

DRAWING ISSUE RECORD		
DATE	REVISIONS	NO.
4-6-2021	ISSUE TO BID	



ADDITION TO COLHAM FERRY
ELEMENTARY SCHOOL
191 COLHAM FERRY ROAD, WATKINSVILLE, GA 30677
FOR THE
OCONEE COUNTY BOARD OF EDUCATION
OCONEE COUNTY, GEORGIA
DOE FACILITY CODE 3050

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CONCRETE MASONRY UNIT LINTEL & JAMB SCHEDULE					
OPENING WIDTH	LINTEL DEPTH "D"	LINTEL REINFORCING			JAMB REINFORCING (SEE NOTE 5)
		6" WALL	8" WALL	12" WALL	
≤ 4'-8"	8"	N/A	(1)-#5	N/A	(1)-#5
>4'-8" TO ≤6'-8"	16"	N/A	(2)-#5 (T&B)	N/A	(2)-#5
>6'-8" TO ≤8'-0"	24"	N/A	(2)-#5 (T&B)	N/A	(2)-#5

SECTIONS

ELEVATION

NOTES:

- LINTELS SHALL BE CONSTRUCTED WITH U-BLOCKS AT THE BOTTOM AND DEPRESSED WEB BLOCKS ABOVE AND SHALL BE FULLY GROUTED.
- SILL REINFORCING REQUIREMENTS:
 - OPENING WIDTH ≤ 6'-0" AND SILL HEIGHT ≤ 3'-0": SILL REINFORCING NOT REQUIRED.
 - OPENING WIDTH > 6'-0" OR SILL HEIGHT > 3'-0": PROVIDE REINFORCED LINTEL ACCORDING TO SCHEDULE.
- NOTIFY STRUCTURAL ENGINEER OF RECORD IF OPENING WIDTH EXCEEDS SCHEDULED WIDTHS.
- SEE CONCRETE MASONRY GENERAL NOTES AND RELEVANT SCHEDULES, SECTIONS, AND DETAILS FOR ADDITIONAL REINFORCING AND REQUIREMENTS NOT SHOWN IN THIS SCHEDULE.
- PROVIDE (1) BAR PER CELL IN JAMBS, TYPICAL. WHERE SCHEDULED JAMB REINFORCING EXCEEDS THE NUMBER OF CELLS, PROVIDE (2) BARS PER CELL LOCATED 3/4" CLEAR FROM EACH FACE SHELL.

CONCRETE MIXTURES						
APPLICATION	EXPOSURE	F'c (AT 28-DAYS UNO)	MAXIMUM W/C	AIR CONTENT	NOMINAL MAXIMUM AGGREGATE SIZE (NOTE 4)	MAXIMUM CONCRETE WEIGHT
FOOTINGS	F0, S0, P0, C0	3000 PSI	SEE NOTE 2	SEE NOTE 3	1"	150 PCF
EXTERIOR SLAB-ON-GRADE	F1, S0, P0, C1	4000 PSI AT 28-DAYS 4500 PSI AT 56-DAYS	0.45	4.5% ± 1.5%	1"	150 PCF
INTERIOR SLAB-ON-GRADE	F0, S0, P0, C0	3000 PSI	SEE NOTE 2	SEE NOTE 3	1"	150 PCF

NOTES:

- EXPOSURE CATEGORIES AND CLASSES FOR SULFATES, PERMEABILITY, AND CORROSION PROTECTION OF REINFORCEMENT IS CLASS ZERO UNLESS NOTED OTHERWISE.
- WHERE NO MAXIMUM WATER CEMENT RATIO IS NOTED FOR DURABILITY, PROPORTIONING OF WATER/CEMENT RATIO SHALL BE AS REQUIRED FOR SPECIFIED CONCRETE MIX DESIGN.
- WHERE AIR ENTRAINMENT IS NOT REQUIRED BY DESIGN, THE CONTRACTOR, INSTALLER, AND SUPPLIER MAY CHOOSE TO INCLUDE AIR ENTRAINMENT TO IMPROVE PLACEMENT AND FINISHING CHARACTERISTICS. AIR ENTRAINMENT IS NOT PERMITTED IN NORMAL WEIGHT CONCRETE TO RECEIVE A HARD TROWEL FINISH AND ENTRAPPED AIR SHALL NOT EXCEED 3%.
- COARSE AGGREGATE SHALL BE ASTM C 33, GRADED. SELECT GRADING CLASS PER TYPE OF CONSTRUCTION OR LOCATION USED, AND IN RELATION TO SPECIFIC WEATHERING REGION. AGGREGATE SHALL BE FROM A SINGLE SOURCE. #67 GRADING SHALL BE USED FOR CONCRETE WITH 3/4 INCH MAXIMUM; #57 GRADING SHALL BE USED FOR CONCRETE WITH 1 INCH MAXIMUM.
- FINE AGGREGATE FOR INTERIOR SLAB-ON-GRADE SHALL CONSIST OF A MINIMUM 70% NATURAL SAND.

MIN. LAP SPLICE LENGTH SCHEDULE "A" FOR CONCRETE MASONRY UNITS (CMU) WITH (1) REINFORCEMENT BAR IN CENTER OF WALL									
CMU TYPE	BAR SIZE								
	#3	#4	#5	#6	#7	#8	#9	#10	#11
6" CMU	12"	20"	32"	54"	NP	NP	NP		
8" CMU	12"	15"	23"	43"	60"	72"	NP		
10" CMU	12"	12"	18"	34"	46"	71"	82"		
12" CMU	12"	12"	15"	28"	38"	57"	74"		

NOTES:

- F_{cr} = 2000 psi
- REBAR IS ASSUMED TO BE UNCOATED (NO EPOXY COATING)
- SCHEDULE APPLIES WHERE (1) BAR PER CELL IS REQ'D PER CMU WALL REINF SCHED. REBAR SHALL BE LOCATED IN CENTER OF CELL.
- "NP" DENOTES NOT POSSIBLE. BAR IS TOO LARGE FOR THIS WALL.
- ADDITIONAL BARS REQ'D @ SHEAR WALLS END ZONES PER SCHEDULE (SEE S4.1). REGARDLESS OF THE # OF BARS PER CELL LISTED IN THE SCHEDULE, SHALL BE LOCATED WITHIN THE CELL TO MATCH THE TYPICAL WALL VERTICAL REINFORCING.

POST-INSTALLED ANCHORS SPECIFIED PRODUCTS BY APPLICATION		
ANCHOR TYPE	CONCRETE	CONCRETE MASONRY
EXPANSION ANCHORS/ EXPANSION BOLTS	HILTI KWIK BOLT T2 SIMPSON STRONG-BOLT T2 DEWALT POWER POWER-STD+ SD1	HILTI KWIK BOLT 3 SIMPSON STRONG-BOLT 2 DEWALT POWER POWER-STD+ SD1
SCREW ANCHORS	HILTI HUS-EZ SIMPSON TITEN HD DEWALT POWER SCREW-BOLT+	HILTI HUS-EZ SIMPSON TITEN HD DEWALT POWER SCREW-BOLT+
ADHESIVE ANCHORS (EPOXY ANCHORS) WITH A36 ALL-THREAD ROD	HILTI HIT-HY200 SIMPSON SET-3G DEWALT POWER PURE110+	HILTI HIT-HY270 SIMPSON SET-3P DEWALT POWER A100+ GOLD
ADHESIVE ANCHORS (EPOXY ANCHORS) WITH REBAR	HILTI HIT-HY200 SIMPSON SET-3G DEWALT POWER PURE110+	

NOTES:

- POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE GENERAL CONTRACTOR SHALL OBTAIN APPROVAL FROM THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REINFORCING. HOLES SHALL BE DRILLED AND CLEANED PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
- SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED, SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD WITH CALCULATIONS THAT ARE PREPARED AND SEALED BY A REGISTERED DESIGN PROFESSIONAL IN THE STATE IN WHICH THE PROJECT IS LOCATED SHOWING THAT THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE REQUIRED BY THE REFERENCED BUILDING CODE.
- ALTERNATE PRODUCTS SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR APPROVAL SHALL HAVE A VALID RESEARCH REPORT, ALSO KNOWN AS EVALUATION REPORT, INDICATING COMPLIANCE WITH APPROPRIATE ACCEPTANCE CRITERIA REQUIRED BY THE BUILDING CODE FOR THE INTENDED LOAD TYPE AND USE (E.G. WIND, SEISMIC, SUSTAINED TENSION, ETC). RESEARCH REPORTS SHALL BE ISSUED BY A SOURCE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
- ADHESIVE ANCHOR DESIGN TEMPERATURE RANGE IS 110°F (LONG TERM) AND 130°F (SHORT TERM).
- IN ADDITION TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, THE FOLLOWING GUIDELINES SHALL BE FOLLOWED FOR INSTALLATION OF ADHESIVE ANCHORS:
 - ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT TIME OF ANCHOR INSTALLATION.
 - ADHESIVE ANCHORS SHALL BE INSTALLED IN DRY CONCRETE, AND DURING DRY CONDITIONS.
 - ADHESIVE ANCHORS SHALL BE INSTALLED IN HOLES PREDRILLED WITH A CARBIDE TIPPED DRILL BIT.
 - ADHESIVE ANCHORS SHALL BE INSTALLED WITHIN THE TEMPERATURE RANGE SPECIFIED IN THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, BUT NOT OUTSIDE OF THE DESIGN TEMPERATURE RANGE. LOADS SHALL NOT BE APPLIED TO ADHESIVE ANCHORS UNTIL THE FULL CURING TIME ASSOCIATED WITH THE INSTALLATION TEMPERATURE HAS ELAPSED.
 - INSTALLATION OF ADHESIVE ANCHORS SHALL BE PERFORMED BY CERTIFIED PERSONNEL. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ANCHOR'S ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM, OR EQUIVALENT.
 - SPECIAL INSPECTIONS SHALL BE PROVIDED FOR POST-INSTALLED ANCHORS IN ACCORDANCE WITH THE ANCHOR MFR AND/OR EVALUATION REPORT, UNLESS MORE SPECIFIC REQUIREMENTS ARE SPECIFIED IN THE CONSTRUCTION DOCUMENTS.
 - WHEN ANCHORING TO CONCRETE MASONRY WITH VOIDS, THE APPROPRIATE SCREEN TUBE SHALL BE USED AS RECOMMENDED BY THE ADHESIVE MANUFACTURER.

CLASS B TENSION LAP SPLICE LENGTHS (ACI 318)					
BAR SIZE	F'c = 3000 PSI		F'c = 4000 PSI		LAP SPLICE
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	
#3	28	42	21	32	
#4	37	56	28	43	
#5	46	69	36	53	
#6	56	83	43	64	

BAR SIZE	F'c = 3000 PSI		F'c = 4000 PSI		DEVELOPMENT LENGTH
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	
#3	21	32	16	25	
#4	28	43	22	33	
#5	35	53	27	41	
#6	43	64	33	49	

NOTES:

- TABULATED VALUES ARE BASED ON MINIMUM YIELD STRENGTH OF 60 KSI. LENGTHS ARE IN INCHES.
- CASE 1 AND CASE 2 DEPEND ON THE TYPE OF STRUCTURAL MEMBER, CONCRETE COVER, AND BAR SPACING AND ARE DEFINED AS FOLLOWS:

MEMBERS & COLUMNS	CASE 1	CASE 2
	CLEAR SPACING ≥ 2.0 BAR DIA	CLEAR SPACING < 2.0 BAR DIA
- ALL OTHERS

CAST-IN-PLACE CONCRETE (NON-RESTRESSED) CLEAR COVER SCHEDULE	
CONCRETE CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	CONCRETE COVER
CONCRETE IN CONTACT WITH GROUND OR WEATHER:	3 IN
#6 THROUGH #10 BARS	2 IN
#5 BAR, W/31 OR GREATER, AND SMALLER	1 1/2 IN
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	
#14 AND #18 BARS	1 1/2 IN
#11 BAR AND SMALLER	3/4 IN
BEAMS, COLUMNS:	
PRIMARY REINFORCEMENT, TIES, STRUTS, SPIRALS	1 1/2 IN

WATER PIPING SUPPORT SCHEDULE		
PIPE DIA (IN)	PIPE WEIGHT (LB/FT)	PIPE SUPPORT SPACING (MAX) (FT)
2 1/2	6.0	12
3	8.5	12
4	12.0	12
5	17.5	12
6	23.5	6
8	37.5	6

NOTES:

- PIPES IN TABLE ARE SCHEDULE 10 TYPE. ESRF MANUFACTURER TO SUBMIT DOCUMENTATION FOR ALTERNATE PIPING NOT NOTED.
- PIPE WEIGHT INCLUDES: PIPE + INSULATION + WATER.
- EXACT PIPE LOCATIONS TO BE COORDINATED WITH MECHANICAL DRAWINGS.
- PIPES RUNNING PARALLEL TO JOISTS WITH DIAMETER GREATER THAN 4" OR RUNNING IN COMBINATION A MINIMUM OF 2 JOISTS.
- MEMBER SIZES ON PLANS HAVE BEEN ADJUSTED TO SUPPORT WATER PIPING LOADS IN THIS TABLE.
- ANY PIPE OR COMBINATION OF PIPES WITH TOTAL DIAMETERS GREATER THAN 8" SHALL BE HUNG PER THE DIRECTION OF THE ARCHITECT - NOTIFY ARCHITECT PRIOR TO PROCEEDING WITH WORK.
- NO PIPING SHALL RUN BELOW THE BOTTOM CHORD OF THE BAR JOIST.

BRICK/STONE VENEER LINTEL SCHEDULE (FLUSH TO STUD)	
SPAN (OPENING)	LINTEL SIZE
0'-0" - 4'-0"	BENT PL 7x4x5/16 (LLH)
4'-0" - 6'-0"	L7x4x3/8 (LLH)
6'-0" - 8'-0"	BENT PLATE 7x7x3/8

DETAILS:

NOTES:

- PROVIDE 4" BEARING MINIMUM AT EACH END OF LINTEL ANGLES.

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