

COVER

MASSENGILL ASSOCIATES, P. A.

116 EAST MAIN STREET

BENSON, NORTH CAROLINA 27504

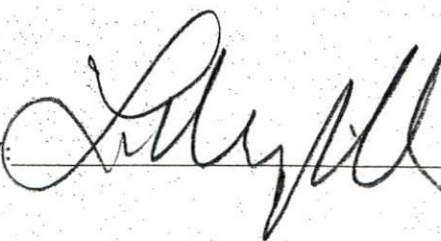
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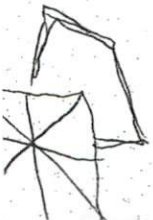
STRUCTURAL CALCULATIONS - REPORT

PROJECT: RAYFORD McLEOD

SUBJECT: STRUCTURAL MODIFICATIONS

LOCATION: 107 4th STREET ERWIN
2665 ASH AVE

BY: 



McCLOUD RES.

FOUNDATION OBSERVATION

1. THE EXTERIOR WALL FOOTING WERE
PROBED @ 24" OC TO VERIFY THICKNESS
& PROJECTION.
2. WALL FOOTINGS WERE LOCATED
IN ALL NECESSARY BEARING WALL AREAS.
3. DECK COLUMN FOOTINGS WERE PROBED
AND FOUND TO BE 12" X 12" TO 18" X 18" X 8"
CONC

① DECK OBSERVATIONS LEFT SIDE

1. SIZE 44-9 X 8'-6 REQ'D LL = 40 PSF
2. THE DECAYING BOARDS ARE WATER DAMAGED AND MUST BE REPLACED.
3. THE DECK FLOOR CONSIST OF TREATED 2" X 8" @ 16" OC
4. ALLOWABLE SPAN FOR 2" X 8" @ 16" = 11'-10" > 8'-0" OK
5. GIRDER 2-2X10 8'-0" SPAN
LOAD REQ'D = 50 PSF X 4' = 200 #/LF
- ① LOAD CAPACITY = 400 #/LF > 200 #/LF OK
6. THE EXISTING COLUMN SPANS ARE OK AS IS OK

DECK OPERATIONS REAR SIDE

$$RDLL = 40 PSF$$
$$DL = 10 PSF$$

1 SIZE: 32'-5" x 8'-0"

2 THE EXISTING DECKING IS WATER DAMAGED AND MUST BE REPLACED.

DECK CONSIST OF TREATED 2x8" @ 16" OC
ALLOWABLE SPAN FOR 2"x8" @ 16" = 11'-10" OK

3 GIRDER 2-2x10 @ 8'-0" SPAN
LOAD REQD = $50 \times 4' = 200 \#/ft$
LOAD CAPACITY = 440 #/ft
OK

4 THE EXISTING COLUMN SPANS ARE OK AS IS
OK

5 THE REAR STEPS NEED TO

REPAIRED DUE TO WATER DAMAGE.

6 DECK RAILINGS ARE INADEQUATE AS

CONSTRUCTED. RAILING HEIGHT AND SPACING MUST BE INSTALLED IAW THE 2018 BUILDING CODE

SHEDDER / CARPORT CROSS SECTION

Roof LL = 20 RSF

1. SIZE 35'-6" x 19'-2"

2. ROOF CONSIST OF 2" X 10 @ 16" OC

ALDWARBE SPAN = 19'-10" OK

3. GIRDER SPAN = 17'-9"

$$\text{LOAD} = 19.5 \times 30 \text{ RSF} = 293 \text{ \#/LF}$$

4. THE EXISTING GIRDER 2-2X10 MUST BE

SUPPORTED WITH 6x6 TREATED POST

TO REDUCE SPAN = 8'-10"

TO SUPPORT THE DL+LL SHOWN ABOVE

5. THE 2" X 10 RAFTERS MUST BE

ATTACHED TO THE EXISTING BAND

W/ JOIST TRACKERS.

6. THE 2" X 10 BAND MUST BE BOLTED

TO THE WALL WITH 5/8" GAL BOLTS

AT 24" OC AND 12d NAILS 2 @ 8" OC.

FIRST FLOOR

1. MODIFY STAIRWAY HEAD ROOM TO ALLOW 6'8" CLEAR.
2. MODIFY FLOOR TRUSS AS SHOWN IN TYPICAL GUSSET. REINFORCEMENT.
3. RISER HEIGHT MAX. 8 1/4" HIGH
TREAD DEPTH MIN. 9"
4. ADD HAND RAILS
5. REPLACE EXISTING FRONT DOOR W/ WINDOW.
6. REMOVE EXT. WALL FINISH TO VERIFY R-15 INSULATION.

SECOND FLOOR

5-6

1. MODIFY STAIRWAY HEAD ROOM TO ALLOW 6'-8" CLEAR.
2. MODIFY FLOOR FRAMING AS NECESSARY TO ALLOW FOR RISER HEIGHT 8 1/4" HIGH AND TREAD DEPTH MIN 9" WIDE.
3. ADD HAND RAILS
4. REMOVE EXTERIOR WALL FINISH SECTIONS TO CHECK FOR R-15 INSULATION.

THIRD FLOOR

1. MASTER SUITE
THE EXISTING BATHROOM MUST BE ENCLOSED FOR PRIVACY & VENTILATION CONTROL.
2. LEaving GWB MUST BE REMOVED IN SECTIONS
TO CHECK INSULATION R-VALUE ALL LOCATION
3. REMOVE EXISTING 4' CANTILEVER
2x10 P1 @ 3RD FLOOR RIGHT SIDE.
REPAIR WALL OPENING.

MEMBER TYPE	SIZE	SPRUCE-PINE - FIR	SOUTHERN PINE
FLOOR JOIST	2x10	9-4	8-1
40 PSF LL	2x8	12-3	10-3
10 PSF DL	2x10	17-3	15-5
FLOOR JOIST	2x12	21-6	17-10
FLOOR JOIST	2x12	21-6	14-7
30 PSF LL	2x8	14-11	13-6
10 PSF DL	2x10	19-0	17-2
FLOOR JOIST	2x12	23-0	19-11
CEILING JOIST	2x4	11-10	10-9
NO LL	2x6	18-8	14-9
10 DL	2x8	24-7	18-9
CEILING JOIST	2x10	31-4	28-1
CEILING JOIST	2x4	9-2	7-2
20 PSF LL	2x6	14-5	10-6
10 PSF DL	2x8	18-6	15-3
SEE CODE	2x10	22-7	19-10
KATERS	2x4	9-5	8-7
20 PSF LL	2x6	14-9	11-9
10 PSF DL	2x8	19-6	14-10
AMB CEILING	2x10	24-10	22-3
L/180	2x12	26-0	25-9
KATERS	2x4	10-4	9-5
20 PSF LL	2x6	16-3	14-4
10 PSF DL	2x8	21-0	18-2
SLOPE > 3/12	2x10	25-8	22-3
L/180	2x12	31-4	25-9
KATERS	2x4	10-4	8-0
20 PSF LL	2x6	15-7	11-9
10 PSF DL	2x8	21-0	14-10
2x4	2x10	25-8	22-3
2x12	2x12	31-4	25-9
2x4	2x4	10-4	9-4
2x6	2x6	15-7	11-9
2x8	2x8	21-0	14-10
2x10	2x10	25-8	22-3
2x12	2x12	31-4	25-9
2x4	2x4	10-4	9-4
2x6	2x6	15-7	11-9
2x8	2x8	21-0	14-10
2x10	2x10	25-8	22-3
2x12	2x12	31-4	25-9

ROUGH CARPENTRY NOTES

5-9

1. ROUGH CARPENTRY SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL FOREST PRODUCTS ASSOCIATION (NFPA) "NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION."
2. WOOD FRAMING MEMBERS PERMANENTLY EXPOSED TO THE WEATHER AND ALL SILL PLATES AROUND THE BUILDING PERIMETER SHALL BE PRESERVATIVE-TREATED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. UNLESS OTHERWISE NOTED, ALL NAILING FASTENERS SHALL CONFORM TO "FASTENING SCHEDULE" OF THE NORTH CAROLINA STATE BUILDING CODE, LATEST EDITION.
4. CONSTRUCTION PANELS SHALL COMPLY WITH PS I "U.S. PRODUCT STANDARD FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD" FOR PLYWOOD CONSTRUCTION PANELS AND THE FOLLOWING REQUIREMENTS:
 - A) EXTERIOR WALL AND SHEARWALL WALL SHEATHING: $\frac{1}{2}$ " APA RATED SHEATHING, EXTERIOR EXPOSURE | EXPOSURE DURABILITY CLASSIFICATION.
 - B) ROOF SHEATHING: $\frac{1}{2}$ " APA RATED SHEATHING, EXTERIOR EXPOSURE DURABILITY CLASSIFICATION.
5. WOOD FRAMING SHALL COMPLY THE FOLLOWING REQUIREMENTS:
 - A) MOISTURE CONTENT - SEASONED, WITH 19 PERCENT MAXIMUM MOISTURE CONTENT.
 - B) GRADE - NO. 2. SPF
6. PROVIDE DOUBLE JOISTS UNDER ALL PARTITIONS WHICH RUN PARALLEL WITH JOISTS. PROVIDE MULTIPLE STUDS AS INDICATED ON THE PLANS.
7. PROVIDE HEADERS OF THE SAME CROSS SECTION AS JOISTS OR RAFTERS TO FRAME AROUND ALL OPENINGS TO SUPPORT SHEATHING.
8. ATTACH BLOCKING AND NAILERS TO FRAMING USING $\frac{3}{16}$ " DIAMETER POWDER ACTUATED FASTENERS AT 24" ON CENTER OR $\frac{1}{2}$ " DIAMETER BOLTS AT 48" ON CENTER STAGGER FASTENERS TO ALTERNATE SIDES OF BEAM WEB.
9. WHERE MULTIPLE FRAMING MEMBERS ARE INDICATED, SCAB MEMBERS TOGETHER WITH 16d NAILS AT 12" ON CENTER, ALTERNATING AT 2 INCHES FROM EACH EDGE.
10. STEEL PLATE CONNECTORS SHALL COMPLY WITH ASTM A 36 SPECIFICATIONS ($F_y = 36$ KSI). BOLTS CONNECTING WOOD MEMBERS SHALL COMPLY WITH ASTM A 307 COMMON STEEL BOLTS, AND SHALL BE $\frac{1}{2}$ " DIAMETER UNLESS OTHERWISE SPECIFIED.
11. METAL FRAMING ANCHORS SHALL COMPLY WITH ASTM A 446 GRADE A (STRUCTURAL QUALITY).
12. BRIDGING SHALL BE PROVIDED FOR ALL FLOOR JOISTS AND ROOF RAFTERS. MAXIMUM SPACING SHALL BE 8'-0" UNLESS OTHERWISE NOTED.

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Consulting Engineering

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JOB _____
SHEET NO. 5-10 OF _____
CALCULATED BY _____ DATE _____
CHECKED BY _____ DATE _____
SCALE _____

FOUNDATION AND CONCRETE NOTES:

1. FOUNDATION DESIGN BASED ON 2000 LB/SF ALLOWABLE SOIL BEARING CAPACITY. CONTACT ENGINEER IF POOR SOIL CONDITIONS ARE ENCOUNTERED IN THE FOUNDATION EXCAVATION.
2. ALL CONCRETE SHALL 3000 PSI AT 28 DAYS.
3. REINFORCING STEEL SHALL BE GRADE 60.
4. WIRE REINFORCEMENT SHALL BE 6X6, 10/10.
5. VAPOR BARRIER: ALL SLABS ON GRADE SHALL BE PLACED ON 6 MIL POLY VAPOR BARRIER.
6. SAW CUT CONTROL JOINTS AS INDICATED ON PLAN.
7. CURING COMPOUND SHALL BE APPLIED UNLESS OTHERWISE NOTED.
8. SURFACE SHALL BE BROME FINISHED UNLESS OTHERWISE NOTED.