STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHALL BE OF THE GRADES INDICATED BELOW, UNLESS NOTED OTHERWISE ON PLANS OR DETAILS:
   - A. WIDE FLANGE SHAPES ASTM A992 GR50.
   - B. OTHER ROLLED SHAPES ASTM A36 TYPICALLY, U.N.O.
   - C. ANCHOR BOLTS ASTM A36 OR ASTM A449 PER DRAWINGS
   - D. STEEL PIPE ASTM A53, TYPE E OR S, GRADE B, FY=35 KSI
   - E. STRUCTURAL TUBING ASTM A500, GRADE B, FY=46 KSI
   - F. PLATES AND BARS ASTM A36 U.N.O.
   - G. MISCELLANEOUS ASTM A36 U.N.O.
2. ALL STRUCTURAL STEEL SHALL BE DETAILED AND, FABRICATED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS.
3. SUBMIT SHOP DRAWINGS FOR DETAILS, FABRICATION, AND ERECTION OF STRUCTURAL STEEL. COMPLY WITH AISC "STEEL CONSTRUCTION MANUAL", AISC "DETAILING FOR STEEL CONSTRUCTION", AND AISC "ENGINEERING FOR STEEL CONSTRUCTION" PUBLICATIONS.
4. SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO SUBMISSION. DRAWINGS SHALL BEAR THE CONTRACTOR'S APPROVAL STAMP ACCEPTING RESPONSIBILITY FOR DIMENSIONS, QUANTITIES AND COORDINATION WITH THE OTHER TRADES.
5. SUBMIT TWO (2) PRINTS OF EACH SHOP DRAWING FOR REVIEW.
6. ALTERNATIVELY, WHERE ACCEPTABLE TO ARCHITECT, SUBMIT ONE (1) PRINT OF EACH SHOP DRAWING FOR REVIEW. DRAWINGS MAY BE IN A REDUCED 8 1/2" X 11" FORMAT SUITABLE FOR FAX TRANSMISSION WHERE NECESSARY TO ACCOMMODATE THE PROJECT SCHEDULE, PROVIDED LEGIBILITY IS MAINTAINED. REVIEW COMMENTS ONLY WILL BE FORWARDED TO THE CONTRACTOR AND SUBMISSION WILL BE RETAINED BY THE STRUCTURAL ENGINEER.
7. CONTRACTOR SHALL PROVIDE IN HIS SCHEDULE FOR A SHOP DRAWING REVIEW AND RETURN TIME OF A MINIMUM OF FIFTEEN (15) WORKING DAYS IN THE STRUCTURAL ENGINEER'S OFFICE.
8. CONNECTION DESIGN:
   - A. FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF CONNECTIONS NOT DESIGNED ON THE STRUCTURAL DRAWINGS.
   - B. GENERALLY, CONNECTIONS SHOWN ON THE DRAWINGS ARE SCHEMATIC AND ARE INTENDED TO SHOW THE RELATIONSHIP OF THE MEMBERS.
   - C. BEAM CONNECTIONS SHALL BE DESIGNED FOR ONE-HALF (1/2) THE ALLOWABLE UNIFORM LOAD ON THE MEMBER, AS DEFINED IN PART 2, "ALLOWABLE LOADS ON BEAMS" TABLES IN THE AISC "MANUAL OF STEEL CONSTRUCTION", NINTH EDITION, ALLOWABLE STRESS DESIGN OR FOR THE REACTIONS AS SHOWN ON THE DRAWINGS OR A MINIMUM OF 10 KIPS, WHICHEVER IS GREATEST.
   - D. MEMBER FORCES AND REACTIONS HAVE BEEN REDUCED IN CONFORMANCE TO CODE PROVISIONS RELATED TO COMBINATIONS OF LOADS THAT INCLUDE WIND AND SEISMIC FORCES. NO FURTHER REDUCTIONS IN FORCES OR INCREASES IN ALLOWABLE STRESSES ARE PERMITTED.
   - E. CONNECTIONS MAY BE BOLTED OR WELDED, U.N.O. ON THE DRAWINGS:
9. BOLTED CONNECTIONS:
   - A. SLIP CRITICAL CONNECTIONS WITH A325SC OR A490SC BOLTS SHALL BE USED IN ALL BOLTED MOMENT PLATE CONNECTIONS. OVERSIZED OR LONG-SLOTTED HOLES ARE PERMITTED.
   - B. BEARING-TYPE CONNECTIONS WITH A325N OR A490N BOLTS SHALL BE USED FOR ALL OTHER BOLTED CONNECTIONS. OVERSIZED AND LONG-SLOTTED HOLES ARE NOT PERMITTED U.N.O. IN SINGLE TAB PLATE CONNECTIONS ONLY BEARING-TYPE FASTENERS ARE PERMITTED, FASTENERS SHALL NOT BE TORQUED, AND SHORT SLOTTED HOLES ARE REQUIRED.
   - C. ANCHOR BOLTS OR OTHER BOLTS, WHERE INDICATED, SHALL CONFORM TO ASTM A36 U.N.O.
   - D. PROTRUDING BOLT HEADS, SHAFTS OR NUTS SHALL NOT EXTEND NOR PROHIBIT THE APPLICATION OF ARCHITECTURAL FINISHES OR PLACEMENT OF STEEL DECK AT ITS CORRECT LOCATION AND ELEVATION.
   - E. CONNECTION DESIGNER IS RESPONSIBLE FOR VERIFYING THE AXIAL CAPACITY AFTER A SECTION IS REDUCED FOR BOLT HOLES. MEMBER SIZE MAY BE INCREASED OR PLATES ADDED TO MAINTAIN REQUIRED CAPACITY.
   - F. SHOP DRAWINGS SHALL INDICATE THE TYPE OF BOLT USED IN EACH CONNECTION, ALLOWABLE VALUES FOR THE VARIOUS BOLT TYPES AND CAPACITY OF EACH CONNECTION SHOWN.
   - G. DOMESTIC FASTENERS ARE REQUIRED IN ALL STRUCTURAL STEEL WORK ON THIS PROJECT. IMPORTED FASTENERS ARE PROHIBITED.
10. WELDED CONNECTIONS:
   - A. ALL WELDING SHALL BE IN ACCORDANCE WITH THE "STRUCTURAL WELDING CODE - STEEL" (AWS D1.1) OF THE AMERICAN WELDING SOCIETY.
   - B. ELECTRODES FOR WELDING SHALL COMPLY WITH THE REQUIREMENTS OF AWS D1.1 TABLE 4.1.1.
   - C. SHOP DRAWINGS SHALL INDICATE WELD TYPE, REQUIRED ELECTRODES AND CAPACITY FOR EACH CONNECTION DETAILED ON THE SHOP DRAWINGS.
11. WHERE CANTILEVER BEAMS OCCUR ON PLAN AND THE SIZE IS NOTED ONLY FOR THE BACK-SPAN, THE CANTILEVER IS INTENDED TO BE THE SAME SIZE AS THE BACK-SPAN.
12. SPLICING OF STEEL MEMBERS, UNLESS SHOWN ON THE DRAWINGS, IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
13. NO CHANGE IN SIZE OR POSITION OF ANY STRUCTURAL ELEMENT NOR HOLES, SLOTS, CUTS, ETC. SHALL BE MADE UNLESS DETAILED AND NOTED AS A PROPOSED CHANGE ON THE SHOP DRAWINGS AND REVIEWED AND ACCEPTED BY THE STRUCTURAL ENGINEER.
14. NO FINAL BOLTING OR WELDING SHALL BE PERFORMED UNTIL AS MUCH OF THE STRUCTURE AS WILL BE STIFFENED THEREBY HAS BEEN PROPERLY ALIGNED.
15. FABRICATE ALL BEAMS WITH MILL CAMBERS UP.
16. MINIMUM PLATE THICKNESS SHALL BE 3/8" U.N.O.; MINIMUM BOLT DIAMETER SHALL BE 3/4" U.N.O.; MINIMUM SHOP WELD SHALL BE 3/16" AND MINIMUM FIELD WELD SHALL BE 1/4" U.N.O.
17. ALL RE-ENTRANT CORNERS (SUCH AS COPES AND BLOCKS) SHALL BE CUT AND SHAPED NOTCH FREE WITH A RADIUS OF AT LEAST 1/2".
18. FIELD USE OF GAS CUTTING TORCHES IS PROHIBITED FOR CORRECTING FABRICATION ERRORS IN PRIMARY STRUCTURAL FRAMING.
19. PARAGRAPH 3.3 OF THE AISC CODE OF STANDARD PRACTICE SHALL BE SUPERSEDED BY THE FOLLOWING: "ALL THINGS WHICH IN THE OPINION OF THE CONTRACTOR APPEAR TO BE DEFICIENCIES, OMISSIONS, CONTRADICTIONS, OR AMBIGUITIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER. CORRECTIONS OR WRITTEN INTERPRETATIONS WILL BE MADE BEFORE AFFECTED WORK PROCEEDS."
20. PARAGRAPH 4.2.1 OF THE AISC CODE OF STANDARD PRACTICE SHALL BE SUPERSEDED BY THE FOLLOWING: SUBSTITUTE FOLLOWING: INDICATION OF COMPLIANCE BY THE OWNER OF SHOP DRAWINGS PREPARED BY THE FABRICATOR INDICATES THAT THE FABRICATOR HAS CORRECTLY INTERPRETED THE CONTRACT REQUIREMENTS. SUCH INDICATION DOES NOT RELIEVE THE FABRICATOR OF THE RESPONSIBILITY ASSIGNED TO HIM FOR THE DESIGN AND DETAILING OF CONNECTIONS ASSIGNED TO HIM, NOR FOR THE ACCURACY OF DIMENSIONS ON THE SHOP DRAWINGS, NOR FOR GENERAL FIT UP OF PARTS TO BE ASSEMBLED IN FIELD.
21. PARAGRAPHS 7.2 THROUGH 7.6 OF THE AISC CODE OF STANDARD PRACTICE SHALL BE SUPERSEDED AS FOLLOWS: ALL REFERENCES TO "OWNER" SHALL BE SUPERSEDED WITH REFERENCES TO "CONTRACTOR".
22. EXPANSION BOLTS SHALL PROVIDE A MINIMUM SAFETY FACTOR OF FOUR (4) TIMES THE FOLLOWING MINIMUM SERVICE LOAD CAPACITIES, U.N.O.

SLEEVE ANCHORS (2000 PSI MASONRY)			WEDGE ANCHORS (3000 PSI CONCRETE)		
DIA.	SHEAR	TENSION	DIA.	SHEAR	TENSION
1/4"	270 LB.	300 LB.	1/2"	1950 LB.	1250 LB.
1/2"	930 LB.	600 LB.	3/4"	3750 LB.	2250 LB.

STEEL DECK

1. STEEL DECKS SHALL HAVE THE DEPTHS, MINIMUM GAGES, AND PROPERTIES SHOWN BELOW. DECK HAS BEEN SELECTED BASED ON A MINIMUM THREE SPAN CONDITION. SUPPLIER SHALL EVALUATE THE ABILITY OF HIS STEEL DECK TO ACCOMMODATE THE LOAD CONDITIONS INDICATED IN THE GENERAL NOTES FOR ALL SPAN CONDITIONS REQUIRED FOR HIS PROPOSED DETAILING. WHERE SUPPLIER DETAILS SINGLE OR TWO SPAN CONDITIONS ON HIS SHOP DRAWINGS DECK WITH A GREATER THICKNESS MAY BE REQUIRED SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER.
2. ALL COMPOSITE STEEL FLOOR DECK SHALL BE GALVANIZED PER ASTM A525 G60 EXCEPT DECK PERMANENTLY EXPOSED TO WEATHER SHALL BE G90.
3. STEEL DECK AT ROOFS AND PENTHOUSES SHALL BE GALVANIZED PER ASTM A525 G60.
4. COMPOSITE STEEL FLOOR DECK:
   - A. COMPOSITE STEEL DECK SHALL BE DESIGNED TO REQUIRE NO TEMPORARY SHORING FOR CONSTRUCTION LOADS (WET CONCRETE + 20 PSF). ALLOWABLE CONSTRUCTION LOADS SHALL BE SHOWN ON STEEL DECK SHOP AND ERECTION DRAWINGS.
   - B. FASTEN COMPOSITE FLOOR DECK UNITS TO SUPPORTING STEEL MEMBERS BY NOT LESS THAN 3/4" DIAMETER WELDS OR ELONGATED WELDS OF EQUAL PERIMETER, SPACED NOT MORE THAN 12" O/C. WITH A MINIMUM OF 2 WELDS PER UNIT AT EACH SUPPORT.
   - C. SHEAR CAPACITY OF HEADED STUDS VARIES WITH THE PROPERTIES OF THE COMPOSITE DECK. THE DECK SUPPLIER SHALL PROVIDE DECK WITH A CONFIGURATION THAT DOES NOT REDUCE STUD CAPACITY PER AISC REQUIREMENTS.
   - D. THE COMPOSITE FLOOR SLAB IS NOT DESIGNED TO CARRY MASONRY WALLS UNLESS A BEAM OCCURS DIRECTLY UNDER THE WALL OR THE CENTERLINE OF THE WALL IS WITHIN A DISTANCE FROM THE CENTERLINE OF THE BEAM NOT GREATER THAN THE DEPTH OF THE SLAB AND DECK.
   - E. DECK CAPACITY AND PROPERTIES SHALL BE CLEARLY INDICATED ON THE SHOP DRAWINGS. ADDITIONAL REINFORCEMENT REQUIRED BY THE DECK SUPPLIER OR THE STRUCTURAL ENGINEER TO ACCOMMODATE THAT PARTICULAR SUPPLIER'S DECK SHALL BE DESIGNED, DETAILED, AND SUPPLIED BY THAT DECK SUPPLIER AND PLACED BY THE CONTRACTOR RESPONSIBLE FOR SLAB REINFORCING.
   - F. MANUFACTURER SHALL PROVIDE VALUES FOR ADDITIONAL CONCRETE VOLUME EXPECTED FROM DEFLECTION OF HIS DECK BASED ON THE SPANS REQUIRED AND CONTRACTOR SHALL FURNISH THE ADDITIONAL CONCRETE REQUIRED.
5. STEEL DECK SUBMITTALS: STEEL DECK MANUFACTURER SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND ACCEPTANCE BY THE STRUCTURAL ENGINEER INDICATING DECK TYPE, GAUGE AND PROTECTIVE TREATMENT, AS WELL AS TYPE, SIZE AND LAYOUT OF DECK CONNECTIONS.
6. SHEAR CONNECTOR SUBMITTALS: STEEL DECK MANUFACTURER SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND ACCEPTANCE BY THE STRUCTURAL ENGINEER INDICATING SHEAR CONNECTOR (STUD) LAYOUT CONTAINING STUD DIAMETERS, LENGTH, AND INSTALLATION DETAILS SHOWING NUMBER AND SPACING OF STUDS CONSISTENT WITH THE MANUFACTURER'S STEEL DECK CONFIGURATION.
7. SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO SUBMISSION AND SHALL BEAR THE CONTRACTOR'S APPROVAL STAMP ACCEPTING RESPONSIBILITY FOR DIMENSIONS, QUANTITIES AND COORDINATION WITH THE OTHER TRADES.
8. SUBMIT TWO (2) PRINTS OF EACH SHOP DRAWING FOR REVIEW.
9. ALTERNATIVELY, WHERE ACCEPTABLE TO ARCHITECT, SUBMIT ONE (1) PRINT OF EACH SHOP DRAWING FOR REVIEW. DRAWINGS MAY BE IN A REDUCED 8 1/2" X 11" FORMAT SUITABLE FOR FAX TRANSMISSION WHERE NECESSARY TO ACCOMMODATE THE PROJECT SCHEDULE, PROVIDED LEGIBILITY IS MAINTAINED. REVIEW COMMENTS ONLY WILL BE FORWARDED TO THE CONTRACTOR AND SUBMISSION WILL BE RETAINED BY THE STRUCTURAL ENGINEER.
10. CONTRACTOR SHALL PROVIDE IN HIS SCHEDULE FOR A SHOP DRAWING REVIEW AND RETURN TIME OF A MINIMUM OF FIFTEEN (15) WORKING DAYS IN THE STRUCTURAL ENGINEER'S OFFICE.

LIGHT GAGE STEEL FRAMING

1. ALL MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE AMERICAN IRON AND STEEL INSTITUTE (AISI) "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".
2. ALL FRAMING MEMBERS SHALL BE FORMED FROM CORROSION-RESISTANT STEEL, CORRESPONDING TO THE REQUIREMENTS OF ASTM A446, WITH A MINIMUM YIELD STRENGTH OF 50 KSI FOR JOISTS AND STUDS AND 33 KSI FOR RUNNERS OR TRACKS.
3. ALL MEMBERS SHOWN ARE STANDARD DESIGNATIONS OF "CLARK INDUSTRIES".
4. MEMBERS INDICATED ON THE STRUCTURAL DRAWINGS ARE BASED ON MINIMUM PROPERTIES OF PRODUCTS PRODUCED BY "CLARK INDUSTRIES." SUBSTITUTION OF MATERIALS IS ACCEPTABLE, PRIOR TO SUBMISSION OF SHOP DRAWINGS SUBJECT TO APPROVAL OF THE STRUCTURAL ENGINEER.
5. MEMBER CONFIGURATIONS AND CONNECTIONS SHOWN ON THE DRAWINGS ARE SCHEMATIC AND ARE INTENDED ONLY TO SHOW RELATIONSHIPS OF MEMBERS AND INFORMATION FOR PRICING AND BIDDING PURPOSES.
6. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS OR AS REQUIRED FOR AN ANGULAR FIT TIGHT AGAINST ABUTTING MEMBERS.
7. AXIALLY LOADED STUDS SHALL BE INSTALLED IN A MANNER WHICH WILL ASSURE THAT THEIR ENDS ARE POSITIONED TIGHT AGAINST THE INSIDE OF RUNNER WEBS PRIOR TO FASTENING. PROVIDE WEAK-AXIS HORIZONTAL BRACING AT 36 INCHES MAXIMUM VERTICAL SPACING, BOTH STUD FLANGES. HORIZONTAL BRACING SHALL BE 1 1/2" X 20 GA. STRAPS AND CS TYPE RUNNER SOLID BRIDGING AT EACH END OF WALL, ADJACENT TO WALL OPENINGS, AND AT 8'-0" O.C. MAXIMUM.
8. FLOOR OR ROOF JOISTS AND RAFTERS SHALL HAVE SOLID BLOCKING, A FITTED CS TYPE CLOSURE OR JOIST SECTION, PLACED BETWEEN OUTER JOISTS, OVER ALL INTERIOR SUPPORTS, ADJACENT TO OPENINGS AND AT 8'-0" O/C. MAXIMUM. BETWEEN SOLID BLOCKING PROVIDE STRAP BRACING OF 1 1/2" X 20 GA. STRAPS. JOIST BRIDGING SHALL BE PROVIDED AT MID-SPAN OR AT 8'-0" O.C. MAXIMUM FOR SPANS EXCEEDING 15'-0".
9. WHERE STUDS FRAME TO STRUCTURAL FLOOR OR ROOF MEMBERS SUBJECT TO DEFLECTION FROM TRANSIENT OR LIVE LOADING, EITHER A DEEP LEG DOUBLE TRACK OR A "Z" CLIP ASSEMBLY SHALL BE PROVIDED AT THE TOP RUNNER TO ACCOMMODATE VERTICAL STRUCTURAL MOVEMENT. FAILURE TO PROVIDE TOP CONNECTIONS CAPABLE OF ACCOMMODATING MOVEMENT MAY RESULT IN CRUSHING AND BUCKLING OF THE STUD MEMBERS AND DAMAGE TO ARCHITECTURAL COMPONENTS OR FINISHES.
10. FASTENING OF COMPONENTS SHALL BE BY SELF-DRILLING SCREWS OR BY WELDING AS DEFINED BELOW U.N.O. ON THE DRAWINGS.
11. SCREWED CONNECTIONS:
   - A. SCREWS SHALL BE TYPE S-12, TYPE S-4, OR SCREWS OF A SIMILAR TYPE WITH THE CAPACITIES NECESSARY FOR THE REQUIRED DESIGN LOADINGS FOR ALL FRAMING MEMBERS PER MANUFACTURER'S RECOMMENDATIONS.
   - B. A MINIMUM OF THREE (3) EXPOSED THREADS SHALL PENETRATE THROUGH ALL JOINED MATERIALS.
   - C. CORROSION-RESISTANT CADMIUM-PLATED SCREWS SHALL BE USED FOR SCREWS ATTACHING METAL LATH, MASONRY TIES, AND OTHER EXTERIOR MATERIALS.
12. WELDED CONNECTIONS:
   - A. CONTRACTOR SHALL REQUIRE THAT AWS QUALIFICATION TESTS FOR WELDING OF MATERIAL LESS THAN 1/8" IN THICKNESS ARE SATISFACTORILY PASSED BY WELDERS EXPECTED TO ERECT LIGHTGAGE FRAMING MATERIALS. THESE TESTS ARE NOT THE SAME AS FOR STRUCTURAL STEEL WELDING QUALIFICATION.
   - B. USE GAS METAL ARC WELDING (GMAW) FOR 20 GA. OR LIGHTER MEMBERS. AWS E-705-3, E-705-5, E-705-6 WIRE ELECTRODES OF .030" TO .035" DIAMETER SHALL BE USED WITH CARBON DIOXIDE, ARGON-OXYGEN, OR ARGON-CARBON DIOXIDE GAS SHIELDING. WELDING EQUIPMENT SHALL PROVIDE 60 TO 100 AMPERES AT 25 VOLTS USING 220-VOLT 3-PHASE ELECTRIC SERVICE.
   - C. SHIELDED METAL ARC WELDING (SMAW) SHALL BE USED FOR 18 GA. AND HEAVIER MEMBERS. AWS E-6012, E-6013, OR E-7014 ELECTRODES OF 3/32" OR 1/8" DIAMETER SHALL BE USED. WELDING EQUIPMENT HEAT SETTING SHALL BE VARIED DEPENDENT ON MATERIAL THICKNESS.
   - D. ALL WELDS SHALL BE TOUCHED UP WITH A ZINC RICH PAINT, OR PAINT SIMILAR TO THAT USED BY THE FRAMING MEMBER SUPPLIER ON PAINTED MEMBERS FROM THE SUPPLIER.
13. CUTTING OF STEEL FRAMING MEMBERS MAY BE DONE WITH A SAW OR CUTTING SHEARS. TORCH CUTTING OF LOAD BEARING MEMBERS IS NOT PERMITTED.
14. COMPLETE, UNIFORM, AND LEVEL BEARING SUPPORT SHALL BE PROVIDED FOR THE BOTTOM RUNNER. AT SPLICES WHERE SUPPORT IS NOT COMMON TO BOTH RUNNERS, EITHER BUTT WELD RUNNERS OR USE A STUD SECTION INSERTED IN THE RUNNER AS A SPLICING MEMBER ATTACHED PER MANUFACTURER'S RECOMMENDATIONS. RUNNER INTERSECTIONS SHALL BUTT EVENLY.
15. SPACING OF STUDS SHALL HAVE A TOLERANCE OF 1/8" FROM THAT SHOWN ON THE DRAWINGS, PROVIDING THAT THE CUMULATIVE ERROR DOES NOT EXCEED THE REQUIREMENTS OF OTHER MATERIALS OR CONSTRUCTION.
16. ALIGNMENT OF STUDS (PLUMBNESS) AND WALLS (STRAIGHTNESS) SHALL BE WITHIN 1/960TH OF THEIR RESPECTIVE HEIGHTS AND LENGTHS.
17. STUDS SHALL BE PLUMBED, ALIGNED, AND SECURELY ATTACHED TO BOTH TOP AND BOTTOM RUNNERS. SPLICES IN STUDS ARE NOT PERMITTED.
18. TEMPORARY BRACING, WHERE REQUIRED, SHALL BE PROVIDED UNTIL ERECTION IS COMPLETED.
19. WHERE MANUFACTURER'S RECOMMENDATIONS FOR ERECTION, ATTACHMENT, ASSEMBLY, BRACING, ALIGNMENT, OR OTHER REQUIREMENTS ARE MORE STRINGENT THAN INDICATED IN THESE DRAWINGS OR THE PROJECT SPECIFICATIONS THE MANUFACTURER'S RECOMMENDATIONS SHALL APPLY.

STRUCTURAL MASONRY

1. ALL STRUCTURAL MASONRY SHALL CONFORM TO ACI 530-92 STANDARDS AS APPROPRIATE TO THE MATERIAL.
2. MASONRY STRENGTH AND GRADE:
   - A. CONCRETE MASONRY UNITS (CMU):
     - I. UNITS SHALL BE LIGHTWEIGHT CELLULAR UNITS CONFORMING TO ASTM C 90, GRADE N-2. CONCRETE MASONRY NET AREA UNIT STRENGTH SHALL BE NO LESS THAN 1900 PSI IN ACCORDANCE WITH ASTM C 140, WITH A UNIT WEIGHT NOT EXCEEDING 95 PCF. SEE SPECIFICATIONS.
     - II. DESIGN COMPRESSIVE STRENGTH OF CMU (F'M) = 1500 PSI.
3. SUBMITTALS: CONTRACTOR SHALL SUBMIT FOR APPROVAL TEST REPORTS ON MASONRY UNITS SHOWING UNIT WEIGHT, COMPRESSIVE STRENGTH, ABSORPTION, VOLUME CHANGE AND SHRINKAGE PER ASTM C90 NO LATER THAN 15 WORKING DAYS PRIOR TO THE COMMENCEMENT OF MASONRY CONSTRUCTION.
4. MORTAR SHALL CONFORM TO ASTM C 270. MORTAR SHALL BE TYPE "S" AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 1800 PSI.
5. MASONRY GROUT FILL SHALL CONFORM TO ASTM C 476. GROUT, EITHER FINE OR COARSE AGGREGATE PER SPECIFICATIONS, SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI. MASONRY CONCRETE FILL SHALL CONFORM TO THE REQUIREMENTS NOTED UNDER "CONCRETE" IN THE GENERAL NOTES.
6. GROUTING:
   - A. ALL BOND BEAMS SHALL BE FILLED WITH GROUT AND REINFORCED AS INDICATED ON THE DRAWINGS (DETAILS OR SCHEDULES). MORTAR FILL IS NOT PERMITTED.
   - B. ALL MASONRY WALL CELLS OR CAVITIES INDICATED AS REINFORCED SHALL BE GROUTED FOR THE FULL HEIGHT OF THE WALL, UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. UN-REINFORCED WALLS INDICATED AS GROUTED SHALL BE GROUTED FULL HEIGHT, UNLESS SPECIFICALLY NOTED OTHERWISE. MORTAR FILL IS NOT PERMITTED.
   - C. ALL MASONRY CELLS OR CAVITIES BELOW GRADE SHALL BE GROUTED SOLID UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. MORTAR FILL IS NOT PERMITTED.
   - D. VERTICAL GROUTING SHALL BE LOW LIFT OR HIGH LIFT AS FOLLOWS:
     - I. LOW LIFT GROUTING SHALL BE USED FOR ALL CAVITY WALLS AND MAY BE USED FOR ALL WALLS AT THE OPTION OF THE CONTRACTOR. LIFTS SHALL NOT EXCEED 4'-0" IN HEIGHT.
     - II. HIGH LIFT GROUTING IS PERMISSIBLE ONLY FOR FILLING OF CELLULAR MASONRY UNITS AND SHALL NOT EXCEED ONE STORY IN HEIGHT. CLEAN OUT HOLES SHALL BE PROVIDED AT THE BASE OF EACH GROUTED CELL.
   - E. GROUTING SHALL BE STOPPED 1 1/2" BELOW THE TOP OF A COURSE TO FORM A KEY AT THE JOINT.
   - F. GROUTING OF MASONRY BEAMS OR LINTELS SHALL BE DONE IN ONE CONTINUOUS OPERATION.
7. REINFORCING:
   - A. ALL BARS MARKED "CONTINUOUS" SHALL BE LAPPED A MINIMUM OF 40 BAR DIAMETERS AT ALL SPLICES. UNLESS NOTED OTHERWISE, ALL WALL/FOOTING DOWELS SHALL BE LAPPED 30 BAR DIAMETERS OR 24", WHICHEVER IS GREATEST.
   - B. FOUNDATION DOWELS MAY SLOPE A MAXIMUM OF 1:6 TO ALIGN WITH WALL CAVITIES OR VERTICAL CMU CORES. GREATER SLOPES WILL REQUIRE REPLACEMENT OF THE FOUNDATION DOWELS.
   - C. SPLICED REINFORCING SHALL BE LAPPED UNDER "REINFORCING" ABOVE OR AS SHOWN ON DRAWINGS, WHICHEVER IS GREATEST. ALL SPLICES SHALL BE WIRED TOGETHER.
   - D. VERTICAL REINFORCING BARS SHALL HAVE A MINIMUM CLEARANCE OF 3/4" FROM MASONRY AND SHALL BE HELD IN POSITION TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 4'-0". ACCESSORIES FOR SUCH SUPPORT SHALL BE USED. PROVIDE "AA WIRE PRODUCTS COMPANY" OR APPROVED EQUAL) BAR POSITIONER AA225 OR AA239 FOR VERTICAL BARS AND AA238 FOR HORIZONTAL BARS OR APPROVED EQUAL PRODUCTS FROM OTHER SUPPLIERS.
   - E. HORIZONTAL JOINT REINFORCING SHALL BE LAPPED NO LESS THAN 6" ALL SPLICES, INCLUDING CORNERS AND TEES WHERE NO CONTROL JOINT IS USED.
   - F. ALL HORIZONTAL JOINT REINFORCING SHALL STOP AT CONTROL JOINTS.
   - G. HORIZONTAL REINFORCING IN BOND BEAMS SHALL BE CONTINUOUS THROUGH CONTROL JOINTS.
8. MASONRY SHOWN ON THE STRUCTURAL DRAWINGS DEFINES THE STRUCTURAL EXTENTS AND REQUIREMENTS FOR MASONRY FOR SUPPORTING MEMBERS, FLOORS, ROOFS OR WALLS AND SHALL BE BUILT IN CONFORMANCE WITH THE REQUIREMENTS OF THESE DRAWINGS AND NOTE 1 ABOVE. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE TOTAL SCOPE OF THE MASONRY AND FOR LOCATIONS AND DETAILS OF OPENINGS, SPECIAL COURSING OR OTHER MASONRY DETAILS.
9. MASONRY CONTRACTOR SHALL PROVIDE FOR AND COORDINATE WITH OTHER TRADES FOR PLACEMENT OF ALL ITEMS TO BE EMBEDDED OR BUILT INTO THE MASONRY.

STRUCTURAL DOCUMENT STATUS DEFINITIONS

DESIGN DEVELOPMENT:
STRUCTURAL DRAWINGS MARKED AS "DESIGN DEVELOPMENT" INDICATE DESIGN INTENT AND ARE NOT MEANT TO BE USED FOR PRICING, DETAILING, FINAL CONSTRUCTION, OR PERMIT. IT IS UNDERSTOOD THAT MAJOR CHANGES MAY OCCUR WITHOUT NOTICE FROM "PRELIMINARY ONLY" DRAWINGS TO "PERMIT ONLY" DRAWINGS. BY DETAILING OR BUILDING FROM THIS SET OF DOCUMENTS, THE DETAILER / FABRICATOR / CONTRACTOR UNDERSTANDS THAT ANY AND ALL MODIFICATIONS REQUIRED FOR CONSTRUCTION DOCUMENTS ARE THE RESPONSIBILITY OF THE ABOVE MENTIONED PARTIES AND CURRY ENGINEERS, LLC SHALL NOT BE HELD RESPONSIBLE FOR ANY ADDITIONAL DETAILING EFFORT.

PERMIT SET:
STRUCTURAL DRAWINGS MARKED AS "PERMIT ONLY" INDICATE THAT THE DESIGN IS NEARLY COMPLETE BUT DRAFTING AND / OR DETAIL WORK REMAINS. CONSTRUCTION DETAILS THAT ARE IMPORTANT TO THE PROJECT MAY NOT BE FULLY DETAILED OR DRAWN ON THIS SET OF DRAWINGS. "PERMIT ONLY" DRAWINGS ADEQUATELY SHOW THE STRUCTURAL DESIGN OF A STRUCTURE BUT ARE NOT MEANT TO BE USED FOR DETAILING BY OTHERS OR FINAL CONSTRUCTION. IT IS UNDERSTOOD THAT CHANGES MAY OCCUR WITHOUT NOTICE FROM "PERMIT ONLY" DRAWINGS TO "CONSTRUCTION SET" DRAWINGS OR THAT THE DRAWINGS MAY NOT BE FULLY COORDINATED WITH THE LATEST ARCHITECTURAL DRAWINGS. BY DETAILING OR BUILDING FROM THIS SET OF DOCUMENTS, THE DETAILER / FABRICATOR / CONTRACTOR UNDERSTANDS THAT ANY AND ALL MODIFICATIONS REQUIRED FOR CONSTRUCTION DOCUMENTS ARE THE RESPONSIBILITY OF THE ABOVE MENTIONED PARTIES AND CURRY ENGINEERS, LLC SHALL NOT BE HELD RESPONSIBLE FOR ANY ADDITIONAL DETAILING EFFORT.

CONSTRUCTION SET:
STRUCTURAL DRAWINGS LABELED "CONSTRUCTION SET" INDICATE THAT THE DESIGN IS COMPLETE AND DRAFTING IS AS COMPLETE AS POSSIBLE BASED ON INFORMATION AVAILABLE TO THE EOR. IF DETAILS ARE NOT SHOWN AT DESIRED LOCATIONS, THE EOR SHOULD BE CONTACTED TO PROVIDE SUCH DETAILS. ASSUMPTIONS SHOULD NOT BE MADE AS TO THE CONSTRUCTION OF NON-DETAILED AREAS WITHOUT FIRST CONSULTING THE EOR.

CONSTRUCTION SET ONLY

CURRY ENGINEERS, LLC.
STRUCTURAL ENGINEERING
ROOFING CONSULTANTS
843 - 849 - 9755
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WWW.CURRYENGINEERING.COM

CURRY ENGINEERS

CURRY ENGINEERS, LLC. No. C02848

No. 21964

OFFICES AT BELLE HALL
BUILDING ONE
MT. PLEASANT, S.C.

REVISIONS:
1 CONST. SET 04.25.06 PAC
2
3
4

GENERAL NOTES

DRAWN BY:	J. BOYD
DESIGNED BY:	P. CURRY
CHECKED BY:	P. CURRY
DATE:	01.06.06
SCALE:	AS NOTED
JOB NO.:	25134
SHEET:	S-1.1