

GENERAL NOTES

1. STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE PROVISIONS OF THE 2009 INTERNATIONAL BUILDING CODE
2. THE BUILDING STRUCTURE HAS BEEN DESIGNED TO RESIST THE FOLLOWING CODE PRESCRIBED LOADS:

LIVE LOADS

ROOF	20 PSF
TYPICAL FLOOR	40 PSF
PRIVATE BALCONY	100 PSF
PUBLIC ROOMS AND CORRIDORS	100 PSF
GARAGE	40 PSF

SNOW LOADS

GROUND SNOW LOAD, P _g	5 PSF
SNOW IMPORTANCE FACTOR, I _s	1.0
SNOW EXPOSURE FACTOR, C _e	0.9
THERMAL FACTOR, C _t	1.0

WIND LOADS

BASIC WIND SPEED (THREE SECOND GUST), V _{3s}	90 MPH
WIND IMPORTANCE FACTOR, I _w	1.0
EXPOSURE CATEGORY	B

SEISMIC LOADS

SEISMIC USE GROUP	I
SEISMIC IMPORTANCE FACTOR, I _e	1.0
SPECTRAL RESPONSE COEFFICIENT, S _s	1.225 _s
SPECTRAL RESPONSE COEFFICIENT, S ₁	0.125 _g
SOIL CLASS	C
SEISMIC DESIGN CATEGORY	A

3. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION UNLESS SO STATED OR NOTED. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE WORKMEN AND OTHER PERSONS DURING CONSTRUCTION.
4. THE STRUCTURAL DRAWINGS SHALL NOT BE SCALED FOR DETERMINATION OF QUANTITY, LENGTH OR FIT OF MATERIALS.
5. PRINCIPAL OPENINGS ARE INDICATED ON THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, BLOCKOUTS, INSERTS, CURBS, OPENINGS AND SLAB DEPRESSIONS NOT SHOWN.
6. CONTRACTOR SHALL COMPARE STRUCTURAL AND ARCHITECTURAL DRAWINGS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO FABRICATING

SHORING OF ALL STRUCTURAL WORK AS REQUIRED FOR STABILIZATION OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONDITION WHICH, IN HIS OR HER OPINION, MIGHT ENDANGER THE STABILITY OF THE STRUCTURE OR CAUSE DISTRESS IN THE STRUCTURE.

9. LOADINGS FOR MECHANICAL EQUIPMENT ARE BASED ON THE UNITS(S) SHOWN ON THE STRUCTURAL DRAWINGS. ANY CHANGES IN TYPE, SIZE, WEIGHT OR NUMBER OF UNIT(S) SHALL BE REPORTED TO THE ARCHITECT PRIOR TO FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS OR MECHANICAL EQUIPMENT.

10. REPRODUCTION OF THE STRUCTURAL DRAWINGS, EITHER IN PART OR IN WHOLE, FOR SUBMITTALS OR SHOP DRAWINGS IS NOT PERMITTED. SUCH SUBMITTALS AND SHOP DRAWINGS MAY BE REJECTED.

11. CONTRACTOR SHALL SCHEDULE SITE OBSERVATION VISITS WITH THE ENGINEER OF RECORD AND/OR TESTING LABORATORY A MINIMUM OF FORTY-EIGHT HOURS PRIOR TO THE REQUIRED TIME OF THE VISIT.

12. CONTRACTOR SHALL ALLOW TEN (10) WORKING DAYS FOR THE ENGINEER TO REVIEW EACH STRUCTURAL SUBMITTAL OR SHOP DRAWING.

FOUNDATION NOTES

1. THE BUILDING FOUNDATION DESIGN IS BASED ON THE PROJECT GEOTECHNICAL REPORT PREPARED BY REED ENGINEERING GROUP, INC. (PROJECT NO. 13896) DATED DECEMBER 15, 2008 AND A SUPPLEMENTAL LETTER DATED MAY 2, 2007. REFER TO SHEET SGI.01 FOR PARKING GARAGE FOUNDATION INFORMATION.

2. THE BUILDING FOUNDATION DESIGN IS BASED ON A POTENTIAL VERTICAL MOVEMENT, P_v, ON THE ORDER OF ONE (1) INCH OR LESS. IF THIS VALUE IS NOT ACCEPTABLE TO THE OWNER OR TENANTS, THE FOUNDATION DESIGN MUST BE REVISED.

3. THE FOUNDATION SHALL CONSIST OF AUGER-EXCAVATED, STRAIGHT SHAFT REINFORCED CONCRETE PIERS. REFER TO TYPICAL PIER DETAIL FOR BEARING STRATA. PIERS HAVE BEEN PROPORTIONED FOR THE FOLLOWING:

END BEARING	80,000 PSF
SKIN FRICTION (COMPRESSION)	20,000 PSF
SKIN FRICTION (TENSION)	13,000 PSF

4. ALL GRADE BEAM SIDES SHALL BE HARD FORMED, EARTH-FORMING IS NOT ACCEPTABLE.

5. CORRUGATED PAPER FORMS, AS MANUFACTURED BY SUREVOID PRODUCTS INC. SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER TO PROVIDE A NOMINAL SIX (6) INCH VOID BENEATH ALL GRADE BEAMS. 3/8 INCH THICK BY TWELVE (12) INCH HIGH PLASTIC BACKFILL RETAINER BOARDS, AS MANUFACTURED BY SUREVOID PRODUCTS, INC., SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER CONTINUOUSLY ALONG EACH SIDE OF ALL GRADE BEAMS.

THE BUILDING SLAB ON GRADE SHALL BE PLACED ON A VAPOR BARRIER/RETARDER OVER CORRUGATED PAPER FORMS, AS MANUFACTURED BY SUREVOID PRODUCTS INC., INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER TO PROVIDE A NOMINAL EIGHT (8) INCH VOID BENEATH ALL SLABS.

6. INFORMATION ABOVE IS PRESENTED ONLY AS A SUMMARY OF THE PROJECT GEOTECHNICAL REPORT. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND COMPLYING WITH THE RECOMMENDATIONS CONTAINED IN THE PROJECT GEOTECHNICAL REPORT.

7. IT IS RECOMMENDED THAT THE BUILDING OWNER RETAIN A QUALIFIED INDEPENDENT INSPECTION SERVICE TO VERIFY BEARING STRATA, LOCATION, DIMENSIONS, SELECT FILT PLACEMENT/COMPACT AND REINFORCEMENT SIZE AND PLACEMENT.

8. BECAUSE OF THE ELAPSED TIME, THE CURRENT SOIL CONDITIONS MAY DIFFER SIGNIFICANTLY FROM THE SAMPLES THAT WERE USED IN THE DEVELOPMENT OF THE PROJECT GEOTECHNICAL REPORT REFERENCED ABOVE. THEREFORE, IT IS RECOMMENDED THAT THE BUILDING OWNER CONSULT WITH THE PROJECT GEOTECHNICAL ENGINEER TO DETERMINE IF THE FOUNDATION DESIGN PARAMETERS ARE CONSISTENT WITH THE CURRENT SOIL CONDITIONS.

STRUCTURAL CONCRETE NOTES

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 301 AND ACI 318. ALL CONCRETE SHALL BE LABORATORY DESIGNED AND CONTROLLED.

2. CONCRETE IN THE FOLLOWING AREAS SHALL HAVE SAND AND GRAVEL OR CRUSHED STONE COARSE AGGREGATES AND CORRESPONDING TWENTY-EIGHT (28) DAY COMPRESSIVE STRENGTH AS FOLLOWS:

SLAB ON VOID BOXES

PIERS	4,000 PSI
SIERS	3,500 PSI
GRADE BEAMS	3,500 PSI
SIDEWALKS AND STAIRS	3,000 PSI

* INDICATES CONCRETE SHALL INCLUDE AN AIR ENTRAINING AGENT PROVIDING FOUR (4) TO SIX (6) PERCENT AIR BY VOLUME.

3. CONCRETE ON WOOD DECK SHALL HAVE SAND AND LIGHTWEIGHT COARSE AGGREGATE AND A CORRESPONDING TWENTY-EIGHT (28) DAY COMPRESSIVE STRENGTH OF 3,000 PSI. UNLESS NOTED OTHERWISE, UNIT WEIGHT OF IN PLACE LIGHTWEIGHT CONCRETE SHALL NOT EXCEED ONE HUNDRED FIFTEEN (115) POUNDS PER CUBIC FOOT. CONCRETE SHALL BE REINFORCED WITH NYCON-RC FIBER REINFORCEMENT AS MANUFACTURED BY NYCON, INC. OR APPROVED SUBSTITUTE. DOSING AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.

4. CONCRETE PROTECTION FOR STEEL REINFORCEMENT SHALL BE AS FOLLOWS (SEE ACI 318, SECTION 7.7 FOR CONDITIONS NOT INDICATED):

ALL CONCRETE PLACED AGAINST SOIL	3" SLABS ON VOID BOXES
FORMED GRADE BEAMS	3" BOTTOM, 2" SIDES, 1 1/2" TOP

POST-TENSIONED SLAB ON VOID:

TOP	3/4"
BOTTOM (TYPICAL)	1 1/2"
BOTTOM (DISCONTINUOUS SPANS)	1 1/2"

5. LOCATE JOINTS TO LEAST IMPAIR STRENGTH AND APPEARANCE OF STRUCTURE. LOCATE HORIZONTAL JOINTS IN CONCRETE ONLY WHERE THEY NORMALLY OCCUR OR WHERE INDICATED ON PLAN. LOCATE VERTICAL JOINTS IN THE MIDDLE THIRD OF SPAN.

6. ROUGHEN SURFACE OF HORIZONTAL OR NEARLY HORIZONTAL CONSTRUCTION JOINTS SO THAT AGGREGATE SHALL BE EXPOSED UNIFORMLY, LEAVING NO LAITANCE, LOOSENED PARTICLES OR DAMAGED CONCRETE.

7. THE PLACEMENT OF SLEEVES OR OPENINGS THRU CONCRETE MEMBERS IS PROHIBITED UNLESS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS OR APPROVED IN WRITING BY THE ENGINEER OF RECORD.

8. PROVIDE CHAMFERS AND REVEALS AS INDICATED IN THE ARCHITECTURAL DRAWINGS.

REINFORCING STEEL NOTES

1. ALL DETAILING OF STEEL REINFORCEMENT AND ACCESSORIES SHALL CONFORM TO ACI COMMITTEE 315 PUBLICATION SP-66, "ACI DETAILING MANUAL."

2. DEFORMED BAR REINFORCEMENT SHALL BE DOMESTIC NEW BILLET STEEL IN CONFORMANCE WITH ASTM A615, GRADE 60.

3. WELDED WIRE FABRIC SHALL BE ELECTRICALLY WELDED, COLD-DRAWN WIRE IN CONFORMANCE WITH ASTM A185, GRADE 65. WELDED WIRE FABRIC SHALL BE PLACED IN FLAT SHEETS ONLY.

4. LAP WELDED WIRE FABRIC AT LEAST 1 1/2 SQUARES PLUS WIRE END EXTENSIONS BUT NOT LESS THAN TWELVE (12) INCHES, UNLESS NOTED OTHERWISE. EXTEND MESH ACROSS SUPPORTING BEAMS AND WALLS.

5. FIBER REINFORCEMENT FOR CONCRETE SHALL BE NYCON-RC FIBERS AS MANUFACTURED BY NYCON, INC. OR APPROVED SUBSTITUTE. DOSING AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.

POST-TENSIONED SLAB ON VOID NOTES:

1. POST-TENSIONING MATERIALS INCLUDING TENDONS AND ANCHORAGES SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR UNBONDED SINGLE STRAND TENDONS PUBLISHED BY THE POST-TENSIONING INSTITUTE (PTI).

2. POST-TENSIONING TENDONS SHALL BE FABRICATED IN A PLANT THAT IS CURRENTLY CERTIFIED BY THE PTI IN ACCORDANCE WITH THE MANUAL FOR CERTIFICATION OF PLANTS PRODUCING UNBONDED SINGLE-STRAND TENDONS PUBLISHED BY THE PTI.

3. CONTRACTOR SHALL SUBMIT COMPLETE FRICTION LOSS CALCULATIONS AND SHOP DRAWINGS INDICATING TENDON LAYOUT, TENSIONING ORDER AND DEAD-END/STRESSING-END ANCHORAGE DETAILS. CALCULATIONS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.

4. THE CONTRACTOR AND POST-TENSIONED TENDON SUPPLIER SHALL VERIFY THE MODULUS OF ELASTICITY AND DIAMETER OF ALL TENDONS USED ON THE PROJECT AND PROVIDE REVISED ELONGATION CALCULATIONS PRIOR TO STRESSING FOR ANY TENDONS WHICH HAVE PROPERTIES THAT ARE DIFFERENT FROM THE VALUES ASSUMED IN THE SHOP DRAWINGS.

5. LOCATIONS AND DETAILS OF ALL STRESSING POCKETS SHALL BE INCLUDED IN POST-TENSION SHOP DRAWINGS. ALL POCKETS AND BLOCKOUTS SHALL BE ADEQUATELY REINFORCED SO AS NOT TO DECREASE THE STRENGTH OF THE STRUCTURE.

6. THE POST-TENSION SUPPLIER SHALL PROVIDE ALL ANCHORAGE REINFORCING NECESSARY TO DEVELOP ANCHORAGE AND BEARING OF THE ANCHORAGE UNITS. THIS REINFORCING SHALL BE IN ADDITION TO THE REINFORCING INDICATED IN THE CONTRACT DOCUMENTS.

7. IN CONTINUOUS STRESSING SITUATIONS CONSISTING OF MORE THAN ONE (1) SPAN IN WHICH THE POST-TENSIONING FORCE IS NOT EQUAL IN ALL SPANS, TENDONS REQUIRED FOR ADDITIONAL POST-TENSIONING FORCE SHALL BE STRESSED AFTER CONTINUOUS TENDONS.

8. LOCATION OF CONSTRUCTION JOINTS AND/OR ANCHORAGES SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR.

9. POST-TENSIONING TENDONS SHALL BE LOW RELAXATION, UNBONDED, SHEATHED AND COATED 1/2 INCH IN DIAMETER SEVEN (7) WIRE STRAND CABLE AND SHALL CONFORM TO ASTM A416, 270 KSI.

10. POST-TENSIONING TENDONS AND CONVENTIONAL REINFORCEMENT SHALL BE PLACED TO ALLOW ADEQUATE CLEAR DISTANCE AROUND CONVENTIONAL REINFORCEMENT IN ACCORDANCE WITH ACI 318.

11. POST-TENSIONING TENDONS SHALL BE SECURED TO A SUFFICIENT NUMBER OF POSITIONING DEVICES TO ENSURE CORRECT LOCATION DURING CONCRETE PLACEMENT. TENDONS SHALL BE SUPPORTED AT FOUR (4) FEET ON CENTER MAXIMUM. CHAIRS GREATER THAN ONE (1) INCH IN HEIGHT SHALL BE STAMPED TO FORMWORK.

12. TWISTING OR ENTWINING OF INDIVIDUAL WIRES OR STRANDS WITHIN A BUNDLE OR POST-TENSIONED MEMBER SHALL NOT BE PERMITTED.

13. AFTER TENDONS ARE PLACED AND FIRMLY SUPPORTED, TENDONS SHALL BE INSPECTED FOR DAMAGE AND REPAIRED. ALL CUTS OR TEARS IN TENDON SHEATHING SHALL BE TAPED PRIOR TO CONCRETE PLACEMENT.

14. POST-TENSIONING TENDONS SHALL NOT BE DISTURBED BY TENDONING EQUIPMENT OR LABORERS DURING CONCRETE PLACEMENT.

15. PLUMBING AND/OR ELECTRICAL CONDUIT THAT IS TO BE PLACED IN THE FLOOR SLAB SHALL NOT BE PERMITTED TO REST ON THE POST-TENSIONED TENDONS OR CONVENTIONAL REINFORCEMENT AND SHALL NOT BE PLACED CLOSER THAN 1/4 OF THE SPAN LENGTH TO THE COLUMN.

16. IF CONCRETE IS PLACED BY THE PUMP, THE HOSE SHALL NOT REST ON POST-TENSIONED OR CONVENTIONAL REINFORCEMENT DURING CONCRETE PLACEMENT.

18. POST-TENSIONING SLAB TENDONS SHALL BE STRESSED BEFORE POST-TENSIONING BEAM TENDONS.

POST-TENSIONED SLAB ON VOID NOTES, CONTINUED:

19. TEMPORARY JACKING FORCES IN POST-TENSIONING TENDONS SHALL NOT EXCEED EIGHTY (80) PERCENT OF ULTIMATE TENDON STRENGTH (0.8 F_{pu}). STRESS IN TENDONS IMMEDIATELY AFTER FORCE TRANSFER SHALL NOT EXCEED SEVENTY-FOUR (74) PERCENT OF ULTIMATE TENDON STRENGTH (0.74 F_{pu}). STRESS IN TENDONS AFTER ANCHORAGE SHALL NOT EXCEED SEVENTY (70) PERCENT OF ULTIMATE TENDON STRENGTH (0.7 F_{pu}).

20. ALL EFFECTIVE POST-TENSIONING FORCES AND ORINATES TO CENTERLINES OF TENDONS ARE INTENDED AS A GUIDE ONLY. THE SUPPLIER SHALL ADJUST SCHEDULED PRESTRESS FORCES AND/OR DRAPES FOR FRICTION LOSSES AS REQUIRED BY LOCATION OF CONSTRUCTION JOINTS AND/OR ANCHORAGES AND FOR ACTUAL TENDON SIZES USED MAINTAINING THE MINIMUM CONCRETE COVERS. BID PRICES SHALL BE BASED ON THE FINAL ADJUSTED VALUES. FINAL DESIGN COMPUTATIONS AND VALUES SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW.

21. THE REGISTERED PROFESSIONAL ENGINEER ON THE STAFF OF THE POST-TENSIONING SUPPLIER SHALL SUPERVISE THE STRESSING OPERATIONS AND CERTIFY IN WRITING THAT THE EFFECTIVE POST-TENSIONING FORCE AS REQUIRED BY THE STRUCTURAL DRAWINGS HAS BEEN TRANSFERRED TO THE STRUCTURE AND/OR ADDRESS IN WRITING ANY AND ALL TENDON FORCE OR ELONGATIONS NOT MEETING THE REQUIREMENTS OF THE SPECIFICATIONS.

22. THE CONTRACTOR SHALL NOT RE-PULL OR PERFORM ANY REMEDIAL WORK WITHOUT SUBMITTING A SIGNED AND SEALED LETTER ADDRESSING THE TENDONS NOT MEETING THE REQUIREMENTS OF THE SPECIFICATIONS TO THE ARCHITECT AND WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND INSTRUCTIONS.

23. THE CONTRACTOR SHALL CHECK THE STRESSING RECORDS FOR COMPLETENESS AND ACCURACY OF INFORMATION INCLUDING NUMBER OF TENDONS, ELONGATIONS AND GAUGE PRESSURES. ANY INFORMATION THAT IS MISSING OR INCORRECT SHOULD BE CORRECTED BY THE CONTRACTOR PRIOR TO SUBMITTAL. WHEN ALL CORRECTIONS HAVE BEEN MADE, THE CONTRACTOR SHALL FORWARD THE STRESSING RECORD ALONG WITH A LETTER FROM A REGISTERED PROFESSIONAL ENGINEER ON THE STAFF OF THE POST-TENSIONING SUPPLIER STATING THAT THE INFORMATION IS COMPLETE AND ACCURATE TO THE ENGINEER OF RECORD FOR REVIEW.

24. AFTER STRESSING OF THE POST-TENSIONING TENDONS IS COMPLETED AND WITH THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD, THE POST-TENSION TENDON ENDS SHALL BE CUT OR BURNED OFF TO WITHIN ONE (1) INCH OF THE SLAB EDGE.

25. COAT THE POST-TENSIONING STRESSING AGCHARGE WITH CORROSION PREVENTATIVE MATERIAL (ASPHALTIC PAINT OR SIMILAR PRODUCT). EXPOSED RECESS SHALL THEN BE FILLED FLUSH WITH NON-SHRINK GROUT THAT ATTAINS A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

26. THE CONTRACTOR SHALL NOT INSTALL DRILL-IN OR POWDER-ACTUATED FASTENERS IN POST-TENSIONED MEMBERS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.

ADHESIVE AND DRILL-IN ANCHOR NOTES

1. UNLESS NOTED OTHERWISE, ADHESIVE ANCHORS SHALL BE INSTALLED WITH SIMPSON STRONG-TIE SET HIGH STRENGTH EPOXY IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.
2. UNLESS NOTED OTHERWISE, HEAVY DUTY SCREW ANCHORS SHALL BE SIMPSON STRONG-TIE H10 ANCHORS INSTALLED IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER.
3. UNLESS NOTED OTHERWISE, WEDGE ANCHORS SHALL BE SIMPSON STRONG-TIE STRONG-BOLT ANCHORS INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.

STRUCTURAL STEEL NOTES

1. ALL STRUCTURAL STEEL DETAILING, FABRICATION AND INSTALLATION SHALL CONFORM TO THE STANDARDS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).

2. PROVIDE NEW DOMESTIC STRUCTURAL STEEL IN ACCORDANCE WITH THE FOLLOWING:

WIDE FLANGE SHAPES, CHANNELS, PLATES AND ANGLES

ASTM A992	ASTM A992
ASTM A36	ASTM A36
ASTM A500, GRADE B	ASTM A500, GRADE B
ASTM A53 (TYPES E OR S), GRADE B	ASTM A53 (TYPES E OR S), GRADE B

3. THE DETAILER SHALL DESIGN ALL CONNECTIONS TO RESIST FIFTY (50) PERCENT OF THE ALLOWABLE SHEAR CAPACITY OF THE BEAM, UNLESS NOTED OTHERWISE. AS A MINIMUM, PROVIDE THE NUMBER OF BOLTS SHOWN BELOW FOR EACH BEAM SIZE:

BEAM SIZE	NUMBER OF BOLTS
W8 & W10	2 MINIMUM
W12, W14, W16	3 MINIMUM
W18 & W21	4 MINIMUM
W24 & W27	5 MINIMUM
W30 & W33	6 MINIMUM
W36 & W40	7 MINIMUM

4. CONNECTION BOLTS FOR STRUCTURAL STEEL MEMBERS SHALL BE 3/4 INCH DIAMETER ASTM A325-N BOLTS, UNLESS NOTED OTHERWISE.

5. ANCHOR BOLTS SHALL BE UNFINISHED THREADED FASTENERS THAT CONFORM TO ASTM A307, GRADE A BOLTS AND NUTS WITH HEXAGONAL HEADS.

6. SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED EXCEPT AS SPECIFICALLY INDICATED IN STRUCTURAL DRAWINGS.

7. ERECT ALL STEEL BEAMS WITH NATURAL OR SPECIFIED CAMBER UP.

8. UNLESS NOTED OTHERWISE, HOT DIP GALVANIZE ALL STRUCTURAL STEEL MEMBERS AND ENDS EXPOSED TO WEATHER OR SOIL AND WHERE INDICATED ON DRAWINGS. GALVANIZING SHALL CONFORM TO ASTM A123.

9. TOUCH UP FIELD WELDS ON GALVANIZED ITEMS WITH PAINT CONFORMING TO TT-P-641.

10. ALL STAIRS, LANDINGS AND SUPPORTS SHALL BE DESIGNED BY THE STAIR MANUFACTURER. THE MINIMUM DESIGN LIVE LOAD FOR STAIRS AND ACCESSORIES SHALL BE ONE HUNDRED (100) POUNDS PER SQUARE FOOT. CONTRACTOR SHALL SUBMIT COMPLETE DESIGN CALCULATIONS AND SHOP DRAWINGS. SUBMITTALS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.

WELDING NOTES

1. WELDING OF STRUCTURAL STEEL SHALL CONFORM TO AWS D1.1. USE E70XX ELECTRODES FOR FIELD AND SHOP WELDS. USE ONLY LOW-HYDROGEN ELECTRODES ON ASTM A242, A514, A572 AND A588 STEEL.

2. WELDS NOT INDICATED IN DRAWINGS SHALL BE MINIMUM SIZE CONTINUOUS FILLET WELDS IN ACCORDANCE WITH AWS D1.1. FILLET WELDS SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE.

3. PROVIDE FILLET WELDS AT ALL CONTACT JOINTS BETWEEN STEEL MEMBERS SUFFICIENT TO DEVELOP THE ALLOWABLE TENSILE CAPACITY OF THE SMALLER MEMBER AT THE JOINT, UNLESS NOTED OTHERWISE.

4. ALL GROOVE WELDS SHALL BE FULL PENETRATION, UNLESS NOTED OTHERWISE.

5. AUTOMATICALLY END WELD HEADED STUDS AND DEFORMED BARS WHERE INDICATED ON DRAWINGS. STUDS SHALL CONFORM TO ASTM A108.

SHEAR CONNECTOR NOTES

1. SHEAR CONNECTORS FOR COMPOSITE CONSTRUCTION SHALL BE 3/4 INCH DIAMETER, 4 1/2 INCH LONG HEADED STUDS AS MANUFACTURED BY TRW, NELSON DIVISION OR APPROVED SUBSTITUTE. STUDS SHALL CONFORM TO ASTM A108.

2. SEE TYPICAL SHEAR CONNECTOR PLACING DETAIL FOR FIELD PLACEMENT OF CONNECTORS.
3. AUTOMATICALLY END WELD SHEAR CONNECTORS THROUGH DECK TO SUPPORTING STRUCTURAL MEMBERS IN FIELD IN ACCORDANCE WITH AWS D1.1 AND THE SHEAR CONNECTOR MANUFACTURER'S RECOMMENDATIONS.
4. REMOVE CERAMIC FERRULES FROM CONNECTOR AND DECK BEFORE PLACING CONCRETE.

REINFORCED CONCRETE MASONRY NOTES

1. REINFORCED CONCRETE MASONRY WALL CONSTRUCTION HAS BEEN DESIGNED FOR A MINIMUM COMPRESSION STRENGTH (f_m) OF 1,500 PSI. THIS VALUE SHALL BE VERIFIED IN ACCORDANCE WITH NCM4 TR 75B. "SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF LOAD-BEARING CONCRETE MASONRY"

2. CONCRETE BLOCK SHALL BE ASTM C90, GRADE N, TYPE 1, LIGHT-WEIGHT UNITS OF EIGHT (8) INCH NOMINAL THICKNESS WITH A MINIMUM COMPRESSIVE STRENGTH OF 1,900 PSI ON THE NET AREA OF THE BLOCK.

3. MORTAR SHALL BE TYPE "M" OR "S" IN ACCORDANCE WITH ASTM C270 AND SHALL HAVE A TWENTY-EIGHT (28) DAY COMPRESSIVE STRENGTH OF 2,500 PSI OR 1,800 PSI, RESPECTIVELY. AGGREGATES FOR MORTAR SHALL CONFORM TO ASTM C144.

4. GROUT SHALL CONFORM TO ASTM C476 WITH A MAXIMUM AGGREGATE SIZE OF 3/8 INCH AND A 28-DAY COMPRESSIVE STRENGTH OF 2,000 PSI. AGGREGATES FOR GROUT SHALL CONFORM TO ASTM C404.

5. LAP SPEC LENGTH FOR CONTINUOUS DEFORMED BAR REINFORCEMENT IN CONCRETE MASONRY CONSTRUCTION SHALL BE AS FOLLOWS:

#3 BARS	19 INCHES MINIMUM
#4 BARS	25 INCHES MINIMUM
#5 BARS	31 INCHES MINIMUM
#6 BARS	37 INCHES MINIMUM

7. ALL CELLS CONTAINING REINFORCING BARS, BOLTS OR OTHER METAL FABRICATIONS SHALL BE GROUTED SOLID. ANY CELLS AT OR BELOW FINISHED GRADE SHALL BE GROUTED SOLID.

8. REINFORCED CONCRETE MASONRY CONSTRUCTION SHALL BE RUNNING BOND, UNLESS NOTED OTHERWISE.

STRUCTURAL WOOD NOTES

1. ALL WOOD FRAMING SHALL BE KILN-DRIED WITH A MAXIMUM MOISTURE CONTENT AT TIME OF INSTALLATION OF NINETEEN (19) PERCENT AND SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:

MEMBER	MATERIAL	DESIGN PROPERTIES
2x6 BEAMS, HEADERS, JOISTS, SILL PLATES	#2 GRADE SOUTHERN PINE (SPI)	F _b = 975 PSI F _v = 90 PSI E = 1,600,000 PSI
LAMINATED VENEER LUMBER BEAMS (LVL)	TRUSJOIST 1.9E MICROLAM LVL	F _b = 2,600 PSI F _v = 285 PSI F _c = 2,510 PSI E = 1,900,000 PSI
PARALLEL STRAND LUMBER BEAMS (PSL)	TRUSJOIST 2.0E PARALLAM PSL	F _b = 2,900 PSI F _v = 290 PSI F _c = 2,800 PSI E = 2,000,000 PSI

ANTHONY POWER BEAM (APB)	ANTHONY 30F POWER BEAM	F _b = 3,000 PSI F _v = 290 PSI E = 2,100,000 PSI
BEARING PLATES, LEDGERS	#2 GRADE SOUTHERN-PINE (SPI)	F _b = 975 PSI F _v = 90 PSI E = 1,600,000 PSI
WALL STUDS/POST COLUMNS, U.N.O.	STUD GRADE DOUGLAS FIR-LARCH (DFL)	F _b = 675 PSI F _c = 825 PSI E = 1,400,000 PSI

2. ALLOWABLE STRESSES ARE UNFACTORED AND ARE BASED ON THE 1997 NATIONAL DESIGN SPECIFICATION, PUBLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION.

2. THE CONTRACTOR SHALL SUBMIT, PRIOR TO THE FABRICATION OR INSTALLATION OF MATERIAL A WRITTEN SUBSTITUTION REQUEST TO THE ENGINEER FOR REVIEW OF ANY PROPOSED LUMBER SPECIES OR GRADE SUBSTITUTIONS.

3. SILL PLATES AND OTHER MEMBERS EXPOSED TO WEATHER OR IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED FOR MOISTURE RESISTANCE.

4. MASONRY VENEERS SHALL NOT BE SUPPORTED BY WOOD MEMBERS. THE CONTRACTOR SHALL BRING ANY SUCH CONDITIONS TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS.

WOOD SHEATHING NOTES

1. UNLESS NOTED OTHERWISE, FLOOR SHEATHING SHALL BE TONGUE-AND-GROOVE, EXPOSURE 1, 3/4 INCH THICK APA RATED SHEATHING WITH A MINIMUM PANEL INDEX OF 48/24. PROVIDE A CONTINUOUS BEAD OF CONSTRUCTION ADHESIVE BETWEEN SHEATHING AND EACH SUPPORT. ADHESIVES SHALL MEET APA SPECIFICATION APG-01 AND BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

2. UNLESS NOTED OTHERWISE, ROOF SHEATHING SHALL BE TONGUE-AND-GROOVE, EXPOSURE 1, 3/4 INCH THICK APA RATED SHEATHING WITH A MINIMUM PANEL INDEX OF 48/24. PROVIDE A CONTINUOUS BEAD OF CONSTRUCTION ADHESIVE BETWEEN SHEATHING AND EACH SUPPORT. ADHESIVES SHALL MEET APA SPECIFICATION APG-01 AND BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ROOF SHEATHING THAT IS EXPOSED ON THE UNDERSIDE SHALL BE BONDED WITH EXTERIOR GLUE. PROVIDE STANDARD EDGE CLIPS AT MID-SPAN BETWEEN ALL SUPPORTS.

3. WHERE SPECIFIED, EXTERIOR WALL SHEATHING SHALL BE EXPOSURE 1, 1/2 INCH THICK APA RATED SHEATHING WITH A MINIMUM PANEL INDEX OF 32/16.

4. EXTERIOR WALL SHEATHING AT CURVED WALLS SHALL BE COMPRISED OF TWO (2) LAYERS OF EXPOSURE 1, 1/4 INCH THICK APA RATED SHEATHING. APPLY A COAT OF CONSTRUCTION ADHESIVE BETWEEN LAYERS AND STAGGER PANEL EDGES. ATTACH SHEATHING TO LIGHTGAGE STUDS WITH #8 TEK SCREWS SPACED AT SIX (6) INCHES ON CENTER AT PANEL EDGES AND TWELVE (12) INCHES ON CENTER AT INTERMEDIATE SUPPORTS.

WOOD FLOOR AND ROOF FRAMING NOTES

1. NOTCHES ON THE ENDS OF CONVENTIONAL LUMBER JOISTS SHALL NOT EXCEED ONE FOURTH OF THE JOIST DEPTH. HOLES BORED IN JOISTS SHALL NOT BE WITHIN TWO (2) INCHES OF THE TOP OR BOTTOM OF THE JOIST AND THE DIAMETER OF ANY HOLE SHALL NOT EXCEED ONE THIRD OF THE DEPTH OF THE JOIST. NOTCHES IN THE TOP OR BOTTOM OF JOISTS SHALL NOT EXCEED ONE SIXTH OF THE DEPTH AND SHALL NOT BE LOCATED IN THE MIDDLE THIRD OF THE SPAN. THE GENERAL CONTRACTOR SHALL COORDINATE THESE GUIDELINES WITH OTHER TRADES.

2. HOLES AND NOTCHES IN BEAMS AND HEADERS ARE NOT PERMITTED UNLESS VERIFIED IN WRITING BY THE ENGINEER OF RECORD.

3. BEAMS COMPRISED OF TWO (2) MEMBERS OR MORE MEMBERS SHALL BE GLEUED AND NAILED TOGETHER WITH A MINIMUM OF TWO (2) ROWS OF 16