GENERAL

1. THESE NOTES ARE GENERAL REQUIREMENTS.

2. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREINAFTER FOR USE ON THIS PROJECT.

3. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS ARE NOT IN AGREEMENT WITH THESE NOTES, THE CONTRACTOR SHALL CONTACT THE ARCHITECT/ENGINEER FOR CLARIFICATION.

4. TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON THE PLANS, BUT APPLY UNLESS NOTED OTHERWISE.

5. SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER/ARCHITECT.

6. SHOP DRAWINGS PREPARED BY THE CONTRACTORS, SUPPLIERS, ETC., WILL BE REVIEWED BY THE ENGINEER/ARCHITECT ONLY FOR CONFORMANCE WITH DESIGN CONCEPT. NO WORK AFFECTED BY THE SHOP DRAWINGS SHALL BE STARTED WITHOUT SUCH REVIEW.

7. THE GENERAL CONTRACTOR SHALL COORDINATE ALL REVISIONS, CORRECTIONS, AND COMMENTS INDICATED ON THE SHOP DRAWINGS BY THE ARCHITECT/ENGINEER.

8. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR AND SHALL CONFORM TO THOSE SHOWN ON THE ARCHITECTURAL DRAWINGS.

9. THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.

10. ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER ARE SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.

11. ALL STRUCTURES ARE DESIGNED TO BE STABLE AND SELF-SUPPORTING AT THE COMPLETION OF CONSTRUCTION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE STABILITY AND SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL IS NOT INDICATED ON THE DRAWINGS AND, IF PROVIDED, SHALL BE REMOVED, AS CONDITIONS PERMIT AND REMAIN THE PROPERTY OF THE CONTRACTOR.

12. ALL MATERIALS AND EQUIPMENT FURNISHED WILL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND EQUIPMENT BEING SUBSTITUTED.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.

14. COORDINATE WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR MISCELLANEOUS STEEL ITEMS, LINTELS, SIZE AND LOCATION OF FLOOR SLOPES, DEPRESSED AREAS, FINISH FILLS, CHAMFERS, GROOVES, RAILING SLEEVES, ROOF EDGES, INSERTS, ETC.

15. COORDINATE WITH CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS FOR PIPE SLEEVES, FLOOR DRAINS, ROOF DRAINS, INSERTS, HANGERS, TRENCHES, PITS, WALL AND SLAB OPENINGS, CONDUIT RUNS IN WALLS AND SLABS, SIZE AND LOCATION OF EQUIPMENT SUPPORTS, BASE AND ANCHOR BOLTS, RAILING, ETC.

16. COORDINATE WITH SITE, ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND CIVIL DRAWINGS FOR RETAINING WALLS, PADS, PAVEMENT AND OTHER SITE STRUCTURES.

17. EARTHWORK, FOUNDATION DRAINS, WATERPROOFING, PERIMETER INSULATION, MASONRY AND OTHER REQUIRED NON-STRUCTURAL ITEMS ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE WITH CIVIL/SITE AND ARCHITECTURAL DRAWINGS.

GOVERNING CODES AND SPECIFICATIONS

IBC	-INTERNATIONAL BUILDING CODE, 2015 EDITION
ASCE 7	-MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, 2010 EDITION
ACI 318	-BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 2014 EDITION
ACI 301	-SPECIFICATIONS FOR STRUCTURAL CONCRETE, 2010 EDITION
ACI 305R	-HOT WEATHER CONCRETING, 2010 EDITION
ACI 306R	-COLD WEATHER CONCRETING, 2010 EDITION
ACI SP-66	-ACI DETAILING MANUAL, 2004
ACI 530	-BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, 2013 EDITION
ACI 530.1	-SPECIFICATIONS FOR MASONRY STRUCTURES, 2013 EDITION
AISC 360	-STEEL CONSTRUCTION MANUAL, 14TH EDITION
AISI S100	-NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, 2012 EDITION
AISI S200	-NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS, 2012 EDITION
AISI S211	-NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - WALL STUD DESIGN, 2012 EDITION, INCLUDING SUPPLEMENT 1, DATED 2012 (REAFFIRMED 2012)
AWC NDS	-NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION WITH 2012 SUPPLEMENT, 2015 EDITION
AWC SDPWS	-SPECIAL DESIGN PROVISIONS FOR WIND AND SEISMIC, 2015 EDITION
APA PDS	-PANEL DESIGN SPECIFICATION, 2012 EDITION

DESIGN LOADS

1. LIVE LOADS: (REDUCIBLE PER GOVERNING CODE) — UNIFORM (PSF) / CONCENTRATED (LBS)
   a. ROOF 20 300
   b. FIRST FLOOR (SLAB ON GRADE) 100 2,000

2. SNOW LOADS:
   a. GROUND SNOW LOAD, P_g . . . . . 10 PSF
   b. FLAT ROOF SNOW LOAD, P_f . . . . . 7 PSF
   c. SNOW EXPOSURE FACTOR, C_e 1.0
   d. SNOW LOAD IMPORTANCE FACTOR, I_s 1.0
   e. THERMAL FACTOR, C_t 1.0

3. WIND LOADS:
   a. ULTIMATE DESIGN WIND SPEED (3-SECOND GUST), MPH 115
   b. NOMINAL DESIGN WIND SPEED (3-SECOND GUST), MPH 90
   c. RISK CATEGORY II
   d. WIND EXPOSURE . . . . . B
   e. DESIGN WIND PRESSURE FOR COMPONENTS AND CLADDING SHALL BE COMPUTED PER GOVERNING BUILDING CODE USING EXPOSURE . . . . . B (SEE DIAGRAM ON SHEET S0.[illegible])
   f. INTERNAL PRESSURE COEFFICIENT (ENCLOSED) . . . . . +/- 0.18

4. EARTHQUAKE DESIGN DATA:
   a. OCCUPANCY RISK CATEGORY II
   b. SEISMIC IMPORTANCE FACTOR, I_e . . . . . [illegible]
   c. MAPPED SPECTRAL RESPONSE ACCELERATIONS . . . . . S_S = [illegible]; S_1 = 0.[illegible]
   d. SITE CLASS . . . . . D
   e. DESIGN SPECTRAL RESPONSE ACCELERATIONS . . . . . S_{DS} = 0.27[illegible]; S_{D1} = 0.17
   f. SEISMIC DESIGN CATEGORY C
   g. BASIC SEISMIC RESISTING SYSTEM . . . . . LIGHT FRAME WALLS WITH STRUCTURAL WOOD PANELS
   h. DESIGN BASE SHEAR . . . . . V = 2.9 K
   i. SEISMIC RESPONSE COEFFICIENT . . . . . CS = 0.042
   j. RESPONSE MODIFICATION COEFFICIENT . . . . . R = 6.5
   k. ANALYSIS PROCEDURE USED . . . . . EQUIVALENT LATERAL FORCE

FOUNDATIONS

1. FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS IN THE GEOTECHNICAL REPORT NO.1335-17-038, PREPARED BY S & ME Inc., DATED AUGUST 18,2017 CONTRACTOR SHALL REVIEW GEOTECHNICAL REPORT PRIOR TO CONSTRUCTION.

2. FOUNDATIONS ARE DESIGNED TO BEAR ON UNDISTURBED NATURAL SOILS OR PROPERLY COMPACTED ENGINEERED FILL WITH A NET ALLOWABLE BEARING CAPACITY OF 4,000 PSF . (SEE GEOTECHNICAL REPORT.)

3. TOPSOIL, FILL, AND/OR OTHER DELETERIOUS MATERIALS ENCOUNTERED DURING THE SITE PREPARATION MUST BE REMOVED AND REPLACED WITH SELECT ENGINEERED FILL COMPACTED TO 95% PER ASTM D1557 (98% IN THE TOP 18 INCHES) AND MEETING THE SPECIFIED DESIGN BEARING CAPACITY. (SEE GEOTECH REPORT FOR MORE INFORMATION).

4. OWNER SHALL EMPLOY A SOILS TESTING LABORATORY APPROVED BY THE ENGINEER TO PERFORM TESTING SERVICES AS REQUIRED BY THE SPECIFICATIONS AND TO INSPECT ALL BEARING SURFACES OF SLABS AND FOUNDATIONS.

5. NOTIFY ENGINEER IF FOUNDATION CONDITIONS ENCOUNTERED DIFFER FROM SOILS EXPLORATION INFORMATION MADE AVAILABLE TO THE CONTRACTOR.

6. REMOVE ALL EXISTING PAVEMENT, STRUCTURES AND FOUNDATIONS, AND TOPSOIL, UNSUITABLE FILLS AND ORGANIC SOILS ENCOUNTERED WITHIN AND BELOW THE AREA TO BE OCCUPIED BY SLABS ON GRADE AND FOUNDATIONS. THESE MATERIALS SHALL NOT BE USED FOR FILL WITHIN OR ADJACENT TO THE BUILDING.

7. THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL PROVIDE TEMPORARY SHORING, BRACING, UNDERPINNING, AND OTHER MEASURES NECESSARY TO INSURE STABILITY AND SAFETY DURING ERECTION AND CONSTRUCTION AND TO PREVENT MOVEMENT OF SOIL THAT COULD DAMAGE EXISTING STRUCTURES, PAVEMENT, UTILITIES, ETC.

8. AFTER EXCAVATING FOR SLABS ON GRADE, THE EXPOSED NATURAL SOIL SHALL BE THOROUGHLY COMPACTED PRIOR TO PLACING THE GRANULAR MATERIAL.

9. CENTER FOOTINGS UNDER COLUMNS OR WALLS UNLESS NOTED.

10. THE DIFFERENCE IN ELEVATION OF THE BACKFILL ON THE INSIDE AND OUTSIDE OF WALLS SHALL NOT EXCEED TWO FEET UNTIL THE FIRST FLOOR STRUCTURE SUPPORTING THE WALLS IS IN PLACE, UNLESS THE WALL IS BRACED TO PREVENT MOVEMENT.

11. UNLESS NOTED OTHERWISE ON THE CIVIL/SITE DRAWINGS, PROVIDE A MINIMUM 2% GRADE WITHIN 10-FEET OF THE PERIMETER OF THE FOUNDATION SYSTEM TO ALLOW SURFACE WATER TO DRAIN AWAY.

12. DO NOT PLACE FILL OR CONCRETE ON FROZEN GROUND.

CAST-IN-PLACE CONCRETE AND REINFORCEMENT

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318.

2. CONCRETE SHALL HAVE THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS.
   EXTERIOR SLABS . . . . . 4,500 PSI
   FOOTINGS AND INTERIOR SLAB ON GRADE . . . . . 3,000 PSI
   FILL CONCRETE . . . . . 1,500 PSI

3. USE 4.5% ± 1.5%, ENTRAINED AIR PER ASTM C260 FOR ALL CONCRETE EXPOSED TO WEATHER.

4. WATER CEMENT RATIO SHALL BE AS FOLLOWS:
   ALL INTERIOR SLABS-ON-GRADE . . . . . 0.45 (MAX)
   CONCRETE WITH ENTRAINED AIR . . . . . 0.45 (MAX)
   CONCRETE WITHOUT ENTRAINED AIR . . . 0.48 (MAX)

5. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.

6. ALL WELDED WIRE REINFORCING SHALL CONFORM TO ASTM A1064 PROVIDED IN FLAT SHEETS OR ROLLS.

7. ADMIXTURES SHALL CONTAIN NO MORE THAN 0.05% CHLORIDE IONS BY WEIGHT OF CEMENT WHEN TESTED IN ACCORDANCE WITH AASHTO T260.

8. CONTRACTOR SHALL KEEP A COPY OF "FIELD REFERENCE MANUAL: STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE ACI 301 WITH SELECTED ACI REFERENCES", (ACI PUBLICATION SP-15) AT THE PROJECT FIELD OFFICE.

9. ALL REINFORCING DETAILS SHALL CONFORM TO "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" ACI 315, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.

10. SUBMIT FOR APPROVAL CONCRETE MIX DESIGN AND CERTIFICATION OF CONCRETE MATERIALS.

11. THE OWNER SHALL EMPLOY A TESTING LABORATORY APPROVED BY THE ENGINEER/ARCHITECT TO PERFORM THE TESTING SPECIFIED PER PARAGRAPH 1.6.4 OF ACI 301. THE TESTING LABORATORY SHALL MEET THE REQUIREMENTS OF ASTM E329. TESTING SHALL BE MADE BY AN ACI CONCRETE FIELD TESTING TECHNICIAN GRADE 1 OR APPROVED EQUIVALENT. A TECHNICIAN GRADE 1 SHALL BE PRESENT DURING ALL CONCRETE PLACEMENT.

12. SUBMIT SHOP DRAWINGS FOR REVIEW. THESE DRAWINGS SHALL SHOW ALL CONCRETE MEMBER DIMENSIONS AND DOWELS FOR STEM WALLS.

13. PROVIDE DOWELS FROM FOUNDATIONS TO MATCH COLUMN, PIER AND WALL VERTICAL REINFORCING. WHERE SHOWN, PROVIDE DOWELS OUT OF WALLS TO MATCH SLAB REINFORCING.

14. PROVIDE CLASS "B" TENSION LAP SPLICE OR FULL MECHANICAL SPLICE (ACI 318, SECT. 12.14.3) FOR ALL VERTICAL STEEL IN WALLS AND SLABS. SEE LAP SCHEDULE ON SHEET S0.1 FOR LAP LENGTHS, U.N.O.

15. PROVIDE ADEQUATE BOLSTERS, HI-CHAIRS, SUPPORT BARS, ETC., TO MAINTAIN SPECIFIED CLEARANCES FOR THE ENTIRE LENGTH OF ALL REINFORCING BARS.

16. ALL BEAMS, SLABS AND WALLS SHALL BE POURED MONOLITHICALLY, EXCEPT FOR THE REQUIRED CONSTRUCTION JOINTS.

17. PROVIDE PERIMETER INSULATION AGAINST EXTERIOR FOUNDATION WALLS AND GRADE BEAMS AND UNDER THE SLAB ADJACENT TO THE EXTERIOR OF THE BUILDING AS SHOWN ON THE ARCHITECTURAL DRAWINGS.

18. PROVIDE 3/4-INCH CHAMFER SHALL EXPOSED CORNERS OF SLABS, BEAMS AND WALLS UNLESS OTHERWISE INDICATED ON THE ARCHITECTURAL DRAWINGS. MINIMUM CLEARANCES FOR REINFORCING STEEL SHALL BE MAINTAINED.

19. CURE ALL CONCRETE FOR A MINIMUM 7-DAYS. APPLY CURING COMPOUND AT THE MAXIMUM COVERAGE RATE OF 300 SQUARE FEET PER GALLON. USE PRODUCT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

20. ALL CONSTRUCTION JOINTS SHALL BE KEYED. PROVIDE KEYWAYS AT MEMBER CENTERLINE WITH A DEPTH OF 1-1/2 INCH AND HEIGHT EQUAL TO ONE-THIRD OF THE MEMBER'S DEPTH/THICKNESS.

21. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS NOT INDICATED ON THE DRAWINGS FOR REVIEW BY THE ENGINEER/ARCHITECT.

22. ALL ALUMINUM IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED WITH GRAY EPOXY PRIMER, APPROVED BY THE ENGINEER.

23. FORMWORK, FOR ALL CONCRETE THAT WILL BE EXPOSED IN THE COMPLETED STRUCTURE, SHALL BE CONSTRUCTED FROM A METAL OR SUITABLE SURFACE PLYWOOD THAT WILL PRODUCE AN ACCEPTABLY SMOOTH SURFACE.

24. PITCH CONCRETE SLABS TO FLOOR DRAINS SHOWN ON MECHANICAL OR ARCHITECTURAL DRAWINGS.

25. ALL HORIZONTAL AND VERTICAL PIPE SLEEVE OPENINGS THROUGH BEAMS SHALL BE FORMED WITH STANDARD STEEL PIPE.

26. CONCRETE PROTECTION (CLEAR COVER) FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
   a. FOOTINGS:
      - 3 INCHES, BOTTOM AND UNFORMED EDGES
      - 2 INCHES, FORMED EDGES
      - 2 INCHES, EXPOSED TO EARTH, WATER OR WEATHER

27. LAP SPLICE WELDED WIRE FABRIC ONE SPACE PLUS 2 INCHES AT EDGES AND ENDS AND PROVIDE ADDITIONAL REINFORCING WHERE SHOWN ON DRAWINGS. PLACE MESH 2 INCHES FROM TOP OF SLAB FOR SLABS ON GROUND AND 1 INCH FROM TOP OF SUPPORTED SLABS UNLESS NOTED OTHERWISE.

28. ALL HOOKS SHALL BE ACI STANDARD HOOKS UNLESS DIMENSIONED OTHERWISE.

CONCRETE MASONRY

1. MASONRY IS SUPPORTED IN THE COMPLETED CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SUPPORTING THE MASONRY DURING CONSTRUCTION IN CONFORMANCE WITH LOCAL, STATE AND NATIONAL LAWS AND AS REQUIRED.

2. MASONRY CONSTRUCTION AND MATERIAL SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1/ASCE 6) EXCEPT AS MODIFIED IN THE SPECIFICATIONS AND BELOW. A COPY OF ACI 530.1/ASCE 6 SHALL BE ON THE JOB SITE AT ALL TIMES THAT MASONRY WORK IS BEING PERFORMED.

3. SUBMIT FOR REVIEW, PRIOR TO CONSTRUCTION, SHOP DRAWINGS SHOWING A PLAN AND ELEVATION VIEW OF ALL CMU WALL, AND A PLAN THAT SHOWS ALL DOWELS REQUIRED FOR VERTICAL CMU REINFORCING THAT EXTEND OUT OF CONCRETE. SHOW WALL THICKNESS, AND DIMENSION WALL LENGTH AND LOCATION. SHOWING TOP ELEVATIONS OF WALLS, BOND BEAMS AND GROUT POURS. SHOW LOCATION OF CONTROL JOINT LOCATIONS, SOLID UNITS, CELLS TO BE GROUT FILLED, OPENING, JOINT REINFORCEMENT, REINFORCING BAR AND EMBEDMENT.

4. SUBMIT FOR REVIEW, PRIOR TO CONSTRUCTION, DOCUMENTATION FOR THE BLOCK, MORTAR, GROUT, ADMIXTURES, REINFORCING, BAR POSITIONER AND OTHER ACCESSORIES PROPOSED FOR USE. SUBMIT A WRITTEN DESCRIPTION OF THE METHOD OF REINFORCEMENT AND GROUT, AND OF GROUT CONSOLIDATION.

5. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, NORMAL WEIGHT.

6. CONCRETE MASONRY UNITS WHICH CONTAIN VERTICAL REINFORCEMENT SHALL BE TWO CORE UNITS AND WITH CORES AND WEBS VERTICALLY ALIGNED.

7. MORTAR FOR CONCRETE MASONRY UNITS SHALL BE NON-AIR ENTRAINED PORTLAND CEMENT-LIME CONFORMING TO ASTM C270, TYPE S. CEMENT IN MORTAR SHALL BE LOW-ALKALI AND NON-STAINING. TYPE N MORTAR AND MASONRY CEMENT SHALL NOT BE USED FOR CMU CONSTRUCTION.

8. ADMIXTURES SHALL NOT BE USED IN THE MORTAR OR GROUT. ANTIFREEZE AND CALCIUM CHLORIDE SHALL NOT BE USED.

9. MINIMUM NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS SHALL BE:
   STANDARD BLOCK = 1,900 PSI (F'M = 1,500 PSI)

10. COARSE GROUT SHALL CONFORM TO ASTM C476 WITH A MAXIMUM AGGREGATE SIZE OF 3/8" AND A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.

11. PROVIDE 1-#5 VERTICAL BAR IN FIRST CORE AT EACH CORNER, END OF WALL, AND ADJACENT TO OPENINGS, CONTROL JOINTS.

12. VERTICAL REINFORCEMENT SHALL EXTEND FROM FOOTING THROUGH BOND BEAMS AND TO WITHIN 2 INCHES OF THE TOP OF WALLS.

13. REINFORCING STEEL SPLICES SHALL BE LAPPED A MINIMUM OF 48 BAR DIAMETERS, UNLESS NOTED OTHERWISE.

14. ANCHORAGE OF REINFORCING STEEL INTO CONCRETE SHALL BE 36 BAR DIAMETERS BUT NO LESS THAN 12 INCHES, UNLESS NOTED OTHERWISE.

15. HORIZONTAL JOINT REINFORCING SHALL BE, UNLESS SHOWN OTHERWISE, STANDARD 9 GAGE, LADDER TYPE CONFORMING TO ASTM A951, SPACED VERTICALLY AT 8-INCH ON CENTERS ABOVE AND BELOW OPENINGS FOR THREE CONSECUTIVE COURSES AND AT 16 INCHES ON CENTERS ELSEWHERE. EXTEND REINFORCEMENT 2 FEET BEYOND EACH SIDE OF OPENINGS BUT DO NOT EXTEND THROUGH CONTROL JOINTS. PROVIDE FACTORY FABRICATED "T" AND "L" SHAPED PIECES AT INTERSECTIONS AND CORNERS.

16. JOINT REINFORCEMENT SHALL BE SPLICED BY LAPPING THE LONGITUDINAL WIRES AT LEAST 12 INCHES; THE CROSS-WIRES WITHIN THE LAP SHALL BE REMOVED SO THAT THE LONGITUDINAL WIRES ARE SIDE BY SIDE. ALTERNATELY WHERE JOINT REINFORCING IS NOT REQUIRED IN BETWEEN EACH COURSE, SPLICES MAY BE MADE BY ABUTTING THE ADJACENT SECTIONS OF JOINT REINFORCING AND CENTERING A 48 INCH LENGTH OF JOINT REINFORCING IN THE BED JOINT IMMEDIATELY ABOVE OR BELOW THE BUTT JOINT. SPLICE WITH "T" AND "L" SHAPED PIECES AT INTERSECTIONS AND CORNERS.

17. BOND BEAMS SHALL BE PROVIDED IN EACH WALL AT THE TOP OF WALL. FILL BOND BEAMS WITH GROUT. REINFORCE BOND BEAMS WITH 2-# 5 UNLESS NOTED OTHERWISE. PROVIDE CORNER BARS WITH 2'-0" LEGS AND BAR SUPPORTS TO OBTAIN THE REQUIRED CLEARANCE.

18. BOND BEAM REINFORCEMENT AND GROUT AT WALL CONTROL JOINTS SHALL BE CONTINUOUS. PROVIDE A DUMMY CONTROL JOINT IN BOTH FACES OF BOND BEAM ALIGNED WITH WALL CONTROL JOINTS. THE BLOCK FACE SHELLS AT DUMMY CONTROL JOINTS SHALL BE FREE OF MORTAR AND GROUT. THE DUMMY CONTROL JOINT IN EXPOSED FACES SHALL HAVE BACKING ROD AND CAULK SEAL AS REQUIRED FOR THE CONTROL JOINT.

19. VERTICAL CONTROL JOINTS IN CONCRETE MASONRY WALLS (OTHER THAN BASEMENT WALLS) SHALL BE PROVIDED WHERE SHOWN ON THE PLANS AND AS GIVEN BELOW:
   a. AT [illegible] FEET OR LESS ON CENTERS BUT NOT MORE THAN 1 1/2 TIMES THE WALL HEIGHT
   b. AT A DISTANCE NOT OVER ONE-HALF THE ABOVE SPACING FROM BONDED INTERSECTIONS OR CORNERS.
   c. ALL ABRUPT CHANGES IN WALL HEIGHT.
   d. AT ALL CHANGES IN WALL THICKNESS, SUCH AS THOSE AT PIPE AND DUCT CHASES AND THOSE ADJACENT TO COLUMNS OR PILASTERS.
   e. ABOVE JOINTS IN FOUNDATIONS AND FLOORS.
   f. WHERE SHOWN IN BRICK OR OTHER VENEER.

20. CONTROL JOINTS SHALL NOT OCCUR AT WALL CORNERS, INTERSECTIONS, ENDS, WITHIN 2'-0" OF CONCENTRATED POINTS OF BEARING, OR JAMBS OVER OPENINGS UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.

21. MECHANICALLY VIBRATE GROUT IN VERTICAL SPACES IMMEDIATELY AFTER POURING AND AGAIN MINUTES LATER.

22. PROVIDE CLEANOUTS IF GROUT LIFT EXCEEDS 4'-0" IN BLOCK WALLS.

VENEER ANCHORAGE

1. MASONRY VENEER SHALL BE LAID IN RUNNING BOND. (COORDINATE VENEER CONSTRUCTION WITH ARCHITECTURAL DRAWINGS.)

2. A MINIMUM 1-INCH AIR SPACE AND A 4-1/2 INCH MAXIMUM DISTANCE SHALL BE MAINTAINED BETWEEN THE INSIDE FACE OF THE VENEER AND THE WOOD STUD OR WOOD FRAMING, COLD-FORMED METAL FRAMING OR MASONRY BACKUP.

3. VENEER ANCHORS SHALL CONSIST OF AT LEAST A 9-GAGE GALVANIZED WIRE AND HAVE ENDS BENT TO FORM AN EXTENSION FROM THE BEND AT LEAST 2 INCHES LONG.

4. FOR COLD-FORMED METAL STUD BACKING:
   a. MASONRY VENEER SHALL BE ATTACHED TO METAL STUD BACKING UTILIZING ADJUSTABLE WIRE ANCHORS AND A CORROSION RESISTANT SCREW WITH A MINIMUM NOMINAL SHANK DIAMETER OF 0.190-INCHES.
   b. PROVIDE AT LEAST ONE ANCHOR FOR EACH 2.67 SQUARE FEET OF WALL AREA. SPACING OF ANCHORS SHALL NOT EXCEED A MAXIMUM OF 32 INCHES HORIZONTALLY AND 18 INCHES VERTICALLY.

5. FOR WOOD STUD BACKING:
   a. MASONRY VENEER SHALL BE ATTACHED TO WOOD STUD BACKUP SHALL BE A MINIMUM OF 1" x 2.5" x 0.0625" CORROSION RESISTANT CORRUGATED SHEET METAL ANCHOR WITH A MINIMUM WAVELENGTH OF 0.3" AND MINIMUM AMPLITUDE OF 0.06".
   b. PROVIDE AT LEAST ONE ANCHOR FOR EACH 2.67 SQUARE FEET OF WALL AREA WITH A MAXIMUM HORIZONTAL AND VERTICAL SPACING NOT TO EXCEED 32-INCHES AND 18-INCHES, RESPECTIVELY.
   c. VENEER ANCHORS SHALL BE ATTACHED TO WOOD STUDS WITH A CORROSION RESISTANT 8d COMMON NAIL LOCATED WITHIN 1/2-INCH OF THE 90-DEGREE BEND IN THE ANCHOR.

6. FOR ADJUSTABLE ANCHORS, THE MAXIMUM CLEARANCE BETWEEN CONNECTING PARTS SHALL BE 1/16-INCH AND SHALL BE DETAILED TO PREVENT DISENGAGEMENT.

7. PROVIDE ADDITIONAL ANCHORS AROUND OPENINGS LARGER THAN 16-INCHES IN EITHER DIRECTION. ANCHOR SPACING AROUND PERIMETER OF OPENING SHALL BE 3-FEET MAXIMUM ON CENTER AND WITHIN 12-INCHES OF OPENING.

COLD-FORMED METAL FRAMING

1. COLD FORMED METAL FRAMING SHALL CONFORM TO THE REQUIREMENTS OF AISI S100, AISI S200 AND AISI S211.

2. COLD-FORMED MEMBERS SHALL BE FORMED FROM CORROSION-RESISTANT STEEL CONFORMING TO ASTM 653 WITH YIELD AS FOLLOWS:
   18 GAGE AND THINNER — 33 KSI
   16 GAGE AND THICKER — 50 KSI

3. MEMBERS THAT ARE PART OF THE EXTERIOR ENVELOPE OF THE BUILDING SHALL HAVE A MINIMUM G60 COATING.

4. ALL THE COLD FORMED MEMBERS SHALL COME FROM A SINGLE MANUFACTURER. THE INSTALLATION SHALL COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS.

5. BASE TRACKS SHALL BE SET ON SMOOTH AND LEVEL CONCRETE, NON-SHRINK GROUT SUCH AS "MASTERFLOW 713" BY MASTER BUILDERS, OR STRUCTURAL STEEL.

6. LOW SHOT VELOCITY SHALL BE USED FOR POWDER ACTUATED FASTENERS IN CONCRETE AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.

7. FASTENING OF COMPONENTS SHALL BE WITH SELF-DRILLING CORROSION RESISTANT (OR ZINC COATED) SCREWS.

8. SPLICES IN FRAMING COMPONENTS OTHER THAN TRACK ARE NOT PERMITTED.

9. STUDS SHALL BE INSTALLED SO THE ENDS ARE POSITIONED AGAINST THE INSIDE OF THE RUNNER TRACK WEB PRIOR TO FASTENING AND SHALL BE ATTACHED TO BOTH FLANGES OF THE UPPER AND LOWER RUNNER TRACKS.

10. RESISTANCE TO BENDING AND ROTATION SHALL BE PROVIDED BY SECONDARY BRACING SPACED AT 48" MAX PER THE MANUFACTURER'S STANDARD BRIDGING DETAIL.

11. TRACKS OF STUD WALLS BEARING DIRECTLY ON CONCRETE SHALL BE ATTACHED TO THE CONCRETE WITH POWDER DRIVEN FASTENERS SPACED AT NO MORE THAN 24" O.C. FOR EXTERIOR WALLS OR AS SPECIFIED ON THE DRAWINGS.

12. ATTACH TRACKS TO STRUCTURAL STEEL AND CONCRETE WITH ONE POWDER DRIVEN FASTENER AS LISTED BELOW, AT EACH STUD LOCATION, UNLESS NOTED OTHERWISE.
   a. POWDER DRIVEN FASTENERS:
      - BY HILTI, SIMPSON STRONG TIE OR APPROVED EQUAL.
      - INSTALL CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS.
      - SHANK DIAMETER OF 0.177" (UNLESS OTHER SIZE IS SHOWN).
   b. IN CONCRETE:
      - USED LOW SHOT VELOCITY POWDER DRIVEN.
      - SMOOTH SHANKS.
      - 1 3/8" MINIMUM PENETRATION.
      - MINIMUM STRENGTH CAPACITY OF 150 LB PULLOUT AND 275 LB SHEAR.
      - SPACING NO CLOSER THAN 4" O.C. AND NO CLOSER THAN 3" TO A CONCRETE EDGE.

13. MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

MEMBER	SIZE/DEPTH	GAGE	F_y (KSI)	GROSS AREA (IN^2)	I_{eff} (IN^4)	S_{eff} (IN^3)
STUD	5.5"	18	33	0.424	1.883	0.681
TRACK	5.5"	18	33	0.383	1.516	0.468

14. ALL STUDS SHALL BE SECURELY SEATED FOR FULL END BEARING ON TOP AND BOTTOM TRACK.

STEEL LINTELS

1. PROVIDE LINTELS OVER ALL MASONRY OPENINGS AND OVER RECESSES WIDER THAN 12 INCHES IN ACCORDANCE WITH THE ACCOMPANYING LINTEL SCHEDULE, UNLESS NOTED OTHERWISE ON DRAWINGS.

2. WHERE CONTROL JOINTS ARE AT ENDS OF LINTELS, PROVIDE 15 POUND FELT BOND BREAKER UNDER LINTEL BEARING AND DUMMY CONTROL JOINT ON EXPOSED FACES. NO MORTAR OR GROUT SHALL BE IN THE HEAD JOINT OF DUMMY CONTROL JOINTS OPPOSITE THE BLOCK SHELL. PROVIDE A POSITIVE MEANS OF PREVENTING GROUT FROM ENTERING DUMMY JOINT OPPOSITE THE BLOCK SHELL.

3. THE FABRICATOR SHALL SUPPLY LOOSE LINTEL ANGLES (DEFINED BELOW) OVER ALL MASONRY OPENING AND RECESSES UNLESS NOTED OTHERWISE. PROVIDE ONE ANGLE FOR EACH 4-INCHES OF WALL THICKNESS.

MASONRY OPENING	STEEL ANGLE SIZE	BEARING END
6'-0" OR LESS	L 4 x 4 x 5/16	6"
6'-1" TO 8'-0"	L 6 x 4 x 5/16	8"
8'-1" TO 10'-8"	L 7 x 4 x 3/8	8"

4. PLACE ANGLES WITH LONG LEG VERTICAL. ANGLES SUPPORTING BRICK SHALL BE PLACED WITH HORIZONTAL LEG SUPPORTING AT LEAST TWO-THIRDS OF WYTHE.

5. ALL STEEL LINTELS FOR EXTERIOR WALLS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.

WOOD

1. WOOD DESIGN, SPECIFICATIONS AND ERECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION."

2. WOOD SHALL COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE SOUTHERN PINE INSPECTION BUREAU (SPIB).

3. ALL SAWN LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED GRADING AGENCY.

4. SAWN LUMBER SHALL HAVE THE FOLLOWING MINIMUM GRADE UNLESS NOTED OTHERWISE:

MEMBER SIZE	Fb (PSI)	Fv (PSI)	E (PSI)	Fc (PSI)	WOOD GRADE
2x & 4x	1000	175	1,400,000	565	SYP NO. 2
BEAM WIDTH > 4"	850	165	1,200,000	375	SYP NO. 2
POST WIDTH > 4"	850	165	1,200,000	525	SYP NO. 2

5. ALL STUDS SHALL BE CONSTRUCTED CONTINUOUS FROM SILL TO TOP PLATE UNLESS NOTED OTHERWISE.

6. ALL 2x BEARING WALLS SHALL BE BLOCKED HORIZONTALLY AT 4'-0" O.C. VERT. SPACING FOR ALL WALLS GREATER THAN 9'-0" IN HEIGHT.

7. ENGINEERED LUMBER PRODUCTS SHALL BE LAMINATED VENEER LUMBER (LVL), WITH THE FOLLOWING MINIMUM PROPERTIES:
   E = 1.9 x 10^6 PSI F_b = 2,600 PSI F_v = 285 PSI

8. ALL WOOD SHEATHING SHALL BE APA RATED SHEATHING CONFORMING TO STANDARD PS 1-08 OR PS2-10 WITH THE FOLLOWING NOMINAL THICKNESS AND SPAN/INDEX RATIO UNLESS NOTED OTHERWISE:

SHEATHING LOCALE	THICKNESS	SPAN/INDEX RATIO
ROOF	5/8"	40/20
WALL	7/16"	24/16

9. WOOD SHEATHING SHALL BE PLACED WITH FACE GRAIN PERPENDICULAR TO SUPPORTS USING A MINIMUM 5-PLY PLYWOOD. WOOD SHEATHING JOINTS SHALL BE STAGGERED.

10. WOOD SHEATHING SHALL BE ATTACHED USING COMMON NAILS. NAILING PATTERN SHALL BE AS NOTED ON TYPICAL DIAPHRAGM NAILING DETAIL ON SHEET S0.2 AND SHEAR WALL SCHEDULE. ATTACHMENT OF WOOD SHEATHING USING WOOD SCREWS IS NOT PERMITTED.

11. CONTRACTOR SHALL PROVIDE GALVANIZED PLYWOOD CLIPS AT MID-SPAN OF ROOF SHEATHING BETWEEN EACH ROOF TRUSS/JOIST.

12. ALL SILL PLATES RESTING ON CONCRETE OR MASONRY SHALL BE NATURALLY DURABLE (SPECIES FOR BOTH DECAY AND TERMITE RESISTANCE) OR PRESERVATIVE TREATED USING WATER-BORNE PERSERVATIVES IN ACCORDANCE WITH AWPA U1.

13. ALL BOLTS IN WOOD FRAMING SHALL CONFORM TO ASTM A307 AND BE INSTALLED WITH STEEL FLAT WASHERS CONFORMING TO ASTM F436.

14. CONNECTION HARDWARE AND FASTENERS SHALL BE GALVANIZED STEEL, MANUFACTURED AND INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS BY SIMPSON STRONG-TIE COMPANY INC. OR AN APPROVED EQUAL. DO NOT OVERLAP SIMPSON CONNECTORS.

15. A MINIMUM 16-GAGE STRAP EXTENDING 3" BEYOND PLATE WIDTH AND ATTACHED WITH 8-16d NAILS AT EACH END SHALL BE PROVIDED WHERE TOP PLATES, SILL PLATES OR STUDS ARE CUT FOR MECHANICAL, ELECTRICAL OR PLUMBING PENETRATIONS.

16. PROVIDE A MINIMUM OF 3 STUDS AT EACH CORNER OF EXTERIOR WALLS.

NOT FOR CONSTRUCTION, FOR REFERENCE ONLY

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GENERAL NOTES

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