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DESIGN & CONSULTING ENGINEER
9218 CYPRESS GREEN DR, STE. #10
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Project# 130609

READERICE FOR TOMMY & TRUDIE COPPERGE
@ 259 S.W MYSTIC WAY
FT WHITE, FLORIDA.

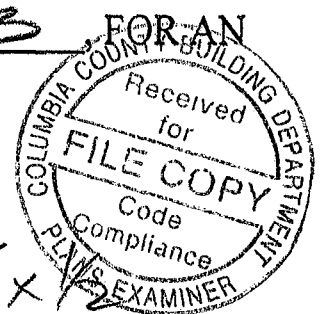
COLUMBIA COUNTY BUILDING DEPARTMENT

WIND LOAD

BASED ON THE FLORIDA BUILDING CODE 2010 RESIDENTIAL,
FIG. R301.2(4), THIS SITE IS IN THE 130 MPH ZONE. PER ASCE 7-10,
METHOD 1, THE IMPORTANCE FACTOR IS 1.0, THE RISK
CATEGORY IS II, AND THE EXPOSURE CATEGORY 1B FOR AN
ENCLOSED BUILDING.

$$\text{ROOF ANGLE A} = \tan^{-1} \frac{5}{12} \\ = 22.6^\circ$$

$$\text{MEAN ROOF HT} = 8.125 + \frac{5}{12} \times 38.58 \times \frac{1}{2} \\ = 12.144'$$



HEIGHT & EXPOSURE ADJUSTMENT COEFFICIENT = 1.0

$$W_w = 1.0 \times 1.0 \times 20.6 = 20.6$$

ROOF LOAD

L.L.	20	P.S.F.
D.L.	20	P.S.F.
T.L.	40	P.S.F.

FLOOR LOAD

L.L.	P.S.F.
D.L.	P.S.F.
T.L.	P.S.F.

Handwritten signature and date 8/10/13.

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Truss Anchor Schedule

Mark	Uplift (Lbs.)	Anchors
A 11	401	H 2.5A / 5-8d
	394	H 2.5A / 5-8d
A 12	98	H 3
	84	H 3
	90	H 3
	95	H 3
A 13	401	H 2.5A / 5-8d
	394	H 2.5A / 5-8d
A 14	71	H 3
	111	H 3
	117	H 3
	68	H 3
A 15	400	H 2.5A / 5-8d
	395	H 2.5A / 5-8d
A 16 GIR	67	H 3
A 17 GIR	442	H 2.5A / 5-8d
	436	H 2.5A / 5-8d
B 1	23	H 3
B 2	23	H 3
B 3 GIR	44	H 3
C 1	123	H cp 2 / 6-10d x 1 1/2
	70	3-16d TOENAILS
	60	4-16d TOENAILS
C 2	110	H cp 2 / 6-10d x 1 1/2
	54	2-16d TOENAILS
	59	3-16d TOENAILS

P3



EXTERIOR WALL 2x4's SPF #2 @ 16" o.c.

$$H = 8.00'$$

$$M_w = \frac{1}{8} \times 20.6 \times 1.33 \times 8.00^2 = 224.1 \text{ #/}$$

$$\frac{M_w}{F_b} = \frac{224.1 \times 12 / 3.06}{2400} = 0.366$$

$$\frac{P/A}{F_c} = \frac{P / 5.25}{1.6 \times 369} = 1 - 0.366$$

$$P_{\text{ALLOWABLE}} = 1964 \text{ # per 16" o.c.}$$

$$R_{\text{ALLOWABLE}} = (24 / 16) \times 1964 = 2946 \text{ #}$$

3) 5030

$$P = 1671/2 \times (5 + 1.33)/2 = 2646 \#$$

$$M_w = 2241/1.33 \times 6.33/2 = 532.4 \#$$

$$\frac{M_w}{F_b} = \frac{532.4 \times 12 / 3.06k}{2400} = 0.87/k$$

$$\frac{P_A}{F_c} = \frac{2646 / 5.05k}{1.6 \times 369} = \frac{0.854/k}{1.724/k}$$

(1K/c) 2-2x4's @ EA SIDE OF OPENING
HEADER

$$R = 1671/2 \times 5/2 = 2088.8 \#$$

$$A = 34.82 \text{ in}^2$$

$$M = 1671/2 \times 5^2/8 = 2611 \#$$

$$S = 27.24 \text{ in}^3$$

USE 2 2x12's / 1/2 PLYWOOD

$$A = 3.5 \times 11.25 = 39.375 \text{ in}^2; S = 73.82 \text{ in}^3$$

$$I = 415.28 \text{ in}^4$$

4) 3050

(1K/c) 2-2x4's @ EA SIDE OF OPENING
HEADER 2-2x8's

5) GUEST ROOM 3030

USE (1K/c) 2-2x4's @ EA SIDE OF OPENING
HEADER 2-2x8's

6) LAUNDRY 2030 / 3068

2-2x4's @ EA SIDE OF OPENING
HEADER 2-2x8's

(10) 2-2668

$$P = 885/2 \times (-5 + 1.33)/2 = 1401.2 \#$$

$$\frac{M/S}{F_b} = \frac{532.4 \times 12 / 3.06k}{2400} = 0.87/k$$

$$\frac{P/A}{F_c} = \frac{1401.2 / 525k}{1.6 \times 369} = \frac{0.452/k}{1.322/k}$$

(11K1C) 2-2x4's @ EA. SIDE OF OPENING.
HEADER

$$R = 885/2 \times 5/2 = 1106.3 \#$$

$$A = 18.44 \text{ in}^2$$

$$M = 885/2 \times 5^2/8 = 1383 \# \cdot \text{ft}$$

$$S = 14.43 \text{ in}^3$$

2-2x8's

(11) 2068

$$P = 1772k \times (3 + 1.33)/2 = 1920 \#$$

$$M_w = 2241.33 \times 4.33/2 = 3642 \# \cdot \text{ft}$$

$$\frac{M/S}{F_b} = \frac{3642 \times 12 / 3.06k}{2400} = 0.596/k$$

$$\frac{P/A}{F_c} = \frac{1920 / 525k}{1.6 \times 369} = \frac{0.62/k}{1.216/k}$$

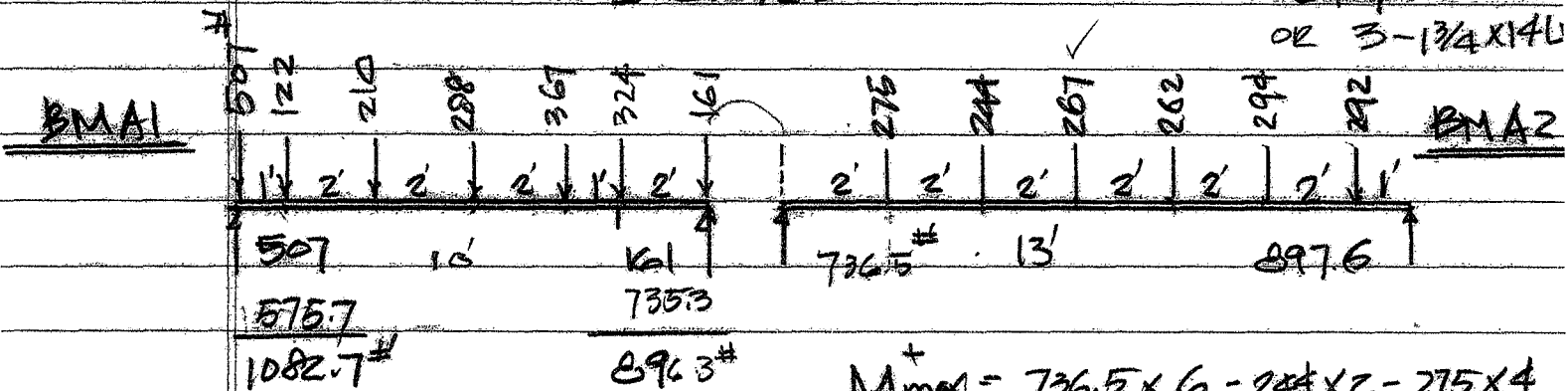
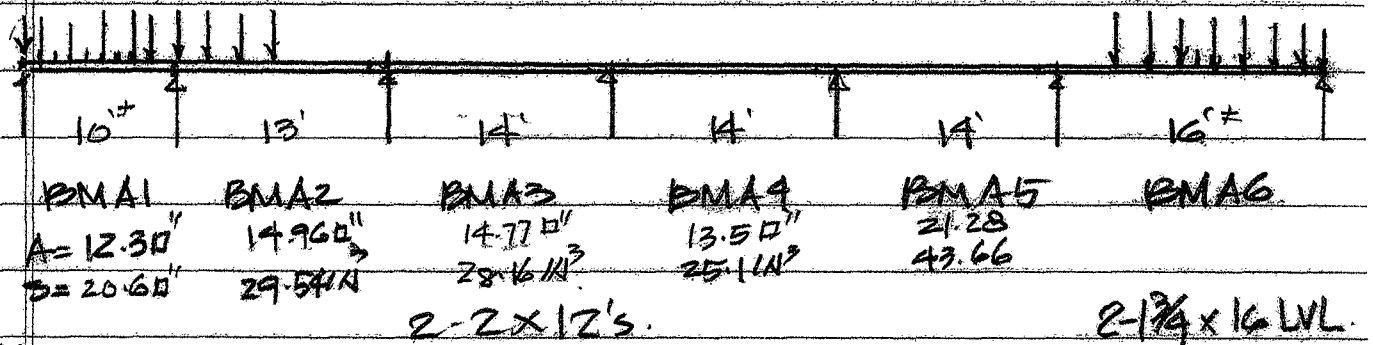
(11K1C) 2-2x4's @ EA. SIDE OF OPENING.
HEADER

$$R = 1772k \times 3/2 = 1329 \# \Rightarrow A = 22.15 \text{ in}^2$$

$$M = 1772k \times 3^2/8 = 997 \# \cdot \text{ft} \Rightarrow S = 10.4 \text{ in}^3$$

USE 2-2x8's / 1/2" ply wood.

Along Col. Line (A)



$$M_{max}^+ = 575.7 \times 5$$

$$= 210 \times 2 - 122 \times 4$$
$$= 1970.5 \text{ \#-}$$

$$V_{max} = 7353 \text{ #}$$

$$A = 12.26 \text{ IN}^2$$

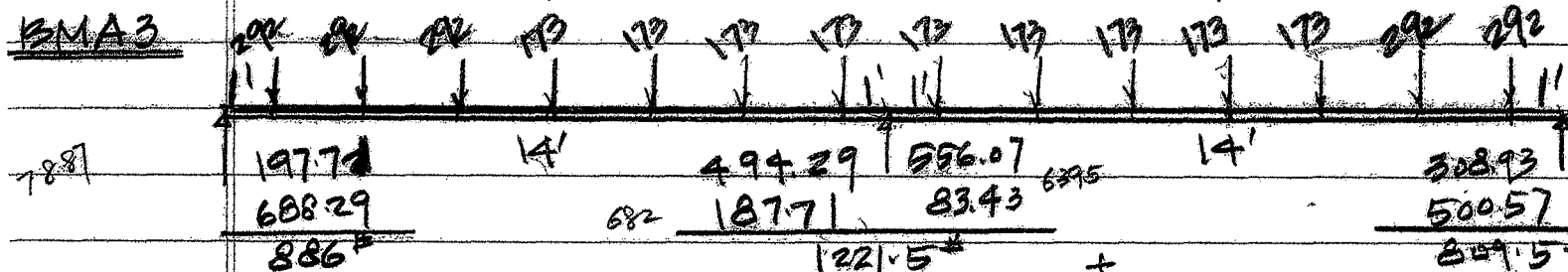
$$M_{\max}^+ = 736.5 \times 6 - 24 \times 2 - 275 \times 4$$

$$= 2831 \text{ #-'}.$$

$$S_{\text{sub}} = 29.54 \text{ IN}^3$$

$$V_{max} = 897.6 \text{ \#}$$

$$A_{\text{avg}} = 14.96 \text{ kN}^2$$



$$M_{\max} = 886 \times 7 - 3 \times 292 \times 4 = 2698$$

$$S = 28.16 \text{ kN}$$

$$A = 14.77 \text{ m}^2$$

$$M_{\max} = 809.5 \times 7 - 173 \times 2 - 29 \times (4+6) = 2400$$

$$S_2 = 215.05 \text{ IN}^3$$

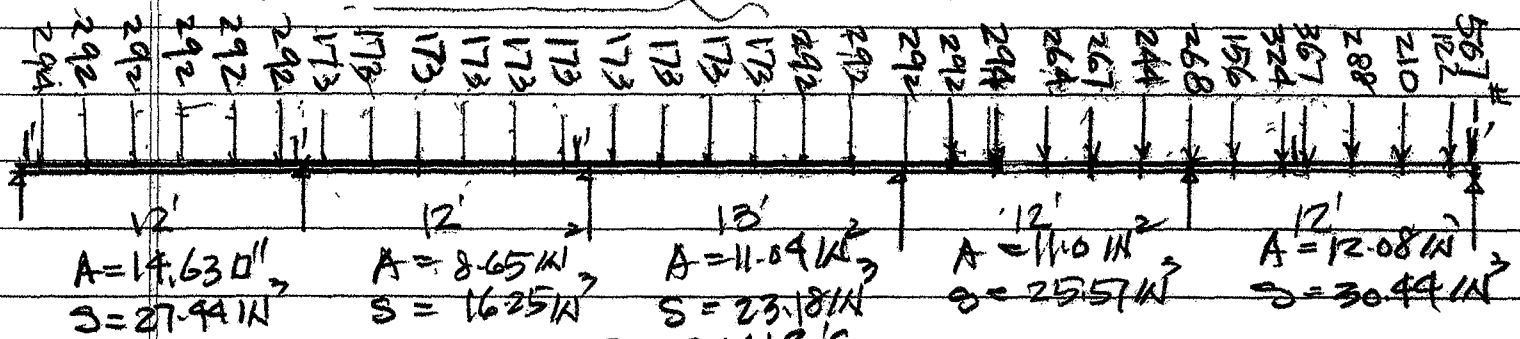
$$A = 13.5 \text{ N}^2$$

BMA4

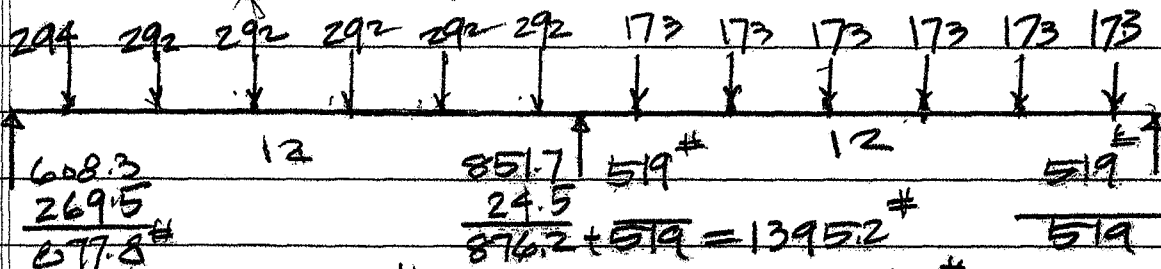
③

Col. D.2

④



2 - 2x12's



$$V_{max} = 87.8 \text{ #}$$

$$V_{max} = 519 \text{ #}$$

$$M_{max} = 87.8 \times 5 - 292 \times 2 - 294 \times 4 = 2629.5 \text{ #ft}$$

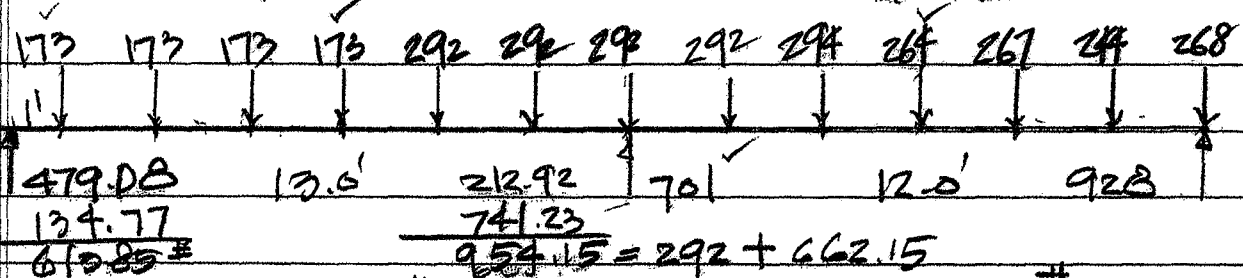
$$M_{max} = 519 \times 5 - 173(2+4) = 1557 \text{ #ft}$$

$$A_{reqd} = 14.63 \text{ ft}^2$$

$$A = 8.65 \text{ ft}^2$$

$$S = 27.44 \text{ in}^3$$

$$S = 16.25 \text{ in}^3$$



$$V_{max} = 613.85 \text{ #}$$

$$A = 11.04 \text{ ft}^2$$

$$V_{max} = 701 \text{ #} \Rightarrow A = 11 \text{ ft}^2$$

$$M_{max} = 613.85 \times 7 - 3 \times 173 \times 4 = 2220.95 \text{ #ft}$$

$$M_{max} = 660 \times 6 - 267 \times 2 - 244 \times 4 = 2450 \text{ #ft}$$

$$A_{reqd} = 15.6 \text{ ft}^2$$

$$S = 23.18 \text{ in}^3$$

$$V_{max} = 742.75 \text{ #} \Rightarrow A = 12.08 \text{ ft}^2$$

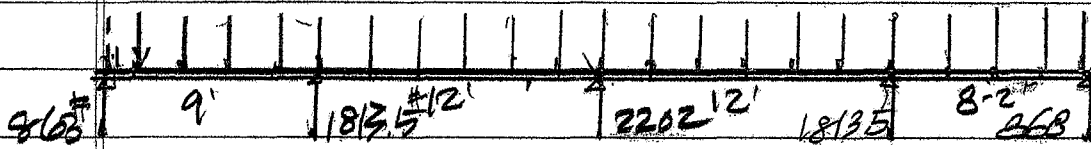
$$M_{max} = 742.75 \times 12 - 324 - 156 \times 3 = 2921.75 \text{ #ft}$$

$$M_{max} = 5 \times 742.75 - 324 - 156 \times 3 = 2921.75 \text{ #ft}$$

$$2 - 2 \times 12's \quad A = 33.75 \text{ ft}^2; S = 63.28 \text{ in}^3; I = 355.95 \text{ in}^4$$

R.15

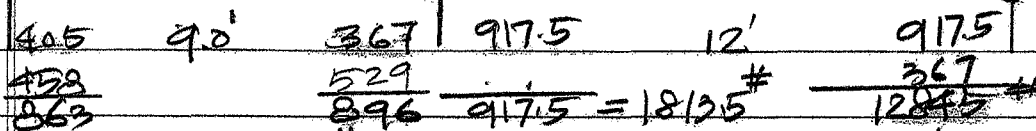
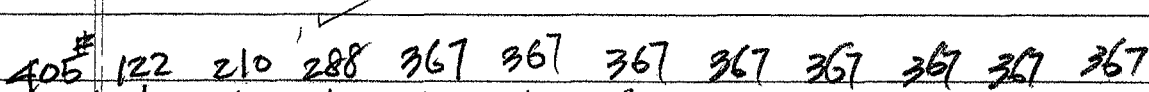
CL ①



$$A = 14.39 \text{ k}^2 \quad A = 15.29 \text{ k}^2 \quad A = 15.29 \text{ k}^2$$

$$S = 14.44 \text{ k}^3 \quad S = 34.47 \text{ k}^3 \quad S = 34.47 \text{ k}^3$$

2-2x10's



$$V_{\max} = 529 \text{ lb}$$

$$A = 14.39 \text{ k}^2$$

$$M_{\max} = 468 \times 5$$

$$- 210 \times 2 - 122 \times 4$$

$$= 1382 \text{ lb-ft}$$

$$S = 14.44 \text{ k}^3$$

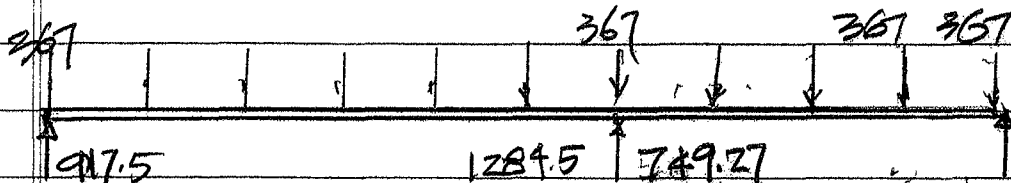
$$V_{\max} = 917.5 \text{ lb}$$

$$A = 15.29 \text{ k}^2$$

$$M_{\max} = 917.5 \times 6 - 367(2+4)$$

$$= 3303 \text{ lb-ft}$$

$$S = 34.47 \text{ k}^3$$



$$V_{\max} = 749.27 \text{ lb}$$

$$M_{\max} = 718.73 \times 2.17 - 367 \times 2$$

$$= 1911.5 \text{ lb-ft}$$

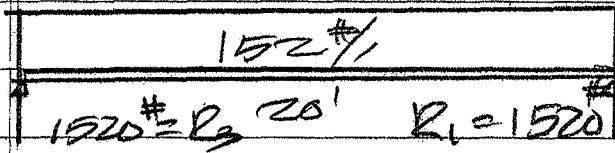
$$S = 19.95 \text{ k}^3$$

$$2-2x10's \quad A = 27.75 \text{ k}^2; \quad S = 42.78 \text{ k}^3 \quad I = 197.86 \text{ k}^4$$

USE 2-2x10's

P17

WORKSHOP



SHEAR WALL <3>

$$R_3 = 1520 \#$$

$$l_3 = 15'$$

$$v_3 = 101.33 \#/\text{TYPE (A)}$$

$$p_3 = 811 \#$$

SHEAR WALL <1>

$$R_1 = 1520 \#$$

$$l_1 = 15'$$

$$v_1 = 101.33 \#/\text{(A)}$$

$$p_1 = 811 \#$$

SHEAR WALL <D>

$$R_D = 1520 \#$$

$$l_D = 867'$$

$$v_D = 175.33 \#/\text{TYPE (A)}$$

$$p_D = 1403 \#$$

SHEAR WALL <E>

$$R_E = 1520 \#$$

$$l_E = 15'$$

$$v_E = 101.33 \#/\text{(A)}$$

$$p_E = 811 \#$$