DESIGN CRITERIA:

D01 BUILDING CODE: INTERNATIONAL BUILDING CODE, 2012 EDITION, W/ GA AMENDMENTS

D02 GRAVITY DESIGN DATA: LL = LIVE LOAD
FLOOR LIVE LOADS:

ROOF LIVE LOAD (MINIMUM) 20 PSF

D03 WIND DESIGN DATA:
ULTIMATE DESIGN WIND SPEED (3 SEC GUST), Vult = 115 MPH
NOMINAL DESIGN WIND SPEED (3 SEC GUST), Vasd = 89 MPH
RISK CATEGORY: II
WIND EXPOSURE: C
INTERNAL PRESSURE COEFF = (+/-) 0.18

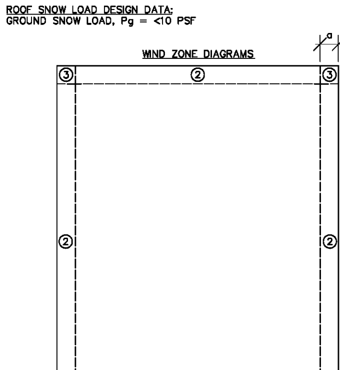
COMPONENTS & CLADDING WIND DESIGN DATA:
a=8'
ROOF ZONES:
ZONE1: (+)16.0 PSF, (-)30.5 PSF
ZONE2: (+)16.0 PSF, (-)36.1 PSF
ZONE3: (+)16.0 PSF, (-)36.1 PSF

WALL ZONES:
ZONE4: (+)28.3 PSF, (-)31.1 PSF
ZONE5: (+)28.3 PSF, (-)34.6 PSF
*VALUES DENOTE NET PRESSURES ACTING PERPENDICULAR, TOWARDS (+) OR AWAY (-), FROM THE SURFACE BEING ANALYZED. EACH VALUE SHOULD BE CHECKED. PRESSURES ASSUME AN EFFECTIVE WIND AREA OF 100 S.F. INCREASE PRESSURES SHOWN FOR EFFECTIVE WIND AREAS LESS THAN 100 S.F.

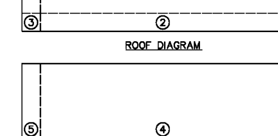
D04 EARTHQUAKE DESIGN DATA:
SEISMIC IMPORTANCE FACTOR, Ie = 1.00
MAPPED SPECTRAL RESPONSE ACCELERATIONS:
SS = 0.204
S1 = 0.094
SPECTRAL RESPONSE COEFFICIENTS:
SDS = 0.218
SD1 = 0.150
RISK CATEGORY: II
SITE CLASS: D
SEISMIC DESIGN CATEGORY: C

ROOF SNOW LOAD DESIGN DATA:
D05 GROUND SNOW LOAD, Pg = <10 PSF

WIND ZONE DIAGRAMS



ROOF DIAGRAM



WALL DIAGRAM

GENERAL:

G01 METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION. COMPLY WITH ALL FEDERAL (OSHA), STATE AND LOCAL LAWS WHICH PRESCRIBE SAFETY REQUIREMENTS FOR CONSTRUCTION PERFORMED.

G02 COORDINATE THESE DRAWINGS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DRAWINGS. IMMEDIATELY REPORT ANY DISCREPANCIES TO THE ARCHITECT.

G03 ALL COLUMNS AND WALLS RELY UPON EXTERIOR WALLS AND COMPLETED FLOOR & ROOF FRAMING AND DECKING OR SHEATHING TO PROVIDE STABILITY; THEREFORE, ALL COLUMNS AND WALLS SHALL BE TEMPORARILY BRACED UNTIL AFOREMENTIONED SYSTEM IS FULLY IN PLACE.

G04 ALL MATERIALS TESTING FOR FOUNDATIONS, CONCRETE, STEEL OR ANY OTHER MATERIAL USED SHALL BE PERFORMED BY AN INDEPENDENT TESTING AGENCY SELECTED AND PAID FOR BY THE OWNER.

G05 WHERE A DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY FOR ALL SIMILAR OR LIKE CONDITIONS.

G06 FOR MISCELLANEOUS ITEMS SUCH AS INSERTS, SLEEVES, CURBS PADS, ETC., AFFECTING STRUCTURAL WORK BUT NOT SHOWN ON THE STRUCTURAL DRAWINGS, REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL PLAN.

G07 COMPLETE SHOP DRAWINGS FOR CURTAIN WALL, GLAZING SYSTEMS, LIGHT GAGE STEEL FRAMING AND CANOPIES SHALL BE DESIGNED, SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT LOCATION IF REQUIRED BY THE GOVERNING JURISDICTION. SUCH DESIGN SHALL INCLUDE CONNECTIONS TO SUPPORTING FRAMING, INCLUDING TYPE, SIZE AND SPACING OF CONNECTORS. IF A CONNECTION METHOD IS SHOWN ALREADY SHOWN ON THE CONTRACT DOCUMENTS, THE DESIGNER SHALL CONFORM HIS DESIGN TO THAT METHOD OF ATTACHMENT. ALL SHOP DRAWINGS SHALL BE AVAILABLE AT THE JOB SITE DURING TIMES OF CONSTRUCTION AND INSPECTION.

FOUNDATION:

F01 PROJECT GEOTECHNICAL REPORT BY: PIEDMONT GEOTECHNICAL CONSULTANTS, INC. (PGC). PGC PROJECT NO. 118061, DATED FEBRUARY 15, 2018.

F02 NET ALLOWABLE SOIL BEARING PRESSURE USED FOR DESIGN: 3000 PSF AT VARIOUS DEPTHS BELOW FINISHED GRADE. THIS BEARING PRESSURE SHALL BE FIELD VERIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER DURING FOUNDATION CONSTRUCTION. FOUNDATION DESIGN HAS BEEN BASED ON INFORMATION CONTAINED IN THE ABOVE REFERENCED GEOTECHNICAL REPORT. SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THIS REPORT. IF A REPORT HAS NOT BEEN COMPLETED, THE ABOVE NET ALLOWABLE PRESSURE SHALL BE VERIFIED PRIOR TO FOUNDATION CONSTRUCTION.

F03 EXTERIOR FOOTINGS SHALL BEAR 18" MINIMUM BELOW FINAL EXTERIOR GRADES TO PROTECT AGAINST FROST HEAVE. IF BOTTOM OF FTG IS LESS THAN 18" BELOW FINAL CIVIL GRADES NOTIFY ARCH IMMEDIATELY

F04 EXCAVATIONS FOR SPREAD FOOTINGS AND CONTINUOUS FOOTINGS SHALL BE CLEANED AND HAND TAMPED TO A UNIFORM SURFACE. FOOTING EXCAVATIONS SHALL HAVE THE SIDES AND BOTTOMS TEMPORARILY LINED WITH 6 MIL POLYETHYLENE IF PLACEMNT OF CONCRETE DOES NOT OCCUR WITHIN 24 HOURS OF THE EXCAVATION FOR THE FOOTING.

F05 SUBGRADE UNDER SLABS-ON-GRADE SHALL BE PROPERLY COMPACTED TO 95% OF A STANDARD PROCTOR DENSITY. THE TOP MOST 12" OF SUBGRADE SHALL BE COMPACTED TO 98% STANDARD PROCTOR DENSITY. COMPACTION SHALL BE VERIFIED BY COMPACTION TESTS BY AN INDEPENDENT TESTING AGENCY AND RESULTS REPORTED TO THE OWNER AND THE ARCHITECT. ANY FILL SHALL BE PLACED IN 8" MAXIMUM LOOSE LIFTS, AND SHALL BE ENGINEERED FILL, FREE OF DEBRIS, MEETING THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT. FOUR INCHES OF POROUS FILL SHALL BE PLACED ON TOP OF SUBGRADE AND SHALL BE COMPACTED TO 98% OF A STANDARD PROCTOR DENSITY. POROUS FILL SHALL BE CRUSHED STONE OR COMPACTABLE SAND WHICH IS STABLE UNDER FOOT TRAFFIC, NOT CONCRETE OR MASONRY SAND. A VAPOR RETARDER SHALL BE PLACED ON THIS FILL AND THE SLAB SHALL BE PLACED ON TOP OF THE VAPOR RETARDER. LAP ALL VAPOR RETARDER JOINTS A MINIMUM OF 6 INCHES.

F06 SITE PREPARATION, FILL CONSTRUCTION, AND BACKFILL OPERATIONS SHALL BE PERFORMED UNDER A QUALITY CONTROL PROGRAM MONITORED BY A QUALIFIED GEOTECHNICAL ENGINEERING CONSULTANT IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.

REINFORCED CONCRETE:

C01 CONFORM TO ALL REQUIREMENTS OF:
BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-11) BY THE AMERICAN CONCRETE INSTITUTE (ACI).

C02 CONCRETE SHALL HAVE NATURAL SAND FINE AGGREGATE AND NORMAL WEIGHT COARSE AGGREGATES CONFORMING TO ASTM C33, TYPE I PORTLAND CEMENT CONFORMING TO ASTM C150, WATER CONFORMING TO ASTM C1602 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI. FLY ASH AND NATURAL POZZOLAN CEMENTITIOUS MATERIALS SHALL CONFORM TO ASTM C618. FOR CONCRETE EXPOSED TO FREEZING AND THAWING, OR DEICING CHEMICALS, SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI. USE NORMAL WEIGHT CONCRETE FOR ALL CONCRETE U.N.O.

C03 EXPOSURE CLASSES FOR INTERIOR CONCRETE ARE F0, S0, P0 AND C0. EXPOSURE CLASSES FOR EXTERIOR CONCRETE ARE F1, S0, P0 AND C1. FOR EXTERIOR F1 AND C1 CONCRETE EXPOSED TO FREEZING AND THAWING OR DEICING CHEMICALS, ENTRAIN AIR TO PRODUCE TOTAL AIR CONTENT OF 5% PLUS OR MINUS 1.5%. ENTRAIN AIR FOR ALL EXTERIOR SLABS AND PERIMETER FOUNDATIONS THAT COULD BE EXPOSED TO FREEZING AND THAWING. LIMIT CHLORIDE CONTENT IN EXTERIOR C1 CONCRETE TO 0.30 PER ACI 318 TABLE 4.3.1.

C04 CONCRETE WORK SHALL CONFORM TO ALL REQUIRMENTS OF ACI 301 SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS, EXCEPT AS MODIFIED HEREIN. MIX DESIGNS SHALL BE SUBMITTED FOR REVIEW ONLY WITH ACCEPTANCE BEING BASED ON TESTS. ANY OF THE METHODS OF PROPORTIONING CONTAINED IN ACI 301 ARE ACCEPTABLE. CONCRETE SHALL BE PRODUCED TO HAVE A SLUMP OF 4" OR LESS IF CONSOLIDATION IS TO BE BY VIBRATION. CONCRETE SHALL BE PRODUCED TO HAVE A SLUMP OF 5" OR LESS IF CONSOLIDATION IS TO BE BY METHODS OTHER THAN VIBRATION. A TOLERANCE OF 1" ABOVE THE MAXIMUM INDICATED SHALL BE ALLOWED FOR 1 IN 5 CONSECUTIVE BATCHES TESTED. CONCRETE SAMPLING AND TESTING SHALL BE PERFORMED ACCORDING TO THE REQUIRMENTS IN ACI 318. ADDITIONAL TEST SAMPLES ARE RECOMMENDED TO INDICATE 7 DAY STRENGTH AND 56 DAY STRENGTH IN CASE OF LOW TEST RESULTS.

C05 CONCRETE REINFORCMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60. BARS SHALL NOT BE WELDED OR HEATED UNLESS INDICATED ON THE CONTRACT DOCUMENTS. DETAILING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI 315. BAR DEVELOPMENT AND LAP SPLICE LENGTHS SHALL BE IN ACCORDANCE WITH ACI 318. PRIOR TO PLACING CONCRETE, ALL REINFORCING STEEL SHALL BE FREE OF RUST, SCALE, OR ANY FOREIGN MATERIAL.

C06 CONCRETE COVER PROTECTION FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS UNLESS NOTED ON THE SECTIONS AND DETAILS. SEE SECTION 7.7 OF ACI 318 FOR CONDITIONS NOT NOTED.

CONCRETE CAST AGAINST EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	2" FOR #6 BAR AND LARGER 1.5" FOR #5 BAR AND SMALLER
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
INTERIOR SLABS AND WALLS	0.75" FOR #11 BAR AND SMALLER
BEAMS & COLUMNS STIRRUPS	1.5" FOR PRIMARY REINF, TIES &

C07 WELDED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A1064. FABRIC SHALL BE LAPPED 2 MESH AT SPLICES. PROVIDE IN FLAT SHEETS.

C08 AT CORNER CONDITIONS, HORIZONTAL REINFORCING BARS SHALL BE LAPPED AROUND THE CORNER OR SEPARATE CORNER BARS SHALL BE PROVIDED. LAP WITH CLASS B TENSION SPLICE. BARS MARKED CONTINUOUS SHALL HAVE ACI 318, CLASS B TENSION SPLICES UNLESS NOTED OTHERWISE. ALL HORIZONTAL REINFORCEMENT SHALL BE CONTINUOUS FOR STRIP FOOTINGS, GRADE BEAMS, WALLS, & SLABS.

C09 CONCRETE SLABS-ON-GRADE SHALL BE 4" THICK REINFORCED WITH FIBERMESH 150, MIXED AT THE RATE OF 1.5 LB/C.Y. UNLESS NOTED OTHERWISE. FIBERS SHALL BE POLYPROPYLENE FIBERS AND CONCRETE SHALL CONFORM TO ASTM C 1116 - STANDARD SPECIFICATION FOR FIBER-REINFORCED CONCRETE.
AS AN ALTERNATE TO USING FIBERMESH REINFORCMENT, CONCRETE SLABS MAY BE REINFORCED WITH WWR AS FOLLOWS: 6X6-W1.4XW1.4 PROVIDED IN FLAT SHEETS.

PROVIDE 1 #4 X 4'-0" AT RE-ENTRANT CORNERS AND AT EACH CORNER OF RECTANGULAR HOLES IN SLABS. PLACE BAR DIAGONAL TO CORNER WITH 1" CLEARANCE. SLABS-ON-GRADE SHALL HAVE CONSTRUCTION JOINTS OR CRACK CONTROL JOINTS AT A MAXIMUM OF 15' IN EACH DIRECTION. JOINTS SHALL BE SAW CUT AS SOON AS POSSIBLE WITHOUT RAVELLING THE CONCRETE. AT CONSTRUCTION JOINTS OF SLABS PROVIDE #3 X 3'-0" DOWELS AT 18" ON CENTER. PROVIDE A VAPOR RETARDER UNDER SLABS THAT ARE LIKELY TO RECEIVE AN IMPERMEABLE FLOOR FINISH. VAPOR RETARDER MATERIAL SHALL BE PLACED ON TOP OF POROUS FILL (CRUSHED STONE OR SAND) LAYER ON TOP OF COMPACTED SUBGRADE. CONCRETE SLAB SHALL BE PLACED ON TOP OF VAPOR RETARDER. WATER TO CEMENT RATIO OF SLABS-ON-GRADE SHALL BE LESS THAN 0.50, PREFERABLY BETWEEN 0.45 AND 0.50.

C10 GROUT SPECIFIED FOR USE UNDER COLUMN BASE PLATES OR BEAM BEARING PLATES SHALL BE NON-SHRINK, NON-METALLIC, HIGH PERFORMANCE CEMENTIOUS GROUT CONTAINING NO CHLORIDE. GROUT SHALL CONFORM TO U.S. ARMY CORPS OF ENGINEERS SPECIFICATION CRD C-621 AND ASTM C-1107 (GRADE C). MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 5000 PSI.

C11 HOT WEATHER CONCRETING: PROVIDE ADEQUATE METHODS OF LOWERING TEMPERATURE OF CONCRETE INGREDIENTS SO THAT THE TEMPERATURE OF CONCRETE DOES NOT EXCEED 90 DEGREES F WHEN PLACED. FOLLOW RECOMMENDATIONS OF ACI 305 "HOT WEATHER CONCRETING".

C12 COLD WEATHER CONCRETING: PROTECT FRESH CONCRETE FROM FREEZING AND MAINTAIN TEMPERATURES ABOVE DESIGNATED MINIMUMS TO ALLOW PROPER CURING OF THE CONCRETE. COLD WEATHER IS DEFINED AS A PERIOD WHEN THE EXPECTED DAILY MEAN TEMPERATURE (DEGREES FAHRENHEIT) IS BELOW 40 DEGREES FOR MORE THAN 3 SUCCESSIVE DAYS. FOLLOW RECOMMENDATIONS OF ACI 306 "COLD WEATHER CONCRETING" TO ENSURE DURABLE CONCRETE.

C13 ALL FORMWORK, EMBEDMENTS AND CONSTRUCTION JOINTS SHALL CONFORM TO ACI 318 AND TO ACI 347 GUIDE TO FORMWORK FOR CONCRETE.

C14 RESULTS FOR ALL CONCRETE COMPRESSIVE STRENGTH TESTS SHALL BE AVAILABLE ON THE JOB SITE FOR REVIEW BY THE INSPECTOR.

C15 ANY METAL EMBEDDED IN CONCRETE FOR DRAINAGE STRUCTURES SHALL BE GALVANIZED.

MASONRY: BRICK MASONRY SUPPORT

M20 BRICK MASONRY ATTACHED TO WOOD STUDS: ATTACH TIES TO WOOD STUDS WITH CORROSION RESISTANT GALVANIZED 8d COMMON NAILS OR EQUIVALENT. ATTACH ALL TIES DIRECTLY TO THE STEEL STUDS THROUGH THE SHEATHING AND NOT TO THE SHEATHING ALONE.

M21 ALL ANCHORS SHALL EXTEND INTO THE BRICK VENEER 1.5" MIN WITH 5/8" MIN MORTAR COVER TO THE OUTSIDE FACE.

M22 EACH TIE / ANCHOR SHOULD SUPPORT NO MORE THAN 2.67 S.F. OF WALL AREA WITH A MAXIMUM SPACING OF 18" IN THE VERTICAL DIRECTION AND 24" IN THE HORIZONTAL DIRECTION. FOR 16" STUD SPACING, 18" WOULD BE THE MAXIMUM VERTICAL SPACING. ADDITIONAL TIES SHALL BE INSTALLED AT 2' AT JAMBS AND NEAR EDGES.

M23 CORRUGATED SHEET METAL ANCHORS SHALL BE 7/8" WIDE MINIMUM WITH A 0.03" MIN BASE METAL THICKNESS. SHEET-METAL ANCHORS SHALL BE 7/8" WIDE MINIMUM WITH A 0.06" MIN BASE METAL THICKNESS. WIRE ANCHORS SHALL BE W1.7 MINIMUM WITH 2" HOOK EXTENSIONS.

M24 JOINT REINFORCEMENT MAY BE CONTINUOUS LADDER-TYPE OR TAB-TYPE WITH LONGITUDINAL WIRES AND CROSS WIRES BEING MINIMUM WIRE SIZE W1.7 SPACED AT 16" MAXIMUM VERTICALLY.

M25 PROVIDE STEEL TIES FROM/TO STEEL COLUMNS TO MASONRY AT ALL STEEL COLUMNS THAT INTERFACE WITH MASONRY. PROVIDE FOR VERTICAL ADJUSTMENT.

M26 STEEL LINTELS SHALL BE PROVIDED AT OPENINGS IN THE BRICK WORK WITH THE FOLLOWING SIZES ALLOWED ONLY IF THEY MEET THE GIVEN CRITERIA. THE SIZES GIVEN ARE FOR BRICK VENEER ONLY SUPPORTING THE WEIGHT OF THE BRICK ABOVE. THE HEIGHT OF BRICK ABOVE THE OPENING MUST BE CONTINUOUS WITH A MINIMUM HEIGHT OF 1/2 TIMES THE CLEAR SPAN. LINTELS SHALL BE GALVANIZED OR PRIMED AND PAINTED WITH AN ONGOING PAINT MAINTENANCE PROGRAM BY THE OWNER.
L 3 1/2 X 3 1/2 X 1/4 UP TO 6'-4" CLEAR WITH 4" MIN BEARING AT EACH END
L 5 X 3 1/2 X 1/4 LLV UP TO 8'-0" CLEAR WITH 4" MIN BEARING AT EACH END

STRUCTURAL STEEL:

S01 CONFORM TO ALL REQUIREMENTS OF:

SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC. (ANSI/AISC 360-10).

SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS (ANSI/AISC 341-10) (THESE PROVISIONS ARE APPLICABLE WHEN THE SEISMIC RESPONSE MODIFICATION COEFFICIENT, R, IS GREATER THAN 3, REGARDLESS OF THE SEISMIC DESIGN CATEGORY.)

SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS (2009) BY RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC).

CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC. (AISC 303-10)

WELDING: AWS D1.1-2010 STRUCTURAL WELDING CODE - STEEL BY AMERICAN WELDING SOCIETY (AWS) (EXCEPT ALTERNATE PROVISIONS SPECIFIED BY AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (SECTION J2) IN LIEU OF AWS PROVISIONS)

COLD-FORMED STEEL: NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, WITH SUPPLEMENT 1 DATED 2010, BY THE AMERICAN IRON AND STEEL INSTITUTE (AISI S100-07/SI-10)

S02 STRUCTURAL STEEL ROLLED W SHAPES SHALL CONFORM TO ASTM A 992 GRADE 50. ALL OTHER STRUCTURAL STEEL ROLLED SHAPES AND PLATES SHALL CONFORM TO ASTM A 36 AS A MINIMUM.

S03 ALL HOLLOW STRUCTURAL SECTIONS (HSS-RECTANGULAR, SQUARE OR ROUND) SHALL CONFORM TO ASTM A 500, GRADE B, OR TO ASTM A1085 GRADE 50.

S04 STRUCTURAL STEEL PIPE SHALL CONFORM TO ASTM A 53, TYPE E OR S. GRADE B.

S05 ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 36, UNLESS NOTED OTHERWISE.

S06 CONNECTION BOLTS, NUTS AND WASHERS FOR STRUCTURAL MEMBERS SHALL CONFORM TO THE FOLLOWING UNLESS NOTED OTHERWISE:
ALL BOLTS - ASTM A325 (TYPICAL U.N.O.)
NUTS - ASTM A563, WASHERS - ASTM F436
ANY BOLTS SPECIFIED AS A307 SHALL CONFORM TO ASTM A 307.
BOLTS SHALL BE INSTALLED TO A SNUG-TIGHT CONDITION FOR ORDINARY BEAM BEARING CONDITIONS. FOR FRAMES WITH FULLY RESTRAINED (FR) CONNECTIONS AND FOR BRACED FRAMES, THE JOINTS SHALL BE PRETENSIONED JOINTS USING TWIST-OFF-TYPE TENSION-CONTROL BOLT PRETENSIONING.

S07 STRUCTURAL STEEL DETAILING SHALL CONFORM TO THE AISC SPECIFICATION, AISC STEEL CONSTRUCTION MANUAL, AISC CODE OF STANDARD PRACTICE AND AS APPLICABLE, THE SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS. THE STEEL FABRICATOR SHALL SELECT AND COMPLETE THE CONNECTIONS DETAILS AS ALLOWED IN THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES. UNLESS NOTED OTHERWISE DESIGN CONNECTION DETAILS USING LRFD. CONNECTION DESIGNER WILL ACT AS A SPECIALTY ENGINEER.

S08 END SHEAR CONNECTIONS FOR ALL STRUCTURAL BEAMS SHALL BE DESIGNED WITH ¾" DIAMETER A 325 BOLTS. UNLESS NOTED OTHERWISE, END CONNECTIONS FOR NON-COMPOSITE BEAMS SHALL BE DESIGNED TO RESIST 50% OF THE MAXIMUM TOTAL UNIFORM LOADS GIVEN IN THE TABLES IN PART 3 OF 14TH EDITION (OR LATER) OF THE AISC STEEL CONSTRUCTION MANUAL. IF A HIGHER VALUE IS GIVEN ON THE DRAWINGS, END CONNECTION SHALL BE DESIGNED FOR THAT HIGHER LOAD. COMPOSITE BEAMS SHALL BE DESIGNED FOR THE LOADS SHOWN ON THE DRAWINGS.

S09 WELDING SHALL CONFORM TO THE STANDARDS OF THE AMERICAN WELDING SOCIETY. ALL WELDING SHALL BE PERFORMED BY AWS QUALIFIED, CERTIFIED WELDERS. IF A FILLET WELD IS SHOWN OR IMPLIED, THE MINIMUM SIZE SHALL BE 3/16" UNLESS NOTED OTHERWISE. ELECTRODES FOR SHOP AND FIELD WELDS SHALL CONFORM TO AWS D1.1 FOR MATCHING FILLER METAL REQUIREMENTS, WITH E70XX AS MINIMUM. ALL WELD FILLER METAL SHALL BE CAPABLE OF PRODUCING WELDS THAT HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB AT 0° F.

S10 SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED ON THE CONTRACT DOCUMENTS IS PROHIBITED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION, TYPE OF SPLICE AND CONNECTION TO BE MADE.

S11 ANY FULLY RESTRAINED (FR) MOMENT CONNECTION, NOTED ON THE DRAWINGS SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH PART 12 OF THE AISC STEEL CONSTRUCTION MANUAL (14TH EDITION OR LATER).

S12 WHERE MEMBERS ARE SHOWN FRAMING INTO EACH OTHER BUT NO CONNECTION IS SPECIFIED, THE CONNECTION SHALL BE ACCOMPLISHED WITH A 3/16" FILLET WELD ALL AROUND. (IE: WHERE ANGLE BRACING IS SHOWN BUT NO END CONNECTION SPECIFIED)

S13 IF A DEFORMED REINFORCEMENT BAR IS TO BE WELDED TO A STRUCTURAL STEEL MEMBER OR PLATE, THE BAR MATERIAL SHALL CONFORM TO ASTM A706 (WELDABLE REBAR).

S14 DEFORMED BAR ANCHORS (DBA) SHALL CONFORM TO ASTM A 496 AND SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE WELDING EQUIPMENT IN THE SHOP OR IN THE FIELD.

S15 HEADED CONCRETE ANCHORS (HCA) SHALL CONFORM TO ASTM A 108 AND SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE WELDING EQUIPMENT IN THE SHOP OR IN THE FIELD.

S16 STEEL SHALL BE CLEANED OF RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS WHERE REQUIRED FOR PROPER FABRICATION, FITTING UP OR WELDING.

S17 ALL STEEL THAT IS DIRECTLY EXPOSED TO THE WETTING EFFECTS OF WEATHER AND ALL STEEL THAT IS TO BE PERMANENTLY EXPOSED TO VIEW SHALL BE SHOP PAINTED WITH A STANDARD RUST INHIBITING PRIMER THAT IS COMPATIBLE WITH THE FINAL COAT OF PAINT. SURFACE PREPARATION AND PAINTING SHALL BE IN ACCORDANCE WITH THE PROVISIONS IN AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AND AS SPECIFIED IN THE SOCIETY FOR PROTECTIVE COATINGS (SSPC) MANUALS. STEEL AREAS TO BE WELDED OR TO BE CONTACT SURFACES OF FRICTION TYPE CONNECTIONS SHALL NOT BE PAINTED UNTIL AFTER CONNECTIONS HAVE BEEN MADE. TOUCH UP ALL AREAS DAMAGED PRIOR TO FINAL PLACEMENT. OWNER SHALL MAINTAIN A PAINTING MAINTENANCE PROGRAM TO PROTECT THE STEEL FROM CORROSION. ALL STEEL THAT IS TO BE FIRE PROTECTED WITH SPRAY-APPLIED MATERIAL SHOULD NOT BE PAINTED.

S18 SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED PRIOR TO COMMENCEMENT OF FABRICATION.

S19 STRUCTURAL STEEL CONNECTIONS NOT DETAILED ON THE CONTRACT DOCUMENTS SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE AISC CONSTRUCTION MANUAL AND AISC DETAILING FOR STEEL CONSTRUCTION.

S20 SHOP AND FIELD TESTING OF WELDED AND BOLTED CONNECTIONS SHALL BE DONE BY AN INDEPENDENT TESTING AGENCY ACCORDING TO THE SCHEDULE OF SPECIAL INSPECTIONS. THE FOLLOWING SHALL BE MINIMUM TESTING CRITERIA AS APPLICABLE:
A. ALL WELDS SHALL BE VISUALLY INSPECTED.
B. FILLET WELDS FOR BEAM AND GIRDER SHEAR CONNECTION PLATES OR ANGLES (10% AT RANDOM) SHALL BE CHECKED BY MAGNETIC PARTICLE METHOD FOR FINAL PASS ONLY.
C. ULTRASONICALLY TEST 100% OF ALL FULL PENETRATION WELDS.
D. CHECK 25% OF BOLTS IN EACH SHEAR CONNECTION (2 MINIMUM).
E. CHECK 25% OF COLUMN SPLICE FILLET WELDS BY MAGNETIC PARTICLE ON LAST LAYERS.
F. ALL BOLTED CONNECTIONS SHALL BE TESTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
G. THE STRUCTURAL STEEL FABRICATOR AND ERECTOR SHALL SCHEDULE ALL WORK TO ALLOW THE ABOVE TESTING REQUIREMENTS TO BE COMPLETED.

S21 ALL STEEL COLUMNS AND BASE PLATES AT THE APPARATUS BAY SHALL BE HOT DIPPED GALVANIZED.

POST-INSTALLED ANCHORS

PI01 A POST-INSTALLED ANCHOR IS AN ANCHOR INSTALLED IN HARDENED CONCRETE OR CONCRETE MASONRY. SIMPSON OR EQUIVALENT HILTI PRODUCTS MAY BE USED

PI02 POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER-OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REBAR. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW, SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD ALONG WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE. CONTACT SIMPSON STRONG-TIE AT (800) 999-5099 FOR PRODUCT RELATED QUESTIONS AND AVAILABILITY.

a. CONCRETE ANCHORS

i. MECHANICAL ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193. PRE-APPROVED MECHANICAL ANCHORS INCLUDE:
(1) SIMPSON STRONG-TIE "STRONG-BOLT" (ICC-ES ESR-1771)
(2) SIMPSON STRONG-TIE "TITEN-HD" (ICC-ES ESR-2713)

ii. ADHESIVE ANCHORS FOR USE IN CRACKED AND UNCRACKED CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC308. PRE-APPROVED ADHESIVE ANCHORS INCLUDE:
(1) SIMPSON STRONG-TIE "SET-XP" (ICC-ES ESR-2508)

TIMBER:

T01 ALL TIMBER CONSTRUCTION SHALL CONFORM TO:
NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION WITH COMMENTARY AND SUPPLEMENT: DESIGN VALUES FOR WOOD CONSTRUCTION, 2012 EDITION WITH 2015 SUPPLEMENT, BY AMERICAN FOREST AND PAPER ASSOCIATION, INC. THIS APPLIES TO SAWN TIMBER, GLUED LAMINATED TIMBER, PREFABRICATED I-JOISTS, STRUCTURAL COMPOSITE LUMBER, OPEN WEB TRUSSES, AND WOOD PANELS (SHEATHING).

T02 TIMBER SPECIFIED SHALL HAVE ONE THE FOLLOWING MINIMUM PROPERTIES:
SPECIES: SOUTHERN PINE (SP) OR SPRUCE-PINE-FIR (SPF) AS SPECIFIED BELOW.
GRADES: NO. 2 (#2) OR STUD AS SPECIFIED BELOW.
(MAY USE STUD GRADE FOR NON-LOAD BEARING WALLS)

T03 ALL SAWN TIMBER SHALL BE SURFACED DRY (S-DRY), OR KILN DRIED (KD) USED AT 19% MAXIMUM MOISTURE CONTENT.

T04 ALL HORIZONTAL FRAMING (JOISTS AND BEAMS) SHALL BE SOUTHERN PINE (SP), NO. 2 GRADE OR COMPOSITE LUMBER AS SPECIFIED IN THE PLANS AND SCHEDULES. ALL LOAD BEARING VERTICAL FRAMING AND ALL EXTERIOR WALLS (WALL STUDS AND COLUMNS) SHALL BE SPRUCE-PINE-FIR (SPF), NO. 2 GRADE. INTERIOR NON-LOAD BEARING WALL STUDS SHALL BE SPF, STUD GRADE.

T05 ALL CONNECTORS FOR WOOD CONSTRUCTION SHALL BE BY SIMPSON STRONG TIE COMPANY, INC., UNLESS NOTED OTHERWISE. THE FOLLOWING SHALL BE STANDARD PRACTICE UNLESS NOTED OTHERWISE: JOIST HANGERS, BEAM HANGERS, POST BASES, POST CAPS, STRAP TIE HOLDOWNS, STRAP TIES BETWEEN FLOORS, SEISMIC & HURRICANE TIES AT ROOF, GIRDER TIEDOWNS.

T06 WOOD STRUCTURAL PANELS SHALL CONFORM TO U.S. DEPT OF COMMERCE (DOC) STANDARDS PS 1 OR PS 2 DEPENDING ON THE TYPE OF PANEL. PANELS MAY BE OSB, PLYWOOD OR COMPOSITE PANELS.

T07 WOOD STRUCTURAL PANELS SHALL HAVE THE MINIMUM THICKNESS AND MINIMUM PERFORMANCE CATEGORY SPECIFIED IN THE DRAWINGS. MINIMUM NAILING SHALL BE 8d NAILS AT 12" ALONG INTERMEDIATE SUPPORTS AND 8d NAILS AT 6" ALONG SUPPORED PANEL EDGES. LONG DIMENSION OF PANELS SHALL BE PERPENDICULAR TO SPAN OF SUPPORTING FLOOR AND ROOF MEMBERS. LONG DIMENSION OF PANELS SHALL BE PERPENDICULAR TO STUDS FOR WALL PANELS.

T08 FLOOR PANELS SHALL BE 23/32" APA RATED STURD-I-FLOOR, 24" O.C., EXPOSURE 1, T&G. SUPPORTS SHALL BE SPACED NO MORE THAN 24" O.C. PLACE SMOOTH SIDE UP. IF PANELS ARE GLUE-NAILED, ADHESIVES SHALL CONFORM TO APA AFG-01 OR ASTM D3498. GLUE-NAILED IS RECOMMENDED FOR BEST PERFORMANCE.

T09 ROOF PANELS SHALL BE 19/32" APA RATED SHEATHING, 40/20, EXPOSURE 1. MEMBERS SUPPORTING ROOF SHEATHING SHALL ALIGN VERTICALLY. MAXIMUM DIFFERENTIAL ELEVATIONS OF ADJACENT MEMBERS SHALL NOT EXCEED 1/8". MAINTAIN 1/8" SPACE BETWEEN ALL ENDS AND EDGES. USE 1 PANEL CLIP MIDWAY BETWEEN SUPPORTS ALONG EACH EDGE. SUPPORTS SHALL BE SPACED NO MORE THAN 24" O.C.

AT CORNER OVERHANGS AND TO A DISTANCE 8'-0" INSIDE THE EXTERIOR WALLS, NAIL SHEATHING AT 3" MINIMUM TO ALL SUPPORTS INCLUDING INTERMEDIATE SUPPORTS. PROVIDE DOUBLE HURRICANE TIES FOR EACH TRUSS AND TOP PLATE IN THESE CORNER AREAS.

T10 WALL PANELS FOR EXTERIOR WALLS SHALL BE 7/16" APA RATED SHEATHING, 24/16, EXPOSURE 1. LONG DIMENSION OF PANELS SHALL BE PERPENDICULAR TO STUDS FOR WALL PANELS. SEE SHEAR WALL SCHEDULE FOR PANEL AND NAILING REQUIREMENTS HIGHER THAN MINIMUM REQUIREMENTS ABOVE.

T11 MINIMUM NAIL AND FASTENER SPACING SHALL BE IN ACCORDANCE WITH THE GOVERNING LOCAL BUILDING CODE.

T12 TYPICAL WALLS SHALL HAVE THE FOLLOWING STUDS:
EXTERIOR WALL STUDS BACKING UP EIFS: SPF #2: 2x8 AT 16" MAX
EXTERIOR WALL STUDS BACKING UP BRICK: SPF #2: 2x8 AT 12" MAX
PARAPET WALL STUDS (PARAPET HT. ≤ 26'-0"): SPF #2: 2x8 AT 24" O.C. (MAX.)
PARAPET WALL STUDS (PARAPET HT. 26'-0" < HT. ≤ 28'-0"): SPF #2: (2)-2x8 AT 16" O.C. (MAX.)

ALL LOAD-BEARING AND EXTERIOR WALL STUDS SUPPORTING ROOF TO DOUBLE TOP PLATE WITH 1 H6 AND TO BOTTOM PLATE WITH 1 H8.

T13 TOP AND BOTTOM BEARING PLATES FOR LOAD BEARING STUD WALLS SHALL BE SP #2. IF FLOOR TRUSSES ARE BEARING ON WALL AND ARE SPACED AT 24", PROVIDE SHORT POSTS (HEIGHT EQUAL TO TRUSS DEPTH) BETWEEN TOP & BOTTOM PLATES SPACED AT 12" MAX BETWEEN THE TRUSSES AND NAILED INTO THE TOP AND BOTTOM PLATES.

T14 CONTINUOUS STUDS EACH SIDE OF HEADERS SHALL BE EQUAL TO 1/2 OF THE INTERRUPTED STUDS PLUS ONE STUD AT EACH SIDE. USE MINIMUM OF TWO STUDS EACH SIDE (UNLESS NOTED OTHERWISE). PROVIDE 1 JACK POST MIN FOR CLEAR SPANS UP TO 6'-0 AND 2 JACK POSTS MIN FOR CLEAR SPANS UP TO 9'-6".

T15 ALL STRUCTURAL COMPOSITE LUMBER (SCL) MEMBERS DESIGNATED PSL OR LVL ARE PROPRIETARY PRODUCTS MANUFACTURED BY ILEVEL (BY WEYERHAEUSER) OR BY BOISE CASCADE. LVL (LAMINATED VENEER LUMBER) AND PSL (PARALLEL STRAND LUMBER) MEMBERS SHALL CONFORM TO THE FOLLOWING: 2.0E GRADE AND ASTM D5456. MEMBERS SHALL BE PROTECTED FROM DAMAGE AND MOISTURE.
LVL = 2.0E MICROLLAM LVL OR 2.0E GP-LVL
PSL = 2.0E PARALLAM PARALLEL STRAND LUMBER (PSL)

T16 PREFABRICATED WOOD I-JOISTS (PRI = PERFORMANCE RATED I-JOISTS) SHALL BE MANUFACTURED ACCORDING TO APA PRI-400, FORM X720. STRUCTURAL CAPACITIES SHALL BE ESTABLISHED ACCORDING TO ASTM D5055. ALL MEMBERS SHALL BE COMPOSITE FLOOR MEMBERS WITH GLUE-NAILED SHEATHING. ADHESIVE SHALL MEET ASTM D3498 OR APA SPEC AFG-01. MINIMUM END BEARING IS 1.75".

T17 ALL BOTTOM BEARING PLATES AND BEARING PLATES ON MASONRY OR CONCRETE SHALL BE SP #2 AND SHALL BE PRESERVATIVE TREATED AND SHALL BE ANCHORED WITH SIMPSON MUDSILL ANCHORS AT 4 FT ON CENTER AS A MINIMUM.

T18 ANY WOOD MEMBERS OR SHEATHING IN CONTACT WITH EXTERIOR MOISTURE OR WITH CONCRETE SHALL BE PRESSURE TREATED.

T19 ALL TIMBER TO BE PRESERVATIVE TREATED (P.T.) SHALL BE PRODUCED IN ACCORDANCE WITH AWPA (AMERICAN WOOD PRESERVERS' ASSOCIATION) STANDARD U1 AND M4 FOR THE SPECIES, PRODUCT, PRESERVATIVE AND END USE.

T20 ALL FASTENERS (NAILS, SCREWS, BOLTS) AND CONNECTORS (JOIST HANGERS, STRAPS, HINGES, POST ANCHORS, TRUSS PLATES, ETC) IN CONTACT WITH PRESERVATIVE TREATED WOOD OR FIRE-RETARDANT-TREATED (FRT) WOOD SHALL BE OF HOT-DIPPED GALVANIZED STEEL, STAINLESS STEEL OR OTHER TYPES APPROVED BY THE MANUFACTURER FOR PRESSURE-PRESERVATIVE TREATED WOOD APPLICATIONS. WOOD SUPPLIER SHOULD BE CONSULTED FOR RECOMMENDATIONS ON THE APPROPRIATE COATING TO BE USED WITH THEIR PRODUCT. AS A MINIMUM, ALL CONNECTORS USED IN CONNECTING SUCH TIMBER SHALL BE HOT-DIP GALVANIZED CONNECTORS MEETING ASTM A653 CLASS G185 OR BETTER. AS A MINIMUM, ALL FASTENERS SHALL BE GALVANIZED FASTENERS MEETING ASTM A153 OR BETTER.

T21 AT ALL LOAD BEARING WALLS, PROVIDE HEADER BEAMS PER HEADER SCHEDULE.

T22 TYPICAL ROOF TRUSSES SHALL BE ATTACHED TO ALL SUPPORTING PLATES W/SIMPSON H2.5T HURRICANE TIES MINIMUM. WHERE TRUSSES RUN PARALLEL TO SHEAR WALLS ATTACH TRUSS TO TOP PLATE OF WALL WITH LTP4 AT 24" MAX.
ALL ROOF TRUSS TIEDOWNS TO BE SUPPLIED BY ROOF TRUSS SUPPLIER.

T23 TRUSS GIRDERS AND JACK TRUSSES SHALL BE TIED TO STUD GROUP BELOW WITH SIMPSON TIEDOWNS OR TWIST STRAPS RATED FOR THE LOADS SHOWN ON THE ROOF SHOP DWGS. TIEDOWNS AND STRAPS SHALL BE SUPPLIED BY ROOF TRUSS SUPPLIER.

T24 NOMINAL 2" THICK NAILERS ON TOP AND/OR SIDES OF STEEL BEAMS SHALL BE SOUTHERN PINE (SP) #2. NAILERS SHALL BE ATTACHED WITH EITHER:
1) 2 ROWS OF ½" DIAM BOLTS SPACED AT 24" (48"EACH ROW STAGGERED ON OPPOSITE SIDES OF THE WEB). BOLTS MUST EXTEND THRU BOTH NAILERS AND FLANGE IF REQUIREMENT IS FOR A DOUBLE TOP PLATE.
2) 2 ROWS OF HILTI DS HEAVY DUTY PINS AT 12" EACH ROW (STAGGERED 6"). ATTACH THESE PINS USING THE HILTI DX POWDER ACUTATED FASTENING SYSTEM. ALLOWABLE TENSION CAPACITY OF EACH PIN SHALL BE 500 LB MIN. IF FASTENED SEPARATELY, TOP PLATE MUST BE FASTENED TO LOWER PLATE WITH SAME CAPACITY.

TIMBER - OPEN WEB WOOD TRUSSES

TT01 COORDINATE ALL NOTES BELOW WITH TIMBER NOTES ABOVE AND OTHER GENERAL NOTES FOR THIS PROJECT. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

TT02 OPEN WEB TIMBER TRUSSES SHALL BE DESIGNED BY THE TRUSS DESIGNER WORKING AS AN AGENT OF THE TRUSS MANUFACTURER. THE TRUSS DESIGNER SHALL BE RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE TRUSSES IN ACCORDANCE WITH DESIGN CRITERIA AND STANDARDS CITED IN THIS BODY OF GENERAL NOTES. TRUSS DESIGNER SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN PERFORMANCE OF THE TRUSS DESIGN. TRUSSES SHALL BE DESIGNED TO BEAR ON THE SUPPORTING STRUCTURE AS SHOWN IN THE DRAWINGS. TEMPORARY AND PERMANENT BRACING SHALL BE PROVIDED PER GENERAL NOTES BELOW.

TT03 TRUSSES SHALL BE DESIGNED, MANUFACTURED, HANDLED, PLACED AND BRACED IN CONFORMANCE WITH ALL OF THE FOLLOWING:

SBCA = STRUCTURAL BUILDING COMPONENTS ASSOCIATION
TPI = TRUSS PLATE INSTITUTE
1) TPI: NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION, COMMENTARY AND APPENDICES. ANSI/TPI 1-2007.
2) TPI: RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATED CONNECTED WOOD TRUSSES. DSB-89.
3) INTERNATIONAL BUILDING CODE 2012, ESPECIALLY SECTION 2303.4
4) SBCA: BUILDING COMPONENT SAFETY INFORMATION: BCSI 2008 GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES
5) SBCA: JOBSITE PACKAGE (MUST CONTAIN INFORMATION FOR FRAMERS INSERT, B1 THRU B4, & TTB)
6) 6) AMERICAN SOFTWOOD LUMBER STANDARD, VOLUNTARY PRODUCT STANDARD PS 20-10, NATIONAL INSTITUTE FOR STANDARDS AND TECHNOLOGY, U.S. DEPARTMENT OF COMMERCE, 2010

TT05 ROOF TRUSSES SHALL BE DESIGNED FOR THESE FOLLOWING MINIMUM LOADS WHICH DO NOT INCLUDE THE WEIGHT OF THE TRUSS:

TOP CHORD: 10 PSF DL, 20 PSF MIN. ROOF LL AND ALL WIND LOADS ACCORDING TO THE INTERNATIONAL BUILDING CODE. EACH TRUSS COMPONENT SHALL BE DESIGNED FOR THE VARIOUS HIGH PRESSURE ZONES OF THE ROOF: RIDGES, HIPS, OVERHANGS AND CORNERS.

ADDITIONALLY, ALL ROOFS SHALL BE DESIGNED TO RESIST A NET WIND LOAD ACTING OUTWARD FROM THE ROOF SURFACE OF -10 PSF OVER ALL THE ROOF.

BOTTOM CHORD: 10 PSF DL, 10 PSF LL (UNINHABITABLE ATTICS WITHOUT STORAGE)

LIMIT DEFLECTIONS TO L/240 FOR TOTAL LOAD AND L/360 FOR LIVE LOAD. IF TRUSS IS SUPPORTING MASONRY, LIMIT TOTAL LOAD AND LATERAL DEFLECTION TO L/600.

MECHANICAL MEZZANINE (IF APPLICABLE): BOTTOM CHORD AND ENTIRE TRUSS SHALL BE DESIGNED TO SUPPORT 10 PSF DL AND 50 PSF MINIMUM LL UNLESS A LARGER MECHANICAL UNIT LOAD IS PROVIDED.

ROOF TOP UNITS (IF APPLICABLE): ROOF TRUSSES SHALL BE DESIGNED FOR ADDITIONAL ROOF LOADS INDICATED ON THE ROOF PLAN. IF THEY ARE SUPPORTING MECHANICAL ROOF TOP UNITS (RTU), THE TRUSSES SHALL BE DESIGNED FOR THE LOADS SHOWN ON THE ROOF PLAN. IF EQUIPMENT LOADS ARE NOT SHOWN, THE TRUSS DESIGNER SHALL DESIGN FOR 1200 LBS AND HAVE THE MEP ENGINEER VERIFY THE WEIGHTS. ALL RTU LOCATIONS AND WEIGHTS SHALL BE VERIFIED BY THE MEP ENGINEER PRIOR TO TRUSS FABRICATION.

TT06 TRUSS DESIGNER SHALL BE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE LOCATION OF THE PROJECT. ALL TRUSS SUBMITTALS SHALL BE SEALED, SIGNED, AND DATED BY THE TRUSS DESIGNER. TRUSS DESIGNER SHALL ACT AS A SPECIALTY ENGINEER.

TT07 TRUSSES SHALL BE SPACED AT 24" O.C. MAXIMUM UNLESS NOTED OTHERWISE. TRUSS DESIGNER MAY SPACE TRUSSES CLOSER WHERE REQUIRED FOR STRENGTH AND SERVICEABILITY. OPEN WEB WOOD TRUSSES SHALL BE DESIGNED FOR THE DESIGN LOADS SHOWN, AND SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL. TRUSSES SHALL NOT BE FABRICATED UNTIL SHOP DRAWINGS HAVE BEEN APPROVED.

TT08 WHERE ADJACENT TRUSSES HAVE DIFFERENT SPANS, CREATING DIFFERENTIAL DEFLECTIONS (I.E., WHERE ONE TRUSS BEARS ON A WALL AND THE ADJACENT TRUSS IS UNSUPPORTED AT THAT POINT), PROVIDE STRONG BACK TIMBER FRAMING TO SPREAD LOADS EVENLY BETWEEN ADJACENT TRUSSES.

TT09 TRUSS DESIGNER SHALL PROVIDE MAXIMUM DOWNWARD AND UPLIFT LOADS FROM ALL MEMBERS AND SHALL SPECIFY APPROPRIATE SIMPSON CONNECTORS TO SUPPORT ALL SUCH LOADS. TRUSS MANUFACTURER SHALL SUPPLY ALL THE SIMPSON CONNECTORS DESIGNED BY TRUSS DESIGNER. THEY SHALL INCLUDE CONNECTORS BETWEEN TRUSSES AND BEARING PLATES, BETWEEN TRUSSES AND SUPPORTING TRUSSES AND STRAPS HOLDING DOWN TRUSS GIRDERS AND HIP TRUSSES.

TT10 ALL TRUSS SHOP DRAWINGS AND FINAL INSTALLATION DRAWINGS SHALL INCLUDE THE JOBSITE-D SAFETY INFORMATION PACKAGE (INFO FOR FRAMERS, B1 THRU B4, B11 & TTB) OF THE BUILDING COMPONENT SAFETY INFORMATION (BCSI) (2013 EDITION UPDATED MARCH 2015) - GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES (BY WTCA). ALL GUIDELINES IN THESE DOCUMENTS SHALL BE FOLLOWED, INCLUDING ALL TEMPORARY AND PERMANENT BRACING SPECIFICATIONS.

TT11 TRUSSES AT GABLES, OUTSIDE WALLS AND OTHER AREAS RECEIVING SIDING OR SHEATHING MUST HAVE VERTICAL MEMBERS AT 16 INCHES O.C. MAXIMUM. THESE MEMBERS MUST HAVE ADEQUATE STRENGTH AND STIFFNESS TO RESIST CODE REQUIRED COMPONENT WIND LOAD AGAINST THE WALL WITH DEFLECTION OF THAT VERTICAL MEMBER NOT EXCEEDING H/600 OF THAT MEMBER'S VERTICAL HEIGHT (H) IF MEMBER IS LATERALLY SUPPORTING BRICK AND NOT EXCEEDING H/360 IF MEMBER IS ONLY SUPPORTING SIDING. IF WEAK AXIS MEMBERS ARE USED, BRACING SHALL BE INSTALLED AGAINST END WALL ACCORDING TO FIGURES B3.32 THROUGH B3-35 OF THE BCSI JOBSITE SAFETY PACKAGE. THESE LINES OF HORIZONTAL BRACING SHALL BE LOCATED NO MORE THAN 4' ON CENTER VERTICALLY AND THE BRACING SHALL BE AT APPROXIMATELY 45 DEGREES. IF DOUBLE OR TRIPLE TRUSSES ARE USED TO SATISFY THESE REQUIREMENTS, THEY MUST BE CONNECTED TOGETHER TO RESIST INWARD AND OUTWARD WIND FORCES. ANY TRUSSES SUPPORTING BRICK OR CONCRETE MASONRY GRAVITY LOADS SHALL BE DESIGNED WITH A VERTICAL DEFLECTION LIMIT OF L/600.

TT12 PROVIDE CONTINUOUS 2X4 BRACING PERPENDICULAR TO TRUSSES AT EACH TOP AND BOTTOM CHORD PANEL POINT. PROVIDE DIAGONAL 2X4 BRACING PERPENDICULAR TO TRUSSES BETWEEN TOP AND BOTTOM CHORDS AT SPACING OF BOTTOM CHORD PANEL POINTS. PROVIDE DIAGONAL BRACING IN PLANE OF ROOF AT ENDS OF BUILDING WHERE TRUSSES ARE PARALLEL TO BUILDING FACE. PROVIDE BRACING AS SHOWN IN BCSI-B3 SUMMARY SHEET.

SPECIALTY ENGINEER:

SE01 THEE SPECIALTY ENGINEER SHALL BE A PROFESSIONAL STRUCTURAL ENGINEER, WHO IS REGISTERED OR LICENSED TO PRACTICE IN STATE OF THE LOCATION OF THE PROJECT. THE SPECIALTY ENGINEER SHALL PERFORM ALL THE REQUIRED STRUCTURAL ENGINEERING DESIGN FOR THE COMPONENTS ALLOCATED TO THEM. ALL CALCULATIONS AND SUBMITTALS SHALL BEAR THE SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER RESPONSIBLE FOR THEM.

SE02 THE SPECIALTY ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PROJECT COMPONENTS ALLOCATED TO THEM. THE SPECIALTY ENGINEER SHALL COMPLY WITH ALL APPLICABLE LOCAL AND NATIONAL CODES THAT GOVERN THE DESIGN OF THE COMPONENTS BEING DESIGNED BY THEM. ADDITIONALLY THEY SHALL CONFORM THEIR DESIGN TO THE REQUIREMENTS OF THE PROJECT AS DEFINED BY THE CONTRACT DOCUMENTS INCLUDING ALL GEOMETRIES AND ANY ADDITIONAL STATED LOADS THAT THEY ARE TO DESIGN FOR.

SE03 THE FOLLOWING COMPONENTS WILL BE DESIGNED BY A SPECIALTY ENGINEER AS AN AGENT FOR THE MANUFACTURER OR SUPPLIER:

ALL DRAWINGS SUBMITTALS SHALL BE SEALED & SIGNED:
ENGINEERED OPEN WEB TIMBER TRUSSES - TM (TRUSS MANUFACTURER)

ALL DRAWING SUBMITTALS SHALL BE SEALED AND SIGNED IF REQUESTED BY BUILDING OFFICIAL:
ENGINEERED POST-INSTALLED ANCHORS (P.I. ANCHORS)
ENGINEERED FASTENING SYSTEMS
ENGINEERED ANCHORING SYSTEMS

SEALED AND SIGNED CALCULATIONS FOR ALL OF THE ABOVE COMPONENTS SHALL BE SUBMITTED IF REQUESTED.

SE04 IF BRACING IS REQUIRED FOR ANY OF THE ABOVE SYSTEMS, TEMPORARY AND PERMANENT BRACING SHALL BE DESIGNED AND SPECIFIED BY A SPECIALTY ENGINEER.

SPECIAL INSPECTIONS:

SP01 SPECIAL INSPECTIONS ARE REQUIRE FOR THIS PROJECT. REFER TO SUPPLEMENTARY STATEMENT OF SPECIAL INSPECTIONS AND SCHEDULE OF SPECIAL INSPECTIONS FOR COMPLETE REQUIREMENTS.

SP02 GENERAL STRUCTURAL MATERIAL INSPECTION REQUIREMENTS:
- CONCRETE CONSTRUCTION
- WOOD CONSTRUCTION
- SOILS
- ROOF TRUSSES

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ISSUE RECORD

date	issue
5/2/18	FOR CONSTRUCTION

DRAWING REVISION

no.	date	revision

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proj# 1806

GENERAL NOTES

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