I. GENERAL:

1. NOTES BELOW ARE NOT INTENDED TO REPLACE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO GENERAL NOTES.

2. DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 2009 NORTH CAROLINA BUILDING CODE.

3. DESIGN LOADS:

SURFACE APPLIED LOADS:
- ROOF LIVE LOAD .... 20 PSF
- MECHANICAL MEZZANINE .... 150 PSF

ROOF SNOW LOAD
- A. GROUND SNOW LOAD........................ P_g = 15 PSF
- B. FLAT-ROOF SNOW LOAD........................ P_f = 15 PSF
- C. SNOW EXPOSURE FACTOR........................ C_e = 1.0
- D. SNOW LOAD IMPORTANCE FACTOR........................ I_e = 1.0
- E. THERMAL FACTOR........................ C_t = 1.0

WIND LOAD
- A. BASIC WIND SPEED .... 100 MPH
- B. WIND IMPORTANCE FACTOR........................ I_w = 1.0
- C. BUILDING CATEGORY I
- D. WIND EXPOSURE .... B
- E. INTERNAL PRESSURE COEFFICIENT .... ± 0.18.
- F. COMPONENTS AND CLADDING .... VARIES

EARTHQUAKE DESIGN DATA
- A. SEISMIC USE GROUP I
- B. SEISMIC IMPORTANCE FACTOR .... I_e = 1.0
- C. SEISMIC DESIGN CATEGORY .... D
- D. SPECTRAL RESPONSE COEFFICIENTS .... S_{DS} = 0.509, S_{D1} = 0.306
- E. SITE CLASS .... E
- F. RESPONSE MODIFICATION COEFFICIENT .... R = 2.5
- G. DESIGN BASE SHEAR .... V_x = 500 kips; V_y = 500 kips
  BASIC SEISMIC FORCE RESISTING SYSTEM - ORDINARY REINFORCED MASONRY SHEAR WALLS RESPONSE
- H. ANALYSIS PROCEDURE - SIMPLIFIED METHOD.

4. ALL SAFETY REGULATIONS, METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIAL IS CONTRACTOR'S RESPONSIBILITY.

5. THE GENERAL CONTRACTOR PRIOR TO CONSTRUCTION SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, THE SIZE AND LOCATION OF ALL SLEEVES, PADS, DEPRESSIONS, OPENINGS, ETC., AS REQUIRED BY THE VARIOUS TRADES. ANY DISCREPANCIES OR VARIATIONS FROM THE CONDITIONS SHOWN ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING. SLEEVES, INSERTS AND OTHER ITEMS TO BE CAST IN THE CONCRETE SHALL BE SET BY THE GENERAL CONTRACTOR AT LOCATIONS DESIGNED BY AND UNDER THE SUPERVISION OF A REPRESENTATIVE OF EACH TRADE.

6. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT FAR ENOUGH IN ADVANCE OF THE TIME EACH CONCRETE POUR IS TO BE MADE TO ALLOW AMPLE TIME TO CHECK THE LAYOUT OF THE STEEL BEFORE BEGINNING THE ACTUAL POUR, BUT NOT IN ADVANCED OF THE TIME THAT 90% OF THE STEEL HAS BEEN PLACED.

7. ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT IN REPRODUCIBLE FORM AND NOT COPIED FROM STRUCTURAL DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED PRIOR TO ANY FABRICATION OR REPLACEMENT OF MATERIALS AND ALLOW TWO WEEKS FOR REVIEW. SHOP DRAWINGS ARE TO HAVE BEEN REVIEWED AND APPROVED BY THE CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER AND SHALL BEAR THE CONTRACTOR'S STAMP ATTESTING THE SAME. DRAWINGS NOT SO MARKED WILL NOT BE REVIEWED. THE REVIEW OF SHOP DRAWINGS BY THE ENGINEER IS ONLY FOR GENERAL CONFORMANCE WITH THE STRUCTURAL DRAWINGS AND SPECIFICATIONS. ANY DEVIATION IN DESIGN, DETAIL, DIMENSIONS, ETC. FROM THE CONSTRUCTION DOCUMENTS SHALL BE CLEARLY NOTED ON SHOP DRAWINGS AND VERIFICATION OF THE CHANGE SHALL BE REQUESTED.

8. THE GENERAL CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT, THE ENGINEER, AND THE LOCAL BUILDING INSPECTION AUTHORITY OF ANY DESIGN DISCREPANCIES. THE CONTRACTOR SHALL NOT PROCEED WITH ANY RELATED WORK UNTIL INSTRUCTIONS ARE PROVIDED OR REVIEWED BY THE ENGINEER OF RECORD.

9. DIMENSIONS ARE NOT TO BE DERIVED BY SCALING THESE DRAWINGS. IF THERE IS ANY QUESTION ABOUT DETAILS OR DIMENSIONS, CONTACT THE ARCHITECT/ENGINEER FOR CLARIFICATION.

10. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE SHORING, BRACING, AND FORMWORK, ETC. AS REQUIRED FOR THE CONSTRUCTION OF THIS BUILDING.

11. IF ANY BIDDER IS IN DOUBT AS TO THE TRUE MEANING OF ANY PART OF THE DOCUMENTS, THEY SHALL REQUEST AN INTERPRETATION FROM THE ARCHITECT/ENGINEER IN WRITING. REQUESTS SHALL BE MADE IN TIME TO ALLOW THE ARCHITECT/ENGINEER TO EVALUATE THE REQUEST AND TO ISSUE A FORMAL CLARIFICATION NO LATER THAN SEVEN (7) DAYS PRIOR TO THE SCHEDULED BID DATE.

12. WHENEVER THERE ARE DISCREPANCIES BETWEEN DRAWINGS, OR BETWEEN THE DRAWINGS AND SPECIFICATIONS, OR CONFLICTS WITHIN THE SPECIFICATIONS, AND SUCH DISCREPANCY, IS NOT CALLED TO THE ATTENTION OF THE ARCHITECT/ENGINEER IN TIME TO PERMIT CLARIFICATION BY ADDENDUM, THE BIDDER SHALL BASE HIS BID UPON PROVIDING THE BETTER QUALITY OR GREATER QUANTITY OF WORK OR MATERIAL CALLED FOR. THE BIDDER SHALL SUBMIT A WRITTEN STATEMENT WITH HIS PROPOSAL NOTING SUCH DISCREPANCIES, AND SHALL SO FURNISH AND INSTALL THE BETTER QUALITY, ETC., UNLESS OTHERWISE ORDERED IN WRITING.

II. FOUNDATIONS

1. ALLOWABLE SOIL BEARING PRESSURE IS PRESUMED TO BE 2500 PSF MIN. OWNER SHALL HIRE A QUALIFIED GEOTECHNICAL ENGINEER TO VERIFY THAT MINIMUM SOIL PRESSURE IS PRESENT.

2. FOOTINGS SHALL BE CARRIED TO LOWER ELEVATION THAN THOSE SHOWN ON THE DRAWINGS IF REQUIRED TO REACH MINIMUM BEARING PRESSURE.

3. COMPACT ALL FILL UNDER AND AROUND BUILDING PER THE OWNER'S ON-SITE GEOTECHNICAL ENGINEERING TO VERIFY THAT MINIMUM SOIL PRESSURE IS PRESENT.

4. NO BACKFILL SHALL BE PLACED AGAINST A FOUNDATION WALL OR BASEMENT WALL WITHOUT ADEQUATE TEMPORARY LATERAL BRACING UNTIL THE SLAB ON GRADE AND SUPPORTED FLOOR ABOVE HAVE BEEN POURED AND CURED TO SPECIFIED STRENGTH. BACKFILLING SHALL BE DONE ON OPPOSITE SIDES OF BASEMENT TO BALANCE LATERAL EARTH PRESSURE.

5. BACKFILL AGAINST CONCRETE OR MASONRY RETAINING WALLS SHALL BE DELAYED UNTIL CONCRETE OR MASONRY HAS OBTAINED SPECIFIED STRENGTH.

6. GROUND WATER TABLE SHALL BE ARTIFICIALLY LOWERED PER GEOTECHNICAL REPORT WHEN EXCAVATING BELOW WATER TABLE.

7. A REGISTERED SOILS ENGINEER REPRESENTING THE OWNER SHALL BE PRESENT TO MONITOR COMPACTION AND SETTLEMENT AND VERIFY THE BEARING CAPACITY.

8. UTILITY LINES SHALL NOT BE PLACED THOUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEERS APPROVAL IN WRITING. THE CONTRACTOR IS TO LOCATE ANY EXISTING UNDERGROUND UTILITIES IN WORK AREAS PRIOR TO ANY CONSTRUCTION. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.

9. ALL SLABS ON GRADE SHALL BE 4" THICK AND PLACED ON 4" MINIMUM GRAVEL SUBBASE OVER 10 MIL VIRGIN VAPOR BARRIER OVER COMPACTED SUBGRADE, U.N.O. ON PLAN OR GEOTECHNICAL REPORT.

10. QUALITY ASSURANCE: INSPECTIONS ARE REQUIRED FOR EXISTING SOILS CONDITIONS, FILL PLACEMENT, AND LOAD BEARING REQUIREMENTS:

A. SITE PREPARATION: PRIOR TO PLACEMENT OF PREPARED FILL, THE INSPECTOR SHALL DETERMINE THAT THE SITE HAS BEEN PREPARED IN ACCORDANCE WITH THE ABOVE-REFERENCED SOILS REPORT.

B. FILL PLACEMENT: DURING PLACEMENT AND COMPACTION OF FILL MATERIAL, THE INSPECTOR SHALL DETERMINE THAT THE PROPER FILL MATERIAL IS BEING USED AND THAT THE MAXIMUM LIFT THICKNESSES ARE FOLLOWED IN ACCORDANCE WITH RECOMMENDATIONS OF THE OWNER'S GEOTECHNICAL ENGINEER.

C. EVALUATION OF IN-PLACE DENSITY: THE INSPECTOR SHALL DETERMINE, AT FREQUENCIES DETERMINED IN THE SOILS REPORT AND PROJECT SPECIFICATIONS, THAT THE IN-PLACE DRY DENSITY OF THE COMPACTED FILL COMPLIES WITH RECOMMENDATIONS OF THE OWNER'S GEOTECHNICAL ENGINEER.

III. CONCRETE

1. ALL CONCRETE WORK TO BE DONE IN ACCORDANCE WITH CURRENT ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318-05).

2. CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS:

A. FOOTINGS AND FOUNDATIONS WALLS	3000 PSI
B. SLAB ON GRADE	3000 PSI

3. ALL FOUNDATIONS AND SLAB ON GRADE CONCRETE SHALL HAVE ASTM C33 AGGREGATE WITH MAXIMUM UNIT WEIGHT OF 150 PCF U.N.O.

4. ALL CONCRETE WALLS SHALL HAVE FORM PULL TIES IN ACCORDANCE WITH CONCRETE SPECIFICATIONS.

5. GROUT UNDER BASE PLATES TO BE NON-SHRINKING GROUT APPROVED BY THE ENGINEER.

6. ALL EXPANSION STRIPS 1/2" THICK, U.N.O.

7. LOCATION OF VERTICAL CONSTRUCTION JOINTS SHALL BE COORDINATED WITH STRUCTURAL ENGINEER.

8. ALL EXPOSED CONCRETE CORNERS SHALL HAVE A 3/4" CHAMFER, U.N.O. BY ARCH.

9. SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER SHOWING PROPOSED LOCATIONS OF ANY MATERIAL SUCH AS CONDUIT, EMBEDMENTS, OR FIXTURE TO BE PLACED INSIDE ANY STRUCTURAL CONCRETE MEMBER SUCH AS BEAMS, WALLS, SLABS, COLUMNS OR FOOTINGS.

10. PROVIDE VERTICAL DOVETAIL SLOTS @ 24" O.C. (HORIZONTALLY) IN ALL CONCRETE WALLS WITH MASONRY VENEER.

IV. REINFORCING STEEL

1. REINFORCING STEEL SHALL BE NEW BILLET STEEL, DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60.

2. WELDED WIRE FABRIC SHALL BE SHEETS OF NEW BILLET STEEL COLD DRAWN, CONFORMING TO ASTM SPECIFICATIONS A185 AND A82, GRADE 60.

3. BAR SUPPORTS, DESIGN, DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ACI 318-99 AND "THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315 (LATEST ED.)

4. ALL CONTINUOUS BARS SHALL USE CLASS B SPLICES, U.N.O.. WWF SHALL BE LAPPED ONE WIRE SPACING.

5. MINIMUM CONCRETE COVERAGE SHALL BE AS FOLLOWS. IF STIRRUPS, TIES, OR SPIRALS ARE USED, COVERAGE SHALL BE TO THE OUTERMOST FACE OF THESE ELEMENTS.

FOOTINGS, CAISSONS, AND OTHER MEMBERS WHERE CONCRETE IS DEPOSITED AGAINST SOIL........................ 3"

CONCRETE EXPOSED TO WEATHER OR SOIL
- #6 BAR AND LARGER........................ 3"
- #5 BAR AND SMALLER........................ 3"

CONCRETE NOT EXPOSED TO WEATHER OR SOIL
SLABS, WALLS, JOISTS
- #14 BAR AND LARGER........................ 3"
- #11 BAR AND SMALLER........................ 3"

BEAMS AND COLUMNS........................ 3"

6. PROVIDE BENT HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF ALL WALLS AND FOOTINGS. BENT BARS ARE TO MATCH THE SIZE AND SPACING OF HORIZONTAL BARS IN WALL OR FOOTING. USE CLASS B SPLICE EACH SIDE.

7. PROVIDE DIAGONAL BARS AT CORNERS OF OPENINGS IN SLABS AND WALLS, USE 2#5 x 4'-0" EACH CORNER, EACH FACE UNLESS OTHERWISE NOTED ON THE DRAWINGS. PROVIDE 2" CLEAR COVER BETWEEN THE OPENING AND THE CORNER REINFORCING BARS.

8. RUN WALL FOOTING REINFORCEMENT CONTINUOUS THROUGH COLUMN FOOTING.

9. PROVIDE DOWELS IN WALL FOOTING TO MATCH WALL VERTICALS UNLESS NOTED OTHERWISE ON DRAWINGS. PROVIDE CLASS B SPLICE AND EXTEND WITHIN 3" CLEAR OF BOTTOM OF FOOTING. USE STANDARD ACI 90° HOOK.

V. STRUCTURAL STEEL

1. DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE AISC "MANUAL OF STEEL CONSTRUCTION," ALLOWABLE STRESS DESIGN, NINTH EDITION, OR THE LOAD AND RESISTANCE FACTOR DESIGN, THIRD EDITION.

2. STEEL FABRICATOR SHALL BE AN AISC "CONVENTIONAL STEEL BUILDING STRUCTURES" (SBD) CERTIFIED FABRICATOR. CONTRACTOR SHALL SUBMIT IN WRITING TO THE STRUCTURAL ENGINEER, AT THE TIME OF BID, PROOF OF CERTIFICATION FOR THE STEEL FABRICATOR(S) SUPPLYING STRUCTURAL STEEL FOR THIS PROJECT.

3. STRUCTURAL STEEL - ASTM 992 (F_y = 50 ksi)
TUBES - ASTM A500, GRADE B, F_y = 46 ksi MIN
MISCELLANEOUS - ASTM A36
PIPES - ASTM A53, GRADE B, F_y = 35 ksi MIN

4. ALL CONNECTIONS SHALL BE AISC DOUBLE ANGLE BEARING TYPE CONNECTIONS WITH 3/4" Ø A325N BOLTS U.N.O. DESIGN SHEAR SHALL BE THE GREATER OF:
1) THE SHEAR REACTION SHOWN ON DRAWINGS;
2) 75% OF THE VALUE FROM THE "ALLOWABLE UNIFORM LOAD IN kips" TABLES OF THE AISC ASD NINTH EDITION; OR
3) THE MINIMUM NUMBER OF BOLTS IN SINGLE SHEAR AS FOLLOWS:

W8 TO W10	4 BOLTS
W12 TO W14	6 BOLTS
W16 TO W18	8 BOLTS
W21	10 BOLTS
W24	12 BOLTS
W27	14 BOLTS
W30	16 BOLTS
W33	18 BOLTS
W36	20 BOLTS

5. PROVIDE (4)-1" Ø ANCHOR BOLTS FOR EA COLUMN U.N.O., PROVIDE ANCHOR BOLT SETTING PLAN WITH SHOP DRAWINGS.

6. WELDS SHALL BE MADE ONLY BY OPERATORS CERTIFIED BY THE STANDARD QUALIFICATION PROCEDURE OF THE AMERICAN WELDING SOCIETY FOR TYPE OF WELD REQUIRED. ELECTRODES SHALL BE E70XX. WELD LENGTHS NOT NOTED SHALL BE FULL LENGTH. WELDER CERTIFICATION SHALL BE SUBMITTED FOR REVIEW.

7. RETURN ALL WELDS AT CORNERS TWICE THE NOMINAL SIZE OF THE WELD MINIMUM.

8. HOLES FOR BLOCKING, TIES, CLIPS, ETC., TO BE ATTACHED TO STRUCTURAL STEEL FOR MASONRY, STAIR STRINGER SUPPORTS, ETC., SHALL BE PROVIDED AS PER THE ARCHITECTURAL DRAWINGS. HOLES LARGER THAN 1"Ø SHALL BE COORDINATED WITH STRUCTURAL ENGINEER.

9. PROTECT COLUMNS, BASE PLATES, ANCHOR BOLTS, AND ANY STEEL BELOW GRADE WITH TWO COATS OF FIELD-APPLIED ASPHALT-BASED PAINT BEFORE SLAB IS PLACED.

10. ERECTION AND FABRICATION SHALL CONFORM TO THE SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS, AISC, AND THE CODE OF STANDARD PRACTICE, AISC. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING AND SHORING OF THE STRUCTURE UNTIL ALL COMPONENTS ARE FULLY ERECTED AND ALL CONNECTIONS ARE FULLY MADE.

11. THE GENERAL CONTRACTOR SHALL VERIFY THAT THE CORRECT BEAM AND GIRDER CAMBER IS PRESENT AFTER ERECTION AND BEFORE FLOOR SLAB IS POURED.

12. ALL CONTINUOUS PLATES, ANGLES, ETC. SHALL BE BUTT WELDED AT ALL SPLICE LOCATIONS UNLESS NOTED OTHERWISE.

VI. STEEL JOISTS

1. STEEL, DESIGN, FABRICATION, AND ERECTION: STANDARD SPECIFICATIONS OF THE STEEL JOIST INSTITUTE. THE DESIGN OF ALL JOISTS FURNISHED SHALL HAVE BEEN SUBMITTED TO AND APPROVED BY THE STEEL JOIST INSTITUTE.

2. TOP AND BOTTOM CHORD BRIDGING - SIZE AND SPACE IN ACCORDANCE WITH SJI SPECIFICATIONS. FOR ROOF JOISTS, SPACE BRIDGING TO LIMIT L/R OF BOTTOM CHORD TO 200.
ROOF JOISTS........................ HORIZONTAL L'S U.N.O.

3. WELD JOISTS TO STEEL SUPPORTS WITH 2" OF 3/16" FILLET EACH SIDE OF JOIST, U.N.O. ALL WELDING TO BE BY WELDERS AS UNDER "STRUCTURAL STEEL".

4. CONNECT DECK TO JOISTS AS DETAILED AND SPECIFIED.

5. DESIGN JOISTS FOR A NET UPLIFT OF 15 PSF.

6. ANY LOADS UP TO 200 POUNDS SHALL BE SUPPORTED FROM A JOIST PANEL. ANY LOAD IN EXCESS OF 200 POUNDS SHALL BE COORDINATED BY THE GENERAL CONTRACTOR AND MOUNTED AS PER THE JOIST ERECTION APPROVAL DRAWINGS. NO LOADS IN EXCESS OF 200 POUNDS MAY BE HUNG FROM THE JOINTS, AT ANY PANEL POINT, WITHOUT PRIOR APPROVAL OF THE ENGINEER IN WRITING.

7. JOIST TOP CHORD EXTENSIONS SHALL BE DESIGNED BY THE JOIST MANUFACTURER TO SUPPORT THE SERVICE LOADS SHOWN ON THE CONSTRUCTION DRAWINGS AND LIMITED TO A MAXIMUM TOTAL LOAD DEFLECTION OF L/120 AND A TOTAL LIVE LOAD DEFLECTION OF L/180.

VII. STEEL DECK

1. METAL DECK SHALL BE CUT TO LENGTHS TO PROVIDE A MINIMUM OF THREE SPAN CONDITIONS.

2. STEEL DECK SHALL BE SECURELY WELDED THROUGH THE DECK ONTO THE SUPPORTING MEMBERS WITH 5/8" Ø PUDDLE WELDS @ 12" O.C., U.N.O./ WELDING WASHERS ARE REQUIRED FOR DECK WITH THICKNESS 22 GA. OR LESS.

3. ALL METAL DECKS SHALL BE FASTENED WITH SIDE-LAP SCREWS OR WELDS AT MIDSPAN OR 3'-0" ON CENTER, WHICHEVER IS LESS, UNLESS OTHERWISE NOTED ON PLAN.

4. ALL METAL DECK NOT EXPOSED TO WEATHER SHALL BE PRIMED PAINTED. DECK EXPOSED TO WEATHER SHALL CONFORM TO ASTM A525 G90.

5. PROVIDE MINIMUM 1 1/2" DECK END BEARING (OR PER MANUFACTURER RECOMMENDATIONS IF GREATER).

6. PROVIDE 6', 18 GA GIRDER FILLER AS NEEDED.

VII. STRUCTURAL MASONRY

1. MASONRY PIERS OR WALLS, MASONRY RETAINING WALLS, FOUNDATIONS WALLS AND ANY OTHER MASONRY SO DESIGNATED ON DRAWINGS ARE CONSIDERED HERE TO BE STRUCTURAL MASONRY.

2. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90. MINIMUM COMPRESSIVE STRENGTH OF MASONRY UNITS SHALL BE AS FOLLOWS:
SOLID CLAY UNITS........................ 8000 PSI
STANDARD CONCRETE UNITS........................ 1900 PSI ON NET AREA
SUBMIT WRITTEN EVIDENCE OF BLOCK STRENGTH TO THE ARCHITECT.

3. COMPRESSIVE STRENGTH OF CONCRETE MASONRY (F'm) - 1500 PSI

4. MORTAR SHALL BE CEMENT-LIME AND CONFORM TO ASTM C270.

AVERAGE MINIMUM COMPRESSIVE STRENGTHS @ 28 DAYS

	CLAY MASONRY	CONCRETE UNIT MASONRY
M	- NA -	2500 psi
S	- NA -	1800 psi
N	750 psi	- NA -

USE TYPE M MORTAR WHEN CMU IS IN CONTACT WITH SOIL.

5. GROUT FOR REINFORCED MASONRY - FINE GROUT ASTM C476, WITH SLUMP OF 8 TO 11 INCHES. MINIMUM 28 DAY COMPRESSIVE STRENGTH - 3000 PSI. LOW LIFT OR HIGH LIFT GROUT MAY BE UTILIZED.

6. REINFORCING: ASTM A615 - GRADE 60.
SEE CHART BELOW FOR MINIMUM LAP LENGTH AND EMBEDMENT OF REINFORCING BARS.

BAR SIZE	LAP LENGTH (IN)	EMBEDMENT (IN)
#4	24	18
#5	30	23
#6	36	27
#7	42	32
#8	48	36

7. ALL MASONRY SHALL BE PLACED IN RUNNING BOND UNLESS SPECIFICALLY NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS. ALL MASONRY CORNERS SHALL BE PLACED INTERLOCKING U.N.O.

8. INTERIOR SLAB ON GRADE SHALL BE PLACED PRIOR TO PLACING AND TAMPING BACKFILL AGAINST OUTSIDE FACE OF REINFORCED CONCRETE MASONRY.

9. FOR NON-LOAD BEARING CMU, AT OPENINGS 6'-0" WIDE AND LESS, PROVIDE CONTINUOUS "U"-SHAPED LINTEL BLOCK WITH TWO #4 CONTINUOUS. FILL LINTEL 8" DEEP WITH 3000 PSI GROUT AND EXTEND 16" BEYOND JAMB. EACH SIDE OF OPENING. FOR OPENINGS 10'-0" WIDE OF LESS PROVIDE CONTINUOUS "U"-SHAPE LINTEL BLOCK WITH TWO #5 CONTINUOUS. FILL LINTEL 16" DEEP WITH 3000 PSI GROUT AND EXTEND 16" BEYOND JAMB.

10. MASONRY LINTELS:
- A. FOR SPANS UP TO 6 FT: USE 3½"x3½"x¼" STEEL ANGLES.
- B. FOR SPANS FROM 6 FT TO 10 FT: USE 5"x3½"x5/16" STEEL ANGLES.
- C. FOR SPANS FROM 9 FT TO 18 FT: USE A PAIR OF 9 GAGUE WIRES IN EACH OF THE FIRST 3 COURSES OF BRICK ON A 5"x3½"x5/16" STEEL ANGLE. LAP ALL 9 GAUGE WIRE SPLICES 12" MINIMUM AND EXTEND WIRES 12" MINIMUM INTO JAMBS. TEMPORARILY SUPPORT STEEL ANGLE BEFORE LAYING MASONRY. SHORING MAY BE REMOVED SEVEN DAYS FOLLOWING THE 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 THE STEEL BEAM. THIS PROVIDES SUPPORT TO THE ENDS OF THE PLATE BY BEARING ON THE ADJACENT MASONRY JAMBS. THE BEAM SHOULD BE TEMPORARILY SHORED PRIOR TO LAYING THE MASONRY. THE SHORING MAY BE REMOVED FIVE DAYS AFTER LAYING THE MASONRY.

11. SEISMIC PERFORMANCE CATEGORY D
- A. STRUCTURES IN SEISMIC PERFORMANCE CATEGORY D SHALL COMPLY WITH THE REQUIREMENTS OF SEISMIC PERFORMANCE CATEGORY C AND TO THE ADDITIONAL REQUIREMENTS OF THIS SECTION.
- B. _DESIGN REQUIREMENTS_ - MASONRY ELEMENTS, OTHER THAN THOSE NOT DESIGNED TO RESIST VERITCAL OR LATERAL LOADS OTHER THAN THOSE INDUCED BY THIER OWN MASS, SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 4 OF ACI 530.
- C. _MINIMUM REINFORCEMENT REQUIREMENTS FOR MASONRY WALLS_ - MASONRY WALLS OTHER THAN THOSE NOT DESIGNED TO RESIST VERITCAL OR LATERAL LOADS OTHER THAN THOSE INDUCED BY THIER OWN MASS, SHALL BE REINFORCED IN BOTH THE VERTICAL AND HORIZONTAL DIRECTION. THE SUM OF THE CROSS-SECTIONAL AREA OF HORIZONTAL AND VERTICAL REINFORCEMENT SHALL BE AT LEAST 0.002 TIMES THE GROSS CROSS-SECTIONAL AREA OF THE WALL, AND THE MINIMUM CROSS-SECTIONAL AREA IN EACH DIRECTION SHALL BE NOT LESS THAN 0.0007 TIMES THE GROSS CROSS-SECTIONAL AREA OF THE WALL, USING SPECIFIED DIMENSIONS. REINFORCEMENT SHALL BE UNIFORMLY DISTRIBUTED. THE MAXIMUM SPACING OF REINFORCEMENT SHALL BE 48 IN. (1219 MM) EXCEPT FOR STACK BOND MASONRY. WYTHES OF STACK BOND MASONRY SHALL BE CONSTRUCTED OF FULLY GROUTED HOLLOW OPEN-END UNITS, FULLY GROUTED HOLLOW UNITS LAID WITH FULL HEAD JOINTS OR SOLID UNITS. MAXIMUM SPACING OF REINFORCEMENT FOR WALLS WITH STACK BOND MASONRY SHALL BE 24 IN. (610 MM).
- D. _SHEAR WALL REINFORCEMENT REQUIREMENTS_ - THE MAXIMUM SPACING OF VERTICAL AND HORIZONTAL REINFORCEMENT SHALL BE THE SMALLEST OF: ONE-THIRD THE LENGTH OF THE SHEAR WALL, OR 48 IN. (1219 MM). THE MINIMUM CROS-SECTIONAL AREA OF VERTICAL REINFORCEMENT SHALL BE ONE-THIRD OF THE REQUIRED SHEAR REINFORCEMENT. SHEAR REINFORCEMENT SHALL BE ANCHORED AROUND VERTICAL REINFORCING BARS WITH A STANDARD HOOK.
- E. _MINIMUM REINFORCEMENT FOR MASONRY COLUMNS_ - LATERAL TIES IN MASONRY COLUMNS SHALL BE SPACED NOT MORE THAN 8 IN. (203 MM) ON CENTER AND SHALL BE AT LEAST 3/8 IN (9.5 MM) DIAMETER. LATERAL TIES SHALL BE EMBEDED IN GROUT.
- F. _MATERIAL REQUIREMENTS_ - NEITHER TYPE N MORTAR NOR MASONRY CEMENT SHALL BE USED AS PART OF THE LATERAL FORCE-RESISTING SYSTEM.
- G. _LATERAL TIE ANCHORAGE_ - STANDARD HOOKS FOR LATERAL TIE ANCHORAGE SHALL BE EITHER A 135 DEGREE STANDARD HOOK OR A 180 DEGREE STANDARD HOOK.

IX. COLD ROLLED STEEL MATERIALS

1. ALL STRUCTURAL MEMBERS, ACCESSORIES, AND CONNECTIONS SHALL BE DESIGNED BY A NORTH CAROLINA PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE 2002 INTERNATIONAL BUILDING CODE. DESIGN SHALL BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI) "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STRUCTURAL MEMBERS".

2. ALL STRUCTURAL MEMBERS SHALL BE FORMED FROM CORROSION-RESISTANT STEEL CORRESPONDING TO THE REQUIREMENTS OF ASTM-A446, WITH A MINIMUM YIELD STRENGTH OF 40 KSI.

3. ALL STRUCTURAL MEMBERS SHALL BE ZINC COATED MEETING THE REQUIREMENTS OF ASTM A525.

4. PROVIDE VERTICAL DEFLECTION CONNECTION "VERTICLIP SLB", OR EQUAL, TO ALL STUDS WHICH PASS BY THE STRUCTURE (FLOOR AND ROOF), AND VERTICAL DEFLECTION CONNECTION "VERTITRACK SL", OR EQUAL, AT ALL STUDS WHICH ATTACH TO THE BOTTOM OF THE STRUCTURE.

5. METAL STUD MANUFACTURER SHALL PROVIDE SHOP DRAWINGS SHOWING PROPOSED LOCATIONS OF MATERIAL, INCLUDING ACCESSORIES, STRAPS, BLOCKING, ETC., FOR GENERAL COORDINATION WITH STRUCTURAL SYSTEM.

6. DESIGN SERVICEABILITY REQUIREMENTS SHALL BE MINIMUMS PRESCRIBED BELOW, UNLESS FINISH OF GLAZING SYSTEM MANUFACTURES REQUIRE A MORE STRINGENT MINIMUM:
- A. BRICK VENEER........................ L/600
- B. EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)...... L/240
- C. STUCCO........................ L/240

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9/5/11

STRUCTURAL INTEGRITY ENGINEERING, P.A. CORPORATE SEAL 2001 NORTH CAROLINA
C-2217

HT #367
FALLS OF THE NEUSE
RALEIGH, NC

PROJECT MANAGER: RB
JOB NO.: 11-RSC Cochran-00
DR. BY: RB

REVISIONS
No. ____ Date ____
No. ____ Date ____
No. ____ Date ____
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DRAWING NAME: **STRUCTURAL NOTES**

ISSUE DATE: 09.05.11

SHEET NO.
S1.0