GENERAL:

1. PROVIDE CONSTRUCTION CONFORMING TO THE 2012 INTERNATIONAL BUILDING CODE. REFERENCE TO LATEST EDITION OR OTHER STANDARDS, SPECIFICATIONS, OR CODES SHALL MEET THE LATEST STANDARD OR CODE PUBLISHED AND ADOPTED BY THE LISTED BUILDING CODE.
2. MATERIAL TESTS AND INSPECTIONS ARE REQUIRED PER CHAPTER 17 OF THE 2012 INTERNATIONAL BUILDING CODE. REFER TO THE PROJECT STATEMENT OF SPECIAL INSPECTIONS FOR REQUIRED TESTS AND INSPECTIONS.
3. THESE NOTES APPLY EXCEPT WHERE OTHERWISE INDICATED BY DRAWINGS OR SPECIFICATIONS.
4. STRUCTURAL DRAWINGS INDICATE TYPICAL AND CERTAIN SPECIFIC CONDITIONS ONLY. SUBMITTED SHOP DRAWINGS DETAIL ALL CONDITIONS IN ACCORDANCE WITH SPECIFIED STANDARDS AND THE SPECIFIC REQUIREMENTS OF THIS PROJECT AS INDICATED ON THE DRAWINGS.
5. COORDINATE THE STRUCTURAL CONTRACT DOCUMENTS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL, AND ALL OTHER CONSULTANTS. NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD IN WRITING OF ANY CONFLICT AND/OR OMISSION. WHERE A CONFLICT OCCURS, THE STRICTEST REQUIREMENT SHALL GOVERN UNLESS OTHERWISE DECIDED BY THE DESIGN TEAM.
6. COORDINATE AND VERIFY FLOOR AND ROOF OPENING SIZES AND LOCATIONS SHOWN WITH ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS. FOR ADDITIONAL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS. OBTAIN WRITTEN APPROVAL OF ADDITIONAL OPENINGS LARGER THAN 12" X 12" FROM THE STRUCTURAL ENGINEER OF RECORD.
7. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, AND ALL OTHER MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
8. COORDINATE THE BUILDING ORIENTATION WITH THE ARCHITECTURAL DRAWINGS.
9. COMPLETE SHOP DRAWINGS FOR CONSTRUCTION OF EACH BUILDING COMPONENT NOT DESIGNED BY THE DESIGN TEAM OF RECORD AND NOT SPECIFIED ON THE PROJECT CONSTRUCTION DOCUMENTS SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED AND SHALL BE MADE AVAILABLE AT THE JOB SITE.

DESIGN LOADS:

1. LIVE LOADS:

		UNIFORM
CORRIDORS ABOVE FIRST FLOOR	=	80 PSF (REDUCIBLE)
OFFICE	=	50 PSF (REDUCIBLE)
ASSEMBLY (MOVABLE SEATS)	=	100 PSF (NON-REDUCIBLE)
STORAGE (LIGHT)	=	125 PSF (NON-REDUCIBLE)
ROOF	=	20 PSF (NON-REDUCED)
SLAB ON GRADE	=	150 PSF (NON-REDUCIBLE)

2. WIND DESIGN DATA:

ULTIMATE WIND SPEED (V_{ULT})	=	115 MPH
NOMINAL WIND SPEED (V_{ASD})	=	90 MPH
WIND IMPORTANCE FACTOR (I_W)	=	1.0 (OCCUPANCY II)
WIND EXPOSURE	=	C
INTERNAL PRESSURE COEFFICIENT	=	±0.18
COMPONENTS AND CLADDING PRESSURES	=	SEE TABLE SHEET S0.2

3. ROOF SNOW LOADING:

GROUND SNOW LOAD (P_G)	=	10 PSF
FLAT-ROOF SNOW LOAD (P_F)	=	10 PSF
SNOW EXPOSURE FACTOR (C_E)	=	1.0
SNOW LOAD IMPORTANCE FACTOR (I_S)	=	1.0
THERMAL FACTOR (C_T)	=	1.0

4. SEISMIC DESIGN DATA (EXISTING BUILDING):

RISK CATEGORY		=	II
SEISMIC IMPORTANCE FACTOR (I_E)		=	1.0
MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS	(S_S)	=	0.272
	(S_1)	=	0.135
SITE CLASS		=	D
DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS	(S_{DS})	=	0.28
	(S_{D1})	=	0.203
SEISMIC DESIGN CATEGORY		=	D
BASIC SEISMIC FORCE RESISTING SYSTEM		=	LIGHT-FRAME (WOOD) WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE
DESIGN BASE SHEAR		=	8.65 K (FOR WOOD MEZZANINE) (SEE APPENDIX B FOR PEMB)
SEISMIC RESPONSE COEFFICIENT (C_S)		=	0.044
RESPONSE MODIFICATION COEFFICIENT (R)		=	6.5
PROCEDURE USED		=	EQUIVALENT LATERAL FORCE PROCEDURE

5. FLOOD DATA:
   NOT APPLICABLE

FOUNDATION:

1. THE DESIGN OF FOUNDATIONS, RETAINING WALLS, AND SLABS-ON-GRADE IS BASED ON THE FOLLOWING CRITERIA ESTABLISHED IN THE GEOTECHNICAL
   REPORT BY GEOCERVICES LLC DATED NOVEMBER 14, 2019 REPORT NUMBER 31-191624.
   ALLOWABLE SOIL BEARING PRESSURE: 2000 PSF
   AFTER EXCAVATION, IF THE CONDITION OF THE SOILS DO NOT MEET THE RECOMMENDED DESIGN CRITERIA STATED IN THE GEOTECHNICAL REPORT, NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD SO THAT THE FOUNDATIONS MAY BE REDESIGNED IF NECESSARY.
2. THE GEOTECHNICAL ENGINEER MUST VERIFY THE CONDITION AND/OR ADEQUACY OF ALL SUB-GRADES, FILLS, AND BACKFILLS PRIOR TO THE PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, ETC.
3. DESIGN OF SLAB-ON-GRADE IS BASED UPON A MODULUS OF SUBGRADE REACTION OF 110 PCI.

REINFORCED CONCRETE:

1. PROVIDE REINFORCED CONCRETE CONFORMING TO THE FOLLOWING STANDARDS.
   A. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS, LATEST EDITION.
   B. ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, LATEST EDITION.
   C. ACI 302.1R, GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION, LATEST EDITION.
   D. ACI 360R, DESIGN OF SLABS-ON-GROUND, LATEST EDITION.
2. FULLY DOCUMENT AND SUBMIT FOR REVIEW THE PROPOSED MATERIALS AND MIX DESIGN FOR ALL CONCRETE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE REQUIRED DESIGN STRENGTH. ALL CONCRETE TEST DATA MUST BE AVAILABLE AT THE JOB SITE.
3. DETAIL CONCRETE REINFORCEMENT ACCORDING TO ACI SP-66 DETAILING MANUAL. SUBMIT SHOP DRAWINGS FOR APPROVAL, SHOWING ALL FABRICATION DIMENSIONS AND LOCATIONS FOR PLACING CONCRETE REINFORCING AND ACCESSORIES. DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND REVIEWED BY THE STRUCTURAL ENGINEER OF RECORD. UNLESS SPECIFICALLY APPROVED OTHERWISE, DETAIL ALL CONCRETE WALLS AND BEAMS IN ELEVATION.
4. PROVIDE NORMAL WEIGHT CONCRETE WITH THE FOLLOWING 28 DAY COMPRESSIVE STRENGTHS:
   FOUNDATIONS: 4000 PSI
   SLABS-ON-GRADE: 4000 PSI
   PIERS: 4000 PSI
5. PROVIDE CONCRETE WITH:
   A. 4% TO 6% ENTRAINED AIR BY VOLUME IN CONCRETE PERMANENTLY EXPOSED TO WEATHER.
   B. THE USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IS NOT PERMITTED.
   C. PLACE CONCRETE AT A SLUMP OF 5" ± 1" UNLESS NOTED OTHERWISE.
6. UNLESS NOTED OTHERWISE, PROVIDE REINFORCING STEEL CONFORMING TO ASTM A 615, GRADE 60.
7. PROVIDE WELDED WIRE FABRIC (MESH) IN FLAT SHEETS (ROLLS NOT PERMITTED) CONFORMING TO ASTM A1064. LAP WELDED WIRE FABRIC A MINIMUM OF 6" AT EACH SPLICE.
8. FIBER REINFORCING MAY BE SUBSTITUTED FOR WELDED WIRE FABRIC IN SLABS-ON-GRADE WITH THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD. PROVIDE FIBER REINFORCING CONFORMING TO ASTM A 820, TYPE 1.
9. SEE ARCHITECTURAL DRAWINGS FOR WATERSTOPS
10. UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING CONCRETE COVER ON ALL REINFORCING STEEL:
    A. CONCRETE AGAINST EARTH (NOT FORMED): 3"
    B. FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:
       a. #6 THROUGH #18 BARS: 2"
       b. #5 BARS AND SMALLER: 1 1/2"
    C. FORMED CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
       1. SLABS, JOISTS, AND WALLS: 3/4"
       2. BEAMS (STIRRUPS) AND COLUMNS (TIES): 1 1/2"
11. REINFORCING, INCLUDING DOWELS, SHALL BE SECURELY TIED AND CAST WITH THE LOWER MEMBER. PLACING REINFORCING AFTER CONCRETE HAS BEEN PLACED IS NOT PERMITTED.
12. FIELD BENDING OF REINFORCING PARTIALL EMBEDDED IN CONCRETE IS NOT ALLOWED UNLESS SPECIFICALLY NOTED IN THE STRUCTURAL DOCUMENTS OR APPROVED BY STRUCTURAL ENGINEER.
13. PROVIDE DOWELS FROM THE FOUNDATION WHICH ARE THE SAME GRADE, SIZE AND NUMBER AS VERTICAL WALL OR COLUMN REINFORCING UNLESS NOTED OTHERWISE.
14. TIE ALL REINFORCING STEEL AND EMBEDDED ITEMS SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN THE POSITION OF THE REINFORCEMENT WITHIN SPECIFIED TOLERANCES DURING ALL CONSTRUCTION ACTIVITIES.
15. PROVIDE CORNER BARS AT ALL CORNERS AND INTERSECTIONS OF ALL FOOTINGS, BEAMS, AND WALLS.
16. PROVIDE CONSTRUCTION OR CONTRACTION JOINTS IN SLABS ON GRADE SPACED AT A MAXIMUM 15'-0" OC IN EACH DIRECTION AND WITH THE LENGTH BETWEEN CONTROL JOINTS NO GREATER THAN 1-1/4 TIMES THE WIDTH BETWEEN CONTROL JOINTS.
17. SAWCUT CONTROL JOINTS AS SOON AFTER PLACING AS POSSIBLE, WHEN CONCRETE WILL NOT RAVEL, TEAR, ABRADE, OR OTHERWISE DAMAGE THE SURFACE AND BEFORE THE CONCRETE DEVELOPS RANDOM SHRINKAGE CRACKING. CURE CONCRETE IN ACCORDANCE WITH ACI 301, BEGIN CURING IMMEDIATELY AFTER PLACING TO LIMIT CRACKING PRIOR TO SAWCUTTING CONTROL JOINTS.
18. UNLESS NOTED OTHERWISE, AT BASEMENT WALLS AND RETAINING WALLS:
    A. PROVIDE VERTICAL CONTROL JOINTS IN BASEMENT WALLS AND RETAINING WALLS WITH A MAXIMUM SPACING OF 15'-0" ON CENTER AND 3/4" DEEP V-CHAMFER ON BOTH FACES.
    B. INTERRUPT HALF OF THE SPECIFIED HORIZONTAL REINFORCEMENT AT CONTROL JOINTS.
    C. CENTER CHAMFER STRIPS BETWEEN VERTICAL REINFORCING BARS.
19. NON-STRUCTURAL EMBEDMENTS (CONDUIT, PIPES, SLEEVES, ETC) WITHIN WALLS, BEAMS OR SLABS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. ALL EMBEDMENTS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH ACI STANDARDS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
    A. ALUMINIUM MATERIALS SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE
    B. OVERALL OUTSIDE DIMENSION OF EMBEDMENTS SHALL NOT EXCEED 1/3 THE CONCRETE MEMBER THICKNESS UP TO 2" MAXIMUM.
       1. FOR CONCRETE SLABS ON METAL DECK THE MEMBER THICKNESS SHALL BE THE CONTINOUS SLAB THICKNESS ABOVE THE DECK.
    C. EMBEDMENTS SHALL BE SPACED A MINIMUM OF 6" OC
    D. EMBEDMENTS SHALL NOT ALTER OR DISPLACE REINFORCING
    E. EMBEDMENTS WITHIN COLUMNS SHALL NOT DISPLACE MORE THAN 4% OF THE AREA OF THE COLUMN CROSS SECTION.
20. NO HORIZONTAL CONSTRUCTION JOINTS WILL BE ALLOWED IN BEAMS OR JOISTS.
21. PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE. SPLICE REINFORCING BARS ONLY AS SHOWN OR APPROVED. STAGGER SPLICES WHERE POSSIBLE. USE CLASS "B" TENSION SPLICES UNLESS NOTED OTHERWISE INCLUDING DOWELS.

REINFORCED CONCRETE (CONTINUED):

22. TEST CYLINDERS SHALL BE TAKEN TO THE LESSER OF THE FOLLOWING.
    A. 75 CUBIC YARDS
    B. 24 HOUR PERIOD
    C. CHANGE IN CONCRETE STRENGTH
23. TEST CYLINDERS AT 7 DAYS AND 28 DAYS. SHOULD 28 DAY STRENGTH NOT BE MET, TEST REMAINING CYLINDERS AT 56 DAYS. TEST RESULTS SHALL BE FORWARDED TO THE STRUCTURAL ENGINEER OF RECORD.
24. THE LOCATION OF CONSTRUCTION JOINTS REQUIRES THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
    A. UNLESS NOTED OTHERWISE, THOROUGHLY ROUGHEN (BY MECHANICAL MEANS) AND CLEAN CONSTRUCTION JOINTS.
    B. PROVIDE KEYS IN BEAMS AT CONSTRUCTION JOINTS.
    C. APPLY SLUSH COAT AS SPECIFIED.
25. PROVIDE THE FOLLOWING NOMINAL SIZE OF KEYS AT WALL CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE:
    A. 8" THROUGH 10" WALL = 2" x 4" KEY
    B. 12" THROUGH 16" WALL = 2" x 6" KEY
26. THE PLACEMENT OF ALL REINFORCING STEEL MUST BE REVIEWED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS TO BE CONSTRUCTED OR BY A REPRESENTATIVE RESPONSIBLE TO HIM (REF: ACI 318).
27. PROVIDE COMPRESSIBLE FILLER AND SEALANT IN SLAB-ON-GRADE AND WALL AND COLUMN INTERFACES THAT ARE NOT DOWELED TOGETHER.
28. ALL COLUMN POCKETS SHALL BE FILLED WITH CONCRETE AFTER COLUMN IS ERECTED.
29. PROVIDE 4" HIGH CONCRETE HOUSEKEEPING PADS UNDER EQUIPMENT. PADS SHALL EXTEND BEYOND EQUIPMENT 6" NOMINAL ON ALL SIDES. APPLY BONDING AGENT TO EXISTING CONCRETE SLAB PRIOR TO PLACING HOUSEKEEPING PAD. SEE DOCUMENTS FROM OTHER DISCIPLINES FOR EQUIPMENT LOCATIONS.
30. AT FLOOR DRAINS, LOCALLY SLOPE FLOOR TOWARD DRAIN. SEE DOCUMENTS FROM OTHER DISCIPLINES FOR DRAIN LOCATIONS.
31. UNLESS NOTED OTHERWISE, STRUCTURAL SLABS EXPOSED TO WEATHER SHALL BE SLOPED APPROXIMATELY 1/4 INCH PER FOOT AWAY FROM OCCUPIED SPACE TOWARD FLOOR DRAINS, SCUPPERS, GUTTERS, ETC. FOR EXTERIOR NON-STRUCTURAL FLATWORK (EX: SIDEWALKS, PAVEMENT) REFERENCE CIVIL SITE PLAN AND SPECIFICATIONS.
32. SEE ARCHITECTURAL DOCUMENTS FOR MOLDS, GROOVES, ORNAMENTS, CLIPS, ETC REQUIRED TO BE ENCASED IN CONCRETE AND FOR LOCATION OF FLOOR FINISHES AND SLAB DEPRESSIONS.

STRUCTURAL STEEL:

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH LATEST EDITION THE "MANUAL OF STEEL CONSTRUCTION" AND "THE SPECIFICATION FOR DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION AND SPECIFICATION MANUAL DIVISION 05 (WHEN PROVIDED)
2. SUBMIT SHOP DRAWINGS FOR FABRICATION AND ERECTION OF ALL STEEL MEMBERS IN ACCORDANCE WITH AISC STANDARDS NOTED ABOVE. DETAILER SHALL ASSUME EQUAL BEAM SPACING BETWEEN COLUMN LINES (OR BETWEEN BEAMS THAT ARE SPECIFICALLY LOCATED ON THE DRAWINGS), UNLESS NOTED OTHERWISE ON THE DRAWINGS.
3. STRUCTURAL STEEL SHALL CONFIRM TO THE FOLLOWING, UNLESS OTHERWISE NOTED:
   A. WIDE FLANGE SHAPES — ASTM A992 (Fy = 50 KSI)
   B. MISC SHAPES (S,M,C, MC, L), PLATES, BARS — ASTM A36 (Fy = 36 KSI)
   C. SQUARE/RECTANGULAR TUBING (HSS) — ASTM A500 GRADE B (Fy = 46 KSI)
   D. ROUND TUBING (HSS) — ASTM A500 GRADE B (Fy = 42 KSI)
   E. STRUCTURAL PIPE — ASTM A53 GRADE B (Fy = 35 KSI)
   F. STRUCTURAL BOLTS (INCL WASHERS & NUTS) — ASTM A325 OR A490
   G. ANCHOR RODS — ASTM F1554 GRADE 36
4. PRIME STRUCTURAL STEEL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. IF SPECIFICATION MANUAL HAS NOT BEEN PROVIDED ALL STRUCTURAL STEEL NOT RECEIVING FIRE-PROOFING SHALL RECEIVE ONE SHOP COAT OF RUST-INHIBITIVE PRIMER. ALL STEEL WITH EXTERIOR EXPOSURE SHALL BE PAINTED WITH A DOUBLE COAT OF RUST PROHIBITIVE EPOXY PRIMER (MATERIAL AND THICKNESS TO BE SPECIFIED BY ARCHITECT) UNLESS NOTED AS GALVANIZED.
5. STEEL BELOW GRADE SHALL HAVE A MINIMUM OF 4" CONCRETE COVER PROTECTION OR PROTECTED WITH 2 COATS OF ASPHALTIC PAINT.
6. BOLTING OF STRUCTURAL STEEL SHALL CONFIRM TO THE PROVISIONS OF RCSC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 AND A490 BOLTS".
7. STRUCTURAL STEEL FABRICATOR IS RESPONSIBLE FOR DESIGN AND DETAILS OF STEEL CONNECTIONS REQUIRED BY THE CONTRACT DOCUMENTS AND SHALL COMPLY WITH THE FOLLOWING.
   A. DESIGN ALL CONNECTIONS NOT SPECIFICALLY DETAILED ON DRAWINGS.
   B. DESIGN CONNECTIONS USING SCHEMATIC DETAILS AND OTHER INFORMATION INDICATED ON DRAWINGS.
   C. ALL REACTIONS AND FORCES INDICATED ON DRAWINGS ARE [ASD] [LRFD] SERVICE LOADS UNLESS NOTED OTHERWISE.
   D. SUBMIT SIGNED AND SEALED CALCULATIONS FOR THE DESIGN OF MOMENT FRAME CONNECTIONS, BRACED FRAME CONNECTIONS, CONNECTIONS TRANSFERRING AXIAL LOAD, AND CONNECTIONS THAT ARE PART OF THE BUILDINGS MAIN LATERAL RESISTING SYSTEM.
   E. SELECT AND COMPLETE BEAM SIMPLE SHEAR CONNECTIONS USING SCHEMATIC DETAILS AND AISC'S MANUAL OF STEEL CONSTRUCTION. BEAM SIMPLE SHEAR CONNECTION CALCULATIONS SHALL BE SUBMITTED UPON REQUEST.
   F. REVIEW OF SHOP DRAWINGS SHALL NOT RELIEVE FABRICATOR OF CONNECTION DESIGN RESPONSIBILITY.
   G. STRUCTURAL STEEL CONNECTIONS SHALL CONFORM TO THE FOLLOWING, UNO:
      a. MINIMUM SIZE OF BOLTS SHALL BE 3/4" DIAMETER AND EACH CONNECTION SHALL HAVE A MINIMUM OF TWO BOLTS WITH ONE HARDENED WASHER PER BOLT.
      b. BEARING TYPE CONNECTIONS SHALL BE DESIGNED AS TYPE "N".
      c. IN GENERAL, CONNECTIONS SHALL BE FIELD BOLTED AND TIGHTENED TO SNUG TIGHT CONDITION, UNO. ALL BOLTS DESIGNATED "SLIP CRITICAL" OR "FULLY TIGHTENED" SHALL BE TIGHTENED TO THE MINIMUM PRETENSION VALUE SHOWN IN TABLE J3.1 OF THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS. IN ADDITION, CONNECTIONS DESIGNATED "SLIP CRITICAL" SHALL HAVE PROPERLY PREPARED FAYING SURFACES TO MEET CLASS A SURFACE CONDITION, U.N.O.
      d. "FULLY TIGHTENED" CONNECTIONS SHALL INCLUDE ALL BOLTS IN MOMENT CONNECTIONS, BRACED FRAME CONNECTIONS, HANGERS, GIRT CONNECTIONS, BOLTS IN TENSION, CONNECTIONS SUBJECT TO VIBRATION, AND ALL A490 BOLTS. DIRECT TENSION INDICATOR (DTI) WASHERS OR TENSION CONTROL BOLTS (TCB'S) SHALL BE USED AT THESE CONDITIONS.
      e. MINIMUM THICKNESS OF ALL CONNECTION MATERIAL TO BE 5/16", UNO. MINIMUM THICKNESS OF GUSSET PLATES AND SHEAR PLATES TO BE 3/8".
      f. UNLESS NOTED OTHERWISE IN THE DRAWINGS, MINIMUM NUMBER OF BOLTS REQUIRED IN A BEAM WEB CONNECTION SHALL BE AS FOLLOWS:

BEAM SIZE	MIN NO OF BOLTS
W8 / W10 / W12	2
W14 / W16 / W18	3
W21 / W24	4
W27 / W30	5
W33 / W36	6
W40 / W44	7

      g. IN CONNECTIONS OF BEAMS, THE MINIMUM NUMBER OF BOLTS SHALL BE REQUIRED TO DEVELOP THE END REACTION NOTED ON THE CONTRACT DRAWINGS. MINIMUM BEAM END REACTION TO BE USED IS 10 KIPS ASD.
      h. CONNECTIONS OF BEAMS SHALL DEVELOP THE BEAM SHEAR END REACTION IN ADDITION TO ANY AXIAL FORCES LISTED ON THE STRUCTURAL DRAWINGS, WHERE APPLICABLE. FORCES SHALL BE CONSIDERED TO ACT SIMULTANEOUSLY.
      i. ALL MOMENT CONNECTIONS SHALL DEVELOP THE FULL MOMENT CAPACITY OF THE BEAM, UNLESS INDICATED OTHERWISE.
      j. ALL BRACING CONNECTIONS SHALL DEVELOP THE TENSION/COMPRESSION FORCES NOTED ON THE DRAWINGS. IF THE FORCE IS NOT NOTED ON DRAWINGS, THE BRACING CONNECTION SHALL DEVELOP THE ALLOWABLE TENSION FORCE IN THE MEMBER. BRACING CONNECTIONS SHALL BE DESIGNED AND DETAILED SO THAT ALL FORCE COMPONENTS WILL BE TRANSMITTED DIRECTLY TO THE CENTER OF GRAVITY OF INTERSECTING MEMBERS. WHERE THIS IS NOT POSSIBLE, CONNECTIONS SHALL BE DESIGNED FOR ALL RESULTING ECCENTRICITIES.
8. WELDING PROCEDURES SHALL CONFIRM TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY'S (AWS) STRUCTURAL WELDING CODES AND SHALL BE PERFORMED BY CERTIFIED WELDERS.
9. WELDS SHOWN ON THE DRAWINGS ARE THE MINIMUM REQUIRED BY DESIGN. MINIMUM WELD SIZE SHALL BE 3/16". ALL STIFFENER PLATES, ANGLES, ETC WHERE SHOWN IN CONTACT WITH OTHER STEEL MEMBERS TO BE CONNECTED w/ 3/16" FILLET WELD ALL AROUND, UNO.
10. FABRICATION SHOP DRAWINGS SHALL REFLECT WELDS IN ACCORDANCE WITH AWS REQUIREMENTS. SHOP DRAWINGS SHALL DETAIL ALL SHOP AND FIELD WELDS. SHOP AND FIELD WELD SHOWN ON DRAWINGS FOR CONCEPT, GENERAL CONTRACTOR SHALL COORDINATE WELDING SEQUENCE REQUIREMENTS, UNO.
11. GROUT BELOW BASE PLATES SHALL BE HIGH-STRENGTH, NON-SHRINK, NONMETALLIC GROUT, WITH A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI.

COLD-FORMED STEEL FRAMING (STUDS AND JOISTS):

1. PROVIDE COLD-FORMED METAL FRAMING CONFORMING WITH THE FOLLOWING STANDARDS:
   A. AISI NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, LATEST EDITION
   PROVIDE CURTAIN WALL FRAMING INSTALLATION TO ACCOMMODATE VERTICAL DISPLACEMENT OF THE PRIMARY STRUCTURE.
3. VERIFY DIMENSIONS OF LOAD BEARING WALLS WITH THE ARCHITECTURAL DRAWINGS. FOR INFORMATION ON NON-LOAD BEARING METAL STUDS SEE ARCHITECTURAL DRAWINGS.
4. DESIGN SLIP TRACK USING THE GUIDELINES ESTABLISHED IN STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA) TECHNICAL GUIDE.
5. PROVIDE STUDS, RUNNER TRACK, AND ASSOCIATED ACCESSORIES OF THE TYPE AND THICKNESS INDICATED ON THE DRAWINGS.
6. PROVIDE STUDS, JOISTS, RUNNER TRACK, AND ACCESSORIES MANUFACTURED OF HOT DIP GALVANIZED ASTM A 1003 STEEL WITH THE FOLLOWING YIELD STRENGTH:
   33,000 PSI 43-MIL (18 GAGE) MEMBERS AND THINNER
   50,000 PSI 54-MIL (16 GAGE), 68-MIL (14 GAGE), AND 97-MIL (12 GAGE) MEMBERS
7. SUBMIT SHOP DRAWINGS SHOWING THE SIZE OF ALL MEMBERS AND ALL CONNECTIONS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS TO BE CONSTRUCTED. SEALED DESIGN NOT REQUIRED IF FULL DESIGN HAS BEEN PROVIDED AND SHOWN ON THE STRUCTURAL DRAWINGS.
   A. REVIEW OF SHOP DRAWINGS BY THE STRUCTURAL ENGINEER OF RECORD IS FOR:
      1. GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS REGARDING ARRANGEMENT AND SIZES OF MEMBERS.
      2. THE DESIGNER'S INTERPRETATION OF THE DESIGN LOADS AND CONTRACT DOCUMENT DETAILS.
8. MINIMUM CONNECTIONS (UNLESS NOTED OTHERWISE ON THE DRAWINGS):
   A. STUD TO STUD CONNECTIONS: A MINIMUM OF TWO 10 - 16 SELF TAPPING SCREWS.
   B. STUD TO TRACK CONNECTIONS: TWO 10 - 16 SELF TAPPING SCREWS.
   C. TRACK ON CONCRETE SLAB: 0.157" Ø x 1 1/4"POWER ACTUATED FASTENERS AT 1'-6" ON CENTER MAXIMUM.
   D. MULTIPLE STUD JAMBS: #10 SCREWS AT 12" ON CENTER PENETRATING EACH MEMBER.
   E. STUD TO WALL SHEATHING: 1/2" x 1 5/8" BUGLE HEAD #6 SELF DRILLING SCREWS AT 8" ON CENTER AT EDGES AND 12" ON CENTER IN FIELD.
      1. SEE ARCHITECTURAL DRAWINGS FOR EXACT SHEATHING TYPE.
   F. STUD TO STRUCTURAL STEEL: AS SHOWN ON SECTIONS.
9. PROVIDE BRIDGING AND BRACING PER STUD MANUFACTURERS RECOMMENDATIONS.
10. REINFORCE EXTERIOR STUDS THAT ARE CUT TO INSTALL MECHANICAL OR ELECTRICAL MATERIAL. SUBMIT REINFORCEMENT DETAIL FOR APPROVAL BEFORE PROCEEDING WITH CONSTRUCTION.
11. FOR EXTERIOR WALLS WITH DELEGATED DESIGN - DESIGN FRAMING SYSTEMS TO WITHSTAND DESIGN LOADS WITHOUT DEFLECTION GREATER THAN L/240 FOR STANDARD WALLS AND L/600 FOR WALLS CLAD IN BRICK VENEER.

STEEL ROOF DECKING:

1. ROOF DECK SHALL BE DESIGNED, FABRICATED AND INSTALLED IN ACCORDANCE WITH "SDI CODE OF STANDARD PRACTICE AND COMMENTARY," SDI COSP-2012.
2. ROOF DECK SHALL BE GALVANIZED.
3. 1-1/2" WIDE RIB ROOF DECK WITH DESIGN THICKNESS 0.0358" (20 GA) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
   - I = 0.212 IN^4/FT
   - Sp = 0.234 IN^3/FT
   - Sn = 0.247 IN^3/FT
   - Fy = 33 KSI
4. DO NOT SUPPORT DUCTS, CEILINGS, LIGHTS, PLUMBING, SPRINKLERS, ETC FROM THE ROOF DECK.
5. ROOF DECK SHALL BE WELDED TO SUPPORTS, BOTH PERPENDICULAR AND PARALLEL TO THE DECK, WITH 3/4" DIAMETER PUDDLE WELDS AND FASTENED AT SIDELAPS WITH #10 SCREWS AS FOLLOWS:
   A. TYPICAL INSTALLATION, UNLESS NOTED OTHERWISE:
      1. WELD PATTERN: 36/7
      2. SIDELAP FASTENERS: (6) FASTENERS / SPAN, MAXIMUM 12" OC
6. METAL DECK ACCESSORIES, INCLUDING BUT NOT LIMITED TO: GIRDER FILLERS, Z-CLOSURES, AND COVER PLATES; THAT ARE INTEGRAL WITH THE FLOOR DIAPHRAGM OR ROOF DIAPHRAGM SHALL BE OF THE SAME MATERIAL, FINISH AND MINIMUM THICKNESS AS THE METAL DECK. ACCESSORIES SHALL BE ANCHORED TO SUPPORTING MEMBERS BY ARC SPOT WELDS OR SELF DRILLING SCREWS AT 12" MAXIMUM SPACING.

POST-INSTALLED ANCHORS:

1. GENERAL
   A. PRE-CONSTRUCTION DUTIES OF THE CONTRACTOR:
      1. ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED.
      2. PROVIDE THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
   B. INSTALL POST-INSTALLED ANCHORS ONLY WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS.
   C. OBTAIN APPROVAL FROM THE ENGINEER-OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
   D. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS OR INDICATED IN THE MANUFACTURER'S LITERATURE.
   E. EXISTING REINFORCING BARS AND OTHER EMBEDDED MATERIAL CONTAINED IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS.
      1. CONTRACTOR REVIEW THE EXISTING STRUCTURAL DRAWINGS AND UNDERTAKE TO LOCATE THE POSITION OF MATERIAL EMBEDDED IN THE CONCRETE AT THE LOCATIONS OF THE DETAILED ANCHORS, BY HILTI FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS UNLESS IT IS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT.
   F. DRILL AND CLEAN HOLES IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
   G. SUBMIT SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW TO THE ENGINEER-OF-RECORD PRIOR TO USE ALONG WITH:
      1. PROVIDE CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
      2. PROVIDE CALCULATIONS THAT DEMONSTRATE THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE.
      3. INCLUDE CONSIDERATION OF CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE IN SUBSTITUTION REQUEST.
      4. EVALUATION OF SUBSTITUTIONS WILL BE BASED ON THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS.
2. CONCRETE ANCHORS
   A. MEDIUM DUTY MECHANICAL AND SCREW ANCHORS FOR USE IN CRACKED AND UN-CRACKED CONCRETE THAT HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193. PRE-APPROVED MECHANICAL AND SCREW ANCHORS INCLUDE:
      1. HILTI KWIK BOLT-TZ EXPANSION ANCHORS (ICC ESR-1917)
      2. HILTI KWIK HUS-EZ AND KWIK HUS EZ-I SCREW ANCHORS (ICC ESR-3027)
      3. SIMPSON STRONG-TIE "TITEN-HD" SCREW ANCHORS (ICC ESR-2713)
      4. SIMPSON STRONG-TIE "STRONG-BOLT 2" EXPANSION ANCHORS (ICC ESR-3037)
      5. DEWALT / POWERS POWER-STUD + SD2 EXPANSION ANCHORS (ICC ESR 2502)
   B. HEAVY DUTY MECHANICAL ANCHORS FOR CRACKED AND UN-CRACKED CONCRETE USE:
      1. HILTI HDA UNDERCUT ANCHORS (ICC ESR 1546)
      2. HILTI HSL-3 EXPANSION ANCHORS (ICC ESR 1545)
      3. DEWALT / POWERS ATOMIC + UNDERCUT ANCHOR (ICC ESR 3067)
   C. ADHESIVE ANCHORS FOR USE IN CRACKED AND UN-CRACKED CONCRETE THAT HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC308. PRE-APPROVED ADHESIVE ANCHORS INCLUDE:
      1. HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HIT-Z ROD (ICC ESR-3187)
      2. HILTI HIT-RE 500-V3 EPOXY ADHESIVE ANCHORING SYSTEM WITH HAS-E THREADED ROD (ICC ESR-3814)
      3. DEWALT / POWERS PURE 110 + STANDARD CURE EPOXY (ICC ESR 3298)
3. MASONRY ANCHORS
   A. ANCHORAGE TO SOLID-GROUTED CONCRETE MASONRY
      1. MECHANICAL AND CONCRETE SCREW ANCHORS FOR USE IN SOLID-GROUTED CONCRETE MASONRY SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC01 OR AC106, RESPECTIVELY. PRE-APPROVED MECHANICAL AND CONCRETE SCREW ANCHORS INCLUDE:
         a. HILTI KWIK HUS-EZ SCREW ANCHOR (ICC ESR-3056)
         b. HILTI KWIK BOLT-3 EXPANSION ANCHORS (ICC ESR-1385)
         c. SIMPSON STRONG-TIE "WEDGE-ALL" (ICC ESR-1396)
         d. SIMPSON STRONG-TIE "TITEN-HD" (ICC ESR-1056)
         e. DEWALT / POWERS POWER-STUD + SD1 (ICC ESR 2966)
      2. ADHESIVE ANCHORS FOR USE IN SOLID-GROUTED CONCRETE MASONRY SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC58. PRE-APPROVED ADHESIVE ANCHORS INCLUDE:
         a. HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM (ICC ESR-3963).
         b. SIMPSON STRONG-TIE "SET-XP" (ICC ESR-1772)
         c. SIMPSON STRONG-TIE "AT" (ICC ESR-1958)
         d. DEWALT / POWERS AC100 + FAST CURE ACRYLIC (ICC ESR-4027)
   B. ANCHORAGE TO HOLLOW CONCRETE MASONRY OR UNREINFORCED CLAY BRICK MASONRY
      1. SCREW ANCHORS FOR USE IN HOLLOW CONCRETE MASONRY SHALL HAVE BEEN TESTED AND QUALIFIED IN ACCORDANCE WITH ICC-ES AC106. PRE-APPROVED SCREW ANCHORS INCLUDE:
         a. SIMPSON STRONG-TIE "TITEN-HD" (ICC ESR-1056)
      2. ADHESIVE ANCHORS WITH SCREEN TUBES THAT ARE TESTED AND QUALIFIED IN ACCORDANCE WITH ICC-ES AC58 OR AC60, AS APPROPRIATE. USE THE APPROPRIATE SCREEN TUBE AS RECOMMENDED BY THE ADHESIVE MANUFACTURER. PRE-APPROVED ADHESIVE ANCHORS WITH SCREEN TUBES INCLUDE:
         a. HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM W/ HIT-IC INSERT (ICC ESR-4143 & ESR-4144.)
         b. SIMPSON STRONG-TIE "SET" (ICC ESR-1772)
         c. SIMPSON STRONG-TIE "AT" (ICC ESR-1958)
         d. SIMPSON STRONG-TIE "ET-HP" (ICC ESR-3638)

PRE-ENGINEERED BUILDING:

1. PRE-ENGINEERED BUILDING SHALL BE FULLY ENGINEERED & FABRICATED BY THE MANUFACTURER & SHALL BEAR THE SEAL & SIGNATURE OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE CONSTRUCTION IS TO OCCUR. DESIGN & ERECTION DRAWINGS SHALL BE SUBMITTED & SHALL INCLUDE COLUMN LAYOUT/LOCATIONS, MEMBER SPACING, SIZE OF MEMBERS, CONNECTIONS & BRACING. DESIGN SHALL CONSIDER LL, DL (INCLUDING TRUE COLLATERAL DEAD LOAD FROM SUSPENDED PIPING, HVAC & OTHER EQUIPMENT LOADS SUPPORTED BY SUPER-STUCTURE & COORDINATED/CALCULATED BY PRE-ENGINEERED BUILDING DESIGNER), SNOW LOAD & SNOW DRIFT WHERE APPLICABLE (INCLUDING DRIFT ON PRE-ENGINEERED BUILDING WHERE CONSTRUCTED ADJACENT TO TALLER BUILDING/STRUCTURE). CALCULATIONS SHALL ALSO BE SUBMITTED & BEAR THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT WILL OCCUR. BUILDING DESIGNER SHALL REFERENCE THE PROJECT NOTES INCLUDED IN THIS SET OF DRAWINGS FOR BUILDING LOADS AND PROVIDE AN INDEPENDENT CODE ANALYSIS FOR CODE-PRESCRIBED LOADS FOR THE PRE-ENGINEERED BUILDING- REPORT DISCREPANCIES TO ENGINEER OF RECORD FOR REVIEW & RESOLUTION BEFORE CONTINUING WITH BUILDING DESIGN.
2. FOOTINGS HAVE BEEN DESIGNED FOR PRELIMINARY LOADS PROVIDED BY THE PRE-ENGINEERED METAL BUILDING MANUFACTURER. SHOP DRAWINGS AND REACTIONS TO BE PROVIDED FOR ENGINEER OF RECORD REVIEW PRIOR TO ISSUING OTHER SHOP DRAWINGS OR ORDERING MATERIALS.
3. CONCRETE FOOTINGS TO BE CENTERED ON PRE-ENGINEERED BUILDING STEEL COLUMNS UNLESS NOTED OTHERWISE.
4. NO FOUNDATION SHALL BE POURED UNTIL THE PRE-ENGINEERED BUILDING SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED, AND FOUNDATION LOADS HAVE BEEN REVIEWED AND VERIFIED BY THE ENGINEER OF RECORD.
5. NO PANELS ARE TO BE POURED UNTIL THE PRE-ENGINEERED BUILDING AND THE PANEL ELEVATION SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED, AND PANEL HEIGHTS HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER OF RECORD.
6. DESIGN & ERECTION DRAWINGS SHALL BE SUBMITTED & SHALL INCLUDE COLUMN LAYOUT/LOCATIONS, MEMBER SPACING, SIZE OF MEMBERS, CONNECTIONS & BRACING.
7. PEMB IS TO BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING AND FIRE CODE (2015 IBC) RELATED REGULATIONS AND ASCE/SEI 7-10

WOOD FRAMING:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE "NATIONAL DESIGN SPECIFICATION FOR WOOD PRODUCTS", LATEST EDITION, BY THE AMERICAN FOREST & PAPER ASSOCIATION, AMERICAN WOOD COUNCIL AND "PANEL DESIGN SPECIFICATIONS", LATEST EDITION, BY APA - THE ENGINEERED WOOD ASSOCIATION.
2. ALL WOOD SPECIES LISTED BELOW SHALL CONFORM TO THE DESIGN VALUES LISTED IN THE LATEST EDITION OF THE "NATIONAL DESIGN SPECIFICATION FOR WOOD PRODUCTS". MINIMUM WOOD STUD GRADES SHALL BE AS FOLLOWS:
   A. WALL STUDS SHALL BE SPRUCE PINE FIR (SPF) STUD GRADE OR BETTER, UNO.
   B. POSTS SHALL BE SOUTHERN YELLOW PINE (SYP) No. 2, UNO.
   C. HORIZONTAL MEMBERS (PLATES, RAFTERS, JOISTS, BEAMS, AND HEADERS) SHALL BE SOUTHERN YELLOW PINE (SYP) No. 2, UNO.
   D. ALL WOOD EXPOSED TO WEATHER OR IN CONTACT WITH CONCRETE/MASONRY SHALL BE PRESSURE-TREATED SOUTHERN YELLOW PINE No. 2.
   E. SPF (SOUTH) SHALL NOT BE SUBSTITUTED FOR SPF.
   F. MOISTURE CONTENT TO BE 19% MAXIMUM.
3. LAMINATED VENEER LUMBER (LVL) MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
   A. Fb = 2600 psi
   B. Fv = 285 psi
   C. E = 1900 ksi
   D. MEMBERS MAY BE MULTIPLE OR SINGLE PLY TO ACHIEVE THE THICKNESS SPECIFIED.
4. PARALLEL STRAND LUMBER (PSL) MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
   A. Fb = 2400 psi Fc = 2500 psi E = 1800 ksi - COLUMNS
   B. Fb = 2900 psi Fv = 290 psi E = 2000 ksi - BEAMS
5. LAMINATED STRAND LUMBER (LSL) MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
   A. Fb = 1700 psi Fc = 1400 psi E = 1300 ksi - COLUMNS
   B. Fb = 2325 psi Fv = 310 psi E = 1550 ksi - BEAMS
6. GLUE LAMINATED BEAMS (24F-V3) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
   A. Fb = 2,400 psi Fv =300 psi E = 1,800 ksi
7. SPLICES ARE NOT PERMITTED IN RAFTERS, BEAMS, OR POSTS EXCEPT AT SUPPORTS.
8. RAFTERS, JOISTS, AND BEAMS SHALL BE SUPPORTED LATERALLY AT THE ENDS AND AT EACH INTERIOR SUPPORT BY SOLID BLOCKING EXCEPT WHERE THE ENDS OF THE MEMBERS ARE FASTENED TO A HEADER, BAND OR RIM BOARD.
9. NOTCHES AND HOLES BORED IN STUDS OR JOISTS SHALL FOLLOW FRAMING REQUIREMENTS OF IBC 2012, REFER TO FIGURE 2308.8.2 "CUTTING, NOTCHING AND BORING JOISTS" AND FIGURE 2308.9.10 "CUTTING, NOTCHING AND BORED HOLES IN STUDS". PROVIDE METAL TIES AS REQUIRED BY CODE. DO NOT NOTCH, CUT, OR BORE HOLES THROUGH COLUMNS OR BEAMS.
10. MULTIPLE STUDS, WITH (2) OR MORE STUDS, SHALL BE NAILED TOGETHER WITH EACH STUD NAILED TO THE ADJACENT STUD WITH (2) ROWS 16d NAILS AT 12" o.c. STAGGERED AT 6" o.c.
11. NAIL MULTIPLE PLY HORIZONTAL MEMBERS (BEAMS, HEADERS, ETC) WITH (2) ROWS 16d NAILS AT 12" o.c. TOP AND BOTTOM. BOLT 3 AND 4 PLY LVL'S WITH (2) ROWS OF 1/2" DIAMETER THRU-BOLTS AT 24" o.c. (STAGGER AT 12" o.c.). SPLICES ARE NOT PERMITTED IN ANY PLY BETWEEN SUPPORTS.
12. ROOF AND FLOOR SHEATHING ARE DESIGNED AS DIAPHRAGMS. SPAN DIRECTION OF SHEETS SHALL BE PERPENDICULAR TO FRAMING AND JOINTS SHALL BE STAGGERED. MAINTAIN 1/8" GAP BETWEEN ENDS AND EDGES OF PANELS. REFER TO ADDITIONAL SECTIONS FOR FASTENING REQUIREMENTS.
13. ALL WOOD, INCLUDING WOOD SHEATHING, SUPPORTED BY EXTERIOR FOUNDATIONS WITHIN 8" OF EXPOSED EARTH SHALL BE OF NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD AS PER IBC 2304.11.2.2
14. CLEARANCE BETWEEN WOOD SIDING AND EXPOSED EARTH SHALL NOT BE LESS THAN 6" EXCEPT WHERE SIDING, SHEATHING AND WALL FRAMING ARE OF NATURALLY DURABLE OR PRESERVATIVE-TREATED WOOD AS PER IBC 2304.11.2.6.

PRE-ENGINEERED WOOD FLOOR TRUSSES:

1. SEE PLANS FOR DIRECTION OF FLOOR TRUSSES. FLOOR TRUSS LOCATIONS SHOWN ON PLANS ARE FOR GRAPHICAL PURPOSES ONLY. TRUSS MANUFACTURER MUST COORDINATE FLOOR TRUSS LOCATIONS WITH MEP DRAWINGS.
2. INSTALL ADDITIONAL TRUSS DIRECTLY UNDER ANY WALL RUNNING PARALLEL TO TRUSS SPAN.
3. TRUSSES SHALL BE DESIGNED FOR ALL APPLICABLE LOADS AND LOAD CASES INCLUDING THE FOLLOWING:
   A. TOP CHORD LIVE LOAD — SEE DESIGN LOAD SECTION AND COORDINATE LOCATION WITH ARCHITECTURAL DRAWINGS
   B. TOP CHORD DEAD LOAD — 25 PSF
   C. BOTTOM CHORD DEAD LOAD — 10 PSF
   D. TOP CHORD DEAD LOAD SHOWN ABOVE INCLUDES 3 PSF (6 PLF) FOR TRUSS SELF-WEIGHT.
   E. TRUSSES SHALL BE DESIGNED FOR ADDITIONAL WIND LOAD AND SEISMIC LOAD AS APPLICABLE (SEE DESIGN LOAD GENERAL NOTES).

PRE-ENGINEERED WOOD ROOF TRUSSES:

1. SHALL BE DESIGNED BY THE SUPPLIER'S COMPONENT ENGINEER TO CONFIGURATION AND LOAD-CARRYING CAPACITY SHOWN ON DRAWINGS. TRUSS DESIGNS SHALL COMPLY WITH ANSI/TPI 1 "NATIONAL DESIGN STANDARD FOR METAL-PLATE-CONNECTED WOOD TRUSS CONSTRUCTION", TPI HIB "COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING, & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES", AND TPI DSB "RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES".
2. TRUSSES SHALL BE SPACED AT 2'-0" o.c. TYPICAL UNLESS SHOWN OTHERWISE. SMALLER SPACING MAY BE USED IF REQUIRED BY TRUSS DESIGNER. SEE PLANS FOR SPAN DIRECTION OF TRUSSES. ALTERNATE TRUSS LAYOUTS ARE NOT ACCEPTABLE.
3. TRUSSES TO BE DESIGNED AND FABRICATED BY TRUSS MANUFACTURER. DESIGN TO CARRY SEAL OF ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. TRUSS MANUFACTURER TO PROVIDE ALL NECESSARY LOADS REQUIRED FOR THE DESIGN OF CONNECTIONS BETWEEN TRUSSES AND MAIN STRUCTURE.
4. TRUSSES SHALL BE DESIGNED FOR ALL APPLICABLE WIND, SEISMIC, AND SNOW LOADS AT THE PROJECT SITE ALONG WITH THE DEAD AND LIVE LOADS SHOWN BELOW IN ACCORDANCE WITH THE LOAD COMBINATIONS INDICATED IN THE 2012 IBC.
5. ANY LOADS SUSPENDED FROM TRUSSES MUST BE APPLIED TO EACH TRUSS UNIFORMLY. SPACING OF HANGERS NOT TO EXCEED 2'-0" oc, IN ANY DIRECTION.
6. CHORD MEMBERS SHALL BE SOUTHERN YELLOW PINE No. 2 OR BETTER.
7. CONFIGURATION AND SIZE OF WEB MEMBERS TO BE DETERMINED BY TRUSS MANUFACTURER. SIZES AND ORIENTATION SHOWN ON CONTRACT DOCUMENTS ARE FOR SCHEMATIC PURPOSES ONLY.
8. PRE-ENGINEERED WOOD TRUSSES SHALL BE BRACED IN ACCORDANCE WITH TRUSS PLATE INSTITUTE'S HANDLING, INSTALLING AND BRACING METAL PLATE CONNECTED WOOD TRUSSES. TRUSS SUPPLIER SHALL CLEARLY INDICATE BRACING LOCATIONS ON SHOP AND ERECTION DRAWINGS.
9. TRUSS BRIDGING SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
10. PERMANENT BRACING AS REQUIRED FOR STABILITY OF THE TRUSS SYSTEM UNDER ALL GRAVITY AND LATERAL LOADS SHALL BE INDICATED AND FULLY DETAILED ON THE SHOP DRAWINGS.
11. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING FOR THE TRUSSES DURING ERECTION.
12. SHOP DRAWINGS OF TRUSSES MUST BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION AND MUST INCLUDE THE FOLLOWING INFORMATION:
    A. SLOPE OR DEPTH, SPAN AND SPACING
    B. LOCATION OF JOINTS
    C. REQUIRED BEARING WIDTHS
    D. DESIGN LOADS AS APPLICABLE
    E. TOP CHORD LIVE LOAD
    F. TOP CHORD DEAD LOAD
    G. CONCENTRATED LOADS AND THEIR POINTS OF APPLICATION AS APPLICABLE
    H. CONTROLLING WIND AND EARTHQUAKE LOADS AS APPLICABLE
    I. ADJUSTMENTS TO LUMBER AND METAL CONNECTOR PLATE DESIGN VALUE FOR CONDITIONS OF USE
    J. EACH REACTION FORCE AND DIRECTION
    K. METAL CONNECTOR PLATE TYPE, SIZE, THICKNESS OR GAGE, AND THE DIMENSIONED LOCATION OF EACH METAL CONNECTOR PLATE EXCEPT WHERE SYMMETRICALLY LOCATED RELATIVE TO THE JOINT INTERFACE.
    L. LUMBER SIZE, SPECIES AND GRADE FOR EACH MEMBER
    M. CONNECTION REQUIREMENTS FOR:
    N. TRUSS TO TRUSS
    O. TRUSS PLY TO PLY
    P. FIELD SPLICES
    Q. CALCULATED DEFLECTION RATIO AND MAXIMUM VERTICAL AND HORIZONTAL DEFLECTION FOR LIVE AND TOTAL LOAD AS APPLICABLE
    R. MAXIMUM AXIAL TENSILE AND COMPRESSION FORCES IN THE TRUSS MEMBER
    S. REQUIRED PERMANENT INDIVIDUAL TRUSS MEMBER BRACING
    T. EACH INDIVIDUAL TRUSS DESIGN DRAWING SHALL BEAR THE SEAL AND SIGNATURE OF THE TRUSS DESIGNER.
13. TRUSS PLANS, SIGNED AND SEALED BY TRUSS DESIGNER, SHALL BE AVAILABLE ON JOB SITE DURING THE TIMES OF INSPECTION. THESE DRAWINGS SHALL BEAR CLEAR INDICATION THAT THEY HAVE BEEN REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
14. TRUSS MANUFACTURER SHALL PROVIDE SIGNED AND STAMPED REPAIR DETAILS FOR ANY TRUSSES DAMAGED DURING CONSTRUCTION.
15. MAXIMUM TOTAL LOAD DEFLECTION SHALL BE SPAN/240 AND MAXIMUM LIVE LOAD ONLY DEFLECTION SHALL BE SPAN/360.

WOOD FLOOR DECKING:

1. FLOOR DECKING SHALL BE GLUED AND NAILED TO FLOOR FRAMING. FLOOR DECKING SHALL BE 3/4" APA RATED PLYWOOD OR OSB WOOD STRUCTURAL PANELS. NAIL DECKING FOR FLOOR FRAMING WITH 8d NAILS AT 6" o.c. AT PANEL EDGES AND 12" o.c. AT INTERIOR SUPPORTS.
2. ALL FLOOR JOISTS SHALL BE THE DEPTH AND SPACING INDICATED ON THE PLANS. I-JOISTS DESIGNATED ON THE PLANS ARE AS MANUFACTURED BY TRUS-JOIST MACMILLAN. I-JOISTS FROM OTHER MANUFACTURER'S MAY BE USED, PROVIDED PRODUCT DATA IS SUBMITTED DEMONSTRATING THAT THE ALTERNATE MANUFACTURER'S JOISTS HAVE STRUCTURAL PROPERITES EQUAL OR GREATER THAN THOSE SPECIFIED.
3. INSTALL DOUBLE I-JOISTS UNDER WALLS ORIENTED PARALLEL TO THE I-JOISTS, U.N.O.

WOOD ROOF DECKING:

1. PITCHED ROOF DECK SHALL BE 1/2" APA RATED (24/16 MIN. SPAN RATING) PLYWOOD OR OSB SHEATHING, EXTERIOR GRADE. FASTEN SHEATHING WITH 10d NAILS AT 6" o.c. AT ALL PANEL EDGES AND AT 12" o.c. TO INTERMEDIATE FRAMING MEMBERS, U.N.O.
2. FLAT ROOF DECK SHALL BE 3/4" APA RATED (48/24 MIN.) PLYWOOD SHEATHING, EXTERIOR GRADE. FASTEN SHEATHING WITH 10d NAILS AT 6" o.c. AT ALL PANEL EDGES AND AT 12" o.c. TO INTERMEDIATE FRAMING MEMBERS, U.N.O. FLAT ROOF DECK TO BE PLYWOOD ONLY.
3. ROOF SHEATHING SHALL RUN CONTINUOUS BELOW ALL DORMERS, CUPOLAS, CHIMNEYS, AND VALLEY TRUSSES UNLESS NOTED OTHERWISE. ANCHOR VALLEY TRUSSES TO SUPPORTING TRUSSES BELOW WITH SIMPSON VTCR AT 24" O.C., MAXIMUM.
4. PROVIDE ONE ROW OF BRIDGING BETWEEN ROOF JOISTS AT 8'-0" o.c., MAX.

WOOD WALLS:

1. LOAD BEARING WALLS TO BE 2x6 AT 16" oc, UNO.
2. AT EXTERIOR LOAD BEARING WALLS, CONTINUOUS STUDS EACH SIDE OF HEADER (KING STUDS) SHALL BE EQUAL TO 1/2 OF THE INTERRUPTED STUD PLUS ONE STUD AT EACH SIDE. USE A MINIMUM (2) KING STUDS AND (2) JACK STUDS EACH SIDE OF HEADER OPENING, UNO.
3. AT INTERIOR LOAD BEARING WALLS PROVIDE (1) FULL HEIGHT KING STUD AND (2) JACK STUDS EACH SIDE OF HEADER OPENING, UNO.
4. HEADERS FOR 2x6 WOOD FRAMED WALLS TO BE (3) 2x10, UNO. HEADERS FOR 2x4 WOOD FRAMED WALLS TO BE (2) 2x10, UNO.
5. STUD WALLS SHALL BE BRACED UNTIL ALL DECKING, SHEAR PANELS AND ROOF TRUSSES ARE IN PLACE. PROVIDE 2x BLOCKING AT MID HEIGHT OF ALL BEARING WALLS OR 4'-6" MININMUM.
6. WOOD BEAMS AND MULTI-PLY TRUSSES SHALL BEAR ON MULTIPLE STUDS AND HAVE THE SAME NUMBER OF STUDS AS NUMBER OF BEAM/TRUSS PLIES (2 MINIMUM), UNLESS A GREATER NUMBER IS NOTED ON THE DRAWINGS.
7. JAMB, BEAM, MULTI-PLY TRUSS SUPPORT STUDS/POSTS SHALL BE CONTINUOUS DOWN TO FOUNDATION OR TRANSFER BEAM/HEADER BELOW. PROVIDE VERTICAL 2X STUDS OR SOLID BLOCKING THROUGH JOIST/TRUSS CAVITY TO MATCH STUD GROUP ABOVE. AT BEAMS, ADD SUFFICIENT BLOCKS TO EACH END OF BEAM TO MATCH STUD GROUP ABOVE.
8. WALL STUDS SHALL BE CONTINUOUS BETWEEN FLOORS, CEILING, AND ROOF. WHERE EXTERIOR WALLS SPAN TWO STORIES WITHOUT INTERMEDIATE SUPPORT FROM A FLOOR, STUDS SHALL BE FULL LENGTH FOR THE TWO STORIES. STUDS SHALL NOT BE SPLICED AT THE "PLATE HEIGHT" WHEN NO ROOF, CEILING, OR FLOOR PROVIDES LATERAL SUPPORT AT THAT HEIGHT.
9. EXTERIOR WALLS SHALL BE COMPLETELY SHEATHED WITH 1/2" APA RATED, EXTERIOR GRADE, OSB OR PLYWOOD SHEATHING, U.N.O. FASTEN ALL EDGES WITH 10d NAILS AT 6" o.c. AND AT 12" o.c. AT ALL INTERMEDIATE STUDS. STAGGER VERTICAL PANEL JOINTS HORIZONTALLY. BLOCK ALL EDGES AT SHEARWALL LOCATIONS AND WITHIN 8'-0" OF WALL CORNERS.
10. EXTERIOR SHEATHING SHALL BE MADE CONTINUOUS FROM FOUNDATION TO ROOF AND HORIZONTALLY CONTINUOUS FROM BUILDING CORNER TO BUILDING CORNER AND AROUND OPENINGS BY NAILING TO STUDS, BLOCKING, ETC. IN WALL TO CONTINUE THROUGH INTERSECTING WALLS AND FLOORS.
11. INTERIOR SHEATHING AT SHEAR WALLS SHALL BE MADE CONTINUOUS FROM FOUNDATION TO TOP OF SHEAR WALL AND HORIZONTALLY CONTINUOUS FROM END OF SHEAR WALL TO END OF SHEAR WALL BY FASTENING TO STUDS, BLOCKING, ETC. IN WALL TO CONTINUE THROUGH INTERSECTING WALLS AND FLOORS.
12. REFER TO PLANS FOR SHEARWALL LOCATIONS, DETAILS, AND ANCHORAGE REQUIREMENTS.
13. WALL DOUBLE TOPPED PLATES SHALL BE LAPPED AT CORNERS AND INTERSECTIONS AND FASTED PER IBC 2012 "FASTENING SCHEDULE". ALL DOUBLE PLATE END JOINTS SHALL BE OFFSET AT LEAST 24".
14. SILL PLATES FOR EXTERIOR WALLS, LOAD BEARING INTERIOR WALLS, AND SHEAR WALLS SHALL BE ATTACHED TO SLAB PER DRAWING DETAILS AND SCHEDULES. WHERE SILL PLATE IS ATTACHED WITH ANCHOR BOLTS, PROVIDE SIMPSON 3"x3"x1/4" BEARING PLATE SLOTTED WASHERS. THERE SHALL BE A MINIMUM OF 2 BOLTS OR ANCHOR STRAPS PER SILL PIECE WITH ONE BOLT OR ANCHOR STRAP LOCATED NOT MORE THAN 12" OR LESS THAN 4" FROM EACH END OF EACH SILL PIECE.
15. SILL PLATES FOR WALLS WHICH ARE NOT SHEAR WALLS OR EXTERIOR WALLS SHALL BE ATTACHED TO SLAB WITH 0.145"Ø POWDER ACTUATED FASTENERS (PAF) WITH 11/4" MINIMUM EMBEDMENT (HILTI X-DNI 72P8S36 OR EQUIVALENT). AT LEAST ONE PIN FASTENER SHALL BE LOCATED AT A MAXIMUM 6" FROM THE END OF THE PLATE AND ANOTHER AT 10" FROM THE PLATE END. MAXIMUM SPACING OF PAF. SHALL BE 12"oc.

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STAMPS

9/30/20

MIDSOUTH CARPENTER'S TRAINING TRUST

LA VERGNE, TN

PROJECT NUMBER 18101

ISSUE DATE

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DRAWING DATA

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CHECKED BY:

SHEET TITLE

GENERAL NOTES

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