

43019

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DATE: 2-20-18  
SHEET: 2 OF 7

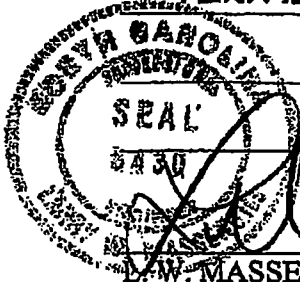
OWNER: CLAYTON HOMES  
LOCATION: 691 EISLER DR.

LILLINGTON N.C

ENGINEER'S REPORT

SUBJECT: MANUFACTURED HOME CURTAIN WALL

- ON 2-17-18, I VISITED THE HOME TO EXAMINE THE CURTAIN WALL CONSTRUCTION.
- THE MAXIMUM WALL HEIGHT IS 57" ALONG THE RIGHT GABLE END. THE WALL HEIGHT IS 30" AT THE LEFT GABLE END.
- PIERS 4" x 8" x 16" WERE PLACED AT 6' ON CENTER WHERE THE WALL HEIGHT EXCEEDS 40."  
PIERS WERE BONDED TO THE 4" BRICK CURTAIN WALL W/ 3/16"  $\phi$  WALL TIES AT 24" OR LESS OC.
- WEDGES APPROX 3 1/2" x 6" HAVE BEEN INSTALLED AT EACH OF THE 22 PIER LOCATIONS FOR LATERAL WIND LOAD SUPPORT. THE WEDGES ARE PLACED OVER THE 4" BRICK WALL TIGHT AGAINST THE PERIMETER FLOOR JOIST.



*W. Massengill*

W. MASSENGILL, P. E.

DATE

TO:

P. 2  
3-1  
/ 5-4

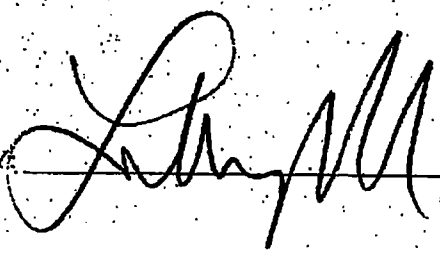
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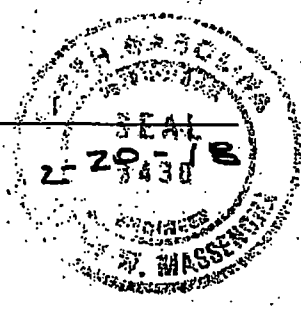
STRUCTURAL CALCULATIONS - REPORT

PROJECT: CLAYTON HOMES

SUBJECT: CURTAIN WALL WIND CONNECTION

LOCATION: 691 EISLER DR. LILLINGTON N.C

BY: 



MASSENGILL ASSOCIATES, P.A.

Consulting Engineering

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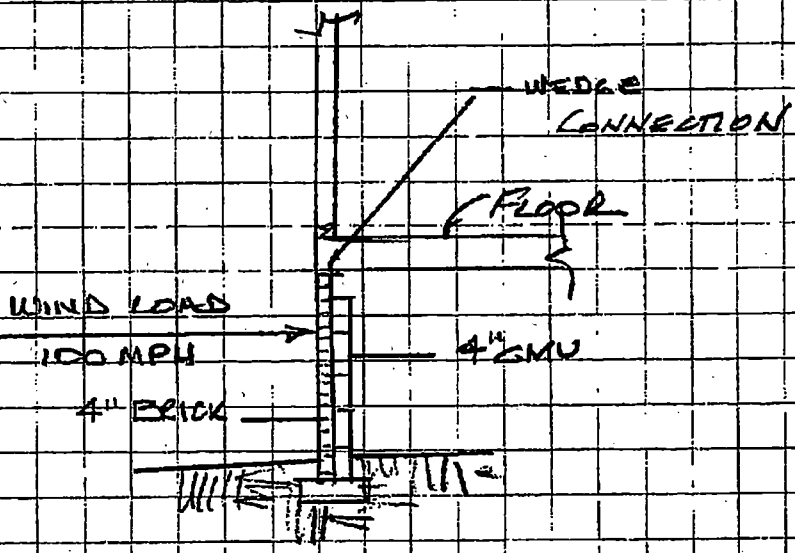
JOB CLAYTON HOMES

SHEET NO. 5-3 OF 5-4

CALCULATED BY W. H. M. DATE 2-20-18

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

SCALE \_\_\_\_\_



WIND LOAD ON WEDGE =  
 $A = 10.5 \text{ PSF} \times 6 \times 2.4 = 151 \text{ \#}$

SHEAR ON CONNECTION:

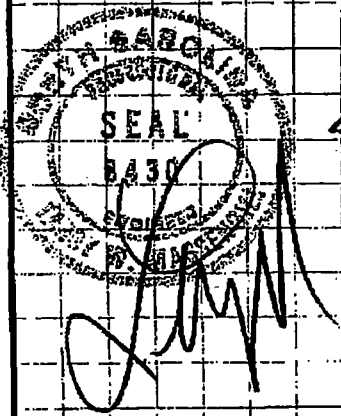
SECTION @ WALL

$\frac{1}{4}'' = 1'-0'' \quad S = \frac{P}{A} = \frac{151 \text{ \#}}{3.5'' \times 10''} = 4.3 \text{ \#/IN}^2$

SUMMARY

THE SHEAR STRESS OF  $4.3 \text{ \#/IN}^2$  IS MUCH LESS THAN THE 4' BRICK WALL AND THE WOOD WEDGE FRICTION LOAD WITH THE WOOD PERIMETER JOIST.

THE WEDGE CONNECTION IS ADEQUATE TO BRACE THE CURTAIN WALL WIND LOAD AS SHOWN ABOVE



Simplified Design Wind Pressure,  $p_{s30}$  (psf) (Exposure B at  $h=30$  ft.;  $K_{zt}=1.0$ ; with  $I=1.0$ )

Basic Wind Speed (mph)	Roof Angle (degrees)	Load Case	Zones									
			Horizontal Pressures				Vertical Pressures				Overhangs	
			A	B	C	D	E	F	G	H	ECH	GCH
85	0 to 5°	1	11.5	-5.9	7.6	-3.5	-13.8	-7.8	-8.8	-6.1	-19.3	-15.1
	10°	1	12.9	-5.4	8.6	-3.1	-13.8	-8.4	-9.6	-8.5	-19.3	-15.1
	15°	1	14.4	-4.8	9.6	-2.7	-13.8	-9.0	-9.6	-6.9	-19.3	-15.1
	20°	1	15.9	-4.2	10.6	-2.3	-13.8	-9.6	-9.6	-7.3	-19.3	-15.1
	25°	1	14.4	2.3	10.4	2.4	-6.4	-8.7	-4.6	-7.0	-11.9	-10.1
		2	---	---	---	---	-2.4	-4.7	-0.7	-3.0	---	---
	30 to 45	1	12.9	8.8	10.2	7.0	1.0	-7.8	0.3	-6.7	-4.5	-5.2
		2	12.9	8.8	10.2	7.0	5.0	-3.9	4.3	-2.8	-4.5	-5.2
90	0 to 5°	1	12.8	-6.7	8.5	-4.0	-15.4	-8.8	-10.7	-6.8	-21.6	-16.9
	10°	1	14.5	-6.0	9.6	-3.5	-15.4	-9.4	-10.7	-7.2	-21.6	-16.9
	15°	1	16.1	-5.4	10.7	-3.0	-16.4	-10.1	-10.7	-7.7	-21.6	-16.9
	20°	1	17.8	-4.7	11.9	-2.6	-15.4	-10.7	-10.7	-8.1	-21.6	-16.9
	25°	1	16.1	2.6	11.7	2.7	-7.2	-9.8	-5.2	-7.8	-13.3	-11.4
		2	---	---	---	---	-2.7	-5.3	-0.7	-3.4	---	---
	30 to 45	1	14.4	9.9	11.5	7.9	1.1	-8.8	0.4	-7.5	-5.1	-5.8
		2	14.4	9.9	11.5	7.9	5.6	-4.3	4.8	-3.1	-5.1	-5.8
100	0 to 5°	1	15.9	-8.2	10.5	-4.9	-19.1	-10.8	-13.3	-8.4	-26.7	-20.9
	10°	1	17.9	-7.4	11.9	-4.3	-19.1	-11.6	-13.3	-8.9	-26.7	-20.9
	15°	1	19.9	-6.6	13.3	-3.8	-19.1	-12.4	-13.3	-9.5	-26.7	-20.9
	20°	1	22.0	-5.8	14.6	-3.2	-19.1	-13.3	-13.3	-10.1	-26.7	-20.9
	25°	1	19.9	3.2	14.4	3.3	-8.8	-12.0	-8.4	-9.7	-16.5	-14.0
		2	---	---	---	---	-3.4	-6.6	-0.9	-4.2	---	---
	30 to 45	1	17.8	12.2	14.2	9.8	1.4	-10.8	0.5	-9.3	-6.3	-7.2
		2	17.8	12.2	14.2	9.8	6.9	-5.3	6.9	-3.8	-6.3	-7.2
105	0 to 5°	1	17.5	-9.0	11.8	-5.4	-21.1	-11.9	-14.7	-9.3	-29.4	-23.0
	10°	1	19.7	-8.2	13.1	-4.7	-21.1	-12.8	-14.7	-9.8	-29.4	-23.0
	15°	1	21.9	-7.3	14.7	-4.2	-21.1	-13.7	-14.7	-10.5	-29.4	-23.0
	20°	1	24.3	-6.4	16.1	-3.5	-21.1	-14.7	-14.7	-11.1	-29.4	-23.0
	25°	1	21.9	3.5	15.9	3.5	-9.7	-13.2	-7.1	-10.7	-18.2	-15.4
		2	---	---	---	---	-3.7	-7.3	-1.0	-4.8	---	---
	30 to 45	1	19.6	13.5	15.7	10.8	1.5	-11.9	0.6	-10.3	-6.9	-7.9
		2	19.6	13.5	15.7	10.8	7.6	-5.8	6.5	-4.2	-6.9	-7.9
110	0 to 5°	1	19.2	-10.0	12.7	-5.9	-23.1	-13.1	-16.0	-10.1	-32.3	-25.3
	10°	1	21.6	-9.0	14.4	-5.2	-23.1	-14.1	-16.0	-10.8	-32.3	-25.3
	15°	1	24.1	-8.0	16.0	-4.6	-23.1	-15.1	-16.0	-11.5	-32.3	-25.3
	20°	1	26.6	-7.0	17.7	-3.9	-23.1	-16.0	-16.0	-12.2	-32.3	-25.3
	25°	1	24.1	3.9	17.4	4.0	-10.7	-14.8	-7.7	-11.7	-19.9	-17.0
		2	---	---	---	---	-4.1	-7.9	-1.1	-5.1	---	---
	30 to 45	1	21.6	14.8	17.2	11.8	1.7	-13.1	0.6	-11.3	-7.6	-8.7
		2	21.6	14.8	17.2	11.8	8.9	-6.5	7.2	-4.6	-7.6	-8.7
120	0 to 5°	1	22.8	-11.9	15.1	-7.0	-27.4	-15.6	-19.1	-12.1	-38.4	-30.1
	10°	1	25.8	-10.7	17.1	-6.2	-27.4	-16.8	-19.1	-12.9	-38.4	-30.1
	15°	1	28.7	-9.5	19.1	-5.4	-27.4	-17.9	-19.1	-13.7	-38.4	-30.1
	20°	1	31.6	-8.3	21.1	-4.6	-27.4	-19.1	-19.1	-14.5	-38.4	-30.1
	25°	1	28.6	4.6	20.7	4.7	-12.7	-17.3	-9.2	-13.9	-23.7	-20.2
		2	---	---	---	---	-4.8	-9.4	-1.3	-6.0	---	---
	30 to 45	1	25.7	17.6	20.4	14.0	2.0	-15.6	0.7	-13.4	-9.0	-10.3
		2	25.7	17.6	20.4	14.0	9.9	-7.7	8.6	-5.5	-9.0	-10.3

10.5 PSF ON WALL HARNETT COUNTY

Unit Conversions—1.0 ft = 0.3048 m; 1.0 psf = 0.0479 kN/m<sup>2</sup>