

MASONRY: BRICK MASONRY SUPPORT

F01	NET ALLOWABLE SOIL BEARING PRESSURE USED FOR DESIGN: 2000 PSF (ASSUMED) 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.
F02	EXTERIOR FOOTINGS SHALL BEAR 18" MINIMUM BELOW FINAL EXTERIOR GRADES TO PROTECT AGAINST FROST HEAVE.
F03	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 PLACEMENT OF CONCRETE DOES NOT OCCUR WITHIN 24 HOURS OF THE EXCAVATION FOR THE FOOTING.
F04	SUBGRADE UNDER SLABS-ON-GRADE SHALL BE PROPERLY COMPACTED TO 95% OF A STANDARD PROCTOR DENSITY. THE TOPMOST 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 6 MIL POLYETHYLENE 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.
F05	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.
MASONRY: CONCRETE MASONRY	
M01	CONFORM TO ALL REQUIREMENTS OF: BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530-11/ASCE 5-11/TMS 402-11) AND SPECIFICATION FOR MASONRY STRUCTURES (ACI 530.1-11/ASCE 6-11/TMS 602-11)
M02	THE SPECIFIED ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE MASONRY (f _m) ON THE NET AREA IS 1500 PSI.
M03	HOLLOW CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90, GRADE N. MASONRY UNITS SHALL BE LIGHTWEIGHT CONCRETE WITH A DENSITY NOT EXCEEDING 105 PCF.
M04	MORTAR SHALL CONFORM TO ASTM C 270. FOR LOAD BEARING WALLS AND ALL EXTERIOR WALLS ABOVE GRADE USE TYPE N MORTAR. IF WALL EXTENDS NO MORE THAN 24" BELOW FINISHED FLOOR TO TOP OF FOOTING, TYPE N MORTAR MAY BE USED. FOR EXTERIOR WALLS BELOW GRADE USE TYPE S MORTAR.
M05	GROUT USED TO FILL CELLS AND BOND BEAMS SHALL CONFORM TO ASTM C 476 AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI. PEA GRAVEL SHALL BE USED FOR COARSE AGGREGATE. ALL CELLS CONTAINING VERTICAL REINFORCEMENT, ALL BOND BEAMS AND ALL CELLS UNDER BEAM BEARING PLATES SHALL BE FILLED WITH GROUT (NOT MORTAR).
M06	STEEL REINFORCEMENT FOR VERTICAL REINFORCEMENT AND HORIZONTAL BOND BEAMS SHALL BE DEFORMED BARS AND 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 THE ACI DETAILING MANUAL (ACI 315). MINIMUM LAP SPLICE LENGTH SHALL BE AS FOLLOWS: #4 - 21", #5 - 26", #6 - 43", #7 - 60", #8 - 92"
M07	LINTEL BEAMS: FOR ALL BOND BEAMS SPANNING OPENINGS, PROVIDE REINFORCED LINTEL BEAMS ACCORDING TO THE CMU LINTEL SCHEDULE. FOR ALL BOND BEAMS NOT SPANNING OPENINGS: PROVIDE 2 #5 BARS CONTINUOUS IN ALL BOND BEAMS. U.N.O. FOR ALL BOND BEAMS: PROVIDE STANDARD HOOKS WHERE BOND BEAM IS DISCONTINUOUS AND PROVIDE CORNER BARS AT CORNERS. BOND BEAMS SHALL BE PLACED ABOVE AND BELOW ANY OPENINGS AND SHALL EXTEND 1'-4" MINIMUM INTO ADJACENT WALL.
M08	PROVIDE GALVANIZED JOINT REINFORCEMENT AT 16" ON CENTER MAXIMUM, AT EVERY OTHER JOINT. MINIMUM ROD SIZE USED SHALL BE W1.7 (NO. 9 GAGE) DEFORMED WIRE AND SHALL CONFORM TO ASTM A 82. PROVIDE LADDER TYPE REINFORCEMENT U.N.O. IF SHEET METAL TIES ARE UTILIZED THEY SHALL BE GALVANIZED AND CONFORM TO ASTM A 1008.
M09	PROVIDE CONTROL JOINTS AT MAJOR CHANGES IN WALL HEIGHT, CHANGES IN WALL THICKNESS, AT FLOOR CONTROL JOINTS, AT WALL OPENINGS AND AT RETURN ANGLES IN L, T, AND U SHAPED STRUCTURES. CONTROL JOINT SPACING SHALL NOT EXCEED 50 FEET. BOND BEAM AND JOINT REINFORCEMENT SHALL BE DISCONTINUOUS AT CONTROL JOINTS.
M10	TYPICAL VERTICAL WALL REINFORCEMENT: FOR INTERIOR LOAD BEARING WALLS: #5 @ 24" FOR EXTERIOR LOAD BEARING WALLS: #5 @ 24"
	EACH CELL CONTAINING VERTICAL REINFORCEMENT SHALL BE GROUTED FULL HEIGHT USING APPROPRIATE GROUTING PROCEDURES. PROVIDE DOWELS FROM FOUNDATION TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT. ALL DOWELS SHALL HAVE STANDARD ACI HOOKS AT THE BOTTOM AND SHALL BE PLACED 3" CLEAR FROM THE BOTTOM OF THE FOOTING. ADDITIONAL VERTICAL REINFORCEMENT MATCHING THE SIZE AND NUMBER OF TYPICAL VERTICAL REINFORCEMENT SHALL BE PLACED AT ENDS OF ALL WALLS, AT EACH SIDE OF ALL OPENINGS, AT EACH WALL CORNER AND AT A TRANSITION IN WALL HEIGHT. PROVIDE STANDARD LINTEL BEAM REINFORCED PER THE CMU LINTEL SCHEDULE AT OVER ALL WALL OPENINGS. PROVIDE CONTINUOUS BOND BEAMS AT THE TOP OF THE WALL, AT THE ROOF LINE, AT EACH FLOOR LEVEL AND AT COURSES WHERE ANCHOR BOLTS WILL BE PROVIDED FOR FLOOR FRAMING CONNECTIONS.
M11	ANCHORS INTO CONCRETE MASONRY SHALL BE SPECIFIED UNDER POST INSTALLED ANCHOR

MB01	BRICK MASONRY ATTACHED TO STEEL STUDS: ATTACH TO STEEL STUDS WITH CORROSION RESISTANT GALVANIZED STEEL TIES. TIES SHALL BE 3/16" MINIMUM DIAMETER, EMBEDDED AT LEAST 2" INTO THE BED JOINTS OF THE BRICK VENEER. ATTACH ALL TIES DIRECTLY TO THE STEEL STUDS THROUGH THE SHEATHING AND NOT TO THE SHEATHING ALONE. EACH TIE 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. ADDITIONAL TIES SHALL BE INSTALLED AT 8" AT JAMBS AND NEAR EDGES.
MB02	PROVIDE MASONRY TO STEEL COLUMN TIES AT ALL STEEL COLUMNS THAT INTERFACE WITH MASONRY.
MB03	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 5/16 UP TO 4'-0" CLEAR WITH 3" MIN. BEARING AT EACH END L 5 x 3 1/2 x 5/16 UP TO 8'-0" CLEAR WITH 3" MIN BEARING AT EACH END.
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, AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI. EXTERIOR CONCRETE EXPOSED TO FREEZING AND THAWING SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI. FOR CONCRETE EXPOSED TO FREEZING AND THAWING OR DEICING CHEMICALS, ENTRAIN AIR TO PRODUCE TOTAL AIR CONTENT OF 5% PLUS OR MINUS 1%. ENTRAIN AIR FOR ALL EXTERIOR SLABS AND PERIMETER FOUNDATIONS THAT COULD BE EXPOSED TO FREEZING AND THAWING. USE NORMAL WEIGHT CONCRETE FOR ALL CONCRETE U.N.O.
C03	CONCRETE AND ADMIXTURES SHALL BE FREE FROM CALCIUM CHLORIDE OTHER THAN IMPURITIES FROM ADMIXTURE INGREDIENTS.
C04	CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301-10 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 REQUIREMENTS 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 REINFORCEMENT 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.....1.5" FOR PRIMARY REINF, TIES, STIRRUPS AND SPIRALS
C07	WELDED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A 185. 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 6 X 6 - W1.4 X W1.4 WWR UNLESS NOTED OTHERWISE. PROVIDE WIRE MESH 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 20' IN EACH DIRECTION. JOINTS SHALL BE SAW CUT AS SOON AS POSSIBLE WITHOUT RAVELLING THE CONCRETE. AT CONSTRUCTION JOINTS OF SLABS SUPPORTING FOOT TRAFFIC ONLY, EXTEND THE WELDED WIRE FABRIC A MINIMUM OF 12" INTO THE NEXT POUR. IF SUPPORTING VEHICULAR TRAFFIC, PROVIDE #3 X 3'-0" DOWELS AT 18" ON CENTER AT SLAB-ON-GRADE CONSTRUCTION JOINTS. PROVIDE A VAPOR RETARDER UNDER SLABS THAT ARE LIKELY TO RECEIVE AN IMPERMEABLE FLOOR FINISH. VAPOR RETARDER MATERIAL SHALL BE 6 MIL POLYETHYLENE. VAPOR RETARDER SHALL BE PLACED ON TOP OF CRUSHER RUN 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 ORD C-621 AND ASTM C-1107 (GRADE C). MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 5000 PSI.
C13	RESULTS FOR ALL CONCRETE COMPRESSIVE STRENGTH TESTS SHALL BE AVAILABLE ON THE JOB SITE FOR REVIEW BY THE INSPECTOR.

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