GENERAL

1. NO PROVISION OF ANY REFERENCED STANDARD SPECIFICATION, MANUAL, OR CODE (WHETHER OR NOT SPECIFICALLY INCORPORATED BY REFERENCE IN THE CONTRACT DOCUMENTS) SHALL BE EFFECTIVE TO CHANGE THE DUTIES AND RESPONSIBILITIES OF OWNER, CONTRACTOR, DESIGN PROFESSIONAL, SUPPLIER, OR ANY OF THEIR CONSULTANTS, AGENTS, OR EMPLOYEES FROM THOSE SET FORTH IN THE CONTRACT DOCUMENTS, NOR SHALL IT BE EFFECTIVE TO ASSIGN TO THE DESIGN PROFESSIONAL OF RECORD OR ANY OF THE DESIGN PROFESSIONAL OF RECORD'S CONSULTANTS, AGENTS, OR EMPLOYEES ANY DUTY OR AUTHORITY TO SUPERVISE OR DIRECT THE FURNISHING OR PERFORMANCE OF THE WORK OR ANY DUTY OR AUTHORITY TO UNDERTAKE RESPONSIBILITIES CONTRARY TO THE PROVISIONS OF THE CONTRACT DOCUMENTS.
2. THE CONTRACT DOCUMENTS INCLUDE BUT ARE NOT LIMITED TO, THE STRUCTURAL DOCUMENTS (DRAWINGS AND SPECIFICATIONS), BUT DO NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS, OR MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR.
3. REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION, OR ASSOCIATION OR REFERENCE TO CODES OF LOCAL OR STATE AUTHORITIES, SHALL MEAN THE LATEST STANDARD, CODE, SPECIFICATION, OR TENTATIVE SPECIFICATION ADOPTED AT THE DATE OF TAKING BIDS UNLESS SPECIFICALLY STATED OTHERWISE.
4. THE MOST STRINGANT DOCUMENTS SHALL GOVERN IN THE EVENT OF A CONFLICT WITH THE CODE OF PRACTICE OR SPECIFICATIONS OF ACI, PCI, AISC, SJI, OR OTHER STANDARDS. WHERE A CONFLICT OCCURS WITHIN THE CONTRACT DOCUMENTS, THE STRICTEST REQUIREMENT SHALL GOVERN.
5. MATERIAL, WORKMANSHIP, AND DESIGN SHALL CONFORM TO THE REFERENCED BUILDING CODE.
6. THE CONTRACTOR SHALL COORDINATE THE STRUCTURAL DOCUMENTS WITH THE ARCHITECTURAL, ELECTRICAL, MECHANICAL, PLUMBING, AND CIVIL DOCUMENTS. THE DESIGN PROFESSIONAL SHALL BE NOTIFIED OF ANY DISCREPANCY OR OMISSION. FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS, REFER TO THE ARCHITECTURAL DRAWINGS.
7. THE CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS, ELEVATIONS, MEMBER SIZES, AND SITE CONDITIONS BEFORE STARTING WORK. THE DESIGN PROFESSIONAL SHALL BE NOTIFIED OF ANY DISCREPANCY.
8. THE CONTRACTOR SHALL VERIFY THE STRUCTURALLY SUPPORTED MECHANICAL EQUIPMENT WEIGHTS, OPENING SIZES, AND OPENING LOCATIONS IDENTIFIED ON THE STRUCTURAL DRAWINGS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING MECHANICAL EQUIPMENT DIMENSIONS AND WEIGHTS WITH THE EQUIPMENT VENDOR. NOTIFY THE DESIGN PROFESSIONAL OF ANY DISCREPANCY.
9. THE CONTRACTOR SHALL VERIFY THAT MISCELLANEOUS FRAMING SHOWN ON THE STRUCTURAL DRAWINGS FOR MECHANICAL EQUIPMENT, OWNER-FURNISHED ITEMS, PARTITIONS, ETC. IS CONSISTENT WITH THE REQUIREMENTS OF SUCH ITEMS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING DIMENSIONS AND WEIGHTS WITH THE VENDOR.
10. THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
11. THE STRUCTURE IS STABLE ONLY IN ITS COMPLETED FORM. TEMPORARY SUPPORTS REQUIRED FOR STABILITY DURING ALL INTERMEDIATE STAGES OF CONSTRUCTION SHALL BE DESIGNED, FURNISHED, AND INSTALLED BY THE CONTRACTOR.
12. STRUCTURE IS DESIGNED ONLY FOR THE INDICATED LOADS UNLESS SPECIFICALLY INDICATED. VERIFICATION OF THE STRUCTURE TO SUPPORT CONSTRUCTION LOADING (INCLUDING HEAVY EQUIPMENT, SCISSOR LIFTS, SCAFFOLDING, CONSTRUCTION MATERIAL STORAGE, ETC) IS THE RESPONSIBILITY OF THE CONTRACTOR. SUBMIT VERIFICATION CALCULATIONS TO THE STRUCTURAL DESIGN PROFESSIONAL FOR REVIEW PRIOR TO CONSTRUCTION LOADING OF ANY PORTION OF THE STRUCTURE. VERIFICATION SUBMITTALS SHALL BE SIGNED AND SEALED BY A REGISTERED ENGINEER LICENSED IN THE PROJECT STATE.
13. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY TO COMPLY WITH ALL OSHA REGULATIONS.
14. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY THE USE OF CONSTRUCTION EQUIPMENT ON THE STRUCTURE. ANY DAMAGE CAUSED BY CONSTRUCTION EQUIPMENT SHALL BE REPAIRED.
15. DO NOT USE DIMENSIONS SCALED FROM THE CONTRACT DOCUMENTS OR TAKEN FROM ANY ELECTRONIC DOCUMENT.
16. REVIEW OF SUBMITTALS OR SHOP DRAWINGS BY THE DESIGN PROFESSIONAL DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK ALL SUBMITTALS AND SHOP DRAWINGS BEFORE SUBMITTING TO THE DESIGN PROFESSIONAL. 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 THE CONTRACT DOCUMENTS. THE CONTRACTOR IS REQUIRED TO REVIEW SHOP DRAWINGS AND COORDINATE WITH OTHER TRADES BEFORE SENDING THE SHOP DRAWINGS FOR REVIEW BY THE DESIGN PROFESSIONAL.
17. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.
18. DETAILS LABELED "TYPICAL" ON THE STRUCTURAL DRAWINGS APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE LOCATIONS SPECIFICALLY INDICATED.
19. PROVIDE EQUAL SPACING OF ELEMENTS UNLESS NOTED OTHERWISE IN THE STRUCTURAL CONTRACT DOCUMENTS.

CODE AND DESIGN CRITERIA

1. STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE FOLLOWING:
   - ARKANSAS FIRE PREVENTION CODE, VOL II, INCORPORATING THE 2021 INTERNATIONAL BUILDING CODE
2. STRUCTURE RISK CATEGORY
   - RISK CATEGORY II
3. GRAVITY LOADS
   - 3.1. ROOF DEAD LOADS (IN ADDITION TO STRUCTURE SELF-WEIGHT):
     - ROOFING 2.0 PSF
     - INSULATION 2.0 PSF
     - MEP ALLOWANCE 4.0 PSF
     - CEILING ALLOWANCE 2.0 PSF
   - 3.2. UNIFORM ROOF LIVE LOADS (REDUCED AS ALLOWED BY THE BUILDING CODE):
     - ROOF 20 PSF
4. ROOF SNOW LOAD DATA
   - GROUND SNOW LOAD P_g = 10 PSF
5. ROOF RAIN LOAD DATA
   - 15-MINUTE DURATION / 100-YEAR RAINFALL I_{15} = 6.44 INCHES/HOUR
   - 60-MINUTE DURATION / 100-YEAR RAINFALL I_{60} = 3.47 INCHES/HOUR
6. WIND DESIGN DATA
   - BASIC DESIGN WIND SPEED V = 107 MILES/HOUR
   - ALLOWABLE STRESS DESIGN WIND SPEED V_{asd} = 82.88 MILES/HOUR
   - WIND EXPOSURE EXPOSURE C
   - INTERNAL PRESSURE COEFFICIENT GC_{pi} = +/- 0.55
   - COMPONENTS AND CLADDING DESIGN WIND PRESSURES (ULTIMATE)
     - ROOF
       - ZONE 1 -27.1 PSF / 16.0 PSF
       - ZONE 2 -31.3 PSF / 16.0 PSF
       - ZONE 2' -37.7 PSF / 16.0 PSF
       - ZONE 3 -41.9 PSF / 16.0 PSF
       - ZONE 3' -58.9 PSF / 16.0 PSF
     - WALLS
       - ZONE 4 -24.8 PSF / 22.9 PSF
       - ZONE 5 -30.5 PSF / 22.9 PSF
     - POSITIVE PRESSURES INDICATE WIND LOADING TOWARD THE SURFACE. NEGATIVE PRESSURES INDICATE WIND LOADING AWAY FROM THE SURFACE.
     - COMPONENTS AND CLADDING WIND PRESSURES LISTED ABOVE ARE BASED UPON FIGURE 30.3-5A (ROOF) AND FIGURE 30.3-1 (WALL) OF ASCE 7-16 USING A WIDTH OF PRESSURE COEFFICIENT ZONE (a) OF 3'-0", A MEAN ROOF HEIGHT (h) OF 15'-0", AND AN EFFECTIVE WIND AREA OF 10 SQUARE FEET.
7. EARTHQUAKE DESIGN DATA
   - SEISMIC IMPORTANCE FACTOR I_e = 1.00
   - MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS
     - 0.2-SECOND PERIOD S_S = 0.160
     - 1.0-SECOND PERIOD S_1 = 0.091
   - SITE CLASS SITE CLASS D (ASSUMED DEFAULT)
   - DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS
     - 0.2-SECOND PERIOD S_{DS} = 0.171
     - 1.0-SECOND PERIOD S_{D1} = 0.146
   - SEISMIC DESIGN CATEGORY SDC C
   - EXISTING BUILDING
     - BASED ON THE PROVISIONS OF THE INTERNATIONAL EXISTING BUILDING CODE, STRUCTURAL ELEMENTS OF THE EXISTING STRUCTURE ARE NOT BEING ALTERED OR MODIFIED TO THE EXTENT REQUIRING THE EXISTING SEISMIC LATERAL FORCE RESISTING SYSTEM TO BE UPGRADED TO MEET THE PROVISIONS AND REQUIREMENTS OF THE CURRENT BUILDING CODE.
   - ENTIRE STRUCTURE
     - BASIC SEISMIC FORCE RESISTING SYSTEM ORDINARY REINFORCED MASONRY SHEAR WALLS
       - RESPONSE MODIFICATION COEFFICIENT R = 2
     - SEISMIC RESPONSE COEFFICIENTS CS = 0.085
     - DESIGN BASE SHEAR V = 4.6 KIPS
   - ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE ANALYSIS
8. DEFLECTION CRITERIA
   - 8.1. UNLESS NOTED OTHERWISE, CALCULATED INDIVIDUAL MEMBER DEFLECTIONS DO NOT EXCEED THE FOLLOWING LIMITS:
     - ROOF MEMBERS
       - DEAD LOAD L/360 OR 1.0 INCHES
       - LIVE LOAD L/240 OR 1.5 INCHES
       - DEAD + LIVE LOAD L/180 OR 2.0 INCHES
     - WHERE L EQUALS THE SPAN LENGTH IN INCHES BETWEEN SUPPORTS (FOR CANTILEVERS, L EQUALS TWICE THE LENGTH OF THE CANTILEVER). NOTE THAT THE TOTAL MAXIMUM CALCULATED FLOOR SYSTEM DEFLECTION WILL BE THE SUM OF THE DEFLECTIONS OF THE SUPPORTED ELEMENTS IN A BAY.
   - 8.2. DEFERRED DESIGN ITEMS AND NON-STRUCTURAL ITEMS MUST BE DESIGNED TO ACCOMMODATE THE CALCULATED DEFLECTIONS LISTED ABOVE.

REINFORCEMENT

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
2. PROVIDE DOWELS FROM FOUNDATIONS THE SIZE AND NUMBER AS THE VERTICAL WALL OR COLUMN REINFORCING, UNLESS NOTED OTHERWISE.
3. ALL HORIZONTAL REINFORCING SHALL BE CONTINUOUS THROUGH CONTROL AND/OR CONSTRUCTION JOINTS AND AROUND CORNERS, UNLESS NOTED OTHERWISE.
4. PLACE REINFORCEMENT AS FOLLOWS, UNLESS NOTED OTHERWISE:
   - 4.1. MASONRY REINFORCING STEEL, UNLESS NOTED OTHERWISE:
     - 8 INCH CMU WALLS CENTERED IN CELL
5. PROVIDE REINFORCING SUPPORTS AND CHAIRS FOR ALL DEFORMED BARS AND WELDED WIRE REINFORCEMENT IN ACCORDANCE WITH CRSI PLACING REINFORCING BARS.

CONCRETE UNIT MASONRY

1. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 WITH A MINIMUM UNIT COMPRESSIVE STRENGTH OF 2000 PSI. MINIMUM 28-DAY COMPRESSIVE STRENGTH OF MASONRY ASSEMBLY SHALL BE f'_m = 2000 PSI.
2. MORTAR SHALL CONFORM TO ASTM C270 AND COMPLY WITH THE BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY. MASONRY CEMENT SHALL NOT BE USED FOR MORTAR. MORTAR SHALL BE OF THE FOLLOWING TYPE:
   - BEARING WALLS: TYPE S
3. GROUT SHALL CONFORM TO ASTM C476 AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2000 PSI TO MATCH OR EXCEED f'_m.
4. CONCRETE MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND.
5. GROUTING SHALL BE A CONTINUOUS PROCEDURE FOR EACH POUR. FORM GROUT KEYS BETWEEN GROUT POURS BY TERMINATING THE GROUT A MINIMUM OF 2 INCHES BELOW A MORTAR JOINT. DO NOT FORM GROUT KEYS WITHIN BEAMS. AT BEAMS OR LINTELS WITH CLOSED BOTTOM UNITS, TERMINATE THE GROUT POUR AT THE BOTTOM OF THE BEAM OR LINTEL WITHOUT FORMING A GROUT KEY. LIMIT THE HEIGHT OF VERTICAL GROUT POURS TO 12'-8" WHERE THE FOLLOWING CONDITIONS ARE MET (OTHERWISE LIMIT THE HEIGHT OF VERTICAL GROUT POURS TO 5'-4"):
   - 5.1. THE MASONRY HAS CURED FOR AT LEAST 4 HOURS.
   - 5.2. THE GROUT SLUMP IS MAINTAINED BETWEEN 10 INCHES AND 11 INCHES.
   - 5.3. NO INTERMEDIATE REINFORCED BOND BEAMS ARE PLACED BETWEEN THE TOP AND BOTTOM OF THE POUR HEIGHT.
   - 5.4. PROVIDE CLEANOUTS IN THE BOTTOM COURSE OF MASONRY WHEN THE GROUT POUR HEIGHT EXCEEDS 5'-4". IN SOLID GROUTED MASONRY, SPACE CLEANOUTS HORIZONTALLY A MAXIMUM OF 32 INCHES ON CENTER WITH A MINIMUM OPENING DIMENSION OF 3 INCHES.
6. GROUT SHALL BE MECHANICALLY CONSOLIDATED USING A VIBRATOR WITH A MAXIMUM 3/4 INCH DIAMETER HEAD.
7. HORIZONTAL JOINT REINFORCEMENT SHALL BE LADDER TYPE. PROVIDE THE FOLLOWING HORIZONTAL JOINT REINFORCEMENT UNLESS NOTED OTHERWISE.
   - ABOVE GRADE CONDITION: W1.7 (9 GAGE) LONGITUDINAL WIRES @ 16 INCHES VERT
   - BELOW GRADE CONDITION: W1.7 (9 GAGE) LONGITUDINAL WIRES @ 8 INCHES VERT
   - PARAPET CONDITION: W1.7 (9 GAGE) LONGITUDINAL WIRES @ 8 INCHES VERT
   - PROVIDE SPECIAL ACCESSORIES FOR COMPLETE CORNERS, INTERSECTIONS, ETC.
8. PROVIDE U-SHAPED BLOCK UNITS AT LINTELS OVER OPENINGS. REFER TO THE DETAILS FOR LOCATION OF REINFORCEMENT.

POST-INSTALLED FASTENING AND ANCHORAGE IN CONCRETE AND MASONRY

1. PROVIDE POST-INSTALLED ANCHORS ONLY WHERE SPECIFIED IN THE CONSTRUCTION DOCUMENTS OR WHERE SPECIFICALLY APPROVED BY THE STRUCTURAL DESIGN PROFESSIONAL. SUBMIT PROPOSED POST-INSTALLED ANCHORING PRODUCTS BEFORE USE.
2. SUBMIT SUBSTITUTION REQUESTS FOR SPECIFICALLY REFERENCED ANCHOR SOLUTIONS TO THE STRUCTURAL DESIGN PROFESSIONAL. SUBSTITUTION REQUESTS MUST FOLLOW THE PROCEDURE INDICATED IN THE CONSTRUCTION DOCUMENTS. CALCULATIONS SHOWING THE PROPOSED PRODUCT CAN ACHIEVE PERFORMANCE EQUAL TO THE PRODUCT SPECIFIED IN THE CONSTRUCTION DOCUMENTS MUST ACCOMPANY ANY SUBSTITUTION REQUEST. CALCULATIONS MUST BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT JURISDICTION.
3. SUBSTITUTION OF POST-INSTALLED ANCHORS FOR MISPLACED, DAMAGED, OR MISSING CAST-IN-PLACE ANCHORS REQUIRES THE APPROVAL OF THE STRUCTURAL DESIGN PROFESSIONAL BEFORE INSTALLATION.
4. PROVIDE CARBON STEEL ANCHOR RODS FOR ADHESIVE ANCHORING SYSTEMS MADE OF MATERIAL CONFORMING TO ASTM A193, GRADE B7. PROVIDE STAINLESS STEEL ANCHOR RODS FOR ADHESIVE ANCHORING SYSTEMS MADE OF MATERIAL CONFORMING TO ASTM A193, GRADE B6.
5. PROVIDE POST-INSTALLED, ADHESIVE CONCRETE ANCHORS IN CRACKED AND UNCRACKED CONCRETE MEETING THE FOLLOWING CRITERIA:
   - 5.1. ADHESIVE ANCHOR SYSTEMS (ADHESIVES AND CONNECTING HARDWARE) SHALL BE TESTED AND QUALIFIED IN ACCORDANCE WITH ACI 355.4 AND/OR ICC-ES AC308 FOR USE IN CRACKED CONCRETE. ANCHOR SYSTEMS SHALL BEAR A VALID ICC-ES REPORT (OR EQUIVALENT).
   - 5.2. ADHESIVE ANCHOR SYSTEMS INSTALLED IN OVERHEAD OR UPWARDLY INCLINED ORIENTATIONS, AND ADHESIVE ANCHOR SYSTEMS RESISTING SUSTAINED TENSION LOADS SHALL BE INSTALLED BY INSTALLERS CERTIFIED IN ACCORDANCE WITH THE ACI/CSRI "ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM."
   - 5.3. THE INSTALLATION SHALL BE INSPECTED IN ACCORDANCE WITH THE SCHEDULE OF SPECIAL INSPECTIONS.
   - 5.4. THE MINIMUM EMBEDMENT LENGTH OF ANCHORS SHALL BE SIX TIMES THE ANCHOR DIAMETER UNLESS NOTED OTHERWISE.
   - 5.5. THE MINIMUM EMBEDMENT LENGTH OF POST-INSTALLED REINFORCING BARS SHALL BE 12 BAR DIAMETERS UNLESS NOTED OTHERWISE.
   - 5.6. THE DESIGN OF ADHESIVE ANCHOR SYSTEMS ASSUMES THE FOLLOWING:
     - CONCRETE IS AT LEAST 21 DAYS OLD.
     - HOLES ARE DRY AT THE TIME OF INSTALLATION.
     - THE ACI 355.4 TEMPERATURE CATEGORY IS CATEGORY B.
6. PROVIDE POST-INSTALLED, ADHESIVE MASONRY ANCHORS MEETING THE FOLLOWING CRITERIA:
   - 6.1. ADHESIVE ANCHOR SYSTEMS (ADHESIVE AND CONNECTING HARDWARE) IN SOLID/GROUT-FILLED CONCRETE MASONRY SHALL BE TESTED AND QUALIFIED IN ACCORDANCE WITH ICC-ES AC58. ANCHORS SHALL BEAR A VALID ICC-ES REPORT (OR EQUIVALENT).
   - 6.2. ADHESIVE ANCHOR SYSTEMS (ADHESIVE AND CONNECTING HARDWARE) IN HOLLOW CONCRETE MASONRY SHALL BE TESTED AND QUALIFIED IN ACCORDANCE WITH ICC-ES AC58. ANCHORS SHALL BEAR A VALID ICC-ES REPORT (OR EQUIVALENT).
   - 6.3. PROVIDE THE REQUIRED ACCESSORIES COMPATIBLE WITH THE ADHESIVE ANCHORING SYSTEM (SCREEN TUBES, ETC.) FOR APPLICATIONS IN HOLLOW CONCRETE MASONRY.
7. PREPARE THE HOLE AND INSTALL THE ANCHORS IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. DO NOT CORE DRILL INSTALLATION HOLES WITHOUT THE APPROVAL OF THE STRUCTURAL DESIGN PROFESSIONAL.
8. POST-INSTALLED ANCHORS EXPOSED TO WEATHER SHALL BE GALVANIZED.
9. FIELD VERIFY THE LOCATION OF EXISTING REINFORCEMENT (INCLUDING POST-TENSIONING TENDONS WHERE APPLICABLE) IN EXISTING CONCRETE ELEMENTS PRIOR TO SUBMITTING ANY SHOP DRAWINGS SHOWING POST-INSTALLED ANCHORS. NOTIFY THE STRUCTURAL DESIGN PROFESSIONAL OF ANY CONFLICTS BETWEEN EXISTING REINFORCEMENT AND POST-INSTALLED ANCHORS.
   - 9.1. LOCATION OF EXISTING ELEMENTS MAY BE ESTABLISHED USING GROUND-PENETRATING RADAR (GPR), RADAR IMAGING, X-RAY SCANNING, OR ANY OTHER RELIABLE NON-DESTRUCTIVE METHOD.
10. DO NOT CUT OR DAMAGE ANY EXISTING REINFORCEMENT OR EMBEDDED ITEMS DURING INSTALLATION.
11. THE POST-INSTALLED ANCHOR LOCATIONS MAY BE SHIFTED UP TO 1 INCH TO AVOID EXISTING REINFORCEMENT OR OTHER EMBEDDED ITEMS. THE SHIFT MAY BE IN ANY DIRECTION SO LONG AS IT DOES NOT REDUCE THE CONCRETE EDGE DISTANCE OR THE MINIMUM ANCHOR SPACING REQUIREMENTS. PROVIDE FIELD DRILLED HOLES IN CONNECTING ELEMENTS AS REQUIRED.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS, UNLESS NOTED OTHERWISE.
   - SQUARE AND RECTANGULAR TUBES (HSS) ASTM A500, GRADE C
   - ANGLES ASTM A36
   - PLATES, RODS, AND CONNECTING MATERIALS ASTM A36
2. BOLTS AND ANCHORS:
   - 2.1. BOLTED CONNECTIONS SHALL BE TYPE N (BEARING TYPE WITH THREADS INCLUDED IN THE SHEAR PLANE) WITH MINIMUM 3/4 INCH DIAMETER, ASTM F3125, GRADE A325 BOLTS. ALL MOMENT FRAME AND BRACED FRAME CONNECTIONS SHALL BE SLIP-CRITICAL CONNECTIONS WITH MINIMUM 3/4 INCH DIAMETER ASTM F3125, GRADE A325 BOLTS. FOR PRETENSIONED OR SLIP-CRITICAL JOINTS, THE METHOD OF PRETENSIONING SHALL BE EITHER TURN-OF-NUT WITH MATCHMARKING, DIRECT TENSION INDICATORS (ASTM F959), OR TWIST-OFF-TYPE TENSION CONTROL BOLT ASSEMBLIES (ASTM F3125, GRADE F1852/GRADE F2280).
3. WELDED CONNECTIONS
   - 3.1. PROVIDE WELDED CONNECTIONS IN ACCORDANCE WITH ANSI/AWS D1.1.
4. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED ACCORDING TO BOTH THE AISC 360 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND THE AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
5. SUBMIT SHOP DRAWINGS WHICH ADEQUATELY DEPICT THE STRUCTURAL ELEMENTS AND CONNECTIONS SHOWN IN THE CONTRACT DOCUMENTS FOR REVIEW BY THE STRUCTURAL DESIGN PROFESSIONAL. REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR THE DESIGN AND ADEQUACY OF SUCH CONNECTIONS. CONNECTIONS SHALL BE DETAILED BASED ON THE DESIGN INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS. CONNECTIONS SHALL BE DESIGNED FOR THE SERVICE LOAD REACTION VALUES SHOWN ON THE STRUCTURAL DRAWINGS.
   - 5.1. DEVIATION FROM THE CONNECTION DETAILS DEPICTED IN THE CONTRACT DOCUMENTS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL DESIGN PROFESSIONAL.
   - 5.2. THE STRUCTURAL DESIGN PROFESSIONAL SHALL BE COMPENSATED BY THE CONTRACTOR FOR THE COST INVOLVED IN THE REDESIGN OF CONNECTIONS FOR THE CONVENIENCE OF THE CONTRACTOR.
   - 5.3. STEEL CONNECTIONS NOT COMPLETELY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED BY THE CONTRACTOR. THE DESIGN SERVICE SHALL BE INCLUDED IN THE CONTRACTOR'S SCOPE OF SERVICES. SHOP DRAWING AND CALCULATIONS FOR SUCH CONNECTIONS SHALL BE SEALED BY AN ENGINEER LICENSED IN THE PROJECT JURISDICTION. REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR THE DESIGN AND ADEQUACY OF SUCH CONNECTIONS. FOR CONNECTION DETAILS DEPICTING THE ARRANGEMENT CONCEPT OF THE CONNECTION WITHOUT COMPLETE DETAILS, THE CONNECTION DESIGN ENGINEER SHALL FOLLOW THAT ARRANGEMENT CONCEPT IN THE DESIGN.
6. USE PRE-QUALIFIED WELDED JOINTS IN ACCORDANCE WITH AISC AND THE STRUCTURAL WELDING CODE OF THE AMERICAN WELDING SOCIETY. "NON-PRE-QUALIFIED JOINTS" SHALL BE QUALIFIED PRIOR TO FABRICATION.
7. STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED.
8. STEEL BAR GRATING SHALL CONFORM TO THE FOLLOWING, UNLESS NOTED OTHERWISE:
   - 8.1. SUBMIT SHOP DRAWINGS WHICH DEPICT THE GRATING ELEMENTS, FASTENERS, AND LAYOUT SHOWN IN THE CONTRACT DOCUMENTS.
   - 8.2. STEEL BAR GRATING SHALL BE RECTANGULAR TYPE WITH WELDED CROSS BARS.
     - BEARING BARS SHALL BE 3/4 INCH DEEP X 3/16 INCH THICK SPACED AT 2 INCH WITH CROSS BARS SPACED AT 2 INCHES, UNLESS NOTED OTHERWISE. STEEL BAR MATERIAL SHALL CONFORM TO ASTM A1011, GRADE 36. PROVIDE CROSS BARS FLUSH WITH THE TOP OF THE BEARING BARS.
     - GRATING SURFACE SHALL BE PLAIN.
     - GRATING FINISH TO BE GALVANIZED IN ACCORDANCE WITH ASTM A123 OR ASTM A385. REPAIR ANY AREAS OF DAMAGED GRATING FINISH.
   - 8.3. FASTEN GRATING TO STEEL SUPPORTS WITH 3/16" FILLET WELDS X 3/4" LONG AT EVERY SIXTH BEARING BAR ALONG SUPPORT (MIN. 2 WELDS PER PANEL) (REFER TO THE STRUCTURAL DETAILS). INSTALL GRATING SUCH THAT BEARING BARS ARE IN COMPLETE CONTACT WITH THE SUPPORTING STRUCTURE. PROVIDE ADDITIONAL ANCHORS TO ELIMINATE BOWING OR CURLING. UNLESS SPECIFICALLY NOTED AS TEMPORARY OR REMOVABLE, ALL GRATING IS PERMANENT.
   - 8.4. LOCATE GRATING TO PROVIDE A 1/2 INCH TYPICAL, 1 INCH MAXIMUM GAP BETWEEN EDGES OF GRATING AND ADJACENT WALL, SLAB, OR OTHER STRUCTURE.
   - 8.5. PROVIDE A 1/4 INCH, PERMANENT TOE PLATE AT EQUIPMENT OPENINGS, AND ANNULAR SPACES AROUND PIPE PENETRATIONS GREATER THAN 1 INCH AND LESS THAN 12 INCHES WIDE.

STRUCTURAL SHEET INDEX

S001	DESIGN PARAMETERS AND GENERAL STRUCTURAL NOTES
S002	DESIGN PARAMETERS AND GENERAL STRUCTURAL NOTES
S101	ROOF FRAMING PLAN AND DETAILS

ABBREVIATIONS

ADDL	ADDITIONAL
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
AOR	ARCHITECT OF RECORD
ARCH	ARCHITECT / ARCHITECTURAL
B/xxx	BOTTOM OF xxx
BFF	BELOW FINISHED FLOOR
BOT	BOTTOM
BRG	BEARING
CFMF	COLD FORMED METAL FRAMING
CJ	CONTRACTION JOINT / CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTER LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CS	COLUMN STRIP
DBA	DEFORMED BAR ANCHOR
DBE	DECK BEARING ELEVATION
DBL	DOUBLE
DEG	DEGREE
DIA	DIAMETER
DTL	DETAIL
DWG	DRAWING
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
EMBED	EMBEDMENT / EMBEDDED
ENG	ENGINEER / ENGINEERING
EOD	EDGE OF DECK
EOR	ENGINEER OF RECORD
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F/xxx	FACE OF xxx
FD	FLOOR DRAIN
FDN	FOUNDATION
FFE	FINISHED FLOOR ELEVATION
FLR	FLOOR
FS	FAR SIDE
FT	FEET
FTG	FOOTING
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GYP	GYPSUM
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
ICF	INSULATED CONCRETE FORMS
IF/xxx	INSIDE FACE OF xxx
INT	INTERIOR
JBE	JOIST BEARING ELEVATION

ABBREVIATIONS

JT	JOINT
K	KIPS
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
LF	LINEAR FEET
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LW	LIGHT WEIGHT
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL/ELECTRICAL/PLUMBING
MFR	MANUFACTURER / MANUFACTURING
MIN	MINIMUM
MISC	MISCELLANEOUS
MS	MIDDLE STRIP
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NS	NEAR SIDE
NTS	NOT TO SCALE
NW	NORMAL WEIGHT
OC	ON CENTER
OF/xxx	OUTSIDE FACE OF xxx
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
PAF	POWER / POWDER ACTUATED FASTENER
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PEMB	PRE-ENGINEERED METAL BUILDING
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSIONED
QTY	QUANTITY
RD	ROOF DRAIN
REF	REFER TO
REINF	REINFORCING / REINFORCEMENT
REQD	REQUIRED
RO	ROUGH OPENING
RTU	ROOF TOP UNIT
SCHED	SCHEDULE
SDS	SELF-DRILLING SCREWS
SF	SQUARE FEET
SIM	SIMILAR
SP	SPECIAL
SPA	SPACE / SPACING
SPECS	SPECIFICATIONS
SS	STAINLESS STEEL
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STR	STRUCTURE / STRUCTURAL
SW	SHEAR WALL
SYM	SYMMETRICAL
T	TOP
T/xxx	TOP OF xxx
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WP	WORK POINT
WWR	WELDED WIRE REINFORCEMENT

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