## DESIGN CRITERIA:

1. BUILDING CODE - INTERNATIONAL BUILDING CODE 2012 WITH 2014 & 2015 GEORGIA AMENDMENTS.
   A. RISK CATEGORY & IMPORTANCE FACTORS:
   B. RISK CATEGORY.......... II
   C. WIND FACTOR.......... 1.0
   D. SNOW FACTOR.......... 1.0
   E. SEISMIC FACTOR.......... 1.0

2. DESIGN DEAD LOADS:
   A. FLOOR.......... 77 PSF
   B. ROOF.......... 20 PSF

3. DESIGN LIVE LOADS*:
   A. FLOOR:
      CLASSROOM.......... 40 PSF
      CORRIDOR.......... 80 PSF
      STAIRS.......... 100 PSF
      LOBBIES/ASSEMBLIES.......... 100 PSF
      OFFICES.......... 50 PSF
      ELEVATED PLATFORMS.......... 60 PSF
      CONCENTRATED.......... 1000 LBS
      PARTITION.......... C.M.U. ACTUAL WEIGHT**

   B. ROOF.......... 20 PSF
      * LIVE LOADS ARE REDUCIBLE IN ACCORDANCE WITH THE BUILDING CODE.
      ** IF PARTITION LOCATIONS ARE NOT KNOWN TO A DEGREE WHERE ACTUAL WEIGHT LOADS CAN BE APPLIED, A 15 PSF LOAD WILL BE APPLIED ACROSS THE ENTIRE AREA PARTITIONS MAY OCCUR.

4. WIND LOADS:
   A. ULTIMATE WIND SPEED.......... 115 MPH
   B. DIRECTIONALITY FACTOR (Kd).......... 0.85
   C. EXPOSURE CATEGORY.......... C
   D. ENCLOSURE CLASSIFICATION.......... ENCLOSED BUILDING
   E. GUST EFFECT FACTOR (G).......... 0.85
   F. COMPONENT AND CLADDING LOADS (100 SQ. FT., ZONES ARE PER ASCE-7)

      ROOFS
      NEGATIVE ZONE 1.......... -28.9 PSF
      NEGATIVE ZONE 2.......... -34.2 PSF
      NEGATIVE ZONE 3.......... -34.2 PSF
      POSITIVE ALL ZONES...... 16.0 PSF
      OVERHANG ZONE 1&2.... -42.8 PSF
      OVERHANG ZONE 3........ -21.4 PSF

      WALLS
      NEGATIVE ZONE 4.......... -27.0 PSF
      NEGATIVE ZONE 5.......... -30.0 PSF
      POSITIVE ZONES 4 & 5.. 24.6 PSF

5. EARTHQUAKE LOADS:
   A. SITE CLASS.......... D
   B. Ss =.......... 0.195
   C. S1 =.......... 0.079
   D. SDS =.......... 0.208
   E. SD1 =.......... 0.126
   F. SEISMIC DESIGN CATEGORY.......... C
   G. BASIC SEISMIC FORCE RESISTING SYSTEM =.......... ORDINARY REINFORCED MASONRY SHEAR WALLS.
   H. RESPONSE MODIFICATION COEFFICIENT, R =.......... 2.0
   I. OVER-STRENGTH FACTOR (Ωo).......... 2.0
   J. DEFLECTION AMPLIFICATION FACTOR (Cd).......... 1.75
   K. SEISMIC RESPONSE COEFFICIENT (Cs) =.......... 0.156
   L. LONG PERIOD TRANSITION PERIOD (TL).......... 12
   M. ANALYSIS PROCEDURE.......... EQUIVALENT LATERAL FORCE PROCEDURE
   N. DESIGN BASE SHEAR =.......... 1583K

6. SNOW LOADS:
   A. GROUND SNOW LOAD.......... 5.0 PSF
   B. FLAT ROOF SNOW LOAD (Pf).......... 5.0 PSF
   C. THERMAL FACTOR (Ct).......... 1.0
   D. SNOW EXPOSURE FACTOR (Ce).......... 1.0
   E. RAIN ON SNOW SURCHARGE.......... 5.0 PSF
   F. UNIFORM ROOF SNOW LOAD.......... 8.5 PSF

7. RETAINING WALLS:
   A. LATERAL PRESSURE METHOD.......... EQUIVALENT FLUID PRESSURE
   B. ACTIVE SOIL PRESSURE.......... 40 PCF
   C. AT-REST SOIL PRESSURE.......... 30 PCF
   D. COEFFICIENT OF FRICTION.......... 0.4
   E. SOIL DENSITY (HEEL).......... 115 PCF

## SPECIAL INSPECTIONS:

1. SPECIAL INSPECTION AND A FINAL REPORT IN ACCORDANCE WITH IBC SECTION 1704.2.4 SHALL BE SUBMITTED TO THE BUILDING OFFICIAL PRIOR TO THE TIME THAT PHASE OF THE WORK IS APPROVED FOR OCCUPANCY.

2. THE OWNER WILL EMPLOY THE SERVICES OF ONE OR MORE SPECIAL INSPECTORS TO PROVIDE SPECIAL INSPECTIONS DURING CONSTRUCTION ACCORDING TO THE SCHEDULE OF SPECIAL INSPECTIONS.

3. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

4. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:

   A. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS. THE INSPECTOR MAY NOT ALTER, MODIFY, ENLARGE OR WAIVE ANY OF THE REQUIREMENTS OF THE DOCUMENTS.
   B. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE PROFESSIONAL OF RECORD, AND THE CONTRACTOR. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, SUBMIT A COMPLETE LIST OF ALL OUTSTANDING DISCREPANCIES ON A WEEKLY BASIS TO THE OWNER, THE BUILDING OFFICIAL, AND THE PROFESSIONAL OF RECORD UNTIL ALL CORRECTIONS HAVE BEEN COMPLETED.
   C. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

5. DUTIES AND RESPONSIBILITIES OF THE CONTRACTOR:

   A. NOTIFY THE SPECIAL INSPECTOR THAT SPECIAL INSPECTIONS ARE NEEDED.
   B. COORDINATE THE SCHEDULING AND TIMELY NOTIFICATION OF THE SPECIFIC INDIVIDUALS NEEDED FOR THE SPECIAL INSPECTION.
   C. PROVIDE DIRECT ACCESS TO THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT
   D. SUBMIT FABRICATORS CERTIFICATES OF COMPLIANCE, WELDER'S CERTIFICATES, AND OTHER REQUIRED DOCUMENTATION FOR REVIEW BY THE SPECIAL INSPECTOR.
   E. PROVIDE SAFE ACCESS TO THE WORK TO BE INSPECTED AND DELIVER SAMPLES FOR TESTING WHEN NEEDED.

6. WHERE SPECIAL INSPECTION REQUIREMENTS DUPLICATE THE REQUIREMENTS OF SPECIFIED QUALITY ASSURANCE TESTING, DUPLICATE INSPECTIONS SHALL NOT BE REQUIRED.

## SUBMITTALS:

1. CONTRACTOR SHALL SUBMIT A SCHEDULE OF SHOP DRAWING SUBMITTAL DATES AT LEAST 30 DAYS PRIOR TO FIRST SUBMITTAL. FAILURE TO SUBMIT DRAWINGS ON DESIGNATED DATES MAY IMPACT REVIEW SCHEDULE.

2. ANY MATERIALS OR PRODUCTS SUBMITTED FOR APPROVAL THAT ARE DIFFERENT FROM THE MATERIAL OR PRODUCTS SPECIFIED IN THE STRUCTURAL CONTRACT DOCUMENTS WILL BE CONSIDERED ONLY IF THE FOLLOWING CRITERIA ARE SATISFIED:
   A. A COST SAVINGS TO THE OWNER IS DOCUMENTED AND SUBMITTED WITH THE REQUEST.
   B. THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE ICC-ES, AND THE ICC-ES REPORT IS SUBMITTED WITH THE REQUEST. SUBMITTALS NOT SATISFYING THE ABOVE CRITERIA WILL NOT BE CONSIDERED.

3. REVIEW OF SUBMITTALS AND/OR SHOP DRAWINGS BY THE STRUCTURAL ENGINEER OF RECORD DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK SHOP DRAWINGS BEFORE SUBMITTAL TO THE STRUCTURAL ENGINEER OF RECORD. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS AND DIMENSIONS SPECIFIED IN METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION. SEE SPECIFIC PROVISIONS IN THE CONTRACT DOCUMENT DEALING WITH THE APPROPRIATE DESIGN RESPONSIBILITIES OF CONTRACTORS, SUBCONTRACTORS AND CONTRACT SUPPLIERS.

4. THE USE OF REPRODUCTIONS OF THESE CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT AND OBLIGATES HIM TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING FROM ANY ERRORS THAT MAY OCCUR HEREIN.

## MISCELLANEOUS:

1. THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

2. STRUCTURAL DRAWINGS SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING PERTINENT ASPECTS OF ALL DISCIPLINES INTO THEIR SHOP DRAWINGS AND WORK, AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR OMISSIONS.

3. NO OPENINGS OR MODIFICATIONS SHALL BE MADE IN OR TO ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT.

4. NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT.

5. OPENINGS 1'-4" OR LESS ON A SIDE ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH OPENINGS.

6. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.

7. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL THE TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.

8. DO NOT SCALE THESE DRAWINGS: USE DIMENSIONS. FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS, SEE ARCHITECTURAL DRAWINGS.

9. CONTRACTOR'S CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.

10. THE CONTRACTOR SHALL INFORM THE PROFESSIONAL OF RECORD, IN WRITING, OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY OF SUCH DEVIATION BY THE PROFESSIONAL OF RECORD, REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC. UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE PROFESSIONAL OF RECORD OF SUCH DEVIATION AT THE TIME OF SUBMISSION AND THE ARCHITECT HAS GIVEN THE WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.

11. WHERE A SECTION/DETAIL IS CUT ON THE PLAN, IT IS ASSUMED/UNDERSTOOD TO BE REPRESENTATIVE OF ALL LIKE OR SIMILAR CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK.

12. AT ALL TIMES THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF PERSONS AND PROPERTY. THE ARCHITECT'S OR ENGINEER'S PRESENCE AT THE JOB SITE OR REVIEW OF WORK DOES NOT IMPLY CONFIRMATION OF THE ADEQUACY OF THE CONTRACTOR'S MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH OSHA REGULATIONS.

13. CONSULT ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR LOCATION, SIZE AND EXTENT OF CHASES, INSERTS, RECESSES, RIDGES, FINISHES, DEPRESSIONS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS.

14. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES.

15. THE CONTRACTOR SHALL VERIFY ALL FLOOR AND ROOF MOUNTED MECHANICAL EQUIPMENT WEIGHTS AS WELL AS FLOOR AND/OR ROOF OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

16. THE CONTRACTOR SHALL NOTIFY, IN WRITING, THE STRUCTURAL ENGINEER OF RECORD OF CONDITIONS ENCOUNTERED IN THE FIELD WHICH ARE CONTRADICTORY TO THOSE SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS.

17. STRUCTURAL CONTRACT DOCUMENTS SHALL NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS, OR ANY MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR OR SUBCONTRACTOR.

18. REFERENCE TO STANDARD SPECIFICATIONS OR ANY TECHNICAL SOCIETY, ORGANIZATION OR ASSOCIATION OR TO CODES OF LOCAL OR STATE AUTHORITIES SHALL MEAN THE LATEST STANDARD, CODE SPECIFICATION OR TENTATIVE SPECIFICATION ADOPTED AND PUBLISHED AT THE DATE OF TAKING BIDS, UNLESS SPECIFICALLY STATED OTHERWISE.

19. SEE ARCHITECTURAL DRAWINGS FOR FLOOR ELEVATIONS, SLOPE, AND LOCATION OF DEPRESSED FLOOR AREAS. THE CONTRACTOR SHALL COMPARE STRUCTURAL SECTIONS WITH THE ARCHITECTURAL SECTIONS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO FABRICATING OR INSTALLING STRUCTURAL MEMBERS.

20. PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON THESE DRAWINGS. THE GENERAL CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR THE REQUIRED OPENINGS AND HE SHALL PROVIDE FOR ALL OPENINGS WHETHER SHOWN ON THE DRAWINGS OR NOT. HE SHALL VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH THE MECHANICAL CONTRACTOR. ANY DEVIATION FROM THE OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR APPROVAL.

## FOUNDATIONS:

1. SPREAD FOOTINGS SHALL BEAR ON SOIL CAPABLE OF SUSTAINING A NET ALLOWABLE BEARING PRESSURE OF 3.0 KSF FOR INDIVIDUAL COLUMN FOOTINGS AND 3.0 KSF FOR CONTINUOUS WALL FOOTINGS UNDER FULL SERVICE LIVE AND DEAD LOAD.

2. THE FOOTINGS HAVE BEEN POSITIONED AT THE ESTIMATED ELEVATION WHICH WILL PROVIDE SUITABLE BEARING. HOWEVER, IF ADEQUATE BEARING CAPACITY IS NON-EXISTENT AT THESE ESTIMATED ELEVATIONS, THE FOOTING SHALL BE LOWERED TO AN ELEVATION WHERE THE PRESCRIBED SAFE BEARING CAPACITY EXISTS.

3. FOOTINGS MAY BE CAST INTO AN EARTH-FORMED TRENCH IF SOIL CONDITIONS PERMIT.

4. EXCAVATION FOR FOOTINGS SHALL BE CUT TO ACCURATE SIZES AND DIMENSIONS, AS SHOWN ON PLANS. ALL SOIL BELOW SLABS AND FOOTINGS SHALL BE PROPERLY COMPACTED AND SUBGRADE BROUGHT TO A REASONABLE TRUE AND LEVEL PLANE BEFORE PLACING CONCRETE.

5. IN THE AREA OF THE BUILDING, EXISTING ORGANIC MATERIAL, UNSUITABLE SOIL, ABANDONED FOOTINGS AND ANY OTHER EXISTING UNSUITABLE MATERIALS AS IDENTIFIED BY THE GEOTECHNICAL INVESTIGATION REPORT SHALL BE REMOVED. ANY FILL MATERIAL REQUIRED AT THE SITE SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE GEOTECHNICAL INVESTIGATION REPORT AND APPROVED BY A SOILS ENGINEER. ROCKS OF A DIAMETER GREATER THAN THAT SPECIFIED SHALL BE EXCLUDED FROM STRUCTURAL FILL LIFTS. FILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS ACCORDING TO THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS AND COMPACTED TO A SPECIFIED MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED COMPACTION TEST (ASTM D1557). ADEQUATE FIELD DENSITY AND MOISTURE CONTENT TESTS SHALL BE PERFORMED TO ENSURE COMPLIANCE.

6. FOOTING CONCRETE SHALL BE CAST ON THE SAME DAY THE EXCAVATION IS APPROVED. IF THE BEARING SURFACE IS ALLOWED TO BECOME DISTURBED IN ANY WAY, IT SHALL BE REWORKED TO THE SATISFACTION OF THE TESTING ENGINEER PRIOR TO CASTING THE CONCRETE.

7. ALL BEARING MATERIAL SHALL BE INSPECTED BY THE INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.

8. BOTTOM OF EXTERIOR FOOTINGS SHALL BEAR A MINIMUM OF 1'-0" BELOW FINAL GRADE FOR FROST PROTECTION.

9. WHEN UNSATISFACTORY OR UNCONTROLLED FILL IS ENCOUNTERED, REMOVAL AND REPLACEMENT WILL BE PAID ON THE BASIS OF UNIT PRICES SET FORTH IN THE CONTRACT.

   DRAINAGE FILL SHALL BE AN EVENLY GRADED MIXTURE OF NATURAL OR CRUSHED STONE CONFORMING TO THE REQUIREMENTS OF ASTM STANDARD C33, AND HAVING A GRADATION AS FOLLOWS:
   11.
   100 % PASSING.......... A 3/4" SIEVE
   10-30 % PASSING.......... A 1/2" SIEVE
   0-10 % PASSING.......... A 3/8" SIEVE
   0-5 % PASSING.......... A #4 SIEVE

11. ANY FILL WITHIN [illegible] OF THE BUILDING LIMIT SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER FOR PREPARATION.

12. BACKFILL AROUND AND OVER FOUNDATION ELEMENTS SHALL BE OF SUITABLE MATERIAL, INSPECTED AND PRE-APPROVED BY THE TESTING ENGINEER.

13. BACKFILL AGAINST WALLS SHALL BE PLACED IN 8 INCH LIFTS AND SHALL BE DEPOSITED EVENLY AGAINST EACH SIDE OF THE WALL UNTIL THE LOWER FINAL GRADE IS REACHED. BACKFILL SHALL NOT BE PLACED AGAINST WALLS DEPENDENT UPON TOP AND BOTTOM SLABS/FOUNDATION FOR SUPPORT UNTIL SUCH SLABS HAVE ATTAINED MINIMUM DESIGN COMPRESSIVE STRENGTH. WALLS WITH SLAB-ON-GROUND AT THE TOP OF THE WALL SHALL BE SAFELY SHORED AND BRACED DURING BACKFILLING.

14. MAXIMUM SLOPE OF EXCAVATIONS SHALL BE IDENTIFIED IN THE GEOTECHNICAL INVESTIGATION REPORT AND ADHERED TO. PROVIDE SHORING AND PROTECTION FOR EXCAVATION BANKS AS NECESSARY TO PRESERVE SAFETY AND PREVENT CAVING.

15. ALL BEARING STRATA SHALL BE ADEQUATELY DRAINED BEFORE FOUNDATION CONCRETE IS PLACED.

16. COLUMN FOOTINGS AND WALL FOOTINGS SHALL BE POURED MONOLITHIC WITH TOPS OF ADJACENT FOOTINGS AT THE SAME ELEVATION.

17. THERE SHALL BE NO HORIZONTAL OR VERTICAL CONSTRUCTION JOINTS IN ANY FOOTING WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER.

18. CONCRETE CAST ON SLOPING SURFACES SHALL BEGIN AT THE LOWEST ELEVATION AND CONTINUE MONOLITHICALLY TOWARD THE HIGHER ELEVATION UNTIL THE INTENDED POUR IS COMPLETED.

19. FOUNDATION DESIGN IS BASED ON THE SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION "DATED XXXXXXXX AS PREPARED BY XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXX JOB NO. XXXXXXXX".

## CONCRETE:

1. CODE: AMERICAN CONCRETE INSTITUTE (ACI) 318 (LATEST ADDITION)

2. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH AND DENSITY IN ACCORDANCE WITH THE FOLLOWING:

| | STRENGTH PSI | DENSITY PCF | AIR |
|---|---|---|---|
| FOOTINGS & SLABS ON GRADE.......... | 3000 | 145 | 3% |
| ELEVATED SLABS & GRADE BEAMS.......... | 4500 | 145 | 4.5% |
| RETAINING WALLS, BASEMENT WALLS, DEEP FDN. & COLUMN/PIERS | 4500 | 145 | 6% |

3. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS FOR ALL UNIQUE CONCRETE APPLICATIONS FOR REVIEW WELL IN ADVANCE OF CONCRETE PLACEMENT. CONCRETE MIX DESIGN SHALL BE CERTIFIED BY AN ENGINEER REGISTERED IN THE PROJECT STATE. MIX DESIGN TEST DATA SHALL COMPLY WITH ACI 318 5.3 AND SHALL INCLUDE (AT A MINIMUM) AVERAGE 28 DAY STRENGTH, NUMBER OF SAMPLES, AND STANDARD DEVIATION (IF APPLICABLE). TEST RESULTS SHALL NOT BE MORE THAN 24 MONTHS OLD AT TIME OF SUBMITTAL.

4. REINFORCING SHALL CONFORM TO ASTM A615, GR60, UNLESS NOTED OTHERWISE.

5. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, GRADE 60.

6. WELDED WIRE FABRIC SHALL BE PLACED 1" BELOW T/SLAB, UNLESS NOTED OTHERWISE. LAP FABRIC 6" ON SIDES AND ENDS.

7. ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE LATEST ADDITION OF THE ACI DETAILING MANUAL.

8. ALL MIXING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE.

9. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN ABOVE-GRADE CONCRETE POURS. ALL CONSTRUCTION JOINTS SHALL BE MADE IN THE CENTER OF SPANS WITH VERTICAL BULKHEADS. WHEN A BEAM INTERSECTS A GIRDER AT THIS POINT, THE JOINTS OF THE GIRDERS SHALL BE OFFSET A DISTANCE EQUAL TO TWICE THE WIDTH OF THE BEAM. THE LOCATION OF CONSTRUCTION JOINTS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS SHALL BE SPECIFIED BY THE ENGINEER OF RECORD.

10. ALL "CONTINUOUS" REINFORCEMENT SHALL HAVE A MINIMUM LAP OF "B" TYPE (ACI 318) AT SPLICES, UNLESS NOTED OTHERWISE.

11. HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS AT CORNERS AND INTERSECTIONS, AS SHOWN ON TYPICAL BAR PLACING DETAILS.

12. PROVIDE STANDARD (IF GALVANIZED, SPELL OUT AREAS) BAR CHAIRS WITH PROTECTIVE TIPS AND SPACERS AT 5'-0" CENTERS FOR ALL SLABS AND BEAMS ABOVE GRADE. PROVIDE 3" X 6" X 20 GAGE SHEET METAL BAR CHAIRS AT 4'-0" MAXIMUM CENTERS EACH WAY FOR ALL TOP REINFORCING FOR SLABS-ON-GRADE.

13. PROVIDE #4 @ 12" CENTERS TEMPERATURE BARS AT RIGHT ANGLES TO MAIN BARS FOR ALL SOLID SLABS ABOVE GRADE, UNLESS NOTED OTHERWISE.

14. SUBMIT REINFORCING PLACEMENT AND DETAIL (SHOP) DRAWINGS FOR REVIEW. NO REINFORCING BARS SHALL BE INSTALLED UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND RETURNED.

15. PRODUCTS AND MATERIALS:
    A. TYPE 1 PORTLAND CEMENT SHALL CONFORM TO ASTM-C150.
    B. AGGREGATES SHALL CONFORM TO ASTM C-33.
    C. REINFORCING BARS SHALL CONFORM TO ASTM A-615 (GRADE 60).
    D. FORMING SHALL BE OF WOOD, STEEL, OR FIBERGLASS OF SATISFACTORY QUALITY AND CONDITION.
    E. NO ADMIXTURES SHALL BE ADDED TO THE CONCRETE UNLESS APPROVED BY THE ENGINEER.
    F. NON-SHRINK GROUT SHALL BE READY TO USE NON-METALLIC AGGREGATE AND DEVELOP A 7-DAY COMPRESSIVE STRENGTH OF 5000 PSI.

16. ALL REINFORCING SHALL BE SUPPORTED IN FORMS SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER IN ACCORDANCE WITH LATEST ADDITION OF THE CRSI "MANUAL OF STANDARD PRACTICE".

17. MINIMUM CONCRETE COVER (UNLESS NOTED OTHERWISE) SHALL BE:

    #11 BARS AND SMALLER.......... 3/4 INCHES
    UNFORMED SURFACE IN CONTACT WITH THE GROUND..... 3 INCHES
    EXTERIOR BASEMENT WALLS.......... 2 INCHES
    INTERIOR BASEMENT WALLS.......... 3/4 INCHES
    FORMED SURFACES EXPOSED TO EARTH OR WEATHER
    #6 BARS AND LARGER.......... 2 INCHES
    #5 BARS AND SMALLER.......... 1 1/2 INCHES
    FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER
    BEAMS GIRDERS AND COLUMNS.......... 1 1/2 INCHES
    SLABS, WALLS, AND JOISTS.......... 3/4 INCHES

18. LAP SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING, UNLESS NOTED OTHERWISE. WHERE CLASSES ARE NOT CALLED OUT ON DRAWINGS, USE CLASS "B" SPLICES.

| BAR SIZE | TENSION SPLICES (INCHES) TOP BARS A | TOP BARS B | OTHER BARS A | OTHER BARS B | COMPRESSION SPLICES (INCHES) |
|---|---|---|---|---|---|
| #3 | 22 | 28 | 17 | 22 | 12 |
| #4 | 29 | 37 | 22 | 29 | 15 |
| #5 | 36 | 47 | 28 | 36 | 19 |
| #6 | 43 | 56 | 33 | 42 | 23 |
| #7 | 63 | 81 | 48 | 63 | 25 |

19. SCHEDULED OR DETAILED REINFORCING STEEL SHALL NOT BE TACK WELDED FOR ANY REASON. WELDED REINFORCING STEEL SPLICES ARE NOT PERMITTED WITHOUT ENGINEER'S APPROVAL. WHERE WELDING IS APPROVED IT SHALL CONFORM TO AWS D1.4 STRUCTURAL WELDING CODE - REINFORCING STEEL.

20. CORNER BARS SHALL BE OF EQUAL SIZE AND SPACING AS THE MAIN REINFORCING WITH LAP SPLICE LENGTHS EQUAL TO 44 BAR DIAMETERS, MINIMUM.

21. SLAB-ON-GRADE SHALL BE SAW CUT IMMEDIATELY AFTER CONCRETE HARDENS. THE CONTRACTOR SHALL SUBMIT LAYOUT AND CONSTRUCTION SCHEDULE ("SOFT CUT" ® INTERNATIONAL OR SIM.)

22. CONTROL JOINTS IN SLABS ON GROUND SHALL BE LOCATED AT 15'-0" MAXIMUM SPACING AND SHALL CREATE SECTIONS OF SLAB WITH A MAXIMUM ASPECT RATIO OF 1.5:1. CONTROL JOINTS SHALL BE SAWN AND SHALL BE A MINIMUM OF 1/4 OF THE SLAB THICKNESS DEEP IF CUT WITH A CONVENTIONAL SAW OR 1" DEEP IF CUT WITH AN EARLY-ENTRY DRY-CUT SAW. THE CONTROL JOINTS SHALL BE SAWN AS SOON AS THE SAW BLADE CAN CUT THE CONCRETE WITHOUT DISPLACING THE AGGREGATE. CUT EVERY OTHER MESH WIRE AT THE CONTROL JOINT LOCATION PRIOR TO PLACING CONCRETE.

23. SAWN CONTROL JOINTS SHALL BE PLACED AS SOON AS CONCRETE IS ABLE TO BE SAWN WITHOUT PULLING AGGREGATE FROM FLOOR. SLABS SHALL NOT BE LEFT OVERNIGHT, OR ANY REASONABLE AMOUNT OF TIME, WITHOUT SAWING JOINTS. WEATHER IS CRITICAL TO THE SCHEDULE OF SAWING JOINTS. IF LARGE AREAS OF SLAB ARE POURED AT ONE TIME, SEVERAL SAWS MAY BE REQUIRED SO THAT JOINTS ARE PLACED IN TIME TO PREVENT SHRINKAGE CRACKING. PROPER JOINTING OF THE SLAB IS CRITICAL. REFER TO THE ACI MANUAL OF CONCRETE PRACTICE FOR PROPER JOINTING TECHNIQUES.

24. BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC. BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 4" OF CONCRETE.

25. THE FLATNESS AND LEVELNESS OF THE SLAB-ON-GRADE SHALL BE DETERMINED ACCORDING TO ASTM E-1155 OR ACI 117, SLAB CLASS 5 (ACI 302) STANDARD TEST METHOD USING F NUMBERS. THE SPECIFIC FLATNESS AND LEVELNESS SHALL BE F/F-35 AND F/L-20.

26. CONCRETE WORK SHALL BE SUBJECT TO QUALITY ASSURANCE TESTING AND INSPECTIONS. SEE GENERAL NOTES AND PROJECT SPECIFICATIONS.

27. WHERE FOOTINGS, WALLS, OR OTHER STRUCTURAL ELEMENTS INTERSECT, CORNER OR TEE, PROVIDE CORNER BARS WITH REQUIRED LAP LENGTHS TO PROVIDE CONTINUITY OF HORIZONTAL STEEL REINFORCING, UNLESS NOTED OTHERWISE.

28. PROVIDE A MINIMUM OF 3" COVER FOR ANCHOR BOLTS AND LOCATE HORIZONTAL REINFORCEMENT TO THE OUTSIDE FOR ANCHOR BOLT CONTAINMENT, UNLESS NOTED OTHERWISE.

29. WHERE DOWELS, BOLTS OR INSERTS ARE CALLED OUT TO BE ANCHORED TO CAST IN PLACE OR PRECAST CONCRETE ELEMENTS USING ADHESIVE ANCHORS, USE AN ANCHORAGE SYSTEM EQUAL TO "HILTI" HIT HY-200. FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS. ALTERNATE ANCHORAGE SYSTEMS MAY BE USED WITH ENGINEER'S PRIOR APPROVAL.

30. PROVIDE TEMPORARY SHORING AND BRACING OF ALL STRUCTURAL AND MISCELLANEOUS ELEMENTS UNTIL CONCRETE HAS OBTAINED 80% OF DESIGN STRENGTH AND ALL PERMANENT BRACING ELEMENTS ARE INSTALLED.

31. PLACEMENT OF CONCRETE, COLD WEATHER AND HOT WEATHER PRECAUTIONS, MATERIAL AND PROPORTIONING REQUIREMENTS, REBAR COVER AND DETAILING SHALL CONFORM TO THE REQUIREMENTS OF THE ACI 318.

32. ALL CONDUIT, SLEEVES AND PIPES EMBEDDED IN CONCRETE SHALL CONFORM TO SECTION 6.3 OF ACI 318 AND THE FOLLOWING:

    A. CONCRETE BEAMS, SLAB RIBS AND JOIST WIDTHS SHOWN ON THE DRAWINGS ARE THE MINIMUM ALLOWABLE WIDTHS.
    B. BEAMS, SLAB RIBS, AND JOISTS HAVING PIPES OR SLEEVES PASSING THROUGH THEM WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE INCREASED IN WIDTH IMMEDIATELY ADJACENT TO THE SLEEVE OR PIPE TO OBTAIN THE SAME CROSS-SECTIONAL AREA OF CONCRETE SHOWN FOR THE MEMBER.
    C. SLEEVES AND PIPES SHALL BE PLACED SO THAT REINFORCING STEEL CAN BE PLACED WITH THE SPECIFIED COVER AND CLEAR DISTANCE BETWEEN BARS.
    D. THE CONCRETE COVERING OF PIPES AND SLEEVES SHALL NOT BE LESS THAN 1". CLEAR DISTANCE BETWEEN SUCH PIPES AND SLEEVES SHALL NOT BE LESS THAN 1-1/2".
    E. CONDUITS AND PIPES PLACED IN SLABS AND TOPPINGS OVER SLAB RIBS OR JOISTS SHALL NOT BE LARGER IN OUTSIDE DIAMETER THAN ONE-THIRD THE THICKNESS OF THE SLAB OR TOPPING. NOT MORE THAN 1-1/4" ROUND OUTER DIAMETER CONDUIT, OR THE EQUIVALENT AREA IN SMALLER CONDUIT, SHALL BE PLACED IN ANY 6" WIDE JOIST OR SLAB RIB. IF IT IS NECESSARY TO USE LARGER CONDUIT OR PIPES, THE SLAB OR TOPPING SHALL BE THICKENED, THE JOIST OR SLAB RIB SHALL BE WIDENED AND REINFORCING SHALL BE ADDED TO SUPPORT THE ADDITIONAL WEIGHT OF THE CONCRETE.
    F. CONDUITS OR PIPES PASSING THROUGH JOISTS, SLAB RIBS OR BEAMS, PARALLEL TO THE MEMBER SHALL BE NOT LARGER THAN 1-1/4" OUTER DIAMETER AND SHALL BE PLACED 2" CLEAR OF THE REINFORCING AT TOP, BOTTOM AND SIDES. CONDUITS OR PIPES PASSING THROUGH JOISTS, SLAB RIBS OR BEAMS PERPENDICULAR TO THE MEMBER SHALL NOT BE LARGER THAN 2" OUTER DIAMETER, AND SHALL BE PLACED AT MID-HEIGHT OF THE MEMBER.
    G. CONDUITS AND PIPES PLACED IN COLUMNS SHALL NOT DISPLACE MORE THAN 4% OF THE CROSS-SECTIONAL AREA OF THE COLUMN AND SHALL BE LOCATED ON THE CENTER LINE OF THE COLUMN. ELECTRICAL BOXES SHALL BE NO DEEPER THAN THE REQUIRED CLEARANCE FOR REINFORCING.

## MASONRY:

1. CODE: AMERICAN CONCRETE INSTITUTE (ACI) 530 (LATEST EDITION)

2. MASONRY SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM COMPRESSIVE STRENGTH, f'm, OF 1500 PSI BASED ON GROSS AREA. MORTAR SHALL CONFORM TO ASTM C270 TYPES S OR M. GROUT SHALL CONFORM TO ASTM C476 WITH A MAXIMUM AGGREGATE SIZE OF 3/8".

3. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60 UNLESS NOTED OTHERWISE.

4. CONTINUOUS WIRE REINFORCING (JOINT REINFORCING) SHALL BE GALVANIZED TRUSS TYPE FABRICATED UNITS WITH A SINGLE PAIR OF 3/16" ø SIDE RODS AND 9 GAGE CONTINUOUS DIAGONAL CROSS RODS FABRICATED FROM COLD DRAWN STEEL WIRE COMPLYING WITH ASTM A82. JOINT REINFORCING SHALL BE SPACED AT 16" O.C. VERTICALLY IN ALL MASONRY WALLS UNLESS NOTED OTHERWISE.

5. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF VERTICAL CONTROL JOINTS. HORIZONTAL BOND BEAM AND LINTEL REINFORCING SHALL BE CONTINUOUS ACROSS VERTICAL CONTROL JOINTS. JOINT REINFORCING SHALL BE STOPPED EITHER SIDE OF VERTICAL CONTROL JOINTS.

6. CONTROL JOINTS SHALL BE LOCATED IN THE INTERIOR WALLS FOR THE BUILDING AT A SPACING NOT EXCEEDING 30 FEET. JOINTS SHALL, AT A MINIMUM, BE LOCATED AT INTERSECTING WALLS AND JAMBS/LINTELS OF OPENING IN WALL.

7. MASONRY PILASTERS SHALL BE LOCATED ADJACENT TO CONTROL OR EXPANSION JOINTS.

8. ALL REINFORCED CELLS AND ALL CELLS BELOW FINISH FLOOR SHALL BE GROUTED SOLID.

9. WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL BLOCK CORE, IT SHALL NOT BE SLOPED MORE THAN ONE HORIZONTAL IN 6 VERTICAL. DOWELS MAY BE GROUTED INTO A CELL IN VERTICAL ALIGNMENT EVEN THOUGH IT IS IN AN ADJACENT CELL TO THE VERTICAL WALL REINFORCING.

10. REINFORCING STEEL SHALL BE SECURED IN PLACE BEFORE GROUTING STARTS.

11. VERTICAL BARS SHALL BE HELD IN POSITION WITH PRE-MANUFACTURED TIES AT TOP AND BOTTOM AND AT INTERVALS NOT EXCEEDING 200 DIAMETERS OF THE REINFORCING NOR 10 FEET.

12. VERTICAL REINFORCING BARS SHALL HAVE A MINIMUM CLEARANCE OF 3/4 OF AN INCH FROM THE MASONRY AND NOT LESS THAN ONE BAR DIAMETER BETWEEN BARS.

13. VERTICAL CELLS THAT WILL BE GROUTED SHALL HAVE A VERTICAL ALIGNMENT TO MAINTAIN A CONTINUOUS UNOBSTRUCTED CELL AREA NOT LESS THAN 2-1/2" X 3".

14. GROUTING SHALL BE STOPPED 1-1/2" BELOW THE TOP OF A COURSE SO AS TO FORM A KEY AT THE POUR JOINT.

15. GROUTING OF MASONRY BEAMS OVER OPENINGS SHALL BE DONE IN ONE CONTINUOUS OPERATION.

16. ALL BOLTS INSERTED IN THE WALLS SHALL BE GROUTED SOLIDLY INTO POSITION.

17. WHERE EXPANSION BOLTS OR OTHER ANCHORS ARE EMBEDDED INTO THE SIDE OF MASONRY WALLS, THE CELLS SHALL BE FULLY GROUTED AT LEAST 8" ABOVE AND BELOW EACH BOLT OR ANCHOR.

18. REINFORCED MASONRY WORK SHALL BE SUBJECT TO QUALITY ASSURANCE TESTING AND INSPECTIONS. SEE QUALITY ASSURANCE GENERAL NOTES AND PROJECT SPECIFICATIONS.

19. REINFORCING SHALL BE LAPPED A MINIMUM OF 36 INCHES. U.N.O.

20. WHERE NOT OTHERWISE SHOWN, MASONRY WALL FOOTINGS SHALL BE 12" THICK AND HAVE A MINIMUM OF 4" PROJECTION ON EACH SIDE OF WALL. REINFORCE WITH (3) #5 BARS CONTINUOUS.

21. WALLS SHALL BE GROUTED USING LOW LIFT GROUTING TECHNIQUES.

## STRUCTURAL STEEL:

1. CODE: LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ANSI/AISC 360.
   2.
   STEEL SHALL CONFORM TO THE FOLLOWING GRADES:
   WIDE FLANGE SHAPES.......... ASTM A992 (Fy=50ksi)
   ALL CHANNELS, ANGLES, PLATES, ETC. (UNO).......... A36 (Fy=36ksi)
   STRUCTURAL TUBES.......... A500 (Fy=46ksi)
   ANCHOR BOLTS.......... F1554 GRADE 36
   STEEL PIPE.......... A53 (Fy=35ksi)
   BOLTS.......... A325
   WELDING ELECTRODES.......... E70xx
   HARDENED STEEL WASHERS.......... F436

2. STRUCTURAL STEEL DETAILING, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MANUAL OF STEEL CONSTRUCTION" OF THE AMERICAN INSTITUTE STEEL CONSTRUCTION. SHOP DRAWINGS SHALL SHOW COMPLETE WELDING INFORMATION, BOTH SHOP AND FIELD, USING AMERICAN WELDING SOCIETY SYMBOLS UNLESS OTHERWISE INDICATED OR SHOWN, BOLTED CONNECTION SHALL BE MADE USING 3/4" DIAMETER BOLTS CONFORMING TO ASTM A325 UNLESS OTHERWISE NOTED. THEY SHALL BE INSTALLED AND INSPECTED IN STRICT CONFORMANCE WITH LATEST EDITION OF "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS."

3. THE STEEL STRUCTURE IS A NON-SELF-SUPPORTING STEEL FRAME AND IS DEPENDENT UPON DIAPHRAGM ACTION OF THE METAL ROOF DECK AND ATTACHMENT TO THE SHEAR WALLS & BRACED/MOMENT FRAMES FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES. PROVIDE ALL TEMPORARY SUPPORTS REQUIRED FOR STABILITY AND FOR RESISTANCE TO WIND AND SEISMIC FORCES UNTIL THESE ELEMENTS ARE COMPLETE AND ARE CAPABLE OF PROVIDING THIS SUPPORT.

4. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF ALL CONNECTIONS SHOWN ON THE STRUCTURAL DRAWINGS. CONNECTIONS SHOWN ARE SCHEMATIC AND ARE ONLY INTENDED TO SHOW THE RELATIONSHIP OF MEMBERS CONNECTED. CONNECTION DETAILS INDICATED ON THE DRAWINGS SHALL BE INCORPORATED INTO FABRICATOR'S CONNECTION DESIGN, SEE SPECIFICATIONS.

5. SPLICING OF STEEL MEMBERS UNLESS SHOWN ON THE DRAWINGS IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT.

6. NO HOLES SHALL BE CUT IN ANY STEEL ELEMENT UNLESS THEY ARE DETAILED ON THE DRAWINGS.

7. UNLESS NOTED OTHERWISE, BEAMS SHALL BEAR 8" MINIMUM ON CONCRETE OR MASONRY, ANCHOR BEAMS TO MASONRY WITH TWO 3/4" DIAMETER ANCHOR BOLTS WITH 4" HOOK AND 1'-4" EMBEDMENT.

8. STRUCTURAL STEEL WORK SHALL BE SUBJECT TO QUALITY ASSURANCE TESTING AND INSPECTIONS. SEE QUALITY ASSURANCE GENERAL NOTES AND PROJECT SPECIFICATIONS.

9. WHERE BEAMS INTERSECT AT THE TERMINATING ELEVATION OF A COLUMN, THE BEAM WITH THE GREATEST REACTION SHALL BEAR ON TOP OF THE COLUMN. WHERE THE BEAMS INTERSECT AT THE INTERMEDIATE ELEVATION OF A COLUMN, THE FRAMING BEAMS SHALL BE CONNECTED TO THE COLUMNS WITH A WT. FIN PLATE CONNECTIONS ARE NOT PERMITTED.

10. CONNECTIONS FOR NON-COMPOSITE BEAMS WHICH CANNOT CONFORM TO AISC TYPICAL CONNECTION DETAILS SHALL BE DETAILED IN ACCORDANCE WITH THE FOLLOWING:
    A. WHERE BEAM REACTIONS ARE NOT SHOWN ON THE DRAWINGS, CONNECTIONS SHALL BE DESIGNED FOR ONE-HALF THE MAXIMUM UNIFORM LOAD WHICH THE BEAM WILL SUPPORT (AS SIMPLE SPAN) FOR THE SPAN SHOWN ON THE DWGS.
    B. WHERE CONNECTIONS ARE SUBJECT TO ECCENTRICITY, SUCH ECCENTRICITY SHALL BE TAKEN INTO ACCOUNT WHEN DESIGNING THE CONNECTION.
    C. WHERE CONNECTIONS SUPPORT BEAMS WHICH ARE SUBJECT TO CONCENTRATED LOADS, SUCH CONCENTRATED LOADS SHALL BE TAKEN INTO ACCOUNT WHEN DESIGNING THE CONNECTION.
    D. BOLTED CONNECTIONS SHALL BE BEARING TYPE WITH A325 BOLTS. MINIMUM DIAMETER OF ALL BOLTS SHALL BE 3/4". MAX. DIA. 1-1/8". PROVIDE AT LEAST 2 BOLTS PER CONN. TIGHTENED BY THE "TURN-OF-THE-NUT" METHOD.
    E. END CONNECTIONS OF FLOOR MEMBERS SHALL ACCOMMODATE END ROTATIONS SIMPLE, UNRESTRAINED BEAMS. FOR THIS PURPOSE, INELASTIC ACTION IN THE CONNECTION IS PERMITTED.
    F. COPED OR CUT ENDS OF MEMBERS SHALL BE REINFORCED WHERE REQUIRED TO SUSTAIN THE SPECIFIED REACTIONS.
    DESIGN OF SPECIAL CONNECTIONS BETWEEN STEEL FRAMING COMPONENTS, INCLUDING BUT NOT LIMITED TO: BRACE END CONNECTIONS; MOMENT-RESISTING CONNECTIONS, MODIFIED BEAM SEAT CONNECTIONS; AND MEMBER SPLICE CONNECTIONS, DESIGNED BY ANYONE OTHER THAN THE PROJECT STRUCTURAL ENGINEER-OF-RECORD, SHALL BE BY A PROFESSIONAL ENGINEER REGISTERED IN THE THE STATE WHERE THE PROJECT IS LOCATED.

11. MOMENT CONNECTIONS (SHOWN ON THE PLANS) SHALL BE DESIGNED FOR THE FULL MOMENT CAPACITY OF THE BEAMS BEING CONNECTED. "CPW" INDICATES COMPLETE PENETRATION WELD.

12. TENSILE CONNECTIONS SHALL BE DESIGNED FOR A FORCE RESULTING FROM MULTIPLYING THE GROSS AREA BY 20 KSI.

13. STEEL STAIRS SHALL BE DESIGNED AND DETAILED BY A SPECIALTY ENGINEER.

14. FABRICATE AND ERECT FLOOR MEMBERS WITH NATURAL CAMBER UP.

15. STRUCTURAL STEEL CONTRACTOR TO PROVIDE DECK SUPPORT ANGLES AS REQUIRED (L4x4x1/4, UNLESS NOTED OTHERWISE). AT SPLICE LOCATIONS, ANGLES SHALL BE WELDED TOGETHER IN A MANNER THAT MAINTAINS FULL TENSILE CAPACITY OF THE SECTIONS.

16. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, THE SIZE OF WELDS SHALL NOT BE SMALLER THAN 1/4".

17. THE CONTRACTOR SHALL PROVIDE, AT NO ADDITIONAL COST, ALL ADDITIONAL STEEL CONNECTIONS, GUYING, ETC. REQUIRED FOR ERECTION.

18. OBTAIN ALL FIELD MEASUREMENTS REQUIRED FOR PROPER FABRICATION AND INSTALLATION OF WORK PRIOR TO DETAILING. PRECISE MEASUREMENTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

19. PROVIDE STIFFENERS TO BEAR UNDER ALL LOAD CONCENTRATIONS ON SUPPORTING MEMBERS, ON ALL MEMBERS FRAMING OVER COLUMNS, AT BEAM COLUMN JOINTS (AS REQUIRED BY THE AISC SPECIFICATIONS) AND WHERE SHOWN ON THE DRAWINGS.

20. SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND ELEVATIONS OF LOOSE LINTELS.

21. CONTINUOUS ANGLES AT THE ROOF PERIMETER SHALL BE SPLICED SUCH THAT THE FULL TENSION FORCE THAT CAN BE DEVELOPED BY THE ANGLE WILL BE TRANSFERRED THROUGHOUT THE SPLICE.

22. THE FABRICATOR SHALL BE RESPONSIBLE FOR ALL ERRORS OF DETAILING ON THE SHOP DRAWINGS, ERRORS IN FABRICATION, AND FOR THE CORRECT FITTING OF STRUCTURAL STEEL MEMBERS.

23. ALL HORIZONTAL TUBES REQUIRE AN END PLATE AT EACH END WITH A THICKNESS EQUAL TO OR GREATER THAN THE TUBE'S WALL THICKNESS.

24. BUILT-UP SHAPES AND BASE PLATES: PRIOR TO FABRICATION ALL ROLLED PLATES 1-1/2" AND THICKER SHALL BE TESTED IN CONFORMANCE WITH ASTM A435 FOR "GROSS" INTERNAL DISCONTINUITIES (LAMINATION).

    1. FOR ALL COMPOSITE BEAMS USING CONCRETE SLAB AS COMPRESSIVE FLANGE, THE BEAM-TO-COLUMN CONNECTION SHOULD DEVELOP THE END REACTION OF THE CONNECTED BEAM. THE END REACTION OF THE CONNECTED BEAM CAN BE OBTAINED BY MULTIPLYING UNIFORM LOADS AS GIVEN IN PART 3 (BEAMS AND GIRDERS) OF THE AISC MANUAL OF STEEL CONSTRUCTION, 2006 (13TH EDITION), BY THE FOLLOWING FACTORS:
       W12 & W14 2.4
       W16 & W18 2.0
       W21 & W24 1.80
       W27 & W30 1.60
       W33 & W36 1.45

26. MINIMUM SHEAR CAPACITY OF 12 KIPS SHALL BE PROVIDED FOR ALL BEAMS 8" TO 10" DEEP - THE REACTIONS PROVIDED ON THE CONTRACT DRAWINGS WILL SUPERSEDE THIS NOTE.

27. ALL COMPOSITE BEAMS USING CONCRETE SLAB AS A COMPRESSION FLANGE ARE DESIGNED FOR UNSHORED CONSTRUCTION.

28. SHORING OF FLOOR MEMBERS TO CONTROL SLAB THICKNESS, FLOOR LEVEL AND OTHER TOLERANCES, AND CONCRETE PONDING IS THE CONTRACTOR'S OPTION. FLOORS SHALL BE CAST SO AS TO MAINTAIN UNIFORM SLAB THICKNESS ACROSS THE TOP OF STEEL MEMBERS.

## STEEL JOISTS:

1. STEEL JOISTS SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS, K-SERIES" OF THE STEEL JOIST INSTITUTE (SJI).

2. STEEL JOISTS SHALL BE DESIGNED BY THE MANUFACTURER. THE MANUFACTURER'S ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN, ADEQUACY AND SAFETY OF ALL STEEL JOISTS. JOIST DESIGNATIONS ON THE STRUCTURAL DRAWINGS REPRESENT A TYPICAL JOIST FOR A UNIFORM SPACING AND LOADING. THE JOIST MANUFACTURER SHOULD DESIGN & PROVIDE SPECIAL (KSP) JOISTS INTERACTING WITH ROOF MOUNTED MECHANICAL UNITS OR THAT HAVE CONCENTRATED OR NON-UNIFORM LOADS FROM A DIFFERENT SOURCE. CONTRACTOR SHALL SEND INFORMATION TO THE ARCHITECT GIVING THE SIZE AND OPERATING WEIGHT OF THE UNIT ACTUALLY PURCHASED FOR VERIFICATION PRIOR TO FABRICATION OF BAR JOISTS OR ROOF DECK. SEE ADDITIONAL ATYPICAL LOADING PROVIDED ON THE STRUCTURAL FRAMING PLAN.

3. UNLESS OTHERWISE NOTED, STEEL JOISTS SHALL BE DESIGNED AS SIMPLY SUPPORTED UNIFORMLY LOADED TRUSSES WITH THE TOP CHORD BRACED AGAINST LATERAL BUCKLING. THE UNIFORM DESIGN LOAD SHALL BE THE TOTAL SAFE UNIFORMLY DISTRIBUTED LOAD AS SHOWN IN THE SJI STANDARD LOAD TABLE.

4. WHEN NET UPLIFT FORCES DUE TO WIND ARE SHOWN ON THE DRAWINGS, THE MANUFACTURER SHALL DESIGN THE JOISTS, BRIDGING, AND CONNECTIONS OF THE JOISTS TO THE SUPPORTING STRUCTURE FOR THE NET UPLIFT. A SINGLE LINE OF BOTTOM CHORD BRIDGING MUST BE PROVIDED NEAR THE FIRST BOTTOM CHORD PANEL POINTS WHENEVER UPLIFT DUE TO WIND FORCES IS SHOWN ON THE DESIGN DRAWINGS.

5. WHEN NON-UNIFORM OR CONCENTRATED LOADS ARE SHOWN ON THE DRAWINGS, THE MANUFACTURER SHALL DESIGN THE JOISTS IN ACCORDANCE WITH THE SJI STANDARD SPECIFICATION FOR OPEN WEB STEEL JOISTS, K-SERIES.

6. STEEL JOIST BRIDGING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE SJI SPECIFICATION. ALL BRIDGING AND BRIDGING ANCHORS SHALL BE PLACED AND STEEL JOIST ENDS FIXED PRIOR TO THE APPLICATION OF ANY LOADS. COORDINATE BRIDGING LOCATIONS TO AVOID INTERFERENCE WITH ALL MECHANICAL, ELECTRICAL AND FIRE PROTECTION EQUIPMENT.

7. MINIMUM BEARING REQUIREMENTS FOR K-SERIES JOISTS, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
   A. ON STRUCTURAL STEEL.......... 2 1/2 INCHES
   B. ON STEEL BEARING PLATES OVER MASONRY OR CONCRETE... 4 INCHES

8. UNLESS NOTED OTHERWISE, K-SERIES STEEL JOISTS SHALL BE ATTACHED TO SUPPORTING STEEL WORK OR STEEL BEARING PLATES WITH TWO 1/8" FILLET WELDS (ONE EACH SIDE), 2" LENGTH MINIMUM, OR WITH (2) 1/2" DIAMETER BOLTS (ONE EACH SIDE).

9. MINIMUM BEARING REQUIREMENTS FOR LH-SERIES JOISTS, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
   A. ON STRUCTURAL STEEL.......... 4 INCHES
   B. ON STEEL BEARING PLATES OVER MASONRY OR CONCRETE.... 6 INCHES

10. UNLESS NOTED OTHERWISE, LH-SERIES STEEL JOISTS SHALL BE ATTACHED TO SUPPORTING STEEL WORK OR STEEL BEARING PLATES WITH TWO 1/4" FILLET WELDS (ONE EACH SIDE), 2" LENGTH MINIMUM, OR (2) 3/4" DIAMETER BOLTS (ONE EACH SIDE).

11. STEEL JOISTS AT COLUMN CENTER LINES SHALL BE BOLTED TO STRUCTURAL STEEL WITH (2) 1/2" DIAMETER BOLTS. WHERE STEEL JOISTS DO NOT SPACE TO COLUMN CENTER LINES, USE BOLTED CONNECTIONS FOR THE STEEL JOIST CLOSEST TO THE CENTER LINE.

12. HOLES IN STEEL JOIST CHORDS WILL NOT BE PERMITTED, EXCEPT FOR BOLTED CONNECTIONS AT THE BEARING END OF THE STEEL JOIST.

13. ALL THE ITEMS SUCH AS MECHANICAL EQUIPMENT, DUCT WORK, PIPES, CEILING FIXTURES, ETC. THAT ARE TO BE SUPPORTED OR HUNG FROM THE STEEL JOISTS SHALL BE FRAMED WITH AUXILIARY FRAMING TO THE PANEL POINTS OF THE STEEL JOISTS. METHODS OF FRAMING THAT INDUCE BENDING TO THE STEEL JOIST CHORDS OR WEB MEMBERS WILL NOT BE PERMITTED.

14. STEEL JOIST WORK SHALL BE SUBJECT TO QUALITY ASSURANCE TESTING AND INSPECTIONS. SEE QUALITY ASSURANCE GENERAL NOTES AND PROJECT SPECIFICATIONS.

15. CONTRACTOR SHALL COORDINATE LOCATION OF JOISTS AND MASONRY WALLS TO PREVENT INTERFERENCE.

16. EXTEND JOIST BOTTOM CHORD TYPICALLY AT COLUMN LINES. DO NOT WELD BOTTOM CHORD UNTIL ROOF DEAD LOAD IS IN PLACE.

17. DAMAGED MEMBERS WILL BE REJECTED. THE CONTRACTOR AND THE JOIST MANUFACTURER ARE RESPONSIBLE FOR REPAIRING AND/OR REPLACING DAMAGED MEMBERS. IF REPAIRS ARE MADE, A LETTER BEARING THE SEAL OF A REGISTERED ENGINEER MUST BE PROVIDED BY THE JOIST MANUFACTURER APPROVING SUCH REPAIRS.

## METAL ROOF DECK:

1. METAL ROOF DECK SHALL COMPLY WITH THE REQUIREMENTS OF THE STEEL DECK INSTITUTE SPECIFICATIONS AND COMMENTARY FOR STEEL ROOF DECK, CURRENT EDITION.

2. THE STEEL DECK WORK SHALL CONSIST OF FURNISHING EVERYTHING (LABOR, MATERIALS, ACCESSORIES, EQUIPMENT, ETC.) NECESSARY AND INCIDENTAL TO THE EXECUTION AND COMPLETION OF ALL STEEL DECK WORK AS INDICATED AND SPECIFIED ON THE DRAWINGS.

3. SUBMIT PLACEMENT AND DETAILED ("SHOP") DRAWINGS FOR REVIEW. NO STEEL DECK SHALL BE INSTALLED UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND RETURNED.

4. STEEL DECK UNITS SHALL BE OF SUFFICIENT LENGTH TO ACCOMMODATE THREE SPAN INSTALLATION PER STANDARDS ESTABLISHED BY THE STEEL DECK INSTITUTE.

5. METAL ROOF DECK AND ITS ATTACHMENT TO THE STRUCTURE SHALL BE DESIGNED BY THE MANUFACTURER. THE MANUFACTURER'S ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN ADEQUACY AND SAFETY OF ALL METAL ROOF DECK. ALL SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE MANUFACTURER'S ENGINEER WITH THE ENGINEER'S SEAL FOR THE PROJECT STATE.

6. METAL ROOF DECK SHALL BE OF THE CONFIGURATION, DEPTH AND MINIMUM GAUGE SHOWN ON THE DRAWINGS. ATTACHMENT TO THE SUPPORTING STRUCTURE SHALL BE AS SHOWN ON THE DRAWINGS, AS A MINIMUM. SEE ROOF PLAN NOTES.

7. DO NOT HANG OR SUPPORT ANY LOADS FROM THE METAL DECK.

8. WHERE POSSIBLE, METAL DECK SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS. TWO SPAN DECK SHALL BE USED ONLY WHERE DECK LAYOUT DOES NOT PERMIT THE USE OF THREE SPANS. SINGLE SPAN DECK IS NOT PERMITTED.

9. METAL DECK WORK SHALL BE SUBJECT TO QUALITY ASSURANCE TESTING AND INSPECTIONS. SEE QUALITY ASSURANCE GENERAL NOTES AND PROJECT SPECIFICATIONS.

10. ROOF OPENINGS LESS THAN 6" SQUARE OR DIAMETER REQUIRE NO REINFORCEMENT. OPENINGS 6" TO 10", INCLUSIVE, SHALL BE REINFORCED WITH A 20 GAUGE GALVANIZED PLATE WELDED TO THE DECK AT EACH CORNER AND 6" MAXIMUM CENTERS WITH A 5/8" DIAMETER PUDDLE WELD OR SHEET METAL SCREWS. SEE DRAWINGS FOR REINFORCEMENT OF OPENINGS LARGER THAN 10".

## METAL FLOOR DECK:

1. METAL FLOOR DECK SHALL COMPLY WITH THE REQUIREMENTS OF THE STEEL DECK INSTITUTE SPECIFICATIONS AND COMMENTARY FOR STEEL FLOOR DECK, CURRENT EDITION.

2. THE STEEL DECK WORK SHALL CONSIST OF FURNISHING EVERYTHING (LABOR, MATERIALS, ACCESSORIES, EQUIPMENT, ETC.) NECESSARY AND INCIDENTAL TO THE EXECUTION AND COMPLETION OF ALL STEEL DECK WORK, AS INDICATED AND SPECIFIED ON THE DRAWINGS.

3. SUBMIT PLACEMENT AND DETAILED ("SHOP") DRAWINGS FOR REVIEW. NO STEEL DECK SHALL BE INSTALLED UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED AND RETURNED.

4. STEEL DECK UNITS SHALL BE OF SUFFICIENT LENGTH TO ACCOMMODATE THREE SPAN INSTALLATION.

5. METAL FLOOR DECK AND ITS ATTACHMENT TO THE STRUCTURE SHALL BE DESIGNED BY THE MANUFACTURER. THE MANUFACTURER'S ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN ADEQUACY AND SAFETY OF ALL METAL FLOOR DECK. ALL SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY THE MANUFACTURER'S ENGINEER WITH THE ENGINEER'S SEAL FOR THE PROJECT STATE.

6. COMPOSITE STEEL DECK SHALL BE 3" DEEP, FLUTED, AND DESIGNED TO BEHAVE COMPOSITELY WITH THE CONCRETE FILL. THE DECK SHALL BE CONSTRUCTED OF 20 GAUGE (BEFORE COATING) MATERIAL, MINIMUM, AND SUFFICIENT IN STRENGTH TO HAVE MAXIMUM DEFLECTION OF ANY SPAN/225, A MINIMUM 3 SPAN CONDITION FOR UNSHORED DECK.

7. PROVIDE CLOSURES AT SIDES, ENDS, AROUND COLUMNS, AND AT ALL OTHER PLACES WHERE LOSS OF CONCRETE IS POSSIBLE. ALL CLOSURES SHALL BE CONSTRUCTED OF 16 GAGE STEEL, UNLESS NOTED OTHERWISE.

8. STEEL DECK AND CLOSURES SHALL BE GALVANIZED, HAVING A COATING OF 0.5 OUNCES/S.F. AND CONFORMING TO ASTM A-525.

9. SHEAR CONNECTORS SHALL BE 3/4" DIAMETER HEADED STUDS WHICH WILL BE 5-1/2" LONG AFTER INSTALLATION, UNLESS NOTED OTHERWISE. THEY SHALL BE INSTALLED USING AUTOMATIC END WELDERS OF SUFFICIENT CAPACITY TO WELD THEM THROUGH THE STEEL DECK TO THE TOP FLANGE OF THE BEAM, AS SHOWN IN THE TYPICAL DETAILS.

10. THE DECK SHALL BE EQUIPPED WITH A SYSTEM OF HANGER DEVICES.

11. THE DECK SHALL BE CONNECTED BY THE SHEAR CONNECTORS. TYPICALLY, AND WHERE INSUFFICIENT CONNECTORS ARE SPECIFIED, WELDING WASHERS SHALL BE ADDED TO THOSE FLUTES.

12. WHERE ONE OR TWO SPAN UNITS OF STEEL DECK ARE USED, THEY SHALL BE SHORED AT THEIR MIDPOINTS PRIOR TO CASTING CONCRETE

13. THE CONTRACTOR SHALL FURNISH 7% ADDITIONAL CONCRETE TO COMPENSATE FOR THE DEFLECTION OF THE METAL DECK.


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SCOPE DOCUMENTS

The Construction Documents have not been completed therefore this drawing may be incomplete or not coordinated. The documents issued indicate the general scope of the Project. The Contractor is responsible for complete and coordinated pricing and Work, and shall include all items necessary for the proper execution and completion of the Project, whether indicated or not. All components of the Project shall comply with any and all requirements of national, state, and local codes. The Contractor shall inform the Owner and Architect of any omissions, inconsistencies or errors in the information provided. If no notice is given and any omissions, inconsistencies or errors are discovered, the Architect's decisions on items of Work included in the scope shall be binding on the Contractor, when consistent with the general scope and quality of the Project.

| ISSUANCES | | |
|---|---|---|
| No. | Drawing Issue Description | Date |

BARACK & MICHELLE OBAMA ACADEMY

970 Martin St SE, Atlanta, GA 30315
♦
ATLANTA PUBLIC SCHOOLS

# GENERAL NOTES

| | |
|---|---|
| Designer | 1279 |
| Principal-in-Charge | Project No. |
| Approver | 03/16/20 |
| Project Manager | Date |
| Checker | |
| Project Engineer | |
| Author | S0.1 |
| Staff Engineer | Drawing No. |

NOT ISSUED FOR CONSTRUCTION

PROJECT NUMBER: 1279 PROJECT NAME: TEMPLATE TESTING
SHEET NUMBER: S0.1 - GENERAL NOTES
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3/16/2020 7:02:43 PM

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