FRAMING CONSTRUCTION NOTES

REVISED AUGUST 31, 2005

1. STEEL GIRDERS AND BUILT WITH 4" CERTAIN-TEED AND PIER CONSTRUCTION SHALL BE 3-ply SOUTHERN YELLOW PINE #2 UNLESS NOTED OTHERWISE. MAINTAIN CLEAR SPAN TO BE 4'-9" (4'-2" O.C. SPACING OF PIERS).

   TO AVOID OBJECTIONABLE CRACKING IN FINISHED HARDWOOD FLOORS OVER ANY GIRDERS, USE THE FOLLOWING PROCEDURE:

   A. NAILING
      i. ALL FLOOR JOISTS MUST BE TOENAILED TO THEIR SUPPORT GIRDERS WITH A MINIMUM OF 3-8d NAILS AT EACH END. LARGER NAILS WILL SPLIT AND RENDER THE TOENAIL INEFFECTIVE. NO END NAILING THROUGH THE GIRDER OR BAND IS PERMITTED.
      ii. IF DROPPED GIRDERS ARE USED, END LAP ALL JOISTS AND SIDE NAIL EACH WITH A MINIMUM OF 3-16d NAILS AT EACH END OF EACH JOIST, LEDGER STRIPS NAILED WITH 2-16 d NAILS AT EACH JOIST END, SPACED 5' APART.
      iii. NAIL MULTIPLE MEMBER BUILT UP GIRDERS WITH TWO ROWS OF 16d NAILS STAGGERED AT 3'-0" O.C., 2" DOWN FROM THE TOP AND 2" UP FROM THE BOTTOM WITH 3-inch NAILS AT EACH END OF EACH PIECE. N THE JOIST THROUGH THE MEMBERS MAKING UP THE MULTIPLE GIRDER.
      iv. THIS NAILING PATTERN WILL MAKE A TIGHT FLOOR FROM OUTSIDE OF HOUSE TO OUTSIDE SO THAT WHEN THE FRAMING SHRINKS DURING THE FIRST HEATING SEASON, THE SHRINKAGE WILL BE UNIFORMLY DISTRIBUTED OVER THE ENTIRE FLOOR. IF THE GIRDER NAILING PATTERN IS OMITTED, THEN THE SHRINKAGE WILL ACCUMULATE OVER THE GIRDERS AND AN OBJECTIONABLE CRACK WILL DEVELOP IN THE FINISHED HARDWOOD FLOOR OVER THE GIRDER LINE.

   B. AT ALL GIRDERS WHERE THE JOISTS CHANGE DIRECTION, INSTALL BRIDGING AT 6' O.C. FOR A MINIMUM OF ONE JOIST SPACING BEYOND ANY JOIST DIRECTION CHANGE. THIS WILL INSURE SHRINKAGE DISTRIBUTION OVER THE FLOOR AND NOT LET IT ACCUMULATE AT THE GIRDER.

   C. THERE MUST BE WOOD BLOCKING TRIPLE BOLTED TO THE STEEL BEAM WITH JOISTS TOENAILED OR ATTACHED TO THE BEAM WITH METAL HANGERS UNDER ANY HARDWOOD FLOORS THAT RUNS OVER A STEEL BEAM SUPPORTING FLOOR JOISTS. THIS CONDITION OFTEN EXISTS BASEMENT AREAS.

2. ALL OTHER LUMBER MAY BE SPRUCE #2 UNLESS NOTED OTHERWISE.
3. STEEL BEAMS MUST HAVE 5-2x4 STUD JACKS UNDER EACH END SUPPORT UNLESS NOTED OTHERWISE.
4. LVL BEAMS MUST HAVE 3-2x4 STUD JACKS UNDER EACH END SUPPORT UNLESS NOTED OTHERWISE.
5. MASONRY LINTELS:
   A. FOR SPANS UP TO 6'-0 USE 3 1/2" X 3 1/2" X 1/4" STEEL ANGLES.
   B. FOR SPANS FROM 6'-0 TO 10'-0, USE 8" X 3 1/2" X 5/16" STEEL ANGLES.
   C. FOR SPANS FROM 9' TO 10'-0, USE A PAIR OF 5 GAUGE WIRES IN EACH OF THE FIRST 3 COURSES OF BRICK ON A 8" X 3 1/2" X 5/16" STEEL ANGLE. LAP ALL 5 GAUGE WIRE SPLICES 6" MINIMUM AND EXTEND WIRES 8" INTO MW JOINTS. TEMPORARILY SUPPORT STEEL ANGLE BEFORE LAYING MASONRY. SHORING MAY BE REMOVED FIVE DAYS FOLLOWING INSTALLATION OF MASONRY.
   D. WHEN STRUCTURAL STEEL BEAMS WITH BOTTOM PLATES ARE USED TO SUPPORT MASONRY, THE BOTTOM PLATE MUST EXTEND THE FULL LENGTH OF STEEL BEAM. THIS PROVIDES SUPPORT TO THE ENDS OF THE PLATE BY BEARING ON THE ADJACENT MASONRY JAMBS. THE BEAM SHOULD BE TEMPORARILY PROPPED PRIOR TO LAYING THE MASONRY. THE PROPPING MAY BE REMOVED FIVE DAYS AFTER LAYING THE MASONRY.
6. ALL BRICK VENEER OVER LOWER ROOFS (BRICK CLERIA) MUST HAVE A STRUCTURAL ANGLE LAG SCREWED TO ADJACENT STUD WALL IN ACCORDANCE WITH DETAIL, WITH STEEL BRICK STOPS TO PREVENT SLIDING OF BRICK.
7. ALL RAFTER BRACES MUST HAVE 2 STUDS FROM PLATE THROUGH ALL FLOORS TO FOUNDATION OR SUPPORTING BEAM (BELOW) NO BRACES SHALL BE ATTACHED TO TOP SHELL PLATE WITHOUT STUDS DIRECTLY UNDER THEM.
8. WHERE PARTITIONS FALLS BETWEEN FLOOR JOISTS OR TRUSSES, 2"x4" LADDERS @ 16" O.C. MUST BE PLACED PERPENDICULAR TO THE TRUSSES TO SUPPORT THE PLYWOOD DECKING.
9. ALL WOOD I-JOISTS AND OPEN JOISTS MUST BE ERACED IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS PLUS DETAILS SHOWN ON PLANS. LOAD BEARING PARTITIONS, JACKS, BEAMS AND GIRDER SUPPORTS MUST BE SOLID BLOCKED THROUGH FLOOR TO JOISTS, TRUSSES AND PLYWOOD CANNOT CARRY CONCENTRATED POINT LOADS. ALL POINT LOADS MUST BE CARRIED TO FOUNDATIONS WITH BLOCKING AND/OR BEAMS.
10. ALL STEEL GIRDERS SHALL BEAR ON CONCRETE, MASONRY, OR STEEL ONLY, AN ADEQUATELY-SIZED BASE PLATE SHALL BE USED TO SPREAD THE COLUMN LOAD ACROSS THE BEARING SURFACE AREAS SO AS NOT TO EXCEED ITS ALLOWABLE COMPRESSIVE STRESS. BEAMS THAT BEAR ON TOP OF STEEL GIRDERS SHALL BE FELDED TO THE GIRDER. BASE PLATE SHALL BE BOLTED WITH FOUR 1/2" DIAMETER ANCHOR BOLTS OR EXPANSION BOLTS TO CONCRETE OR MASONRY.
11. UNLESS NOTED OTHERWISE ON THE PLANS, ALL EXTERIOR FACING STUD WALLS TALLER THAN 10' SHALL BE CONSTRUCTED AS FOLLOWS:
   A. WALLS 10' TO 12' HIGH: BALLOON FRAME 2x4 STUDS @ 12" O.C. WITH 1/2" OSB SHEATHING AND 5 KING STUDS ON EACH SIDE OF EACH OPENING NAILED SECURELY TO THE HEADER.
   B. WALLS 12' TO 20' HIGH: BALLOON FRAME 2X6 STUDS @ 16" O.C. (OR 2X8 @ 24" O.C. IF REQUIRED FOR WALL HEIGHT) TO PROVIDE 3 1/4" X 9 1/4" LVL KING STUDS ON EACH SIDE OF OPENINGS 3'-0" WIDE AND 3-2X6 KING STUDS FOR OPENINGS LESS THAN 3' WIDE. FASTEN KING STUDS SECURELY TO ALL HEADERS WITH A MINIMUM OF 6-16d NAILS OR 4-3/8" DIAMETER LAG SCREWS EMBEDDED A MINIMUM OF 4" INTO THE HEADER.
   C. GABLE END WALLS OF ROOFS WITH VAULTED CEILING JOISTS: BALLOON FRAME WALL AND PROVIDE TRIPLE KING STUD ON EACH SIDE OF OPENING, NAILED SECURELY TO THE HEADER.
   D. TWO-STORY HIGH ROYER WALLS LESS THAN 9' WIDE: EXTEND 3 1/2" X 9 1/4" PARALLAM PSL MEMBER WITH 2-2x4 FLAT PLATES ACROSS THE ENTIRE WALL. LOCATE THE BEAM NEAR MID-HEIGHT OF THE WALL AT OR NEAR FIRST FLOOR TOP PLATE.

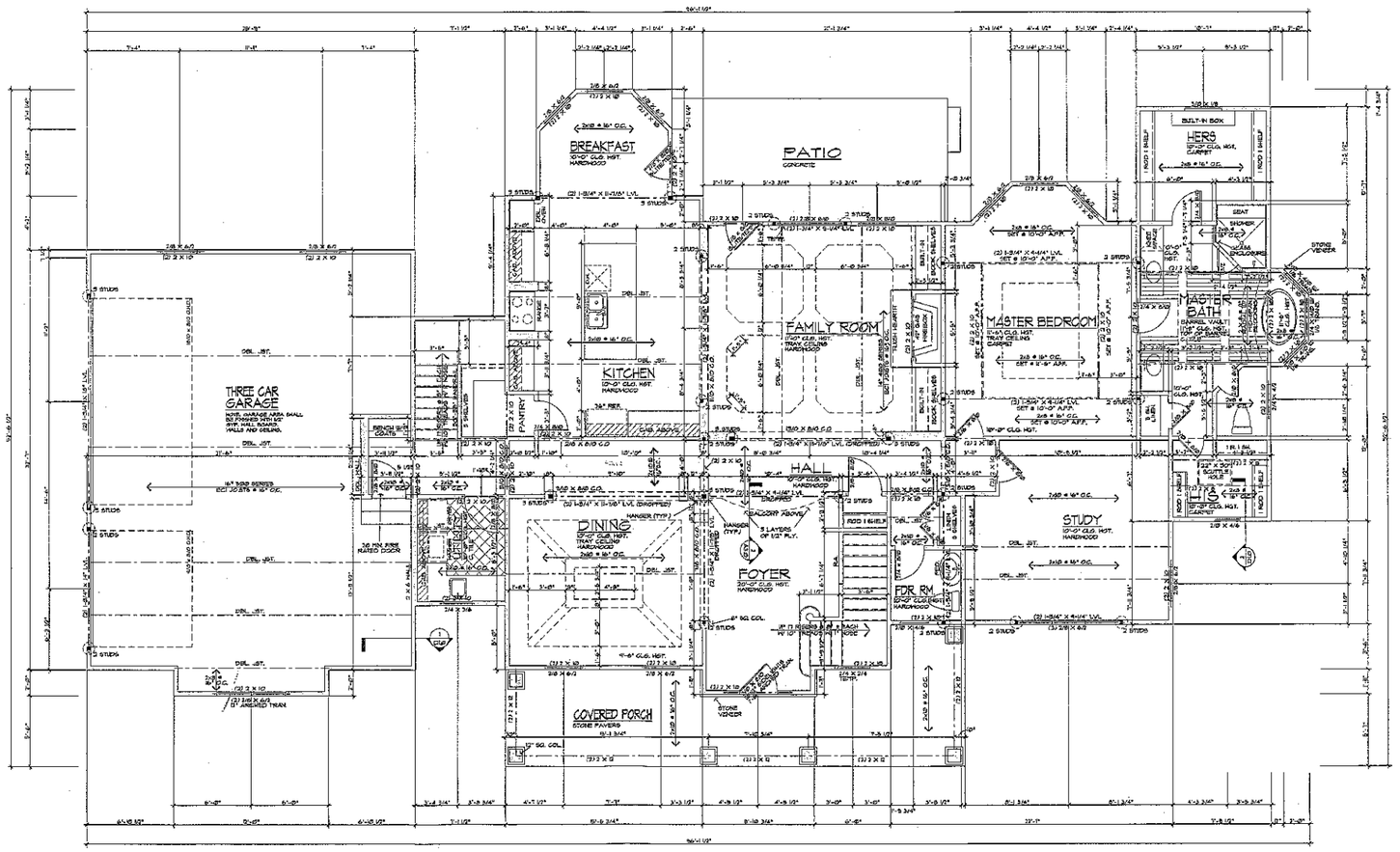
NOTE: SEE SPECIAL DESIGN OR ENGINEER FOR WALLS TALLER THAN 20', WIDE OPENINGS IN HIGH WALLS EXCEED 6' IN WIDTH, OR IF THE WALL CANNOT BE CONSTRUCTED USING ANY OF THE METHODS MENTIONED.

12. CONTINUOUS 2x6 BRIDGING SHALL BE NAILED TO DIAGONAL OR VERTICAL BED MEMBERS OF ALL OPEN WEB FLOOR TRUSSES OVER 10' LONG. THEY SHALL BE INSTALLED NEAR MID-SPAN AS A LOAD DISTRIBUTION MEMBER. IF THE 2x6 BRIDGING IS NOT CONTINUOUS, LAP EACH OF BRIDGING ONE TRUSS SPACE.
13. LOWER STUD WALLS FOR BUILDINGS OVER TWO STORIES, BUT NOT MORE THAN THREE STORIES:
   A. INTERIOR WALLS
      i. LOAD BEARING ——— 2x4 @ 12" O.C.
      ii. NON LOAD BEARING ——— 2x4 @ 16" O.C.
   B. EXTERIOR WALLS
      USE 2x6 @ 16" O.C. WITH 1/2" X 4'-0" X 8' PLYWOOD SHEATHING AT ALL CORNERS AND EVERY 16'-0 OR USE 2x4 @ 12" O.C. WITH 1/2" PLYWOOD SHEATHING SOLID ON WALLS.
14. HEADERS SHALL BE AS SHOWN UNLESS NOTED DIFFERENTLY ON PLANS:
   A. INTERIOR
      i. SPANS UP TO 7'-6" ——— 2-2x8'S
      ii. SPANS 7'-6" TO 9'-6" ——— 2-2x10'S
      iii. SPANS 9'-6" OR MORE ——— SEE PLAN
   B. EXTERIOR
      i. SPANS UP TO 7'-6" ——— 3-2x10'S
      ii. SPANS 7'-6" TO 9'-0" ——— 2-2x12'S
      iii. SPANS 9'-0" TO 10'-0" ——— 3-2x12'S
      iv. SPANS 9'-6" OR MORE ——— SEE PLAN

   HEADERS WIDER THAN 8' SHALL HAVE A MINIMUM OF 3-2x4 KING STUDS ON EACH SIDE U.N.O.
15. WHEN CEILING JOISTS ARE PARALLEL TO AN EXTERIOR WALL AND RAFTERS BEAR ON THIS EXTERIOR WALL TOP PLATE, TIE THE RAFTERS FROM THE TOP PLATE TO CEILING JOISTS WITH 2x4 HOSS A MINIMUM OF 6' LONG AT 4' ON CENTER ACROSS THE TOP OF THE CEILING JOISTS.
16. AT ALL BAY/ORIOR, EACH PANEL SHALL BE NAILED TO EACH ADJACENT PANEL WITH 8-16d NAILS OR TIED TOGETHER WITH METAL STRAPPING NAILED AT FOUR LOCATIONS BETWEEN FLOORS WITH A MINIMUM OF 3-16d NAILS INTO EACH PANEL AT EACH SIGNAL. THIS WILL AVOID VERTICAL CRACKING IN PANEL JOISTS DUE TO HORIZONTAL OSCILLATING PANELS.
17. AT ALL RISERS, EVERY STUD AT EACH STRINGER MUST BE NAILED TO EACH STRINGER WITH A MINIMUM OF 2-16d NAILS. THIS WILL AVOID CRACKING BETWEEN WALLBOARD AND TOP OF RISE HOLDING DUE TO VERTICAL OSCILLATION OF STAIR STRINGERS.
18. STEEL PIPE COLUMNS MUST BE IN CONTACT WITH THE SUPPORTED MEMBER AND CONTINUED SOLID TO THE SUPPORTING MASONRY OR CONCRETE FOUNDATION. NO INTERMEDIATE WOOD BLOCKING SHALL BE USED AS IT WILL CRUSH.

Acknowledgement Of
Plans Submittal ONLY!
Maria Dotson Date 4/26/07
Maika Keaney Date 04/26/07

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1/A4 FIRST FLOOR PLAN
SCALE 1/4" = 1'-0"

ADDITIONAL NOTES

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4. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS BEFORE BEGINNING CONSTRUCTION AND COORDINATE ANY CORRECTIONS OR REVISIONS WITH THE OWNER AND DESIGNER. CROWE DESIGN & ASSOC. WILL ASSUME NO LIABILITY FOR DIMENSIONAL ERRORS ONCE CONSTRUCTION BEGINS.

FRAMED SQUARE FOOTAGE

1ST FLOOR HEATED	2583
2ND FLOOR HEATED	1109
BONUS RM. HEATED	311
UNFINISHED BONUS RM.	986
THREE-CAR GARAGE	829
COVERED PORCH	215
PATIO	203
TOTAL HEATED	3803
TOTAL UNDER ROOF	5935

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MOORESVILLE, NORTH CAROLINA

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SEAL FOR STRUCTURAL ONLY

MARCH 29, 2007

FIRST LEVEL FLOOR PLAN

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