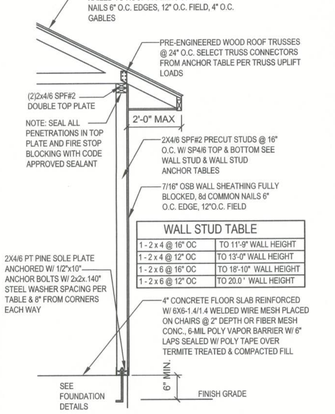
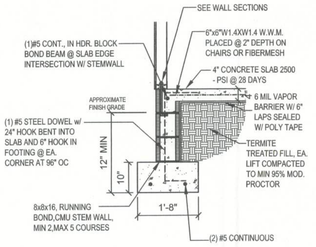
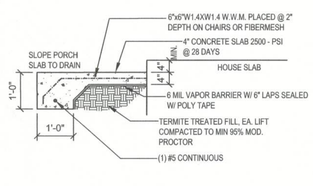



| WALL STUD TABLE | |
|---|---|
| 1 - 2 x 4 @ 16" OC | TO 11'-9" WALL HEIGHT |
| 1 - 2 x 4 @ 12" OC | TO 13'-0" WALL HEIGHT |
| 1 - 2 x 6 @ 16" OC | TO 18'-10" WALL HEIGHT |
| 1 - 2 x 6 @ 12" OC | TO 20.0 " WALL HEIGHT |

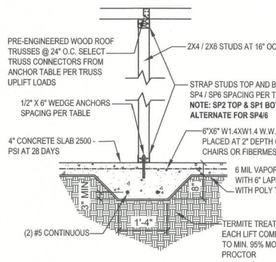
W1 - SINGLE STORY EXT. WALL SECTION
SCALE: 1/2"=1'-0" REV-22-AUG-03




F1 - STEM WALL FOUNDATION
SCALE: 1/2"=1'-0" REV-27-MAY-03

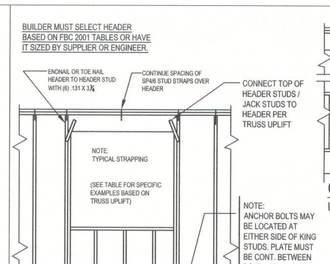


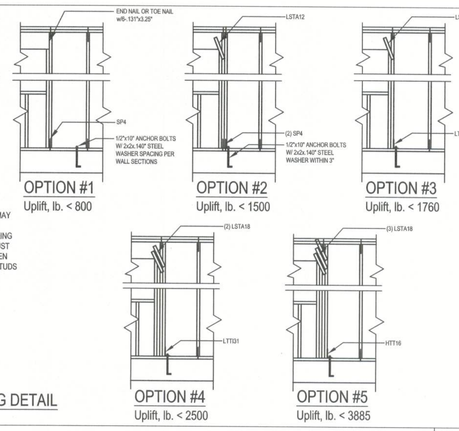

F2 - PORCH SLAB
SCALE: 1/2"=1'-0" REV-22-AUG-03




| TYPICAL TRUSS UPLIFT | WEDGE ANCHOR SPACING | SP4 / SP6 SPACING | TRUSS CONNECTOR |
|---|---|---|---|
| 400 LB | 48" O.C. | 48" O.C. | H2.5A |
| 600 LB | 48" O.C. | 32" O.C. | H10 |
| 1000 LB | 32" O.C. | 16" O.C. | HTS20 |
| 2200 LB | LTT31 W/ 5/8" X 7" WEDGE ANCHOR | N/A | (2) HTS20 NAILED TO STUD PACK |

F4 - INTERIOR BEARING FOOTING
SCALE: 1/2"=1'-0" REV-22-AUG-03




W13-TYPICAL HEADER SIZING & STRAPING DETAIL
SCALE: N.T.S. REV 22-AUG-03

Load Bearing Header Sizing Methods (BY BUILDER)
1. Determine header size from FBC 2001, Tables 2308.3 A, B, & C, or 2308.5.
2. Use supplier published data or Southern pine span tables.
3. For engineered lumber beams have suppliers engineer size beam.

Jack Studs and King Studs (BY BUILDER)
4. Lookup jack studs from FBC 2001, Tables 2308.3 A, B, & C, or 2308.5.
5. Use one jack stud for every 3000 lb vertical load.
6. Total king plus jack studs = studs needed to be there if no opening was there.

Header Uplift Connections (BY BUILDER)
7. Calculate the uplift at each end of the header by summing the moments of all truss uplifts and dividing by the length of the header.
8. Select header connections from table below or mfg. catalog to connect header to stud (top connection) and stud to foundation (bottom connection).

| Option # | Uplift, lb. | Top Connector | Bottom Connector | |
|---|---|---|---|---|
| #1 | < 800 | End nail or toe nail w/6-.131"x3.25" | SP4, (6-10dx1½" | 690 |
| #2 | < 1500 | LSTA12, 10-10d | 755 | (2) SP4, 6-10dx1½" & ½"x10" AB | 1380 |
| #3 | < 1750 | LSTA18, 14-10d | 1055 | LTT20B, 10-16d | ½"x10" AB | 1750 |
| #4 | < 2500 | (2) LSTA18, 14-10d | 2110 | LTTI31, 18-10d | ½"x10" AB | 2185 |
| #5 | < 3885 | (3) LSTA18, 14-10d | 3480 | HTT16, 18-16d | ½"x10" AB | 4175 |

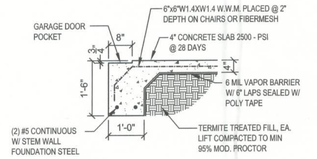
Uplift greater than 3885 lb requires engineering design

FBC2001, TABLE 2308.3A
Header Spans For Exterior Bearing Walls Supporting Roof+Ceiling (20psf+20psf)

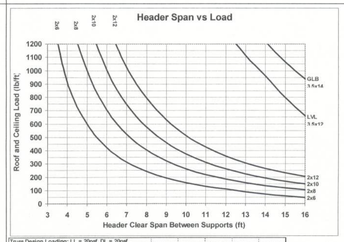
NOTES: NJ = Number of jack studs required to support each end. Building width is measured perpendicular to the ridge. For widths between those shown, spans may be interpolated. Spans are based on uniform loads on header.

| Header Sizes | Header Spans (ft-in) | Building Width / Truss Span (ft) | | | | |
|---|---|---|---|---|---|---|
| | | 20 | | 28 | | 36 |
| | | Span | NJ | Span | NJ | Span |
| | 2-2x4 | 3-8 | 1 | 3-2 | 1 | 2-10 |
| | 2-2x6 | 5-5 | 1 | 4-8 | 1 | 4-2 |
| | 2-2x8 | 6-10 | 1 | 5-11 | 2 | 5-4 |
| | 2-2x10 | 8-5 | 2 | 7-3 | 2 | 6-6 |
| | 2-2x12 | 9-9 | 2 | 8-5 | 2 | 7-6 |
| | 3-2x8 | 8-4 | 1 | 7-5 | 1 | 6-8 |
| | 3-2x10 | 10-6 | 1 | 9-1 | 2 | 8-2 |
| | 3-2x12 | 12-2 | 2 | 10-7 | 2 | 9-5 |
| | 4-2x8 | 9-2 | 1 | 8-4 | 1 | 7-6 |
| | 4-2x10 | 11-8 | 1 | 10-6 | 1 | 9-5 |
| | 4-2x12 | 14-1 | 1 | 12-2 | 2 | 10-11 |

| STUD ANCHOR TABLE | | | |
|---|---|---|---|
| TYPICAL TRUSS UPLIFT & MAX 10'-0" WALL HEIGHT | ANCHOR BOLT SPACING | SP4 / SP6 SPACING | ALTERNATE SP4/6/SP1/6 SPACING |
| 770 LB | 48" O.C. | 48" O.C. | N/A |
| 950 LB | 48" O.C. | 32" O.C. | N/A |
| 1270 LB | 32" O.C. | 16" O.C. | 32" O.C. |
| 1500 LB | 24" O.C. | 16" O.C. | 16" O.C. |
| 2200 LB | LTT31 W/ 5/8" X 7" WEDGE ANCHOR | N/A | (2) HTS20 NAILED TO STUD PACK |
| NOTE: SP2 TOP & SP1 BOTTOM ALTERNATE FOR SP4/6 | | | |
| NOTE: MINIMUM ANCHOR BOLT SPACING FOR WALLS WITH A HEIGHT GREATER THAN 10'-0" AND LESS THAN 14'-0" SHALL BE 32" O.C. | | | |



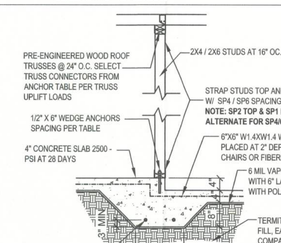

F3 - GARAGE DOOR POCKET
SCALE: 1/2"=1'-0" 22-AUG-03




| Truss Design Loading: LL = 20psf, DL = 20psf | | |
|---|---|---|
| 1" Jack Truss | 220 | Half of 7' truss span + 24" overhang |
| Porch width, 8' | 240 | Half of 8' truss span + 24" overhang |
| Garage width, 20' | 480 | Half of 20' truss span + 24" overhang |
| Garage width, 24' | 500 | Half of 24' truss span + 24" overhang |
| Main house width, 32' | 720 | Half of 32' truss span + 24" overhang |
| Main house width, 40' | 880 | Half of 40' truss span + 24" overhang |
| Main house width, 60' | 1280 | Half of 60' truss span + 24" overhang |
| Bonus Room, above garage | 1025 | Half of 24' truss span and 14' bonus room |

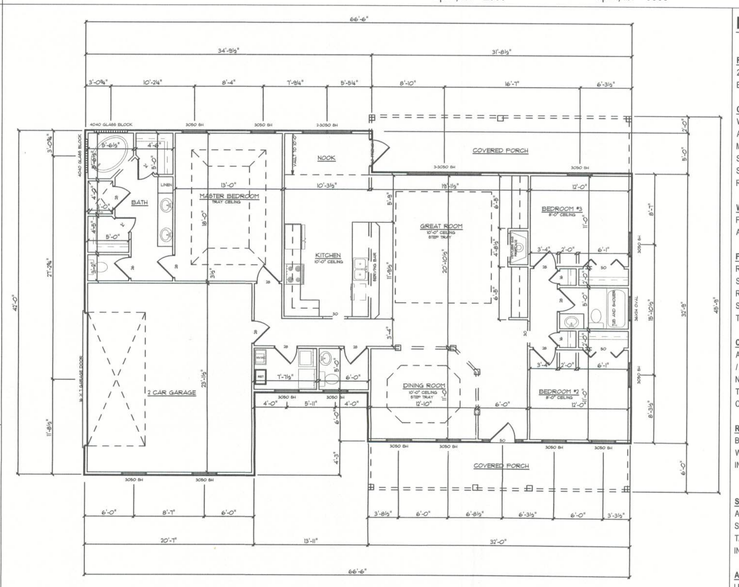
Notes:
1. Deflection limits: TL=L/240, LL=L/180
2. Duration factor, Cd = 1.25, applied to Fb and Fv (No increase to E or Fc_ for duration of load.)
3. 2x headers are SYP#2 with OSB 8inch spacer and (2) 12x5 16"OC. (strength increased 5% for OSB)
4. 3.5" x 14" GLB is Anthony Power Header, 2900 Fb, 1.9 E, or GP (2) 7¼x14 LVL, 2650 Fb, 2.0 E
5. 3.5" x 12" LVL is Blue Link - GP Lam, (2) 1.75" x 11 7/8" LVL, 2900 Fb, 2.0 E, 285 Fv
6. Minimum bearing for SYP header, Fc = 565psi, 2500 lb per jack stud. (For SPF plate, Fc = 425psi, 2200 lb per
7. Shear strength is increased 50% for minimal splits and checks headers cut to size on site.
8. Deflection has not been adjusted for creep due to long term loading, Kcr = 1.0
9. The chart is based on NDS2001 bending, horizontal shear, and deflection requirements.
10. Chart is for uniform loads only.
11. (For non-uniform loads sum the loads on the header, divide by header span; and multiply by 2.)

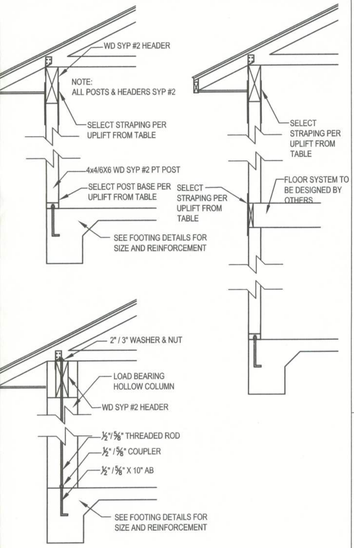
W71 - HEADER SPANS FOR ROOF/CEILING LOAD




| TYPICAL TRUSS UPLIFT | WEDGE ANCHOR SPACING | SP4 / SP6 SPACING | TRUSS CONNECTOR |
|---|---|---|---|
| 400 LB | 48" O.C. | 48" O.C. | H2.5A |
| 600 LB | 48" O.C. | 32" O.C. | H10 |
| 1000 LB | 32" O.C. | 16" O.C. | HTS20 |
| 2200 LB | LTT31 W/ 5/8" X 7" WEDGE ANCHOR | N/A | (2) HTS20 NAILED TO STUD PACK |

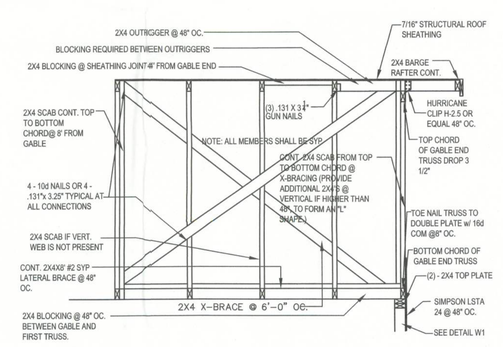
F5 - INTERIOR BEARING STEP FOOTING
SCALE: 1/2"=1'-0" REV-22-AUG-03



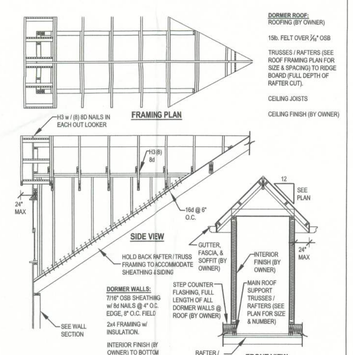




| SYP #2 PT WD POSTS | | | |
|---|---|---|---|
| TYPICAL POST UPLIFT | POST BASE ANCHOR | BETWEEN FLOOR STRAPING | HEADER STRAPING |
| 555 LB | ABA44 W/ (6)-10d & ½" AB | (2) LSTA21 W/ (6)-10d EA. | (2) LSTA21 W/ (6)-10d EA. |
| 720 LB | ABA66 W/ (8)-16d & ⅝" AB | (2) LSTA21 W/ (8)-10d EA. | (2) LSTA21 W/ (8)-10d EA. |
| 2200 LB | ABU44 W/ (12)-16d, (2)½ BOLTS & ⅝"AB | (2) LSTA21 W/ (16)-10d EA. | (2) LSTA21 W/ (16)-10d EA. |
| 2300 LB | ABU66 W/ (12)-16d, (2)½ BOLTS & ⅝"AB | (2) LSTA21 W/ (16)-10d EA. | (2) LSTA21 W/ (16)-10d EA. |
| HOLLOW COLUMN | | | |
| 1500 LB | ½" X 10" AB ATTACHED TO ½" THREADED ROD WITH ½" COUPLER THRU COLUMN & HEADER WITH 2" WASHER & NUT TOP | | |
| 2300 LB | ⅝" X 10" AB ATTACHED TO ⅝" THREADED ROD WITH ⅝" COUPLER THRU COLUMN & HEADER WITH 3" WASHER & NUT TOP | | |

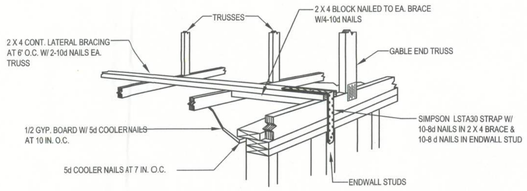
W12 - PORCH HEADER ANCHORS
SCALE: N.T.S. REV-18-JUL-03




W10 - TYPICAL GABLE END ( X-BRACING )
SCALE: 1/2"=1'-0"




R1 - DORMER ANCHORING DETAIL
SCALE: N.T.S. REV-04-JUN03




ALTERNATIVE TO BALLOON FRAMING IS: GYPSUM CEILING DIAPHRAGM AS SPECIFIED IN THE "WOOD FRAME CONSTRUCTION MANUAL" (WFCM). SEE WFCM TABLE 3.1I3 AND FIGURE 3.6a. SHONE ABOVE, PROTECT GYPSUM FROM MOISTURE TO PRESERVE STRENGTH OF DIAPHRAGM.

NOTE: EXTEND RAT RUN BRACES GABLE TO GABLE OR A LENGTH EQUAL TO 1/2 OF GABLE WIDTH FOR ROOFS UP TO 7:12 AND 5/8 OF GABLE WIDTH OVER 7:12

W23 - GYPSUM CEILING DIAPHRAGM OPTION - GABLE END WALL
SCALE: N.T.S.

## N5 - TRUSS UPLIFT CONNECTOR TABLE

REV-18-NOV-04

All connectors are Simpson Strongtie, uno. Select tip and bottom connections from this table or SST catalog to meet truss uplift. Use fasteners as specified.

| Uplift SPF | Uplift SYP | Truss Connector | To Plate | To Truss / Rafter |
|---|---|---|---|---|
| 320 | 455 | H3 | 4-8d | 4-8d |
| 245 | 350 | H5A | 3-8d | 3-8d |
| 535 | 600 | H2.5A | 5-8d | 5-8d |
| 620 | 720 | H10 | 6-10dx1½" | 6-10dx 1½" |
| 850 | 990 | LTS12 | 8-8dx1½" | 8-8dx 1½" |
| 1245 | 1450 | HTS20 | 10-16d or 12-10dx1½" | 10-10d or 12-10dx 1½" |
| 1285 | 1470 | H16, H16-2 | 10- 8dx1½" | 2-10dx 1½" |
| 1785 | 2050 | LGT2 | 14- 8d Sinker | 16-16d Sinker |
| 3655 | 4200 | MGT | ⅝" thd. Rod | 22-10d |
| SPF | SYP | Strap Connector | To One Member | To Other Member |
| 760 | 885 | SP4 | 6-10dx1½" | N/A |
| 865 | 1005 | CS20 | 9-8dx1 7-10d | 9-8d or 7-10d |
| 1085 | 1265 | LSTA18-24 | 7-10d | 7-10d |
| 1170 | 1360 | SPH4 | 12- 10dx1½" | N/A |
| 420 | 455 | SSP | 4-16d | 3-10d to double plate or 1-10d to single |
| 600 | 825 | DSP | 8-16d | 6-10d to double plate or 2-10d to single |
| 1420 | 1650 | CS16 | 14-8d or 11-10d | 14-8d or 11-10d |
| SPF | SYP | Column Anchor | To Foundation | To Column / Truss |
| 1160 | 1350 | LTT19 | ⅝"x 16" AB | 8-16d Sinkers |
| 1985 | 2310 | LTT31 | ⅝"x 16" AB | 18-10dx 1½" |
| 2385 | 2775 | HD2A | ⅝"x 16" AB | 2-⅝" Bolts |
| 3590 | 4175 | HTT16 | ⅝"x 16" AB | 18-16d |
| 1975 | 2300 | ABU66 | ⅝"x 16" AB | 12-16d |

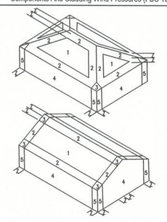
Studs Supporting Trusses: The builder is responsible for gravity loads, but you should put an extra 2x4 stud under truss bearing location for each 3000 lb of reaction. Check the minimum bearing requirements of the truss and top plate (SPF, Fc=425psi=2230lb/sq).

Manufacturer and product number are listed for example not endorsement. An equivalent device of the same or other manufacturer can be substituted for any devices listed in the example tables as long as it meets the required load capacities. Manufacturer's installation instructions must be followed to achieve rated loads. All connections exposed directly to the weather shall be hot dipped galvanized after fabrication. Loads are increased for wind duration. Strap uplift may be reduced proportionally to number of nails. See spec sheet for alternate nail sizes (10d=.84"/66, 100x11"=.89"/106, 150=120=16d sinker), SPF=.86"/1Y

## N4-WIND LOAD DESIGN DATA

(Wind loads are per FBC 2001, Section 1606.2 for enclosed simple diaphragm buildings with mean roof height less than 60' or the least horizontal dimension; not sited on the upper half of an unobstructed 60' high hill with >10% slope.)

| | |
|---|---|
| Basic Wind Speed | 110 MPH |
| Wind Exposure | B |
| Wind Importance Factor | 1.0 |
| Building Category | II |
| Internal pressure Coefficient | N/A (Enclosed) |
| Building not in the high velocity hurricane zone | |
| Building not in the wind-borne debris region | |
| Mean Roof Height | < 30 ft |
| Roof Angle | 10-45 degrees |
| Components And Cladding Wind Pressures (FBC Table1606.2 B&C) | |



| Zone | Effective Wind Area (ft2) | | | |
|---|---|---|---|---|
| | 10 | | 100 | |
| 4 | 21.8 | -23.6 | 16.5 | -20.4 |
| 5 | 21.8 | -29.1 | 16.5 | -22.6 |

| Total Shear Wall Segments | | |
|---|---|---|
| 2'-4"min for 8'-0"H wall 2'-10"min for 10'-0"H wall | | |
| | Transverse | Longitudinal |
| Required | 45.8' | 35.8' |
| Actual | 75.4' | 39.0' |

All exterior walls are type II shear walls ACTUAL SHEAR WALL length is the total of all wall segments with full height sheathing and width to height ratio greater than 1: 3.5 (plus special shear wall segments if noted.) REQUIRED SHEAR WALL length is from WFCM-2001, table 3.17A & 3.17B with table 3.17E adjustment for type II shear wall (or equivalent calculation) REV-27-Jun-03

N3-WINDLOAD ENGINEER'S SCOPE OF WORK: The wind load engineer is engineer of record for compliance of the structure to wind load requirements of FBC 2001, Section 1606. If trusses are used, the wind load engineer is not engineer of record for the trusses and did not design the trusses or delegate to the truss designer.

BUILDER'S RESPONSIBILITY: The builder and owner are responsible for the following, which are specifically not part of the wind load engineer's scope of work.
* Confirm that the foundation design & site conditions meet gravity load requirements (assume 1000 PSF bearing capacity unless visual observation or soils test proves otherwise
* Provide materials and construction techniques, which comply with FBC 2001 requirements for the stated wind velocity and design pressures.
* Provide a continuous load path from roof to foundation. If you believe the plan omits a continuous load path connection, call the wind load engineer immediately.
* Verify the truss engineering includes truss design, placement plans, temporary and permanent bracing details, truss-to-truss connections, and load reactions for all bearing locations.
* Select uplift connections, walls, columns, and footings based on truss engineering bearing locations and reactions; including interior bearing walls.
* Size headers for gravity loads; headers sized by the builder for gravity loads will also satisfy wind loads.

DOCUMENT CONTROL and PRIORITY: Structural requirements on S-1 control unless the building code or architectural sheets have more stringent requirements. Non-structural requirements on architectural sheets control. Specific requirements take precedence over general requirements. Revision control is by the latest signature date and is the responsibility of the builder.

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DIMENSIONS: Stated dimensions supercede scaled dimensions. Refer all questions to Mark Disosway, P.E. for resolution. Do not proceed without clarification.

WINDLOAD ENGINEER: Mark Disosway, PE No.53915

CERTIFICATION: The attached plans and "Windload Engineering", sheet S-1, comply with FBC 2001, Section 1606 wind loads, to the best of my knowledge.

LIMITATION: This design is valid for one building, at specified location. This drawing is not valid for construction unless raised seal is affixed.

REV-06-OCT-03

## N2-GENERAL NOTES:

**FOUNDATION:** FOR POINT LOADS GRATER THAN 5000 lb OR REPETITIVE TRUSS LOADS GRATER THAN 2000 lb PER TRUSS PROVIDE A THICKENED SLAB OR PAD FOOTING 1'-0"D X 1 sq ft. FOR EVERY 1000 lb OF BEARING REINFORCE WITH #5 @ 8" O.C. EACH WAY

**CONCRETE:** MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE F'c = 3000 PSI. WHERE EXCESS WATER IS ADDED TO THE CONCRETE SO THAT ITS SERVICABILITY IS DEGRADED, THE ATTAINMENT OF REQUIRED STRENGTH SHALL NOT RELEASE THE CONTRACTOR FROM PROVIDING SUCH MODIFICATIONS AS MAY BE REQUIRED BY THE ENGINEER TO PROVIDE A SERVICEABLE MEMBER OR SURFACE. ALL CONCRETE SHALL BE VIBRATED. NO REPAIR OR RUBBING OF CONCRETE SURFACES SHALL BE MADE PRIOR TO INSPECTION BY AND APPROVAL OF THE ENGINEER, OWNER OR HIS REPRESENTATIVE.

**WELDED WIRE REINFORCED SLAB:** 6" x 6" W1.4 x W1.4, FB = 85KSI, WELDED WIRE REINFORCEMENT FABRIC (W.W.M.) CONFORMING TO ASTM A185; LOCATED IN MIDDLE OF THE SLAB; SUPPORTED WITH APPROVED MATERIALS OR SUPPORTS AT SPACINGS NOT TO EXCEED 3'.

**FIBER CONCRETE SLAB:** CONCRETE SLABS ON GROUND CONTAINING SYNTHETIC FIBER REINFORCEMENT. FIBER LENGTHS SHALL BE 1/2 INCH TO 2 INCHES IN LENGTH. DOSAGE AMOUNTS SHALL BE FROM 0.75 TO 1.5 POUNDS PER CUBIC YARD IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. SYNTHETIC FIBERS SHALL COMPLY WITH ASTM C 1116. THE MANUFACTURER OR SUPPLIER SHALL PROVIDE CERTIFICATION OF COMPLIANCE WITH ASTM C 1116 WHEN REQUESTED BY THE BUILDING OFFICIAL.

**CONTROL JOINTS:** WHERE SPECIFIED, SAWN CONTROL JOINTS IN SLAB-ON-GRADE SHALL BE CUT IN ACCORDANCE WITH ACI 302. JOINTS SHALL BE CUT WITHIN 12 HOURS OF SLAB PLACEMENT. THE LENGTH / WIDTH RATIOS OF SLAB AREAS SHALL NOT EXCEED 1.5 AND TYPICAL SPACING OF CUTS TO BE 12FT. DO NOT CUT WWM OR REINFORCING STEEL. (RECOMMENDED LOCATION OF CONTROL JOINTS IS SUBJECT TO OWNER AND CONTRACTOR'S APPROVAL. THE CONTROL JOINTS ARE NOT INTENDED TO PREVENT CRACKS BUT RATHER TO ENCOURAGE THE SLAB TO CRACK ON A GIVEN LINE.)

**REBAR:** ASTM A 615, GRADE 60, DEFORMED BARS, FY = 60 KSI. ALL LAPS SPLICES 48 * db (30" FOR #5 BARS); UNO. ALL REINFORCEMENT SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI 315-95 WITH ACI 315-96 UNLESS NOTED OTHERWISE. ALL TENSION DEVELOPMENT LENGTHS SHALL BE 30 INCHES.

**STRUCTURAL CONNECTORS:** MANUFACTURERS AND PRODUCT NUMBER FOR CONNECTORS, ANCHORS, AND REINFORCEMENT ARE LISTED FOR EXAMPLE NOT ENDORSEMENT. AN EQUIVALENT DEVICE OF THE SAME OR OTHER MANUFACTURER CAN BE SUBSTITUTED FOR ANY DEVICES LISTED IN THE EXAMPLE TABLES AS LONG AS IT MEETS THE REQUIRED LOAD CAPACITIES. MANUFACTURER'S INSTALLATION INSTRUCTIONS MUST BE FOLLOWED TO ACHIEVE RATED LOADS.

**ANCHOR BOLTS:** A-307 ANCHOR BOLTS WITH MINIMUM EMBEDMENT AS SPECIFIED IN DRAWINGS BUT NO LESS THAN 7" IN CONCRETE OR REINFORCED BOND BEAM OR 15" IN GROUTED CMU.

**WASHERS:** WASHERS USED WITH 1/2" BOLTS TO BE 2" x 2" x 9/64"; WITH 5/8" BOLTS TO BE 3" x 3" x 9/64"; WITH 3/4" BOLTS TO BE 3" x 3" x 9/64"; WITH 7/8" BOLTS TO BE 3" x 3" x 5/16"; NO.

**NAILS:** ALL NAILS ARE COMMON NAILS UNLESS OTHERWISE SPECIFIED OR ACCEPTED BY FBC TEST REPORTS AS HAVING EQUAL STRUCTURAL VALUES.

REV-27-Jul-04


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Location: Lot 15 Thornwood S/D Columbia County, Florida

Spec House Lot 15 Thornwood S/D

Builder:

Designer:

Approved: FLPE#53915

Revisions:

29Sep05

**Sheet S-1 of 2 Sheets**
Windload Engineering
Job # 509283