DESIGN CRITERIA:

1. DESIGN CODES:
   THE INTERNATIONAL BUILDING CODE/2009.
   MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
   ASCE 7-05
2. DESIGN LOADS:
   DEAD LOADS: MATERIAL SELF WEIGHT PLUS SUPERIMPOSED LOADS PER PLAN.
   LIVE LOADS: SEE PLANS
   CONCENTRATED FLOOR LIVE LOAD: 2,000 lbs. UNIFORMLY DISTRIBUTED OVER ANY 2.5 SQUARE FOOT AREA.
3. WIND LOAD:
   BASIC WIND SPEED 90 MPH.
   RISK CATEGORY III
   WIND EXPOSURE B
   DIRECTIONALITY FACTOR, Kd = 0.85
   INTERNAL PRESSURE COEFFICIENT = (+/-) 0.18
   WIND LOAD IMPORTANCE FACTOR: Iw = 1.15
   COMPONENTS & CLADDING LOAD:
   LOADS SHALL BE DETERMINED ACCORDING TO THE ASCE 7-05 REQUIREMENTS BASED ON TRIB AREA, LOCATION OF BUILDING, AND ANY ADDITIONAL PARAMETERS NOTED IN THE DESIGN CODE.
4. SEISMIC LOAD:
   SEISMIC IMPORTANCE FACTOR: Ie = 1.25
   Ss = 0.54 S1 = 0.18
   Sds = 0.36 Sd1 = 0.12
   SITE CLASS B
   SEISMIC DESIGN CATEGORY C
   STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
   BASE SHEAR V = 425 kips
   Cs = 0.083 R = 3.0
   EQUIVALENT LATERAL FORCE PROCEDURE
5. SNOW LOAD:
   GROUND SNOW LOAD: Pg = 20PSF
   FLAT ROOF SNOW LOAD: Pf = 22PSF (MIN.)
   SNOW EXPOSURE FACTOR: Ce = 1.0
   SNOW LOAD IMPORTANCE FACTOR: Is = 1.1
   THERMAL FACTOR: Ct = 1.0
   DRIFTING SNOW LOAD: PER IBC 2009, ASCE 7-05
6. VIBRATION DESIGN CRITERIA:
   1. AS A MINIMUM, FLOOR VIBRATIONS HAVE BEEN LIMITED TO THE "OFFICES, RESIDENCES" OCCUPANCY CURVE PLOTTED IN FIGURE 2.1 FOR "RECOMMENDED PEAK ACCELERATION FOR HUMAN COMFORT FOR VIBRATIONS DUE TO HUMAN ACTIVITIES" IN AISC DESIGN GUIDE 11, 1997. A CONSTANT FORCE FUNCTION OF 65 POUNDS WITH 2% DAMPING HAS BEEN USED TO REPRESENT A WALKING VIBRATION EXCITATION FOR AN OFFICE, RESIDENCE AND CHURCHES TYPE OCCUPANCY.
   2. LABORATORY AREA HAVE BEEN DESIGNED TO LIMIT FLOOR VIBRATION FOR SENSITIVE EQUIPMENT ASSUMING A VIBRATION VELOCITY CRITERIA LEVEL OF 4,000 MICRO-IN/SEC. WITH A WALKING PACE OF 50 STEPS/MINUTE (SLOW PACE) IN A ROOM AND 75 STEPS/MINUTE (MODERATE PACE) IN A CORRIDOR.
7. ALLOWABLE FOOTING NET SOIL BEARING PRESSURE:
   SEE FOUNDATION NOTES.
8. SOIL PARAMETERS:
   A. ACTIVE DESIGN PRESSURE IS EQUAL TO AN EQUIVALENT FLUID PRESSURE OF 43 P.C.F. (GRANULAR)
   B. AT-REST DESIGN PRESSURE IS EQUAL TO AN EQUIVALENT FLUID PRESSURE OF 63 P.C.F. (GRANULAR)
   C. PASSIVE DESIGN PRESSURE IS EQUAL TO AN EQUIVALENT FLUID PRESSURE OF 205 P.C.F.
   D. SURCHARGE LOADS ARE 100 P.S.F. AT THE SURFACE.
   E. COEFFICIENT OF SLIDING FRICTION
      CONCRETE/SOIL = 0.30
9. NO PROVISIONS HAVE BEEN MADE FOR FUTURE VERTICAL OR HORIZONTAL EXPANSION FOR THE BUILDINGS IN THIS PROJECT.

SPECIALTY STRUCTURAL ENGINEER:

1. THE DESIGN RESPONSIBILITY OF THE ELEMENTS LISTED BELOW IS BEING DELEGATED TO A SPECIALTY STRUCTURAL ENGINEER HIRED BY THE CONTRACTOR. THE DESIGNATED ELEMENTS SHALL BE DESIGNED IN ACCORDANCE WITH THE BUILDING CODE AND SPECIFIC REQUIREMENTS IN THE CONTRACT DOCUMENTS BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF MISSOURI. SUBMITTALS SHALL BE SIGNED AND SEALED BY THE RESPONSIBLE LICENSED ENGINEER. THE FOLLOWING ELEMENTS AND THEIR CONNECTIONS SHALL BE DESIGNED BY A SPECIALTY STRUCTURAL ENGINEER.
   A. EXCAVATION SUPPORT
   B. TEMPORARY BRACING AND SHORING
   C. STRUCTURAL STEEL CONNECTIONS
   D. COLD-FORMED METAL FRAMING, CONNECTIONS AND ANCHORAGE
   E. SEISMIC ANCHORAGE AND SWAY BRACING OF MECHANICAL, ELECTRICAL AND PLUMBING SYSTEM COMPONENTS
   F. STAIRS AND LADDERS, U.N.O.
2. THE CONTRACTOR'S BID SHALL INCLUDE A LIST OF THE SPECIALITY STRUCTURAL ENGINEERS FOR EACH DELEGATED DESIGN RESPONSIBILITY.
3. THE SUCCESSFUL CONTRACTOR SHALL SUBMIT THE LIST OF SPECIALTY STRUCTURAL ENGINEERS FOR EACH DELEGATED DESIGN RESPONSIBILITY TO THE STRUCTURAL ENGINEER PRIOR TO START OF ANY CONSTRUCTION PROJECT WORK.

FOUNDATIONS:

1. THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS MADE IN THE "REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION" BY AKINS CONSULTING SERVICES LLP DATED APRIL 15, 2015 AND SUBSEQUENT LETTERS AND REVISIONS TO THE REPORT DATED SEPTEMBER 28, 2015 AND OCTOBER 20, 2015.
2. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACK-FILLING PRESSURES UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE
3. WHERE FOUNDATION WALLS ARE TO HAVE EARTH PLACED ON EACH SIDE, PLACE FILL SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL.
4. DRILLED PIERS SHALL BE SOCKETED INTO INTACT ROCK CAPABLE OF PROVIDING AN ALLOWABLE BEARING CAPACITY OF 100KSF PER GEOTECHNICAL REPORT. THE MINIMUM PIER SHAFT ROCK SOCKET PENETRATION LENGTH INTO INTACT ROCK SHALL BE TWO TIMES THE SHAFT DIAMETER.
5. DETERMINATION OF THE SUITABILITY OF THE VERTICAL ROCK SOCKET SURFACE FOR AN ALLOWABLE SKIN FRICTION OF 15KSF WILL BE MADE BY THE GEOTECHNICAL ENGINEER. SKIN FRICTION IS USED FOR UPLIFT RESISTANCE.
6. BOTTOM OF ALL PIER HOLES AND VERTICAL ROCK SOCKET SURFACE SHALL BE MADE AVAILABLE FOR INSPECTION BY THE GEOTECHNICAL ENGINEER.
7. GEOTECHNICAL ENGINEER SHALL WITNESS THE POURING OF CONCRETE.
8. SHAFTS SHALL BE DRILLED PLUMB AND STRAIGHT, SEE SPECIFICATIONS FOR TOLERANCES.
9. ALL LOOSE MATERIAL SHALL BE REMOVED FROM THE BOTTOM OF THE PIER HOLES. PROVIDE A LEVEL OR LEDGED BOTTOM. SLOPING BOTTOM SURFACES WILL NOT BE ALLOWED.
10. NOT MORE THAN 2" WATER WILL BE ALLOWED IN ANY PIER HOLE AT THE TIME OF CONCRETE PLACEMENT. SEE SPECIFICATIONS FOR DEWATERING.
11. PIER CONCRETE: f'c = 5,000 PSI @ 28 DAYS (145 PCF).
12. PIER REINFORCING: A615 GRADE 60. EPOXY COATING NOT REQUIRED FOR PIER REINFORCING.
13. WHERE PERMANENT OR TEMPORARY CASING IS CALLED FOR OR REQUIRED BY THE GEOTECHNICAL FIELD REPRESENTATIVE, THE CASING SHALL BE PUSHED AHEAD OF THE EXCAVATION.
14. CONTRACTOR SHALL PROTECT THE REBARS (DOWELS) AND ANCHOR BOLTS PROTRUDING OUT OF THE PIERS WITH PLASTIC CAPS AND FILL ALL PIER EXCAVATION WITH GRANULAR FILL AS SPECIFIED.
15. CONTRACTOR SHALL PROVIDE THE OWNER WITH AS-BUILT REPRODUCIBLE DRAWINGS AT COMPLETION.
16. PIERS w/UPLIFT REQUIRES FULL DEPTH REINFORCING CAGES - SEE DRILLED PIER SCHEDULE.
17. BOTTOM OF DRILLED PIER SHAFTS SHALL BE INTERPOLATED BASED ON BORING LOGS CONTAINED IN THE GEOTECHNICAL REPORT. ELEVATIONS SHALL INCLUDE MINIMUM SOCKET DEPTH OF 2X PIER DIAMETER.

CONCRETE

1. STANDARDS
   A. ACI 318-08 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
2. ALL DETAILING, FABRICATION AND ERECTION FOR REINFORCING BARS AND THEIR SUPPORT IN THE FORMS WITH ACCESSORIES MUST FOLLOW THE ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", (ACI 315-LATEST) AND CRSI "MANUAL OF STANDARD PRACTICE" (LATEST EDITION).
3. MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE:
   A. UNFORMED SURFACE IN CONTACT WITH THE GROUND. 3 IN.
   B. FORMED SURFACES EXPOSED TO EARTH OR WEATHER
      #6 BAR AND LARGER. 2 IN.
      FORMED SURFACES EXPOSED TO EARTH OR WEATHER
      #5 BAR AND SMALLER. 1 1/2 IN.
   C. FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER:
      1. WALLS, SLABS 3/4 IN.
      2. BEAMS, GIRDERS AND COLUMNS
      (TO TIES OR STIRRUPS) 1 1/2 IN.
4. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH AND DENSITY, IN ACCORDANCE WITH THE FOLLOWING:

	STRENGTH PSI	DENSITY PCF
SLABS ON METAL DECK	4000	145 (1)
STAIR PAN FILL	3000	110
DRILLED PIERS	5000	145
ALL OTHER CONCRETE U.N.O.	4000	145

5. REINFORCING BARS SHALL BE ASTM A615-GRADE 60 STEEL, U.N.O. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. WELDED WIRE FABRIC MUST LAP AT LEAST 2" AT SIDE AND 6" AT ENDS AND BE WIRED TOGETHER.
6. THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS MUST BE REFERRED TO FOR ALL MECHANICAL FLOOR REQUIREMENTS, HOUSEKEEPING PADS & EQUIPMENT INERTIA BASES, AND THE VARIOUS TRADES ARE RESPONSIBLE FOR THE PLACING OF SLEEVES, OUTLET BOXES, ANCHORS, ETC. THAT MAY BE REQUIRED.
7. DOWELS IN WALL FOOTINGS SHALL BE EQUIVALENT IN SIZE AND NUMBER TO VERTICAL BARS. DOWELS MUST BE ANCHORED OR TIED IN POSITION BEFORE PLACING CONCRETE, PUSHING BARS INTO FRESHLY POURED CONCRETE IS NOT ACCEPTABLE.
8. FINE AGGREGATE: SHALL BE CLEAN, HARD, DURABLE AND FREE OF DELETERIOUS SUBSTANCES AND CONFORM TO ASTM C33.
   COARSE AGGREGATE: SHALL BE CLEAN, HARD, DURABLE WITHOUT FLAT OR ELONGATED PIECES AND SHALL CONFORM TO ASTM C33.
9. LAP SPLICES SHALL BE IN ACCORDANCE WITH ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (LATEST EDITION). WHERE CLASSES ARE NOT CALLED OUT ON DRAWINGS, USE CLASS "B" SPLICES.
10. UNLESS OTHERWISE SHOWN IN THE ARCHITECTURAL DRAWINGS, PROVIDE 3/4" CHAMFERS AT ALL EDGES THAT ARE EXPOSED TO VIEW IN THE FINISHED STRUCTURE.
11. SEE ARCHITECTURAL DRAWINGS FOR SIZE AND WINDOW OPENINGS, DRIP SLOTS, REGLETS, MASONRY ANCHORS, BRICK LEDGE ELEVATIONS AND FOR MISCELLANEOUS EMBEDDED PLATES, BOLTS, ANCHORS, ANGLES, ETC.
12. REFER TO ARCHITECTURAL DRAWINGS FOR CONCRETE FINISHES. WHERE FINISH IS NOT SPECIFIED, CONFORM TO REQUIREMENTS OF ACI 301.
13. FLOOR SLAB CONSTRUCTION SHALL CONFORM TO GUIDELINES OF ACI 302. FLOOR FINISHED SURFACE SHALL CONFORM TO THE ACI 302 TOLERANCES FOR FLATNESS AND LEVELNESS NUMBERS FF/FL SPECIFIED BY ARCHITECT
14. FURNISH THE FOLLOWING LIST OF REINFORCING TO BE STOCKPILED AT THE JOB SITE AND USED AT THE DIRECTION OF THE STRUCTURAL ENGINEER:
    20-#4x20'-0"
    20-#5x20'-0"
    20-#6x20'-0"
15. ALL STRUCTURAL STEEL MUST BE PROTECTED BY 3" OF CONCRETE WHERE EARTH WOULD OTHERWISE BE IN CONTACT WITH IT.
16. PROVIDE THE FOLLOWING ADDITIONAL REINFORCING UNLESS OTHERWISE CALLED FOR ON STRUCTURAL PLANS:
    A. CORNER BARS AT ALL CORNERS AND INTERSECTIONS OF CONCRETE WALLS, GRADE BEAMS AND FOOTINGS TO MATCH HORIZONTAL REINFORCING.
    B. PROVIDE #4 SLAB DOWELS AT 12" CENTERS AT DOORS UNLESS NOTED OTHERWISE.
    C. BARS AT OPENINGS IN SLAB AND WALLS. PROVIDE BARS WITH AREA EQUAL TO INTERRUPTED REINFORCING ON EITHER SIDE OF OPENING.
17. PIPES, SLEEVES OR SLOTS SHALL NOT RUN THROUGH ANY BEAM OR GIRDER UNLESS SIZE AND LOCATION HAVE BEEN APPROVED BY THE STRUCTURAL ENGINEER.
18. CONCRETE WALLS SHALL HAVE CONSTRUCTION JOINTS NOT FURTHER THAN 100'-0" APART, THE CONTRACTOR SHALL SUBMIT JOINT PLAN TO THE STRUCTURAL ENGINEER FOR APPROVAL.
19. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED FOR INSPECTION OF REBAR PLACEMENT, NOTICE SHALL BE GIVEN NOT LESS THAN 24 HOURS PRIOR TO CONCRETE PLACEMENT.
20. ALL ABUTTING CONCRETE MEMBERS SHALL BE DOWELED TOGETHER, UNLESS POURED MONOLITHICALLY. DOWELS SHALL BE EQUAL IN SIZE AND SPACING TO THE REINFORCING IN THE ADJACENT MEMBERS.
21. WELDED REINFORCING BARS SHALL CONFORM TO ASTM A706, GRADE 60, WELDABLE STEEL.
22. FOOTINGS MAY BE EARTH-FORMED AT CONTRACTOR'S OPTION. PROVIDE MINIMUM COVER AS SPECIFIED ABOVE.
23. SLAB-ON-GRADE SHALL HAVE CONTROL JOINTS IN BOTH DIRECTIONS SPACED AT NOT MORE THAN 15'-ON CENTERS AND LOCATED IN SUCH A MANNER THAT EACH FLOOR SLAB SECTION IS RECTANGULAR IN SHAPE. SEE TYPICAL DETAILS FOR CONTROL JOINT REQUIREMENTS.
24. EACH REINFORCING STEEL SHOP DRAWING SUBMITTAL SUBMITTED FOR REVIEW SHALL HAVE THE CONTRACTORS STAMP AFFIXED TO THE FIRST SHEET AND SHALL BEAR THE SIGNATURE OF THE REPRESENTATIVE OF THE CONTRACTOR WHO REVIEWED THE SUBMITTAL SIGNIFYING THEIR REVIEW AND ACCEPTANCE OF THE SUBMITTAL.
25. REINFORCING STEEL SHOP DRAWINGS SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
    1. REINFORCING PLACING DRAWINGS FOR SLABS, BEAMS, JOISTS, ETC. SHALL BE SHOWN ON PLANS DRAWN TO A MINIMUM SCALE OF 1/8"=1'-0". MINIMUM SHEET SIZE WILL BE 24"x36".
    2. REINFORCING FOR RETAINING WALLS, SHEAR WALLS, ETC. SHALL BE SHOWN ON ELEVATIONS DRAWN TO A MINIMUM SCALE OF 1/4"=1'-0".
    3. REINFORCING FOR BEAMS, COLUMNS AND SLABS MUST BE CLEARLY SHOWN IN SCHEDULES SIMILAR TO THOSE ON THE STRUCTURAL DRAWINGS. COMPUTER PRINT-OUTS ATTACHED TO LARGER SHEETS AND REPRODUCED AS SHOP DRAWINGS WILL NOT BE PERMITTED.
    4. LOCATION OF REINFORCING NOT CLEARLY DESCRIBED IN SCHEDULE FORMAT MUST BE REFERENCED ON PLACING PLANS.
26. WATERSTOPS SHALL BE INSTALLED IN HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS OF CONCRETE CONSTRUCTION. STRIP WATERSTOPS PER SPECIFICATIONS SHALL BE LOCATED IN KEYS AND AT LOCATIONS INDICATED. RIBBED DUMBELL TYPE WATERSTOPS PER SPECIFICATIONS SHALL BE LOCATED AT WALL JOINTS AND AS INDICATED. ALL JOINTS BELOW GRADE REQUIRE WATERSTOPS.

COMPOSITE BEAMS:

1. NUMBER OF 3/4" DIAMETER x 4" LONG (AFTER WELDING) STEEL HEADED STUD ANCHORS (S.A. = STEEL ANCHORS) ASTM A108 TYPE B SHOWN ON THE DRAWINGS ARE BASED UPON THE ASSUMED NOMINAL SHEAR STRENGTHS THAT FOLLOW:
   A. 21.5k EACH FOR NORMAL WT. CONCRETE (145 PCF f'c = 4000 PSI) WITH THE COMPOSITE METAL DECKING ORIENTATED PARALLEL TO THE STEEL SHAPE.
   B. 17.2k EACH FOR NORMAL WT. CONCRETE (145 PSF f'c = 4000 PSI) WITH THE COMPOSITE METAL DECKING ORIENTATED PERPENDICULAR TO THE STEEL SHAPE.
2. S.A. CAPACITY VARIES WITH THE TYPE AND LOCATION OF THE S.A. AND WITH THE PROPERTIES OF THE COMPOSITE DECK. THE S.A. SUPPLIER SHALL DETERMINE THE TYPE AND LENGTH OF STEEL ANCHOR CONSISTENT WITH ALL AISC REQUIREMENTS, INCLUDING MAXIMUM ALLOWABLE SPACING. THE NUMBER OF STEEL ANCHORS SHALL BE ADJUSTED AS REQUIRED.
3. S.A. TYPE, LENGTH, SHEAR VALUE AND DETAILED LAYOUT SHALL BE SUBMITTED WITH THE COMPOSITE METAL DECK SHOP DRAWINGS. SEE COMPOSITE METAL DECK NOTES.
4. MAXIMUM LENGTH OF S.A. SHALL NOT EXCEED THE SLAB DEPTH MINUS 1".
5. SPACING OF S.A. WITHIN A GIVEN LENGTH SHALL BE AS UNIFORM AS POSSIBLE.
6. UNLESS NECESSARY TEMPORARY SHORING OF COMPOSITE AND NONCOMPOSITE BEAMS AND GIRDERS IS NOT REQUIRED FOR ANTICIPATED CONSTRUCTION LOAD (WET CONCRETE WEIGHT PLUS 20 PSF CONSTRUCTION LOAD). ALLOWABLE CONSTRUCTION LOADS SHALL BE SHOWN ON THE ERECTION DRAWINGS.
7. CONTRACTOR SHALL FURNISH THE ADDITIONAL CONCRETE DUE TO WET CONCRETE DEFLECTION OF THE STEEL FRAMING.
8. NO SHEAR STUDS ALLOWED ON S.A. OR ON THE TOP SURFACE OF THE BEAMS THAT RECEIVE FIELD WELDED S.A.
9. BEAM CONNECTIONS SHALL BE DESIGNED FOR LOADS SHOWN ON PLANS OR PER STRUCTURAL STEEL GENERAL NOTES.
10. SEE TYPICAL STEEL HEADED SHEAR STUD ANCHOR LAYOUT AND SPACING DETAIL FOR ADDITIONAL INFORMATION.

COMPOSITE CONCRETE SLABS:

1. THE CONTRACTOR SHALL PLACE CONCRETE SLABS SO THAT THE FINISHED SURFACE IS SCREED LEVEL TO AN ELEVATION WITHIN 1/4" OF THE TOP OF SLAB ELEVATION SHOWN ON PLANS.
2. SLABS SHALL HAVE A TROWELED FINISH WITH A CLASS B TOLERANCE IN ACCORDANCE WITH ACI 301, U.N.O. IN STRUCTURAL OR ARCHITECTURAL CONSTRUCTION DOCUMENTS.
3. CONSIDERATION SHALL BE GIVEN TO SEQUENCING OF CONCRETE PLACEMENT SO AS TO CONTROL FINISH ELEVATIONS WITHIN THE SPECIFIED LIMITS.
4. SEE COMPOSITE BEAM NOTES FOR SHORING REQUIREMENTS.

COMPOSITE METAL DECK:

1. DEPTH OF DECK AND SLAB, TYPE OF DECK, STEEL GAGES AND SLAB REINFORCING ARE SHOWN ON THE PLANS. TOP AND BOTTOM DECK SURFACE FINISH SHALL BE GALVANIZED. WHERE ARCHITECTURAL DRAWINGS INDICATE THAT THE BOTTOM DECK SURFACE WILL RECEIVE A FINISH FIELD PAINT COAT, PROVIDE A PRIME SHOP COAT OF PAINT AT BOTTOM SIDE OF GALVANIZED DECK. SEE ARCHITECTURAL DRAWINGS FOR ANY PAINTED FINISH COAT LOCATIONS.
2. UNLESS NOTED OTHERWISE, TEMPORARY SHORING OF COMPOSITE DECK IS NOT REQUIRED FOR ANTICIPATED CONSTRUCTION LOAD (WET CONCRETE WEIGHT PLUS 20 PSF CONSTRUCTION LOAD). SEE SPECIFICATIONS FOR DEFLECTION LIMITATION. ALLOWABLE CONSTRUCTION LOADS SHALL BE SHOWN ON THE ERECTION DRAWINGS.
3. CONTRACTOR SHALL FURNISH THE ADDITIONAL CONCRETE DUE TO WET CONCRETE DEFLECTION OF THE COMPOSITE DECK.
4. DECK SHOP DRAWINGS SHALL SHOW DECK PROFILE AND INDICATE THE TYPE, SIZE, SHEAR VALUE AND LAYOUT OF STEEL HEADED STUD ANCHORS (S.A.) REQUIRED FOR COMPOSITE BEAMS. SEE SPECIFICATIONS AND COMPOSITE BEAM NOTES FOR S.A. REQUIREMENTS.
5. METAL DECK SUPPLIER SHALL PROVIDE COLUMN CLOSURE SHEET STEEL AT ALL STEEL BUILDING COLUMN LOCATIONS AS REQUIRED. THE CLOSURE SHEET STEEL SHALL BE OF THE SAME QUALITY, MATERIAL, FINISH, AND MINIMUM THICKNESS AS THE DECK UNITS. THE STEEL COLUMN DECK CLOSURES SHALL PROVIDE TIGHT FITTING CLOSURE AT ALL OPENINGS OR GAPS BETWEEN THE DECK UNITS AND THE PROFILE OF THE BUILDING COLUMNS. ATTACH METAL DECK COLUMN CLOSURES TO BUILDING COLUMNS.
6. CONNECTION OF COMPOSITE METAL DECK TO SUPPORTING STEEL SHALL BE BY WELDING. CONNECTION OF COMPOSITE METAL DECK TO SUPPORTING STEEL SHALL NOT BE MADE BY MECHANICAL FASTENING INCLUDING BUT NOT LIMITED TO SELF DRILLING SCREWS AND AIR OR POWER DRIVEN FASTENERS.

METAL ROOF DECK:

1. METAL ROOF DECK SHALL COMPLY WITH THE REQUIREMENTS OF THE STEEL DECK INSTITUTE. SEE PLANS FOR DECK TYPES AND GAGES. TOP AND BOTTOM DECK SURFACE FINISH SHALL BE GALVANIZED. WHERE ARCHITECTURAL DRAWINGS INDICATE THAT THE BOTTOM DECK SURFACE WILL RECEIVE A FINISH FIELD PAINT COAT, PROVIDE A PRIME SHOP COAT OF PAINT AT BOTTOM SIDE OF GALVANIZED DECK. SEE ARCHITECTURAL DRAWINGS FOR ANY PAINTED FINISH COAT LOCATIONS.
2. METAL ROOF DECK HAS BEEN DESIGNED TO FUNCTION AS A DIAPHRAGM FOR THE TRANSMISSION OF LATERAL LOADS. CONNECTION OF DECK UNITS TO EACH OTHER AND TO SUPPORTS IS DENOTED ON THE PLANS.
3. DO NOT SUSPEND PIPES OR DUCTS FROM ROOF DECK.
4. FABRICATE DECK UNITS IN LENGTHS TO SPAN THREE OR MORE SUPPORT SPACING.
5. CLEAR OPENINGS DIMENSIONS FOR ROOF FRAMES SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS PRIOR TO FABRICATION.

LIGHT GAUGE STEEL FRAMING:

1. ALL LIGHT GAUGE FRAMING DESIGNATIONS ON DRAWINGS ARE BASED ON STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA) STANDARDS.
2. ALL LIGHT GAUGE FRAMING SHOWN IN THE SECTIONS AND DETAILS INCLUDING ALL CONNECTIONS, CLIPS, SCREWS, FASTENERS, BRIDGING, STEEL PLATES, WELDING, CONCRETE ANCHORS, ETC. AND ANY OTHER ITEMS NECESSARY TO INSTALL THE LIGHT GAUGE FRAMING TO BE DESIGNED AND PROVIDED BY THE LIGHT GAUGE SUPPLIER. THE LIGHT GAUGE SUPPLIER SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MISSOURI. SCREW AND POWDER ACTUATED FASTENERS PATTERNS NOTED ON PLANS ARE MINIMUMS.
3. ALL LIGHT GAUGE FRAMING SHALL BE GALVANIZED.
4. ALL LIGHT GAUGE FRAMING SHALL BE MINIMUM Fy = 50 KSI.
5. LIGHT GAUGE FLANGE WIDTHS AND THICKNESS NOTED ON DRAWINGS ARE MINIMUMS.
6. LIGHT GAUGE SPACINGS SHOWN ON DRAWINGS ARE MAXIMUM SPACINGS.
7. LIGHT GAUGE FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH ALL MANUFACTURER'S REQUIREMENTS.
8. ALL LIGHT GAUGE TRACK ATTACHMENTS TO CONCRETE SHALL BE ATTACHED WITH MINIMUM 0.145" DIAMETER POWDER ACTUATED FASTENERS WITH MINIMUM 1" EMBEDMENT INTO CONCRETE. TRACK SHALL BE ATTACHED TO FLAT CONCRETE SURFACES @ 16"o.c. MAXIMUM SPACING. TRACK SHALL BE ATTACHED TO UNDERSIDE OF COMPOSITE FLOOR DECK WITH (1) ANCHOR AT EACH RIB, MAXIMUM 12"o.c. SPACING. TRACK SHALL BE ATTACHED TO FLAT OR FLAT STEEL BENT PLATE STEEL, AND UNDERSIDE OF METAL DECK PARALLEL TO RIBS @ 6"o.c. MAXIMUM SPACING.
9. ALL LIGHT GAUGE TRACK ATTACHED TO METAL ROOF DECK SHALL BE ATTACHED WITH A MINIMUM #12 TEK SCREW @ 12"o.c. MAXIMUM SPACING PERPENDICULAR TO RIBS AND 6"o.c. MAXIMUM SPACING PARALLEL TO RIBS.

STRUCTURAL STEEL

1. STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL COMPLY WITH THE ASD AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS 360-05 AND AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS 341-05.
2. STEEL SHALL CONFORM TO THE FOLLOWING GRADES:
   ALL, ANGLE, BASE PLATES, CONN. PLATES (UNO)----------A36
   WELDING ELECTRODES----------E70XX
   STRUCTURAL PIPE----------A500 GRADE B (Fy=42)
   BOLTS----------A325
   STRUCTURAL TUBE----------A500 GRADE B (Fy = 46)
   ANCHOR BOLTS----------F1554 GRADE 36 OR GRADE 105
   W SHAPES----------A992 (GRADE 50)
   C & MC SHAPES----------A992 (GRADE 50)
   STEEL HEADED ANCHORS----------A108, TYPE B, GRADE 1010 THROUGH 1020
3. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE (LATEST EDITION), EXCEPT AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS. (1) (4)
   CONNECTIONS MAY BE BOLTED OR WELDED. FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF CONNECTIONS NOT DESIGNED ON THE DRAWINGS. GENERALLY, CONNECTIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE SCHEMATIC AND ARE ONLY INTENDED TO SHOW THE RELATIONSHIP OF MEMBERS CONNECTED. ANY CONNECTION THAT IS NOT SHOWN OR IS NOT COMPLETELY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED BY AN ENGINEER, REGISTERED IN THE STATE OF MISSOURI, RETAINED BY THE FABRICATOR. IT IS THE RESPONSIBILITY OF THE FABRICATOR TO PROVIDE ALL STIFFENER PLATES, ETC. THAT MAY BE REQUIRED IN ADDITION TO THOSE SHOWN IN THE STRUCTURAL SCHEMATIC DETAILS TO ENSURE THAT THE MEMBERS CONNECTED TOGETHER HAVE ADEQUATE STRENGTH AT THE CONNECTION. COMPLETELY DETAILED MEANS THE FOLLOWING INFORMATION IS SHOWN ON THE DETAIL DRAWINGS.
   A. ALL PLATE DIMENSIONS AND GRADES.
   B. ALL WELD SIZES, LENGTHS, PITCHES AND RETURNS.
   C. ALL HOLE SIZES AND SPACINGS.
   D. NUMBER AND TYPE OF BOLTS: WHERE BOLTS ARE SHOWN BUT NO NUMBER IS GIVEN THE CONNECTION HAS NOT BEEN COMPLETELY DETAILED.
   E. WHERE PARTIAL INFORMATION IS GIVEN, IT SHALL BE THE MINIMUM REQUIREMENT FOR THE CONNECTION.
   DESIGN CALCULATIONS, SIGNED AND SEALED BY FABRICATORS REGISTERED PROFESSIONAL ENGINEER, FOR ALL COLUMN, GIRDER, BEAM, AND BRACING CONNECTIONS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. CALCULATIONS SHALL BE REVIEWEDONLY FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. DESIGN CALCULATIONS MUST ACCOMPANY THE STEEL SHOP DRAWINGS IN ORDER FOR THE STEEL SUBMITTAL TO BE CONSIDERED COMPLETE. INCOMPLETE STEEL SHOP DRAWINGS WILL BE REJECTED AND RETURNED.
5. BEAM CONNECTIONS SHALL BE DESIGNED FOR A SERVICE SHEAR LOAD EQUAL TO ONE-HALF OF THE ALLOWABLE LOAD ON THE MEMBER, AS DEFINED IN THE ASD AISC TABLES FOR ALLOWABLE LOADS ON BEAMS OR THE REACTIONS SHOWN ON THE DRAWINGS, WHICHEVER IS LESS.
6. THE FRAME OF THE STEEL SKELETON SHALL BE CARRIED UP TRUE AND PLUMB AND TEMPORARY BOLTING AND BRACING SHALL BE INTRODUCED TO SAFELY CARRY ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED INCLUDING EQUIPMENT AND THE OPERATION OF SAME. INDIVIDUAL COLUMNS MUST BE BRACED BEFORE CONNECTIONS ARE MADE AND BRACING SHALL BE LEFT IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY. NO FINAL BOLTING OR WELDING SHALL BE DONE UNTIL AS MUCH OF THE STRUCTURE AS WILL BE STIFFENED THEREBY HAS BEEN PROPERLY ALIGNED & PLUMBED.
7. ALL COLUMN BASE PLATES SHALL BE SET ON STEEL SHIMS TO TRUE LEVEL LINE. GENERAL CONTRACTOR SHALL GROUT NON-SHRINK GROUT SUCH AS "EMBECO" UNDER ENTIRE BASE PLATE AREA. PROVIDE 1" MINIMUM DEPTH NON-SHRINK GROUT BELOW PLATES (U.N.O.).
8. PROVIDE FULL HEIGHT SOLID MASONRY UNDER BEARING ENDS OF ALL STRUCTURAL STEEL BEAMS AND LINTELS TO BEAR MINIMUM 8" ON MASONRY.
9. PROVIDE WALL ANCHORS 3/4"x1'-9" AT MASONRY BEARING ENDS AT ALL STRUCTURAL STEEL BEARING ON WALLS. SEE TYPICAL DETAIL.
10. ANCHOR BOLTS SHALL EXTEND INTO CONCRETE NOT LESS THAN 9" WHERE POSSIBLE PLUS 4"± HOOK AND SHALL BE HELD AT 2-1/2" MINIMUM FROM OUTSIDE FACE OF CONCRETE. ALL ANCHOR BOLTS SHAIBE HELD 1-1/2" FROM EDGE OF BASE PLATE WHERE POSSIBLE.
11. FOR ALL COMPOSITE BEAMS USING CONCRETE SLAB AS COMPRESSIVE FLANGE, THE BEAM-TO-BEAM AND BEAM-TO-COLUMN CONNECTION SHALL DEVELOP THE END REACTION OF THE CONNECTED COMPOSITE BEAM. THE END REACTION OF THE CONNECTED BEAM CAN BE OBTAINED BY MULTIPLYING THE SERVICE SHEAR LOAD EQUAL TO ONE-HALF THE ALLOWABLE LOAD ON THE MEMBER, AS DEFINED IN THE ASD AISC TABLES FOR ALLOWABLE LOADS ON BEAMS, BY THE FOLLOWING FACTORS:

W12 OR LESS	2.3
W14 AND W16	2.0
W18 OR DEEPER	2.0

12. MEMBER FORCES ARE SHOWN ON THE DRAWINGS AS FOLLOWS:
    P = AXIAL FORCE IN KIPS (+