

TITLE RESIDENCE & GARAGE FOR MR & MRS J L SARAGUEA	GEORGE MORLAN ARCHITECT # B-1347 131 N. BENITA REDONDO BEACH, CALIF.	PAGE 1 OF 3
SUBJECT STRESSES USED		JOB NO. 413
		DATE 2-2-48

1.00 INTRODUCTION:

1.10 TYPE BUILDING: FILLED CELL BLOCK, WAVE ROOF RESIDENCE.

1.20 STRESSES USED. (UNINSPECIFIED VALUES)

- 1.21 MATERIAL:
- f_c (AXIAL) = 125
 - f_f (FLEX) = 200
 - w = 6 psi (GROSS AREA IN CONTACT)
 - w = 75 psi
 - f_t = 300 psi
 - f_s = 20000 psi (STEEL)

1.22 VALUES OF R

BAL REINF - VERT LOAD:

$$k = \frac{1}{1 + \frac{f_s}{n f_c}} = \frac{1}{1 + \frac{20000}{30(200)}} = 0.23$$

$$j = 1 - \frac{k}{3} = 1 - \frac{0.23}{3} = 0.923$$

$$R_1 = \frac{f_f k j}{2} = \frac{200(0.23)(0.923)}{2} = 21.3 \quad \text{VERTICAL LOAD ONLY - BAL. LOAF}$$

BAL REINF - LAT + VERT

$$R_2 = 21.3(1.33) = 28.4 \quad \text{LAT + VERT LOAD - BAL. REINF.}$$

MIN REINF - VERT LOAD

$$p = 0.005$$

$$j = 0.86$$

$$k = 0.42$$

$$R = \frac{200(0.42)(0.86)}{2} = 36.1$$

MIN REINF - LAT. + VERT. LOAD $R = 48.3$

1.30 SOIL - 2000 #/ft³

1.40 LATERAL FRAMING PLAN - ALL LATERAL LOAD TAKEN BY BOND BEAMS TO CROSS WALLS. ANGLE CLIPS ON CEILING JOISTS TO TAKE LAT LOAD DUE TO ROOF, INTO BOND BEAM

SUBJECT
FILLED CELL STUDS

2.00 WALLS & BEAMS

2.10 WALLS

2.11 STEEL HELD MECHANICALLY HELD @ 160 DIA.

$$\text{LOAD (SEISMIC)} = 0.2W = 0.2(47) = 9.4 \frac{\#}{\text{ft}}$$

$$\text{LENGTH OF VERT BEAM (STUD) FROM F.L. TO BOTTOM OF BOND BEAM} = 6.67'$$

$$\text{ALLOW } d = \text{SHELL THICKNESS} + 1" = 2.25"$$

$$\text{ALLOW } b = 11"$$

$$\text{SPACING OF STUDS} = b_1 \text{ (FT)}$$

$$K = 284 \text{ (SEC 1.21)}$$

MAX SPACING

$$M = \frac{9.4 b_1 (6.67)^2 12}{8} = 627 b_1$$

$$M = R b d^2$$

$$627 b_1 = 36.1 (11) (2.25)^2$$

$$b_1 = 3.20' = 38.4" \text{ O.C. MAX}$$

USE 32" O.C.

$$A_s = \frac{M}{f_s j d} = \frac{627 (2.67)}{20,000 (9.3) 2.25} = 0.04 \text{ in}^2$$

$$\text{MIN STEEL} = 11 (2.25) 0.005 = 0.124$$

USE $\frac{1}{2}$ " @ 32" O.C.

2.12 STEEL HELD @ 160 DIA (80" FOR $\frac{1}{2}$ ")

(HELD MECHANICALLY BY WIRING TO DOWELS @ FLOOR LINE & @ BOTTOM OF BOND BEAM BY USING BLOCK WITH KNOCK OUT HOLE)

$$\text{LOAD} = 9.4 \frac{\#}{\text{ft}}$$

$$d = 4"$$

$$b = 11"$$

$$\text{MAX SPACING} = 48" \text{ PER CODE}$$

$$\text{MAX LENGTH OF STUDS @ 48" O.C}$$

$$w = 4(9.4) = 37.6 \frac{\#}{\text{ft}}$$

$$M = \frac{37.6 l^2 12}{8} = 56.5 l^2$$

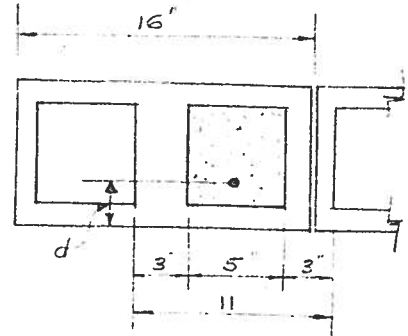
$$M = R b d^2$$

$$56.5 l^2 = 36.1 (11) (4)^2$$

$$l^2 = 1130$$

$$l = 10.6 \text{ FT}$$

USE $\frac{1}{2}$ " @ 48" O.C HELD MECHANICALLY @ 80"



TITLE
RESIDENCE & GARAGE FOR
MR & MRS J. L. SAMPAGUSA.

GEORGE MORLAN

ARCHITECT # B-1347

131 N. BENITA

REDONDO BEACH, CALIF.

PAGE 3 OF 3

JOB NO. 413

DATE 2-3-48

BOND BEAMS SUBJECT

2 20 BOND BEAMS

(LIVING ROOM WALL)

LATERAL LOAD:

$$\text{ROOF LL} = 10(20)0.05(0.08) = 8$$

$$\text{CEILING} = 7.5(10)0.08 = 6$$

$$\text{WALL} = 47(4)0.08 = 15$$

$$\text{ROOF DL} = 10(10)0.05 = 5$$

$$37\% /$$

$$d = 5.625''$$

$$b = 4 \text{ COURSES} = 16''$$

MAX SPAN OF BOND BEAM

$$M = \frac{37 \ell^2}{8} = 55.5 \ell^2$$

$$M = R b d^2 \quad (\text{USE } R \text{ FOR MIN REINF, LAT + VERT LOAD, } = 48.3)$$

$$55.5 \ell^2 = 48.3 (16)(5.6)^2$$

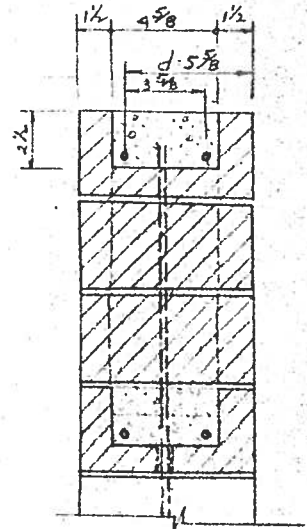
$$\ell^2 = 442$$

$$\ell = 21.0'$$

$$M = \frac{27(21.0)^2}{8} = 2040' \text{ }^{\#}$$

$$\text{REINF. FOR MAX SPAN. } A_s = \frac{2040(12)}{20,000(0.923)(5.63)} = 0.24'' \quad (\text{USE MIN REINF})$$

$$\text{MIN REINF} = 0.005(16)(5.63) = 0.44 \quad \text{USE } 2 \cdot \frac{1}{2}'' \text{ EACH SIDE}$$



2 30 BOND BEAM USED AS A LINTEL.

2.31 - KITCHEN WINDOW

LOAD

$$\text{ROOF} = 12.5(30) = 375$$

$$\text{CEIL} = 5.5(10) = 55$$

$$\text{BEAM} = 200$$

$$630\% /$$

$$M = \frac{630 \ell^2}{10} = 755 \ell^2 \text{ }^{\#}$$

$$R = 36.1 \quad (\text{SEE } "1.22" \text{ MIN REINF } R)$$

$$755 \ell^2 = 36.1 (8)(14.5)^2$$

$$\ell^2 = 804$$

$$\ell = 8.97' \quad (\text{MAX LENGTH WITH MIN STEEL } 0.005 - 2 \cdot \frac{1}{2}'' \text{ RODS})$$

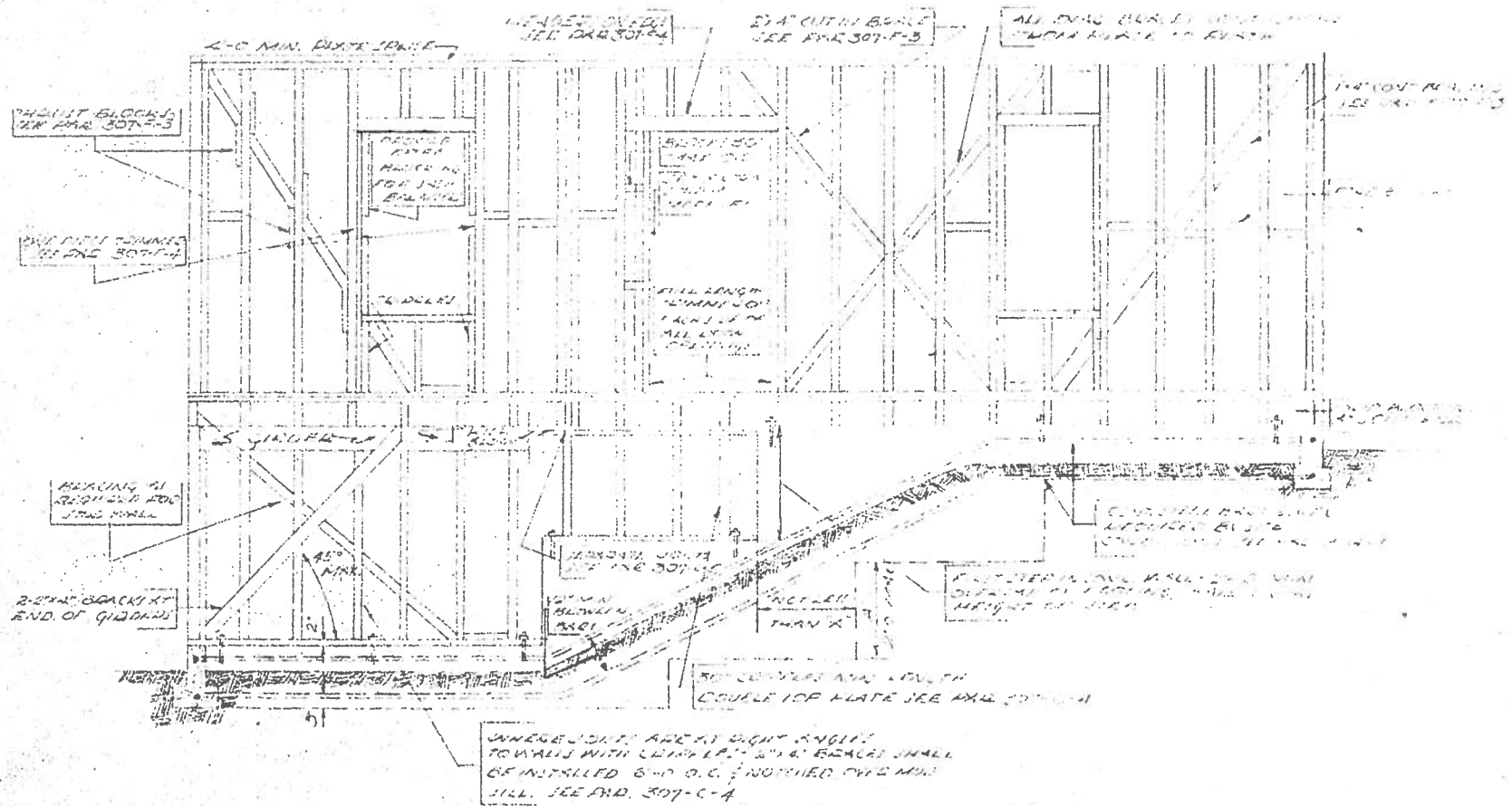
2.32 GARAGE LINTEL.

$$\text{LOADING} = 610\% /$$

$$M = \frac{19500(12)}{157(8)} = 187$$

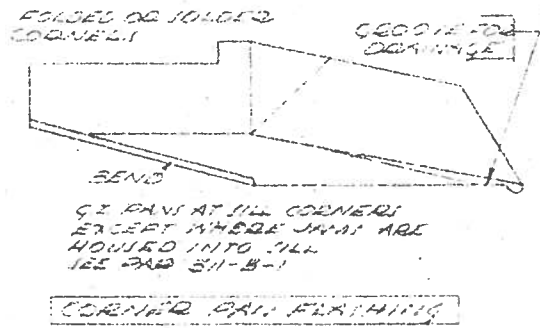
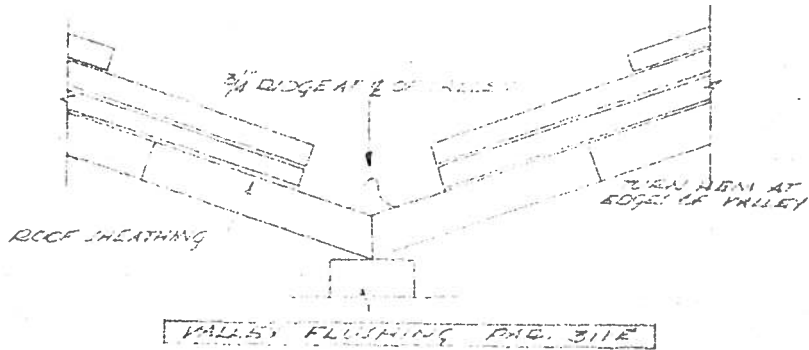
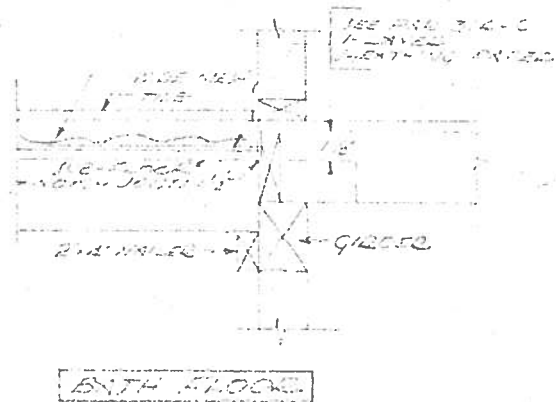
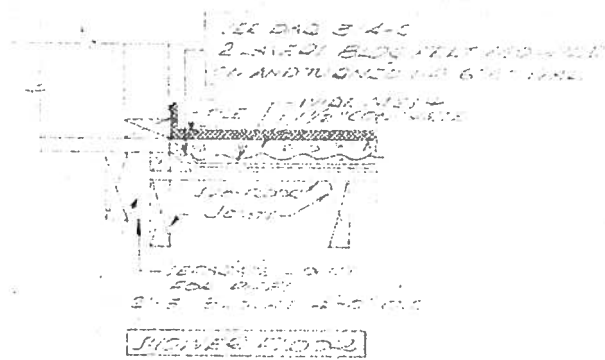
$$d = 14''$$

$$A_s = \frac{1.95}{1.44(14)} = 0.97, \text{ USE } 2 \cdot \frac{3}{8}''$$

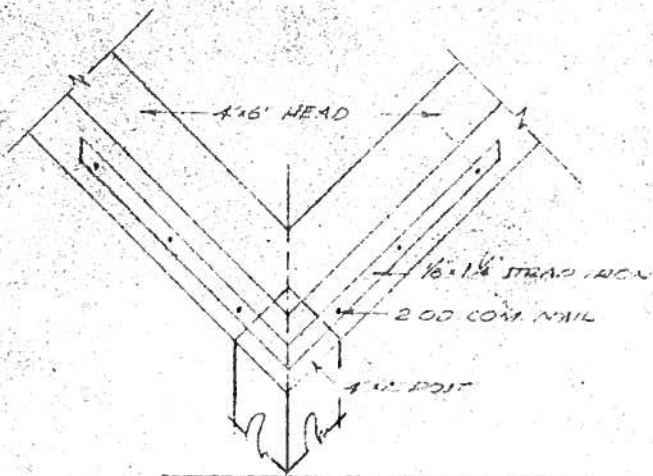


FRAMING DETAILS

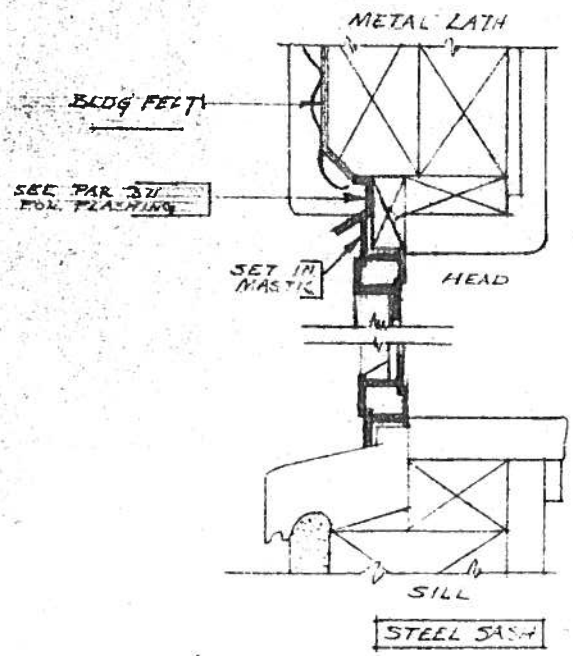
GEORGE MORLAN ARCHITECT



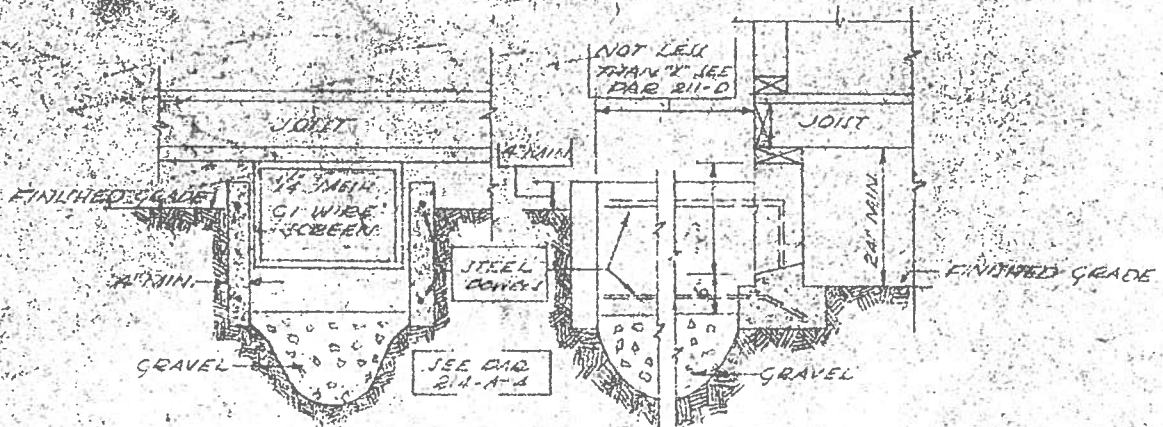
GEORGE MORLAN ARCHITECT



CORNER WINDOW HEAD DETAIL

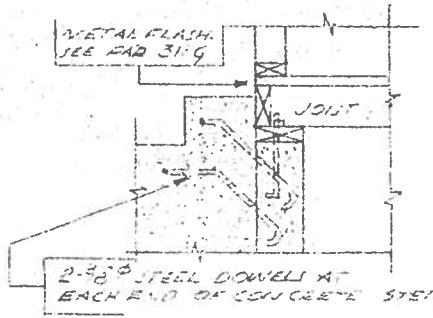


GEORGE WOODS ARCHITECT



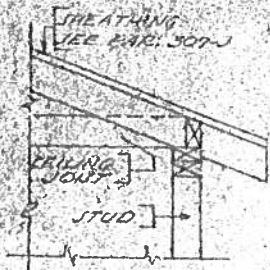
VENT AREA

CEMENT MIX
 1-PART-CEMENT
 2-PARTS-SAND
 4-PARTS-GRAVEL

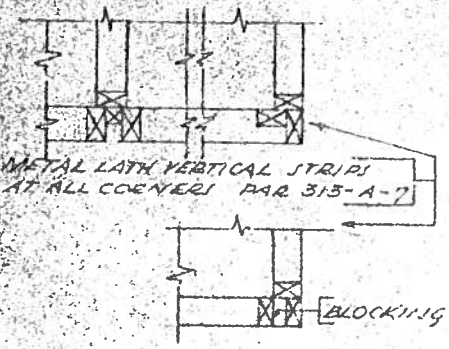


AT CONCRETE STEPS

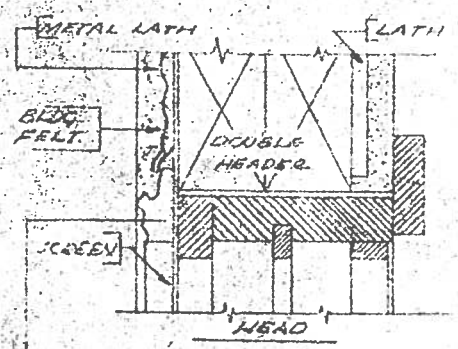
GEORGE MOOREHEAD ARCHITECT



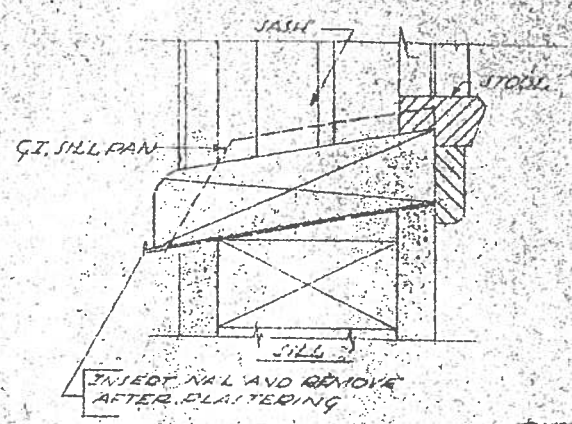
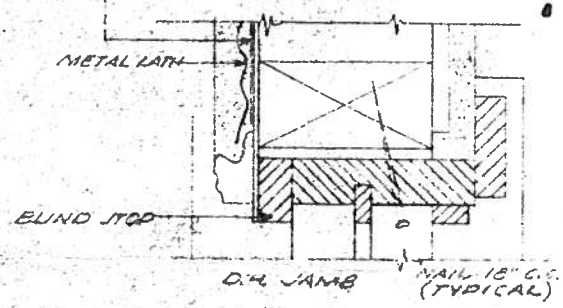
EAVE DETAIL



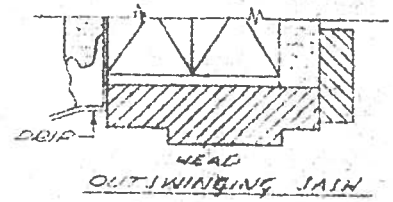
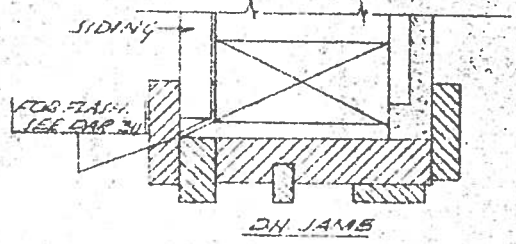
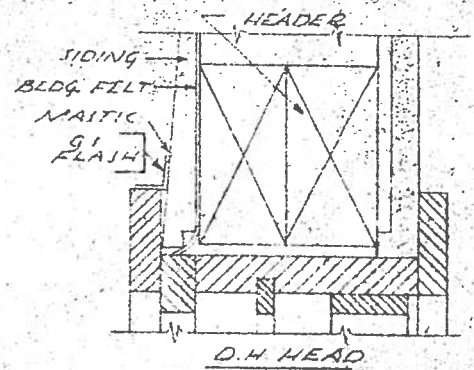
CORNER FRAMING



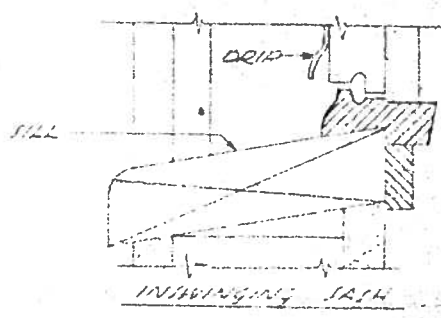
SEE PAR. 311 FOR FLASHING EXTENDING BEHIND PLASTER MOLD



INSERT NAIL AND REMOVE AFTER PLASTERING



OUTSWINGING JAMB



INSWINGING JAMB

WINDOW FRAME DETAILS

GEORGE MORLAN ARCHITECT