GENERAL:

1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, SHOP DRAWINGS AND SPECIFICATIONS.
2. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD AND ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
3. A RECORD SET OF APPROVED SHOP DRAWINGS SHALL BE KEPT IN THE FIELD BY THE GENERAL CONTRACTOR.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECT'S PLANS BEFORE STARTING WORK.
5. SEE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS FOR OPENINGS IN WALLS AND IN ROOF AND FLOOR SYSTEMS.
6. VERIFY ALL MECHANICAL EQUIPMENT WEIGHTS, LOCATIONS AND ASSOCIATED OPENINGS WITH MECHANICAL CONTRACTOR.
7. CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY BRACING, SHORING, GUYING, ETC. AND OTHER METHODS TO PREVENT EXCESSIVE CONSTRUCTION STRESSES. THESE PROVISIONS ARE TO REMAIN IN PLACE UNTIL SUFFICIENT PERMANENT MEMBERS ARE CONSTRUCTED TO INSURE THE SAFETY OF THE STRUCTURE.
8. UNLESS OTHERWISE NOTED, DETAILS SHOWN ON ANY DRAWING ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.
9. METAL DECK AND STRUCTURAL STEEL FRAMING MEMBERS WILL DEFLECT UNDER APPLICATION OF DEAD WEIGHT FROM CONCRETE AND TOPPING. CONCRETE CONTRACTOR TO ACCOUNT FOR THIS DEFLECTION WITH RESPECT TO THE QUANTITY AND SCREEDING OF THE CONCRETE AS REQUIRED TO ACHIEVE A LEVEL FLOOR SLAB.

SHOP DRAWINGS:

1. THE GENERAL CONTRACTOR SHALL REVIEW AND STAMP ALL SHOP DRAWINGS BEFORE SUBMITTAL FOR APPROVAL. SHOP DRAWINGS, REVIEWED BY THE GENERAL CONTRACTOR, FOR REINFORCING, JOIST, DECK, STRUCTURAL MEMBERS, AND STRUCTURAL STEEL SHALL BE SUBMITTED TO THE ARCHITECT AND/OR ENGINEER AND A STAMPED APPROVAL RECEIVED PRIOR TO FABRICATION. INSTALLATION SHALL BE MADE FROM APPROVED SHOP DRAWINGS ONLY.
2. REPRODUCTION & REUSE OF CONTRACT DRAWINGS FOR THE PURPOSE OF PREPARING SHOP DRAWINGS IS STRICTLY PROHIBITED. ELECTRONIC FILES OF THE STRUCTURAL FRAMING PLANS MAY BE PROVIDED FOR THE PURPOSE OF PREPARING SHOP DRAWINGS FOR A NOMINAL FEE OF $100 PER SHEET.
3. THE FABRICATOR SHALL HIGHLIGHT CHANGES MADE IN SHOP DRAWINGS WHICH DO NOT COMPLY WITH THE DESIGN DRAWINGS AND RECEIVE APPROVAL PRIOR TO COMMENCING WITH FABRICATION OF SAME.
4. SHOP DRAWING APPROVAL SHALL NOT CONSTITUTE ACCEPTANCE OF FABRICATOR CHANGES TO THE CONTRACT DOCUMENTS, ONLY GENERAL CONFORMANCE TO THE DESIGN INTENT. FABRICATOR CHANGES THAT RESULT IN MODIFICATIONS TO THE CONTRACT SUM MUST BE APPROVED IN ACCORDANCE WITH PROVISIONS CONTAINED IN THE OWNER-CONTRACTOR AGREEMENT OR PROCEDURES OUTLINED IN THE CONTRACT MANUAL.
5. ONLY SHOP DRAWINGS MARKED "APPROVED" OR "APPROVED AS NOTED" MAY BE RELEASED FOR FABRICATION. SHOP DRAWINGS WITH ANY OTHER MARKINGS MUST BE REVISED AND AN APPROVED COPY RECEIVED BY THE FABRICATOR PRIOR TO FABRICATION OF THE MATERIAL. MATERIAL FABRICATED WITHOUT PROPER APPROVAL IS SUBJECT TO REJECTION.
6. REVIEW OF SHOP DRAWINGS IS FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE FABRICATOR IS RESPONSIBLE FOR DIMENSIONS AND QUANTITIES ASSOCIATED WITH THE FABRICATION OF THEIR RESPECTIVE PARTS AND PORTIONS OF THE PROJECT. MEANS AND METHODS ASSOCIATED WITH THE FABRICATION OF ANY MATERIAL SHALL REMAIN THE REPSONSIBILITY OF THE FABRICATOR AS SHALL THE RESPONSIBILITY FOR THE COORDINATION OF INSTALLATION SEQUENCES AFFECTING OTHER TRADES.

FOUNDATIONS/SOILS:

1. ALL SUBGRADE PREPARATION INCLUDING PREPARATION OF SOILS AT THE BUILDING PAD, FILL MATERIAL, PLACEMENT AND COMPACTION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS AS CONTAINED IN THE REPORT "SOILS EXPLORATIONS AND GEOTECHNICAL ENGINEERING STUDIES FOR THE PROPOSED SIMULATION LAB BUILDING ON USA DRIVE NORTH AT THE UNIVERSITY OF SOUTH ALABAMA IN MOBILE, ALABAMA." AS PREPARED BY GEOTECHNICAL ENGINEERING-TESTING, INC. (PROJECT No 17-186) DATED AUGUST 9, 2017".
2. ALL SOILS WORK, INCLUDING BACKFILL OF UTILITY TRENCHES, AND THE VERIFICATION OF BEARING CAPACITY SHALL BE UNDER THE DIRECTION OF A QUALIFIED SOILS ENGINEER OR SOILS TECHNICIAN. PROXIMITY OF UTILITY TRENCHES TO BUILDING FOUNDATION SYSTEM SHALL BE AS APPROVED BY THE ARCHITECT AND/OR SOILS ENGINEER TO INSURE INTEGRITY OF THE BEARING SOILS.
3. RESULTING TOTAL LOAD SOIL PRESSURES (MAXIMUM).
   a. COLUMN PADS _____2500_____psf
   b. WALL FOOTINGS _____3000_____psf
4. ALL FOOTINGS TO BEAR ON UNDISTURBED EARTH OR COMPACTED STRUCTURAL FILL AT ELEVATIONS SHOWN ON PLANS AND DETAILS.
5. ALL FOOTINGS, OR PORTIONS THEREOF BELOW GRADE, MAY BE EARTH FORMED BY NEAT EXCAVATIONS.
6. FOOTINGS TO BE CENTERED ON WALLS OR COLUMNS UNLESS NOTED OTHERWISE.
7. DO NOT ALLOW HEAVY EQUIPMENT BEHIND EARTH RETAINING STRUCTURES. EQUIPMENT WITHIN 8-FEET OF EARTH RETAINING STRUCTURES SHALL BE LIMITED TO 5,000 LBS GROSS WEIGHT.

CONCRETE WORK:

1. CONCRETE SHALL HAVE THE MINIMUM STRENGTH AND MEET THE PROPERTIES AS DESCRIBED BELOW FOR THE VARIOUS CLASSES OF CONCRETE & GROUT:

MIX TYPE	SUPER P	MAXIMUM SLUMP **	MAX W/C RATIO	% AIR	MAX. AGGR.	COMMENT	LOCATION
3000 PSI	N/A	4"	0.51 MAX.	4-6			FOUNDATIONS
3000 PSI	REQUIRED	3"/8"	0.49 MAX.	<3			SLAB-ON-GRADE
4000 PSI	REQUIRED	3"/8"	0.47 MAX.	4-6		MAX. 3/4" AGGREGATE	WALLS
4000 PSI	REQUIRED	3"/8"	0.47 MAX.	<3		MAX. 3/4" AGGREGATE	ELEVATED SLABS
** #/# INDICATES SLUMP PRIOR TO/AFTER ADDITION OF SUPER P TO MIX.							

2. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE CURRENT "ACI MANUAL OF CONCRETE PLACEMENT."
3. PORTLAND CEMENT SHALL CONFORM TO ASTM C 150, TYPE I OR II.
4. ALL AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL MEET ASTM C33.
5. ALL REINFORCING TO MEET ASTM A 615, GRADE 60. ALL WELDED WIRE FABRIC (WWF) SHALL MEET ASTM A 185.
6. ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED PER CRSI AND ACI STANDARDS, INCLUDING CONCRETE COVER AND BAR SUPPORTS (DESIRED METHOD OF SUPPORTING TOP BARS IN THICK MATS TO BE VERIFIED WITH ENGINEER.) PROVIDE CORNER BARS AT ALL FOOTINGS AND WALL INTERSECTIONS TO MATCH HORIZONTAL REINFORCING IN SIZE AND SPACING AT INTERSECTIONS OF CONTINUOUS SPREAD FOOTINGS EXTEND ALL BARS TO FAR SIDE OF INTERSECTING FOOTING. LAP BARS AT ALL SPLICES, INCLUDING CORNER BARS AND DOWELS, IN ACCORDANCE WITH SPLICE SCHEDULE OR IN LIEU THEREOF 40 BAR DIAMETERS. LAP WWF 6" OR ONE FULL MESH, WHICHEVER IS GREATER.
7. ALL FOUNDATION REINFORCING SHALL BE SUPPORTED BY CORROSION TREATED CHAIRS, BOLSTERS, OR ACI APPROVED PRECAST REINFORCING SUPPORTS, WITH APPROPRIATE BASES OR SAND CHAIRS, DO NOT USE CMU BLOCKS, SHARDS, OR BRICKS. REINFORCING OR OTHER METAL BARS OR DEGRADABLE STAKES, DRIVEN INTO THE GROUND WILL NOT BE ALLOWED. SUPPORTS FOR WIRE AND BAR REINFORCEMENT IN SLABS WITH A VAPOR BARRIER SHALL BE ALL PLASTIC TYPE WITH BEARING PLATES AS REQUIRED TO PREVENT PUNCTURE OF THE VAPOR BARRIER.
8. PROVIDE 2-#5, 4'-0" LONGER THAN OPENING DIMENSION ON ALL SIDES OF OPENING IN SLAB AND WALLS.
9. CONCRETE PROTECTION FOR REINFORCING: 3" AT FOOTINGS AND GRADE BEAMS; 2" AT FORMED SURFACES LATER EXPOSED TO SOIL; 1-1/2" AT BEAMS, COLUMNS AND WALLS; 1" AT SLABS UNLESS NOTED OTHERWISE.
10. NO ALUMINUM TO BE EMBEDDED IN ANY CONCRETE.
11. NO HOLES OR OPENINGS THROUGH FOUNDATION WALL AND/OR FOOTINGS WITHOUT ENGINEERS APPROVAL.
12. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4".
13. FOUNDATION WALL, FOOTINGS AND SLABS SHALL HAVE CONSTRUCTION JOINTS SPACED AT 80'-0" MAXIMUM ON CENTER.
14. UNLESS OTHERWISE APPROVED CONCRETE PLACEMENT SHALL BE SCHEDULED BETWEEN 6AM AND 6PM, MONDAY THROUGH FRIDAY SO THAT INSPECTIONS AND TESTING CAN BE SCHEDULED DURING NORMAL BUSINESS HOURS. CONCRETE PLACEMENT OUTSIDE THESE TIMES SHALL BE PROHIBITED.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL CONCRETE FORM WORK.
16. FORM SAVER ASSEMBLY INDICATED ON THE DRAWINGS SHALL BE AN ICI TYPE [illegible] COUPLER ASSEMBLY THAT DEVELOPS 125% OF THE YIELD STRENGTH OF DOWEL BAR INDICATED. USE LENTON FORM SAVER WITH MATCHING TAPER THREAD [illegible] OR AN APPROVED EQUAL. ASSEMBLY SHALL HAVE A CURRENT ICC EVALUATION REPORT.

MASONRY:

1. HOLLOW CONCRETE BLOCK (MASONRY) UNITS SHALL CONFORM TO ASTM C 90, LIGHTWEIGHT, TYPE 1 WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI ON THE NET AREA AND 1000 PSI ON THE GROSS AREA (f'm = 1500psi).
2. ALL MORTAR FOR USE IN MASONRY SHALL CONFORM TO ASTM C 270, TYPE M OR S. ALL GROUT FOR USE IN MASONRY SHALL CONFORM TO ASTM C 476, MIN. 2500 PSI AND BE NOT LESS THAN A 7-1/2 SACK MIX.
3. IN GENERAL, COARSE AGGREGATE GROUT SHALL BE USED FOR ALL NOMINAL CMU SIZES 8" AND ABOVE. FINE AGGREGATE GROUT SHALL BE USED FOR ALL NOMINAL CMU SIZES LESS THAN 8". SEE THE FOLLOWING TABLE FOR SPECIFIC GROUT SPACE REQUIREMENTS.

GROUT SPACE REQUIREMENTS

GROUT TYPE (1)	MAXIMUM GROUT POUR HEIGHT (4) (FEET)	MINIMUM WIDTH OF GROUT SPACE (2), (3) (INCHES)	MINIMUM GROUT SPACE DIMENSIONS FOR GROUT CELLS OF HOLLOW UNITS (3) (IN. x IN.)
FINE	1	3/4"	1 1/2" x 2"
FINE	5	2"	2"x3"
FINE	12	2 1/2"	2 1/2"x3"
COARSE	1	1 1/2"	1 1/2"x3"
COARSE	5	2"	2 1/2"x3"
COARSE	12	2 1/2"	3"x3"
(1) FINE AND COARSE GROUT ARE DEFINED IN ASTM C476.			
(2) FOR GROUTING BETWEEN MASONRY WYTHES.			
(3) GROUT SPACE DIMENSION IS THE CLEAR DIMENSION BETWEEN ANY MASONRY PROTRUSION AND SHALL BE INCREASED BY THE DIAMETERS OF THE HORIZONTAL BARS WITHIN THE CROSS SECTION OF THE GROUT SPACE.			
(4) GROUT POUR HEIGHTS EXCEEDING 5 FT. (WHERE ALLOWED) SHALL HAVE CLEAN-OUTS AT EACH REINFORCED CELL			

MASONRY NOTES CONTD.:

4. THE CONTRACTOR SHALL DESIGN, FABRICATE AND INSTALL BRACING THAT WILL ASSURE THE STABILITY OF THE MASONRY DURING CONSTRUCTION.
5. REINFORCING BARS TO MEET ASTM A 615, GRADE 60. DEFORMED BAR ANCHORS SHALL BE COMPLY WITH ASTM A 496.
6. REINFORCE MASONRY AT BEARING POINTS OF ALL BEAMS, LINTELS, ETC. WITH 1-#5 (CONTINUOUS TO FOUNDATION) IN EACH BLOCK CORE BENEATH BEARING PLATES.
7. PROVIDE AT LEAST 2 VERTICAL BARS AT EACH END, CORNERS, AND INTERSECTIONS OF ALL WALLS AND ADJACENT TO CONTROL JOINTS. SEE WALL SECTIONS AND SCHEDULES FOR TYPICAL VERTICAL REINFORCING.
8. BOND BEAM BLOCKS SHALL MEAN OPEN BOTTOM UNITS UNLESS NOTED OTHERWISE. PROVIDE METAL LATH IN JOINTS BELOW BOTTOM OF BOND BEAM OVER THOSE CELLS THAT ARE NOT GROUT FILLED. LATH SHALL NOT BE PLACED IN A JOINT WITH JOINT REINFORCEMENT.
9. VERTICAL AND HORIZONTAL REINFORCING SHALL BE CONTINUOUS AND LAPPED 48-BAR DIAMETERS, MINIMUM
10. HOLD VERTICAL BARS STRAIGHT AND TRUE AND ACCURATELY LOCATED IN WALL AS DETAILED. INSTALL REBAR POSITIONERS @ 4'-0" o.c. MAXIMUM THAT ARE DESIGNED TO HOLD REBAR IN PROPER LOCATION WITHIN THE GROUTED CELL.
11. PROVIDE A MINIMUM OF 1/2" GROUT BETWEEN MAIN REINFORCING AND MASONRY UNITS.
12. PROVIDE STANDARD NO. 9 GAGE LADDER TYPE JOINT REINFORCEMENT AT 16"o.c. FOR TYPICAL HORIZONTAL REINFORCING IN BACKUP WYTHE.
13. ALL REINFORCED MASONRY COLUMN AND WALL SECTIONS REQUIRE DOWELS FROM FOOTING, SAME SIZE AND QUANTITY AS VERTICAL REINFORCEMENT.
14. GROUT FILL ALL CELLS, ALL WALLS BELOW GRADE. SLUSH JOINT BETWEEN WYTHES BELOW GRADE.
15. ALL CMU TO BE LAID IN RUNNING BOND PATTERN.
16. EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE, LOW-LIFT GROUTING SHALL BE USED FOR ALL REINFORCED MASONRY CONSTRUCTION. LIMIT MAXIMUM GROUT LIFTS TO 4'-8" MAX FOR ALL LOW-LIFT GROUTING.
17. ALL GROUT SHALL BE CONSOLIDATED INTO PLACE USING A MECHANICAL VIBRATOR AS SPECIFIED ACCORDING TO ACI 530.
18. THE TOP OF EACH GROUT POUR SHALL BE HELD 1" BELOW THE BED JOINT OF THE NEXT COURSE. GROUT POURS AT THE TOP OF THE WALL SHALL BE SLUSH WITH THE TOP OF THE MASONRY.
19. REINFORCEMENT, REBAR POSITIONERS, AND TIES SHALL BE PLACED PRIOR TO GROUTING.
20. CLEANOUTS SHALL BE CONSTRUCTED ADJACENT TO EACH VERTICAL BAR IN THE BOTTOM COURSE OF MASONRY FOR EACH GROUT POUR HEIGHT THAT EXCEEDS 5 FEET. CONSTRUCT CLEANOUTS WITH AN OPENING OF SUFFICIENT SIZE TO PERMIT REMOVAL OF DEBRIS, BUT NO LESS THAN 3 IN. DIMENSION. AFTER CLEANING, CLOSE CLEANOUTS WITH CLOSURES BRACED TO RESIST GROUT PRESSURE. ALL CLEANOUTS SHALL BE LOCATED ON WALL NOT EXPOSED TO VIEW.
21. STORE ALL MASONRY LINTELS UNTIL MASONRY AND GROUT HAVE BEEN ALLOWED TO SET FOR A MINIMUM OF 7 DAYS.
22. MASONRY TESTING (BY OWNER AS IDENTIFIED IN THE SPECIFICATIONS) SHALL BE PERFORMED AS FOLLOWS:
    a. GROUT TESTS _____ PER 1,000 SQ. FT. OF WALL SURFACE.
    b. MASONRY UNITS TEST _____ PER 5,000 SQ. FT. OF WALL SURFACE.

CLASS "B" TENSION LAP SPLICE LENGTHS

BAR SIZE	f'c= 3000 PSI	f'c= 4000 PSI
#3	22"	19"
#4	29"	25"
#5	36"	31"
#6	43"	37"
#7	63"	54"
#8	72"	62"
#9	81"	70"

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GENERAL NOTES

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