return lip. Track shall be a minimum 1 1/4 inches (32 mm) by 3 1/2 inches (89 mm). Both studs and track shall have a minimum uncoated base metal thickness of 0.033 inch (0.84 mm) and shall not have a base metal thickness greater than 0.043 inch (1.10 mm) and shall be ASTM A 446 Grade A [or ASTM A 653, SQ, Grade 33 (new designation)]. Stud spacing shown are maximums. Framing screws shall be No. 8 by 5/8-inch (16 mm) wafer head self-drilling. Plywood and OSB screws shall be approved and shall be a minimum No. 8 by 1-inch (25 mm) flat head with a minimum head diameter of 0.292 inch (7.4 mm).

<sup>3</sup>Screws in the field of the panel shall be installed 12 inches (305 mm) o.c. unless otherwise shown.



R4

# Fasteners (Screws and Welds)

## Screw Table Notes

1. Screw spacing and edge distance shall not be less than 3 x D. (D = Nominal screw diameter)
2. The allowable screw values are based on the steel properties of the members being connected, per AISI section E4.
3. When connecting materials of different metal thicknesses or yield strength, the lowest applicable values should be used.
4. Screw strength needs to be verified by the screw manufacturer.
5. Values include a 3.0 factor of safety.
6. Applied loads may be multiplied by 0.75 for seismic or wind loading, per AISI A 5.1.3.
7. Penetration of screws through joined materials should not be less than 3 exposed threads. Screws should be installed and tightened in accordance with screw manufacturer's recommendations.
8. Values based on a tensile to yield steel property ratio of 1.08.

## Allowable Loads for Screw Connections

Mil	Design Thickness in.	Sheet Properties		Self-Drilling Screws		Self-Drilling Screws		Self-Drilling Screws		Self-Drilling Screws	
		Yield ksi	Tensile ksi	Shear lbs.	Pullout lbs.	Shear lbs.	Pullout lbs.	Shear lbs.	Pullout lbs.	Shear lbs.	Pullout lbs.
18	0.0188	33	36	48	26	52	31	56	36	60	41
27	0.0283	33	36	88	39	96	47	104	54	110	62
30	0.0312	33	36	102	43	111	52	120	60	128	68
33	0.0346	33	36	119	48	130	57	140	66	149	75
43	0.0451	33	36	178	63	194	75	208	87	222	98
54	0.0566	33	36	250	79	272	94	293	109	312	123
68	0.0713	33	36	316	99	375	118	414	137	441	156
97	0.1017	33	36	450	142	535	168	620	195	705	222
54	0.0566	50	54	378	120	412	142	444	165	473	187
68	0.0713	50	54	478	151	568	179	627	207	669	236
97	0.1017	50	54	682	215	811	255	939	296	1068	336

## Weld Table Notes

1. Weld capacities based on AISI, section E2
2. When connecting materials of different metal thicknesses or yield strength, the lowest applicable values should be used.
3. Values include a 2.5 factor of safety.
4. Applied loads may be multiplied by 0.75 for seismic or wind loading per AISI A 5.1.3.
5. Values based on a tensile to yield steel property ratio of 1.08.

## Allowable Loads for Fillet Welds and Flare Groove Welds

Mil	Design Thickness in.	Steel Properties		E60XX Electrodes lbs/in
		Yield ksi	Tensile ksi	
43	0.0451	33	36	482
54	0.0566	33	36	605
68	0.0713	33	36	762
97	0.1017	33	36	1087
43	0.0451	50	54	731
54	0.0566	50	54	917
68	0.0713	50	54	1155
97	0.1017	50	54	1648



Mech. Unit

Note:

Provide 6" x 18 ga. Mtl. stud  
bracing @ 32" o.c. (alt. direction)  
w/ (3) #12 sms @ Ea. End

#10 SMS @ 6" o.c.  
Track to Track

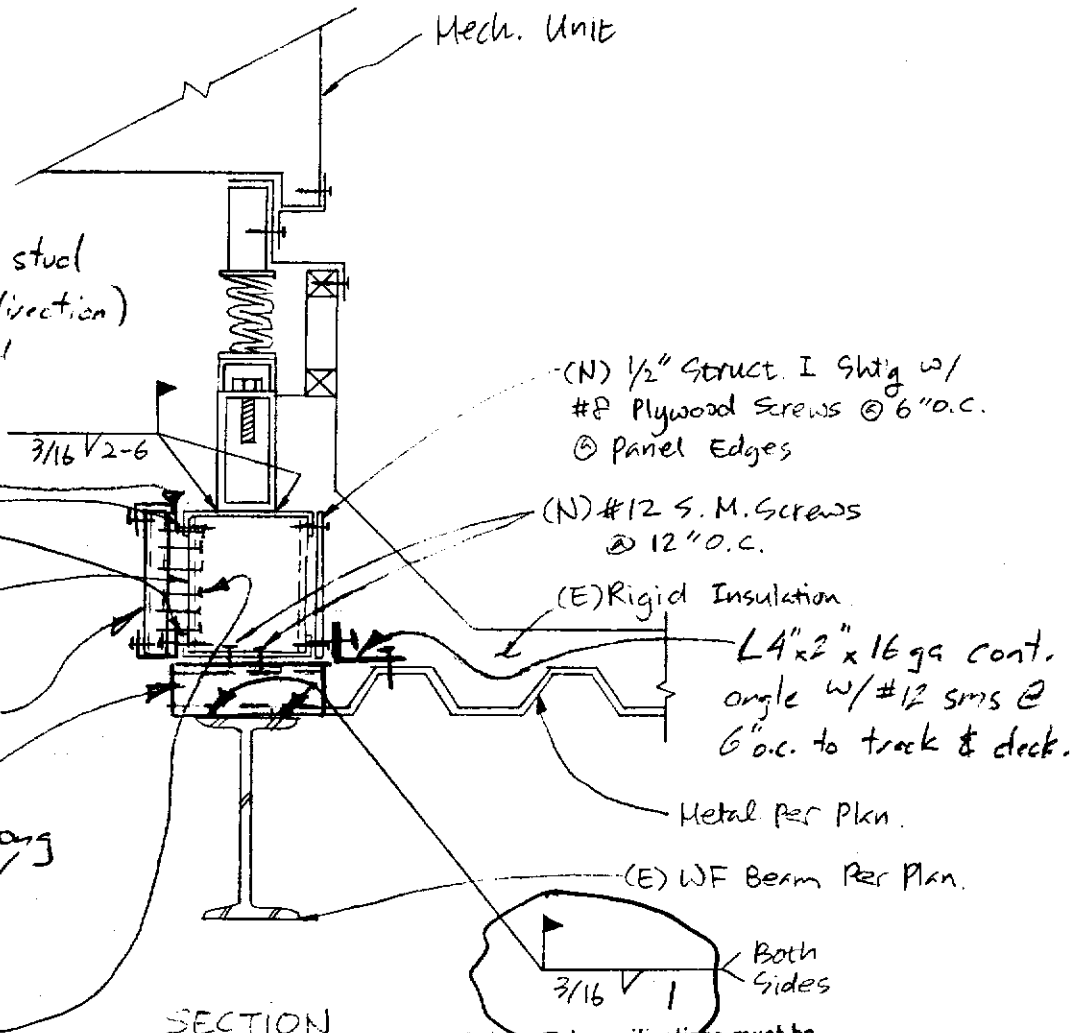
(N) 6" x 16 Ga Track  
w/ #12 S.M. Screws  
@ Ea. Stud, TYP

6" x 18 Ga Stud  
@ 16" o.c.

1 5/8" x 18 ga. stud w/ 16 ga Track  
T&B @ Ea 6" stud

T&B 1/2" x 1/2" x 1/4" x 6" long  
@ 16" o.c., align w/  
Mtl. Studs

#10 SMS @ 4" o.c. Max.  
(stud to stud)



(N) 1/2" Struct. I Shdg w/  
#8 Plywood Screws @ 6" o.c.  
@ Panel Edges

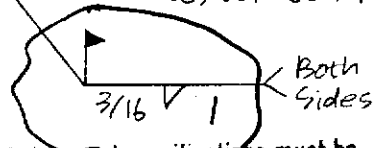
(N) #12 S.M. Screws  
@ 12" o.c.

(E) Rigid Insulation

L4 x 2 x 16 ga cont.  
angle w/ #12 sms @  
6" o.c. to track & deck.

Metal Per Pln.

(E) WF Beam Per Plan.



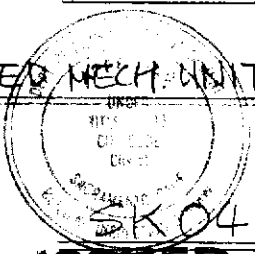
SECTION

REVISED MECH UNIT TO MATCH STAIRS DETAIL

This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations from the same without written permission from the Building Inspection Division. (No Scale)

The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

Special Inspection is req'd (TYP)



JUN 18 2002

Sacramento Building Division

John Tang

**MSM** **MARR SHAFFER & MIYAMOTO**  
 STRUCTURAL ENGINEERS, INC.  
 1450 Halyard Drive, Suite One  
 West Sacramento, CA 95691  
 Tel (916) 373-1995  
 Fax (916) 373-1466  
 Web www.msm1.com  
 E-mail msm@msm1.com

Serna Center Mechanical Unit Curb	
MSM#:	C0320
CLIENT:	Brown Construction
DATE:	04/18/02
SHEET:	SK041802-01

Permit #: 0115711

ISSUED

JUN 25 2002

Sacramento Building Division

REVISED 4/21/02

Note:

Provide 6" x 18 ga. MH. stud  
X-bracing @ 32" o.c. \*

w/ (3) #12 SMS @ Ea. End  
#10 SMS @ 6" o.c. (SEE SK-02)  
Track to Track

(N) 6" x 16 Ga Track  
w/ #12 S.M. Screws  
@ Ea. Stud, TYP

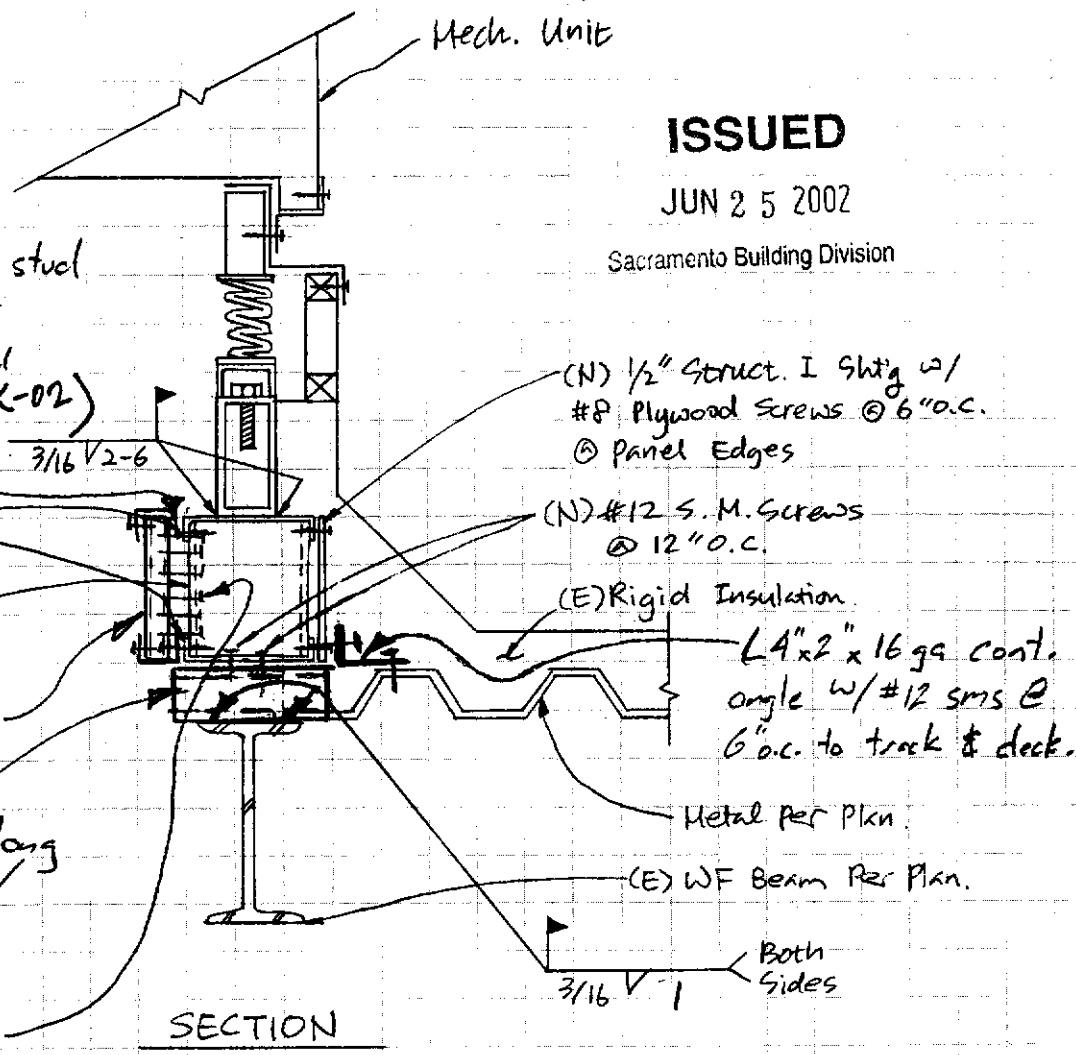
6" x 18 Ga Stud  
@ 16" o.c.

1 5/8" x 18 ga. stud w/ 16 ga Track  
T&B @ Ea 6" stud

T&B 1/2" x 1/2" x 1/4" x 6" long  
@ 16" o.c., align w/  
MH. Studs

#10 SMS @ 4" o.c. Max.  
(stud to stud)

Mech. Unit



(N) 1/2" Struct. I Shdg w/  
#8 Plywood Screws @ 6" o.c.  
@ Panel Edges

(N) #12 S.M. Screws  
@ 12" o.c.

(E) Rigid Insulation

L4x2" x 16 ga cont.  
angle w/ #12 SMS @  
6" o.c. to track & deck.

Metal Per Plan

(E) WF Beam Per Plan.

3/16 V-1 Both Sides

SECTION

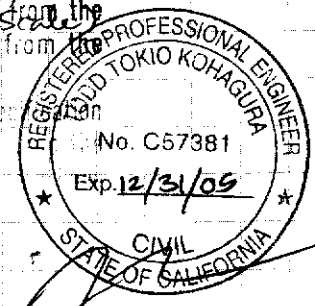
REVISED MECH UNIT MOUNTING DETAIL

This set of plans and specifications must be used for the job at all times and it is unlawful to make any change or alterations from the same without the written permission from the City of Sacramento.

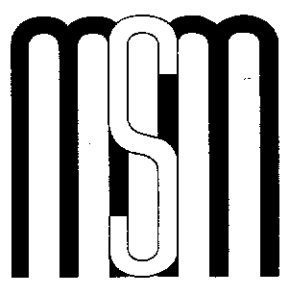
(No Scale)

SK041802-01

John Tanos  
6/25/02



\* NOTE: SEE NOTE ON SK-02 FOR BRACING REQUIREMENTS @ "HU"-TYPE UNITS.



**MARR SHAFFER & MIYAMOTO**  
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Fax (916) 373-1466  
Web www.msm1.com  
E-mail msm@msm1.com

Serna Center - 5735 47 <sup>th</sup> Avenue	
Mechanical Unit Curb	
MSM#: 00320.	
CLIENT: Brown Construction	
DATE: 04/18/02	SHEET: SK041802-01

REVISED 4/21/02

ISSUED

JUN 25 2002

Sacramento Building Division

NOT ALL ITEMS SHOWN  
FOR CLARITY

PROVIDE ADD'L X-BRACE @  
EA. SIDE OF DUCT OPENINGS

CUT FRANGES  
AT VERT. STD  
NOT REQ'D.

6" x 1 5/8" x 10 GA  
STDS @ 16" O.C.

6" x 1 5/8" x 10 GA  
METAL STD  
X-BRACES @ 92"  
O.C. (SEE NOTE  
BELOW)

4-#12  
SMS

5-#12 SMS  
EA. BRACE  
STD @ EA. END.

6" x 10 GA  
TRACK W/ #12  
SMS, EA. SIDE  
@ EA. STD. TOP,  
TOP + BOTTOM

WF BEAM  
PER PLAN

Ø 10 1/2" MAX

GIVE OK-DI FOR ITEMS NOT  
SHOWN OR NOTED

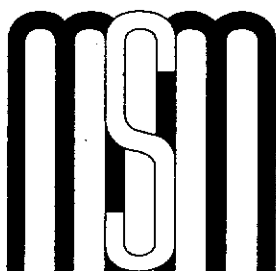
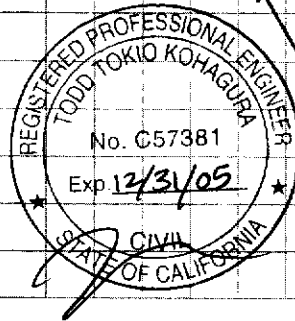
X-BRACING CONNECTION  
MECH. UNIT MOUNTING DETAIL

1 1/2" = 1'-0"

CK-041802-02

NOTE:

PROVIDE X-BRACING PER  
THIS DETAIL @ 1/3 POINTS  
ALONG LENGTH OF "HU"-TYPE  
UNITS. SEE PARTIAL MECH.  
PLAN FOR LOCATIONS.



MARR SHAFFER & MIYAMOTO

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Web www.msm1.com

E-mail msm@msm1.com

GERHA CENTER

5735 47<sup>th</sup> Avenue

MSM#: 00320.01

CLIENT: PRAM

DATE: 6/21/02

SHEET: CK-041802-02

permit #: 0115711

ISSUED

JUN 25 2002

Sacramento Building Division

must be  
unlawful  
the  
the

3

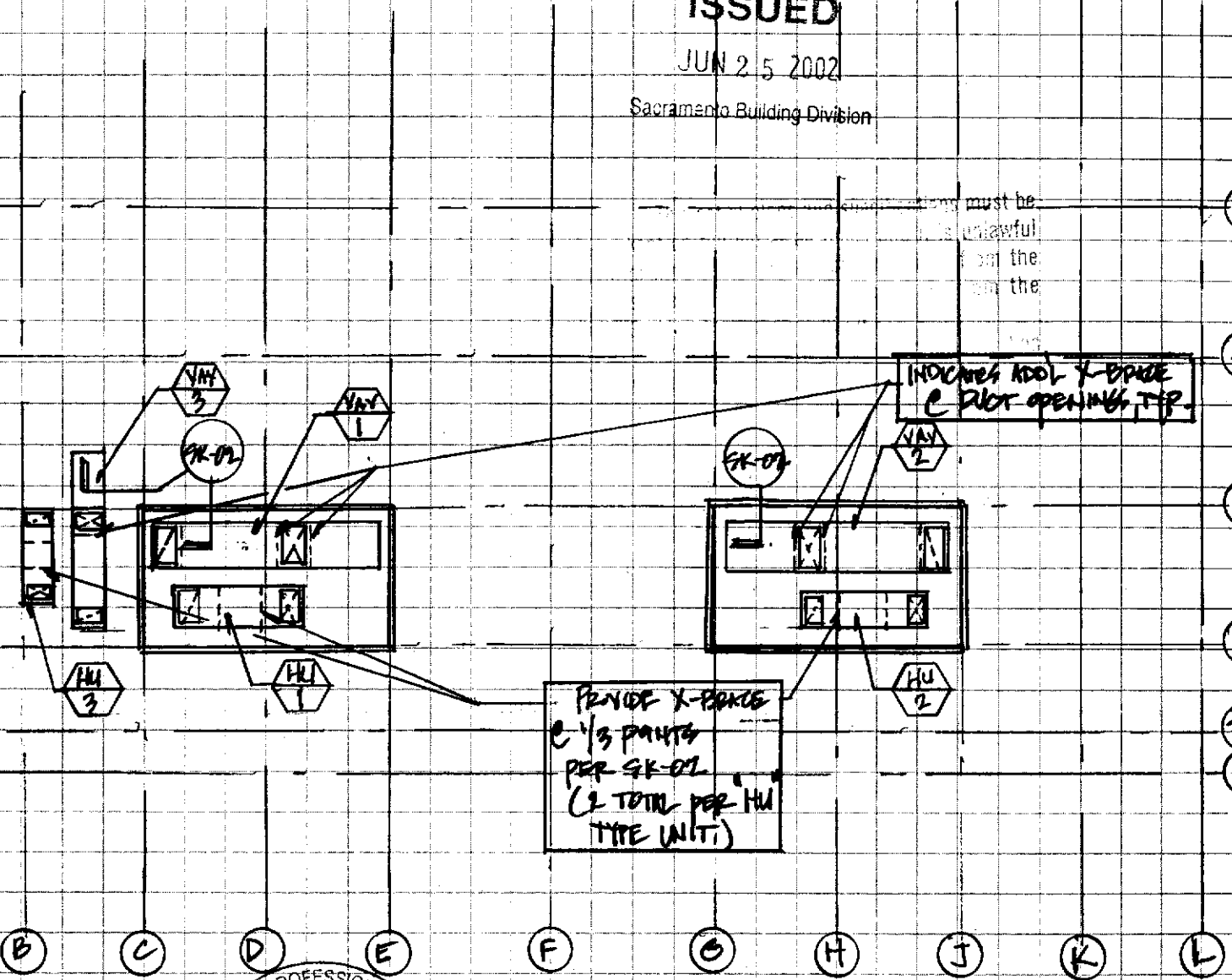
4

5

6

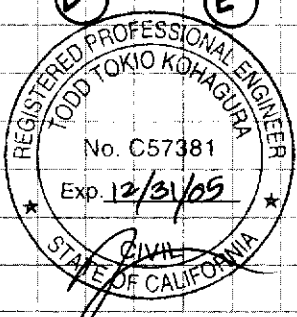
7

8

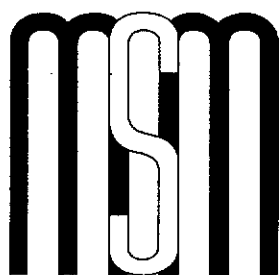
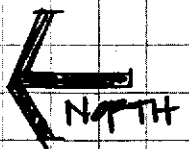


PROVIDE X-PANCK  
ON 1/3 POINTS  
PER SK-01  
(2 TOTAL PER HU  
TYPE UNIT)

INDOOR ACOIL X-PANCK  
ON DUCT OPENINGS



PARTIAL MECHANICAL ROOF PLAN  
SCALE: 1" = 40'-0"



**MARR SHAFFER & MIYAMOTO**  
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Web www.msm1.com  
E-mail msm@msm1.com

SERNA CENTER  
5735 47th Avenue

MSM#: 0072101

CLIENT: BRMHI

DATE: 6/24/02

SHEET: SK-041802-03

October 29, 2002

**COPY TO:** SACRAMENTO BLDG INSP DEPT  
1231 I STREET, NO. 200  
SACRAMENTO, CA 95814

**STL NO.:** 0011039  
**PO NO.:** CS02-00152  
**PERMIT:** 15-0115711

**PROJECT:** SERNA COMMUNITY EDUCATION CENTER  
5735 47TH AVE , SACRAMENTO, CA

**SUBJECT:** AFFIDAVIT OF COMPLETION - SPECIAL INSPECTIONS & MATERIAL TESTING

---

In accordance with the City of Sacramento approved plans and specifications, our firm has conducted observations and laboratory testing for the subject project through June 21, 2002. Special Inspections and Materials Testing were performed under my general technical supervision in accordance with Section 1701 of the 1996 Uniform Building Code (UBC). Specifically each discipline is listed below:

**REINFORCING STEEL:**

- Section 1903 – Tensile/Bend Test
- Section 1701 – Inspection of Placement
- Inspection of Epoxy/Anchor Bolt Installation

**CAST-IN-PLACE CONCRETE:**

- Section 1905 – Inspection of Concrete Placement
- Section 1905 – Compression Tests

**STRUCTURAL STEEL:**

- Sections 1701, 2202, Stds 22-1, AWS D1.1 –

- Shop Welding
- Section 2251, AWS D1.1 – Shop Non-Destructive Examination
- Sections 1701, 2251, AWS D1.1 – Field Welding
- Sections 1701, 2251, AWS D1.1 – Field Bolting
- Section 2251, AWS D1.1 – Field Non-Destructive Examination

This letter is written verification that the inspections, observations, and material testing for the project were found to be in substantial conformance with the project specifications, plans, UBC, and City of Sacramento requirements.

We trust that the information provided herein will satisfy your present needs. If you have any questions or if we can be of further assistance, please do not hesitate to contact our office.

Respectfully submitted,  
**SIGNET TESTING LABS, INC.**



Thomas C. Cole, PE  
Senior Engineer

TCC/dl

c: SACRAMENTO CITY UNIF SCHL DIST/TOM GALLEGOS  
BROWN CONSTRUCTION INC/MATT DEFAZIO  
SACRAMENTO BLDG INSP DEPT  
\* FILE COPY\*