

CITY OF SACRAMENTO

Permit No: 9802277

1231 I Street, Sacramento, CA 95814

Insp Area: 4

Site Address: 3960 RESEARCH DR SAC

Sub-Type: ACOM

Parcel No: 2500025053

Housing (Y/N): N

CONTRACTOR

BRUCE SHADE
4908 REGAL CT
ROCKLIN CA 95765
Phone: 915-632-6892

OWNER

RESEARCH PROPERTIES
SACRAMENTO CA 95812

ARCHITECT

Phone:

Nature of Work: REPLACE 2 EXSTG A/C UNITS. REMOVE EXSTG ALUM WIRE & REPLACE W/COPPER

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 C20 License Number 4B3628 Date 3/23/98 Contractor Signature [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 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 or 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 or 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.

Date 3/23/98 Applicant/Agent Signature [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 Farm Policy Number 1449130-97

____ (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 3/23/98 Applicant Signature [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.

PERMIT NO.

88 122 77c

CITY OF SACRAMENTO
12411 ST HOOM 200
PLUMBING INSPECTIONS DIVISION

AREA NO.

4c

WHEN CORRECTIONS HAVE BEEN MADE CALL 264-5191 FOR REINSPECTION OF WORK

JOB LOCATION

3960 Riverbank Dr

INSPECTION REQUESTED

ALL IN C. Replumbment

THE UNDERSIGNED

BUILDING

PLUMBING

MECHANICAL

ELECTRICAL

INSPECTOR THIS DAY INSPECTED THIS STRUCTURE FOR THE REQUESTED INSPECTION AND FOUND THE FOLLOWING VIOLATIONS OF CITY AND/OR STATE LAWS GOVERNING SAME:

1) Provide smoke detector
 in supply side.
 2) Have pressure hose to
 hot and provide vent to
 outside of the unit.
 3) Fireman get supply access
 to rear of unit of the service.
 4) Verify when the gas supply
 shut off shut off valve is
 working.

INSPECTOR

[Signature]

PLUMBING INSPECTORS 264-5191

DATE

5/14/88

CITY OF SACRAMENTO
 APPLICATION FOR BUILDING PERMIT
 DEPARTMENT OF PLANNING AND DEVELOPMENT
 BUILDING INSPECTION DIVISION

1231 I Street, Room 200
 Sacramento, CA 95814
 (916) 264-7619 FAX 264-7046

P.C. # _____
 SUITE # _____
 AREA # 4C

ADDRESS 3960 Research Dr.
 PARCEL # 250-0025-053

CONTACT

LICENSED CONTRACTOR Lic # 462836

NAME _____
 ADDRESS _____
 ZIP _____
 PHONE _____ FAX: () _____

NAME Bruce Shade
 ADDRESS 4908 Regal Ct.
Rocklin ZIP 95765
 PHONE (916) 682-6892 FAX (916) 631-8975

ARCH./ENG.

OWNER

NAME _____
 ADDRESS _____
 ZIP _____
 PHONE _____

NAME Research Properties
 ADDRESS 1325 J Street
Sacramento ZIP 95816
 PHONE () - FAX () -

WILL THE PERMITEE HAVE ANY EMPLOYEE'S ON THE JOBSITE? YES NO

NATURE OF WORK IN DETAIL: Replace 2 existing A/C units.
Remove existing aluminum wire and replace w/copper

Impervious area as existing - Subject to field approval DM
to Dept of Soc. Serv.

D.B.A. Shade Commercial Service VALUATION \$ 80,000.00
BELOW THIS LINE FOR BLDG. DEPT. USE ONLY

FLOOD STATUS _____ S.C.A.T. _____

JOB DESCR. BLDG SHEL APT TH() REM() SW FIRE ADD OTH

INSP. DISCIPLINES BLDG MECH PLUMB ELEC SITE FIRE

# OF STORIES	AREA 1ST FL.	TOTAL AREA	OCCUP. GROUP	CONST. TYPE	FIRE SPRINK.	FIRE ALARM	FED CODE	VIO. FILE
			B B	YN	Y/A	Y/N		OK
<u>3</u>	<u>L</u>	<u>P</u>	<u>M</u>	<u>E</u>	<u>F</u>	<u>S</u>	<u>D</u>	<u>R</u>
<u>3</u>		<u>30</u>	<u>B0</u>	<u>1</u>				

COMMENTS:

(REGIONAL SAN FEES? Y/N) (HEALTH DEPT? Y/N)

Worker's Comp Policy #

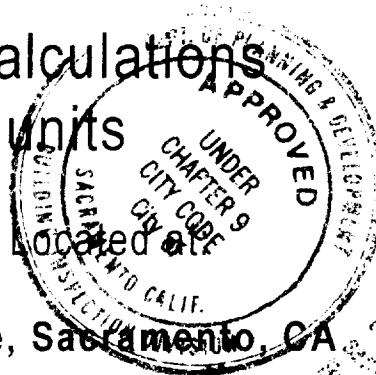
company

Exp. Date

Structural Calculations for AC units

for the Project Located at

3960 Research Drive, Sacramento, CA



by
Shade Commercial Services
4908 Regal CT
Rocklin, CA 95765

These calculations and specifications must be applied to the project and no changes or alterations shall be made without the written permission from the Building Inspection Division. The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

RECEIVED

MAR 25 2010

Building Inspection Division



John Tang

Project: 2000 Solar BuildingDate: 2/25/98 Sheet No. 2 of 8By: SMC

Details For: _____

Field Notes

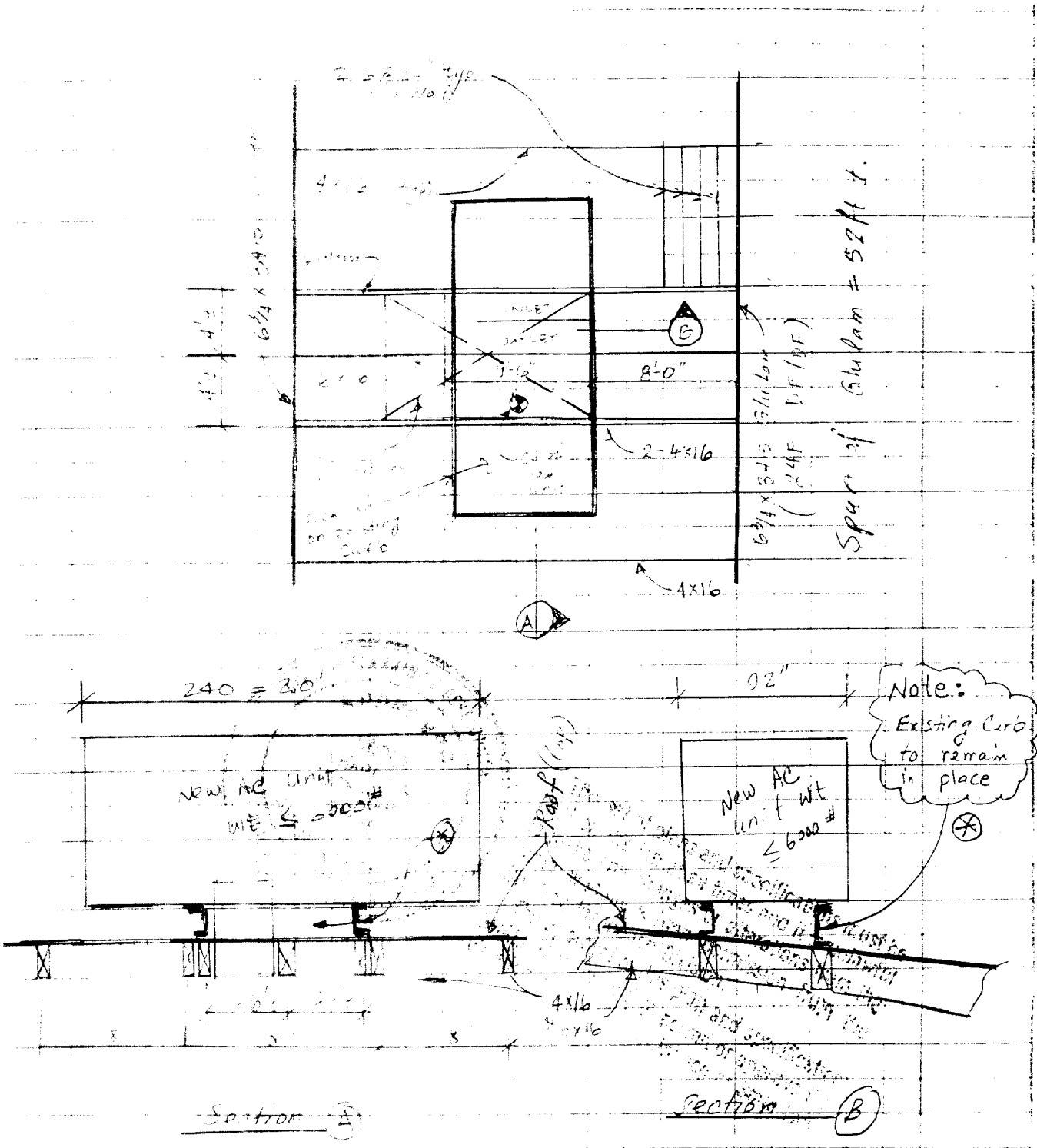
1. Replacement of new AC units at two locations
 2. Existing AC units weight ~4000 lbs
 3. New unit weight be less than 6000 lbs
 4. Roof & framing is as follows
 - Roof slope < 2%
 - Metal suspended ceiling with insulation on top
 - Roof joists 2x6x8' @ 24" oc DF No1
 - Roof Purlins 4x16x25.5' @ 8'-0 oc DF No 1 supported on hangers
 - Roof Purlins supported on Glulam 6 3/4x34 1/2x52' 24F DF/DF (on As-built plans by Shade Construction)
- Support of AC unit as
- 2-2x16 at ends
 - 1-6x16 @ center

Notes on Construction

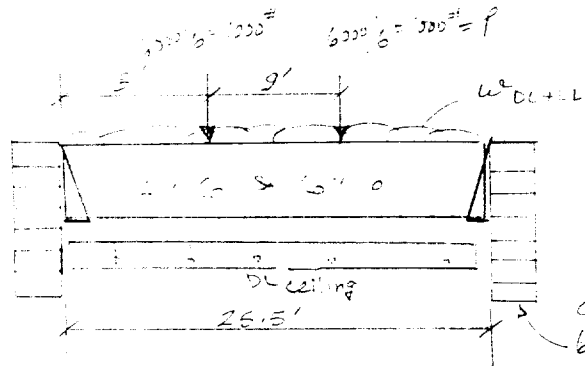
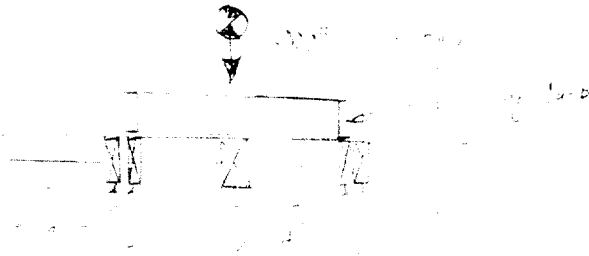
1. Existing curb for support shall stay in place.
2. New unit to be mounted on the existing curb in place.
3. Center of Gravity(CG) of new unit shall be within 12 inches of old unit's CG.
4. New unit shall have only contact with existing support curb in place.
5. Loading points on existing curb shall be remain same.

Subject: 4-1000 F

Reference



Details For: 2000[±] net change



Glulam 4x6
 63/2 x 3.15
 span sec
 conditions.

4x6: $1.5 \times 25.5 = 38.25 \text{ ft}^2$

6x10: $1.5 \times 25.5 = 38.25 \text{ ft}^2$
 $1.5 \times 25.5 = 38.25 \text{ ft}^2$
 $1.5 \times 25.5 = 38.25 \text{ ft}^2$
 $1.5 \times 25.5 = 38.25 \text{ ft}^2$

$A = 85.25 \text{ in}^2$
 $C_x = 200.2 \text{ in}^3$
 $I_x = 173.9 \text{ in}^4$
 $A = 85.25 \text{ in}^2$
 $C_x = 200.2 \text{ in}^3$
 $I_x = 173.9 \text{ in}^4$

4x6 94
 table 23-I-A-4
 table 23-I-A-1
 table 160.15-2

Loads

DL 2000[±] = 12 psf ; DL ceiling = 10 psf
 DL 2000[±] = 12 psf ; DL ceiling = 10 psf

Stress & deflection calculations

6x10: $f_v = \frac{1.5V}{A} = \frac{1.5(3142)}{85.25} = 56 \text{ psi} < 95 \text{ psi}$ OK

$f_b = \frac{M}{S_x} = \frac{21657 \text{ ft} \cdot \text{lb}}{200.2} = 108 \text{ psi} < 200 \text{ psi}$ OK

$L = \frac{5WL^3}{384EI} = \frac{5(42 \times 25.5^3)(1706)}{384(1.5 \times 10^6)(1706)} = 0.62 + 0.47 = 1.09 \text{ in}$ OK
 $1.09 < \frac{25.5 \times 12}{240} = 1.3 \text{ in}$ OK

4x6:

$f_v = \frac{1.5V}{A} = \frac{1.5(2071)}{53.38} = 58 \text{ psi} < 95 \text{ psi}$ OK

$f_b = \frac{M}{S_x} = \frac{14828 \times 12}{135.66} = 131 \text{ psi} < 1150(125) = 1460 \text{ psi}$ OK

$L = \frac{5WL^3}{384EI} = \frac{5(42 \times 25.5^3)(1035)}{384(1.5 \times 10^6)(1035)} + \frac{200(25.5^3)(1035)}{48(1.5 \times 10^6)(1035)} = 0.51 + 0.76 = 1.28 \text{ in} < 1.3 \text{ in}$ OK

Since change in glulam stress due to 2000[±] net change in AC is not significant no cal's are being provided.

Details For: _____

Wind Loads

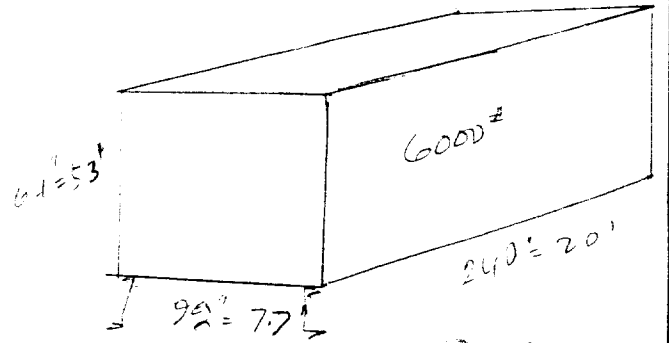
Earthquake Loads

$$F_p = Z I P C_p W$$

$$= (1)(1)(1.5)(100)$$

$$F_p = 2025 \#$$

$Z = 0.3$
 $I = 1.5$
 $P = 1.0$
 $C_p = 1.5$



Wind Loads

$$F = C_e C_g C_d C_p W$$

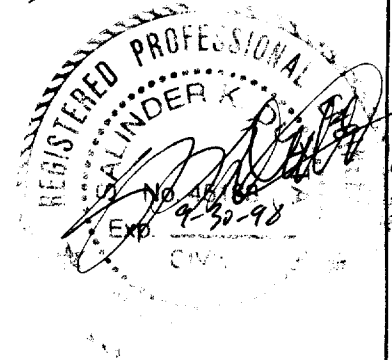
$$F = (1.3)(1)(1.5)(1.5)(100)$$

$$= 300 \text{ psf}$$

$C_e = 1.3$ (Exp C)
 $C_g = 1.4$
 $C_d = 1.6$ (20 mph)
 $I = 1.5$

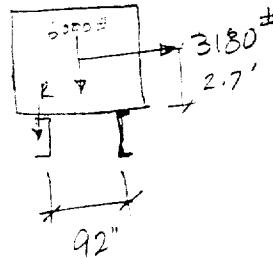
$$F_w = 30(20 \times 5.3) = 3180 \# > 2025 \#$$

wind controls.



Anchorage Force

$$R = \frac{(3180)(2.7) - 6000}{92} \leq 0$$



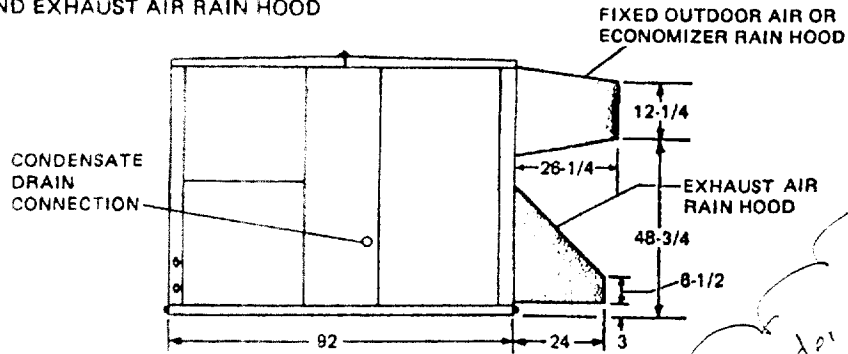
No special anchors necessary.

Provide minimum anchorage required by manufacturer.

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OPTION DIMENSIONS

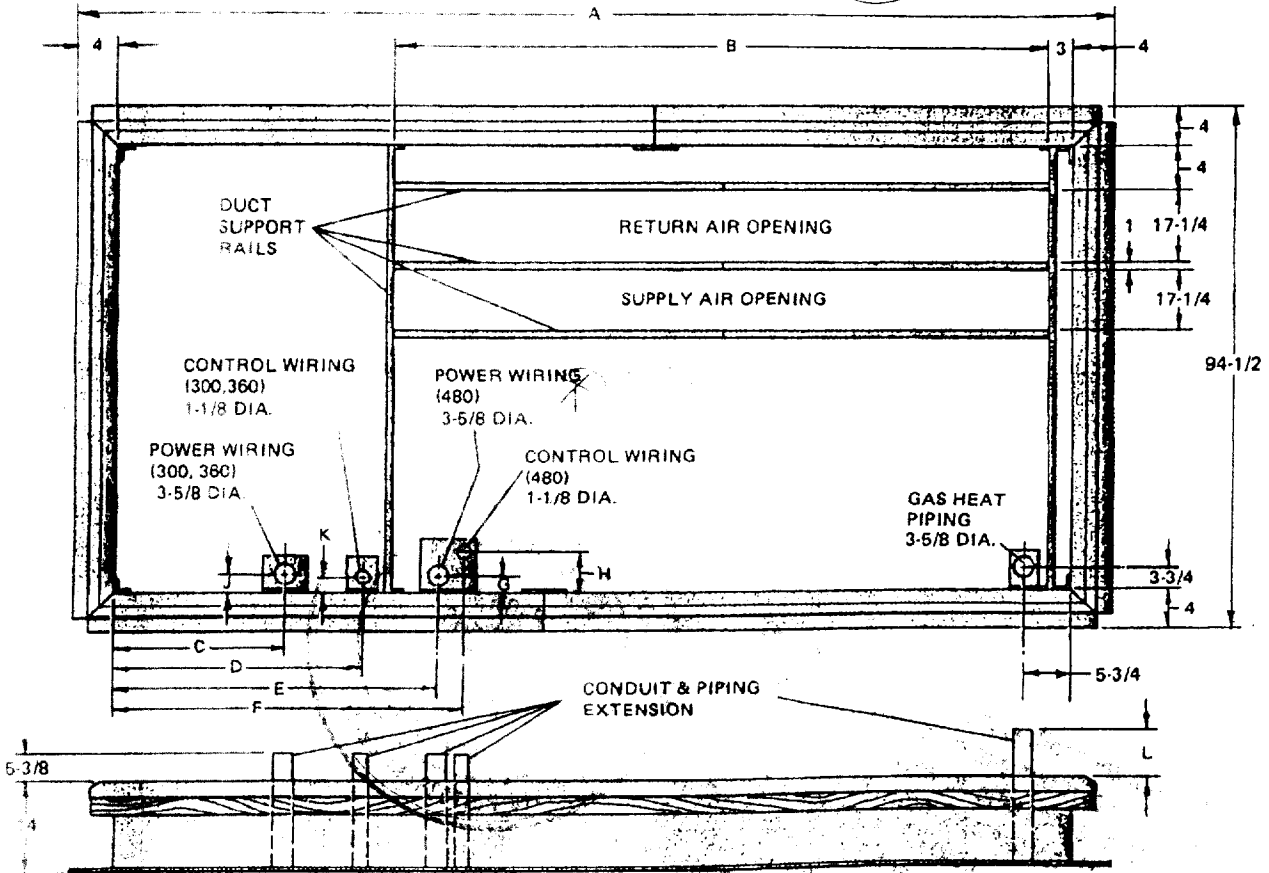
UNIT WITH ECONOMIZER/FIXED OUTDOOR AIR
 RAIN HOOD AND EXHAUST AIR RAIN HOOD



Curb under existing Unit

ACCESSORY DIMENSIONS

ROOF CURB



CURB MODEL	UNIT (DSC/DSV)	A	B	C	D	E	F	G	H	J	K	L (GAS OPTION)		
												G400	G560	G800
1RC0415	300	143-1/2	100-1/2	16-1/4	29-3/4	-	-	-	-	2-1/8	2-1/4	10-3/4	7	7
1RC0416	360	166-1/2	100-1/2	39-1/4	52-3/4	-	-	-	-	2-1/8	2-1/4	10-3/4	7	7
1RC0417	480	186-1/2	120-1/2	-	-	62-1/4	70-1/4	2-7/8	8-1/2	-	-	-	7	7

PRELIMINARY DATA

WEIGHT TABLE AND CENTER OF GRAVITY

530.70-TG1Y

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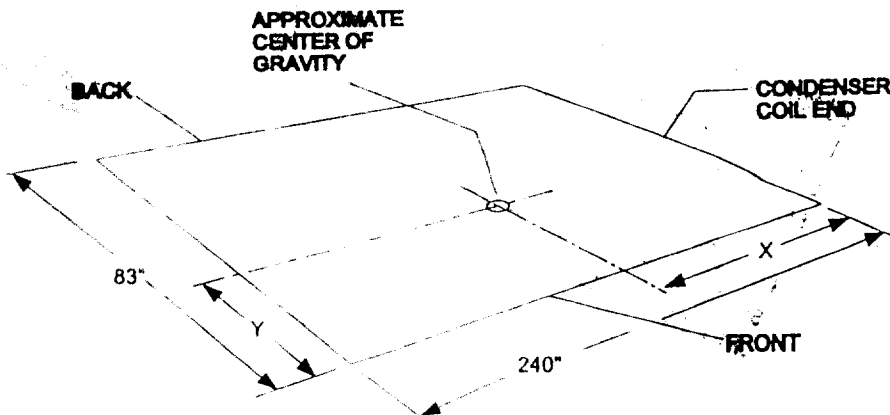
COMPONENT	30 Ton	40 Ton
Basic Unit	4,600	5,100
Gas Heat		
240 MBH	90	90
480 MBH	180	180
Electric Heat		
40KW	75	75
80KW	90	90
108KW	100	100
Blower Motor (Std./Hi-eff.)		
10hp	0/10	0/10
15hp	50/90	50/90
20hp	95/100	85/110
25hp	165/200	165/200
Inlet Guide Vanes with Actuator	175	205
Exhaust		
Barometric	75	75
Powered	325	325
Exhaust Motor (Std./Hi-eff.)		
7.5hp	100/110	100/110
10hp	110/120	110/120
15hp	160/200	160/200
Filters		
6" Rigid	80	80
Refrigeration		
Hi Capacity Coil	45	25
Coated Cond. Coil	30	40
Hot Gas Bypass	20	20
Disconnect		
Convenience Outlet	40 / 40	40 / 40
Accessories		
Partial Curb	385	385
Full Curb	545	545

Handwritten note: Total weight of 30 ton unit is 4,600 lbs.

NOTE: Base unit weight includes the 10 HP motor and economizer.

MODEL	CENTER OF GRAVITY			
	30 ton		40 ton	
	X	Y	X	Y
Basic Unit	98	TBD	93	TBD
Basic Unit w/ Econ.	108	TBD	97	TBD
Basic Unit w/ Econ. & Gas or Elect. Heat	102	TBD	96	TBD
Basic Unit w/ Econ. & Gas or Elect. Heat, & Power Exhaust	112	TBD	108	TBD

NOTE: All dimensions are in inches.

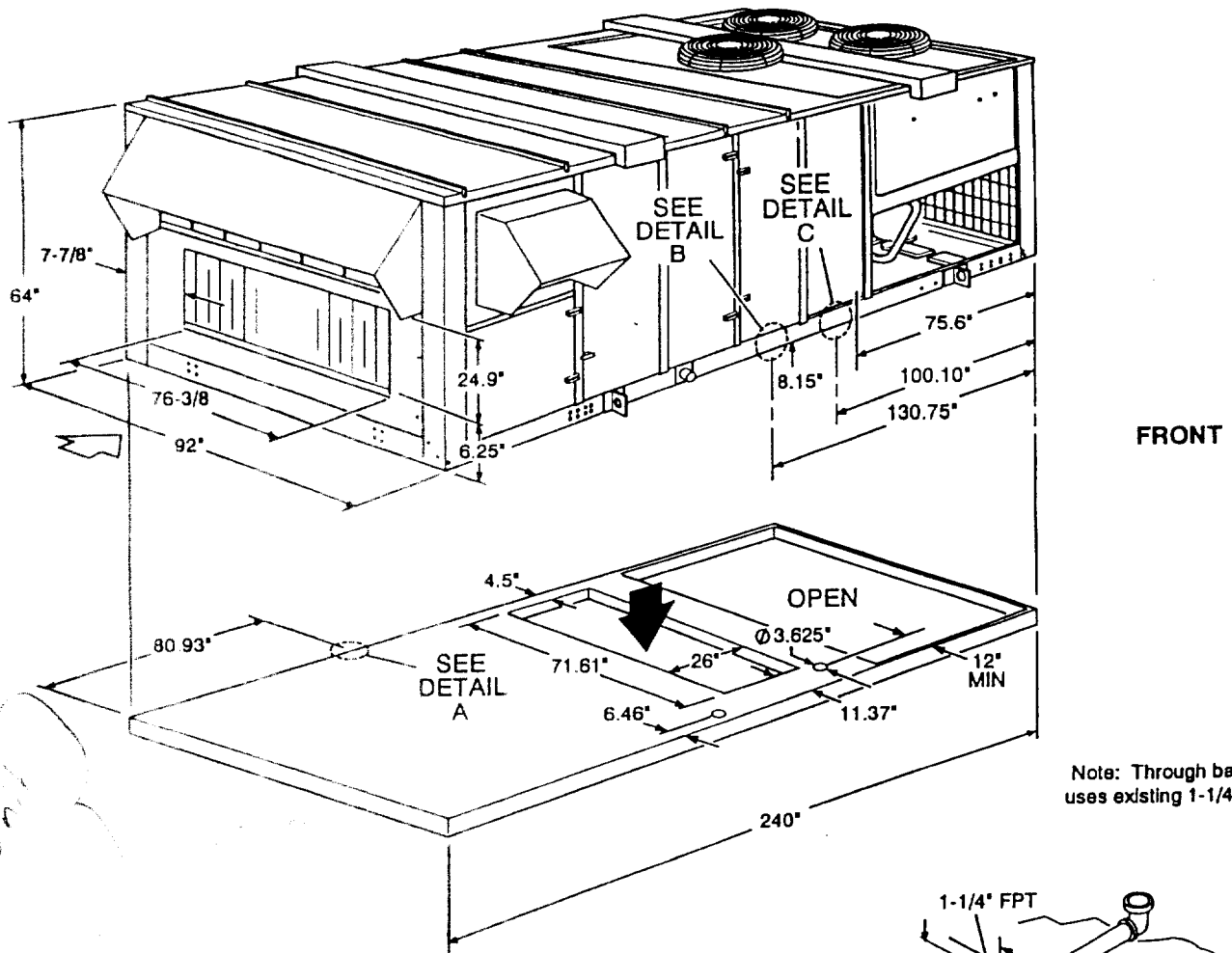
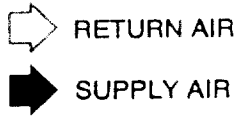


PRELIMINARY DATA

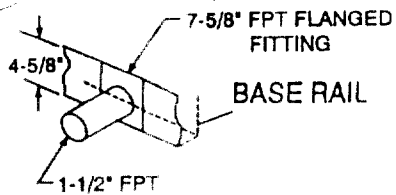
DIMENSIONS - END RETURN, BOTTOM SUPPLY

530.70-TG1Y

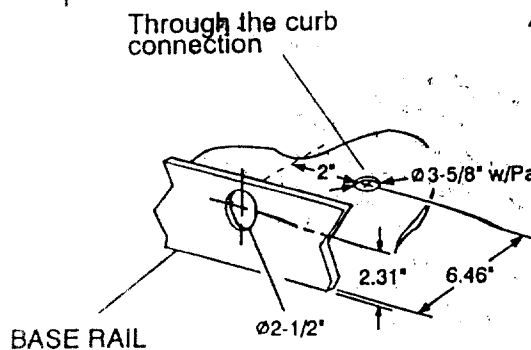
Sheet 8/8



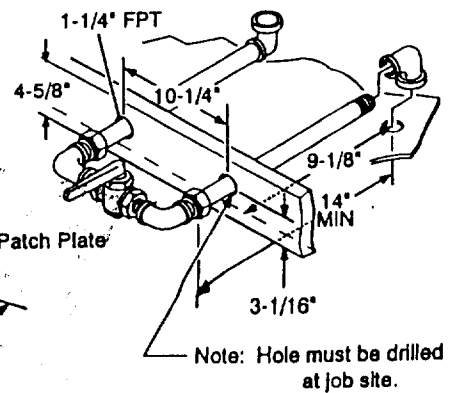
New Unit



DETAIL A
(DRAIN CONNECTION)



DETAIL B
(ELECTRICAL CONNECTION)



DETAIL C
(GAS CONNECTION,
THROUGH CURB)