

SECTION 04200 - MASONRY

PART 1 – GENERAL

1. GENERAL:

- A. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND PERFORM ALL WORK AND SERVICES FOR MASONRY CONSTRUCTION AS SHOWN ON DRAWINGS, AND AS SPECIFIED, IN ACCORDANCE WITH PROVISIONS OF THE CONTRACT DOCUMENTS, AND COMPLETELY COORDINATED WITH WORK OF ALL OTHER TRADES.
- B. ALTHOUGH SUCH WORK IS NOT SPECIFICALLY INDICATED, FURNISH AND INSTALL ALL SUPPLEMENTARY OR MISCELLANEOUS ITEMS, APPURTENANCES AND DEVICES INCIDENTAL TO OR NECESSARY FOR A SOUND, SECURE AND COMPLETE INSTALLATION.
- C. INCLUDE ALL THRU-WALL FLASHING AND WATERPROOFING MEMBRANE.

2. QUALITY STANDARD:

- A. CONCRETE MASONRY UNITS SHALL COMPLY WITH ASTM C-90.
- B. U.L. CLASSIFICATION CERTIFICATE B-4 (4 HOUR AT 4 HR FIRE WALLS) OR CALCULATED FIRE RESISTANCE PER SECTION 709 OF THE FLORIDA BUILDING CODE.

3. SUBMITTALS:

- A. SAMPLES OF BRICK AND BLOCK FOR ARCHITECTS APPROVAL. INCLUDE CERTIFICATION OF TYPE AND GRADE PER ASTM STANDARDS.
- B. DATA AND CERTIFICATIONS FOR BLOCK.
- C. THROUGH WALL FLASHING AND FLASHING CEMENT.
- D. MORTAR
- E. STRUCTURAL GROUT MIX DESIGN
- F. CAVITY DRAINAGE MATERIAL AND WEEPS
- G. PRECAST LINTEL DATA AND INSTALLATION INSTRUCTIONS
- H. JOINT REINFORCING
- I. EXPANSION JOINT COVERS

4. PRODUCT DELIVERY, STORAGE AND HANDLING:

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- A. STORE ALL MATERIALS TO PREVENT DAMAGE TO MATERIALS OR STRUCTURE. STORE CEMENTITIOUS MATERIALS IN DRY, WEATHERTIGHT, and VENTILATED SPACES. STORE AGGREGATE TO EXCLUDE FOREIGN MATTER AND MAINTAIN GRADUATION.
5. JOB CONDITIONS:
- A. VERIFY SUITABILITY OF SUBSTRATE TO ACCEPT WORK. INSTALLATION CONSTITUTES ACCEPTANCE OF SUBSTRATE AND RESPONSIBILITY FOR PERFORMANCE.
 - B. THOROUGHLY CLEAN DIRT AND DEBRIS FROM FOOTINGS PRIOR TO BEGINNING MASONRY WORK.
 - C. REMOVE ANY AND ALL FOREIGN MATERIAL FROM MASONRY CAVITIES PRIOR TO PLACING GROUT OR CONCRETE FILL.
 - D. MARK ON SLAB AND ON BLOCK AT 12 INCHES ABOVE GRADE WITH GREEN SPRAY PAINT, ALL VERTICAL CELLS TO BE FILLED WITH CONCRETE. MARK SLAB PRIOR TO INSTALLATION ON ANY BLOCK AND BLOCK PRIOR TO INSTALLATION OF SECOND LIFT.
6. MATERIALS:
- A. CONCRETE MASONRY UNITS: MODULAR UNITS, ASTM C-90-52 (LIGHTWEIGHT) TYPE II (NON-MOISTURE CONTROLLED), SIZE AND SHAPES INDICATED ON DRAWINGS OR REQUIRED FOR CONDITIONS. PROVIDE SPECIAL SHAPES, SUCH AS HEADERS JAMBS, LINTEL, BOND BEAM, ETC, AS REQUIRED.
 - 1. PROVIDE UNITS WITH FACE DIMENSIONS AND NOMINAL THICKNESS INDICATED.
 - 2. PROVIDE SOLID UNITS, OR HOLLOW UNITS FILLED SOLID WITH GROUT, FOR BEARING UNDER LINTELS.
 - 3. PROVIDE SOLID CONCRETE BRICKS OF SAME MATERIAL, TEXTURE AND QUALITY.
 - 4. DO NOT USE CHIPPED, CRACKED, SPALLED, OR IMPERFECT UNITS EXPOSED IN FINISH WORK.
 - 5. LOW-WEB BOND BEAM BLOCK ARE NOT ALLOWED AND WILL BE REMOVED IF FOUND.
 - 6. PROVIDE REINFORCED CONCRETE MASONRY LINTELS AS SHOW.
 - B. SPLIT FACED BLOCK: (NOT USED)
 - C. JOINT REINFORCEMENT (INTERIOR & INTERIOR MULTI WYTHE WALL SYSTEMS):

PRE-FABRICATED MILL GALVANIZED WELDED WIRE UNITS IN MINIMUM 10 FT. STRAIGHT LENGTHS, WITH MATCHING CORNER AND TEE UNITS. FABRICATE FROM COLD DRAWN STEEL WIRE WITH DEFORMED 9 GA. CONTINUOUS SIDE RODS AND PLAIN 9 GA. TRUSS RODS. UNITS APPROXIMATELY 1-1/2 IN. LESS IN WIDTH

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THAN WALL THICKNESS. APPROVED MANUFACTURES: DUR-O-WAL, AA WIRE PRODUCTS, HOHMANN & BARNARD, OR LOX-ALL PRODUCTS.

D. JOINT REINFORCEMENT (EXTERIOR MULTI WYTHE WALL SYSTEMS):

ADJUSTABLE EYE-WIRE PRE-FABRICATED HOT DIPPED GALVANIZED WELDED WIRE UNITS IN MINIMUM 10 FT. STRAIGHT LENGTHS, WITH MATCHING CORNER AND TEE UNITS. FABRICATE FROM COLD DRAWN STEEL WIRE WITH DEFORMED 10 GA. CONTINUOUS SIDE RODS AND 9 GA. TRUSS RODS AND EYE-WIRE. TIE SPACING SHALL NOT EXCEED 16" HORIZONTALLY AND VERTICALLY. EYE SPACING NOT TO EXCEED 16". MAXIMUM MISALIGNMENT OF BED JOINTS FROM ONE WYTHE TO THE OTHER SHALL BE 1-1/4". APPROVED MANUFACTURES: DUR-O-WAL. AA WIRE PRODUCTS, HOHMANN & BARNARD, OR LOX-ALL PRODUCTS.

E. THRU WALL FLASHING TO BE 40-MILL EPRA-MAX EPDM BY HOHMANN & BARNARD INC. BONDING AGENTS FOR EPDM FLASHING SHALL BE 3M80 NEOPRENE CONTACT ADHESIVE AND EPRA-MAX ADHESIVE TAPE. FLASHING AND ADHESIVES TO BE INSTALLED PER HOHMANN & BARNARDS TECHNICAL SPECIFICATIONS.

WHEN FLASHINGS ARE ATTACHED TO VERTICAL SURFACES, PROVIDE AND INSTALL CONTINUOUS HOHMANN & BARNARD "T2-FTS" TERMINATION BARS AT TOP OF FLASHINGS

EXTEND FLASHING A MINIMUM OF 8" BOTH SIDES OF OPENINGS ABOVE DOORS, WINDOWS, LOUVER, ETC. AND PAN ENDS IN ORDER TO PREVENT MIGRATION OF WATER AT ENDS OF FLASHINGS.

OTHER MANUFACTURERS SEEKING APPROVAL MUST SECURE PRIOR APPROVAL FROM THE ARCHITECT TWO WEEKS PRIOR TO BID DATE.

F. BRICK MASONRY

1. **BRICK: CAROLINA CERAMICS AND SIOUX CITY BRICK - MODULAR**

FIELD BRICK – CAROLINA CERAMICS RED COMMON SMOOTH

ACCENT BRICK – SIOUX CITY BRICK CORDOVAN VELOUR

(SUBMIT SAMPLES FOR VERIFICATION)

2. WHERE CORES OR FROGS WOULD BE VISIBLE IN COMPLETED WORK, PROVIDE SOLID UNITS.

G. ANCHORS:

- (1) 24" X 2" X 1/8" GALVANIZED BAR ANCHOR WITH 1 1/2" TURN DOWN ONE END AND 1 1/2" TURN UP OPPOSITE END AT MASONRY INTERSECTIONS. SEE STRUCTURAL
- (2) HOT DIPPED GALVANIZED RECTANGULAR PINTLE WITH AT LEAST TWO 3/16" DIAMETER LEGS, COMPATABLE WITH WIRE-EYE TRUSS.
- (3) NON-CORROSIVE 1" X 7" CORRUGATED, (AT EXISTING TO NEW CONDITIONS) (ATTACH WITH TAP-CON SCREWS) UNLESS NOTED OTHERWISE ON THE DRAWINGS

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(4) DOVETAIL ANCHOR SLOTS IN CONCRETE STRUCTURES.

H. MORTAR:

TYPE "S" FOR CONCRETE MASONRY UNITS
TYPE "N" FOR BRICK
TYPE "M" FOR BELOW GRADE

I. CAVITY WALL INSULATION BEHIND BRICK VENEER:

1" POLYSTYRENE INSULATION BOARD BY HOHNMANN & BERNARD, INC., DOW CHEMICAL OR EQUAL. FIT TIGHTLY WITH NO OPEN JOINTS AND SECURED WITH AN ADHESIVE RECOMMENDED BY THE MANUFACTURER AND MECHANICALLY ATTACHED WITH GALVANIZED MASONRY ANCHORS WITH GALVANIZED INSULATION WASHERS. INSULATION SHALL HAVE A MINIMUM R-VALUE OF R-5.4 PER 1" THICKNESS. TAPE ALL JOINTS WITH MANUFACTURERS APPROVED TAPE (NOTE: APPLY DAMPPROOFING PRIOR TO INSULATION.)

J. GROUT FILL:

ALL CONCRETE USED FOR CONCRETE FILL IN REINFORCED VERTICAL CELLS OR BEAMS SHALL BE MINIMUM 3,000 P.S.I. SAND CEMENT GROUT. GROUT TO BE PROPORTIONED IN ACCORDANCE WITH ASTM C476 AND TESTED IN ACCORDANCE WITH ASTM C1019.

K. ALUMINUM EXPANSION JOINT COVERS:

EXPANSION JOINT COVERS TO BE SERIES X-M1M, X-N1M BY MM SYSTEMS OR APPROVED EQUAL. ONE SIDE OF COVER TO BE SCREW ATTACHED TO WALL WITH STAINLESS STEEL PAN HEAD SCREWS. SUBMIT SHOP DRAWINGS FOR APPROVAL.

L. CAVITY DRAINAGE MATERIAL:

2-INCH THICK, 200 DENIER 100% RECYCLED POLYESTER, 90% OPEN MESH, DOVETAIL SHAPED TO MAINTAIN UNOBSTRUCTED DRAINAGE AT WEEP HOLES. MORTAR NET GREEN OR APPROVED EQUAL.

M. WEEPS HOLES:

RECTANGULAR PLASTIC TUBING, CLEAR BUTYRATE, 3/8" BY 1-1/2" BY 3-1/2". INSTALL 6" OR MORE ABOVE FINISHED GRADE.

N. DAMPPROOFING:

(1) SURFACE PREPARATION - SURFACES SHALL BE FREE OF OIL, GREASE, DIRT, LANTANCE, AND LOOSE MATERIAL. ALL HOLES, CRACKS, AND RECESSED JOINTS IN CONCRETE BLOCK MUST BE FILLED WITH CEMENT MORTAR FOR A SMOOTH, CLEAN SURFACE WIHTOUT DEPRESSIONS OR PROJECTIONS. SCOUR WITH WIRE BRUSH TO AT LEAST 4" FROM BOTH SIDES OF FINE CRACKS AND CORNERS. ALSO, FILL IN VERTICAL COLD JOINTS FLUSH WITH SURFACE, USING A SEALANT COMPATIBLE WITH ASPHALT.

(2) ACCEPTABLE PRODUCTS:

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- A. SONNEBORN HYDROCID 700B SEMI-MASTIC DAMPPROOFING SYSTEM BY CHEMREX, INC.

(3) EXTERIOR SURFACES

VERIFY THAT SURFACE DAMPNESS MEETS MANUFACTURER'S REQUIREMENTS PRIOR TO APPLICATION. APPLY A SINGLE COAT PER MANUFACTURER'S INSTRUCTIONS. IF APPLYING BY SPRAY, TWO COATS ARE REQUIRED. APPLY AT A RATE OF 2 TO 3 GALLONS PER 100 S.F. ALLOWING FIRST COAT TO DRY BEFORE APPLYING SECOND COAT. FILL IN ALL CREVICES AND GROOVES, MAKING SURE COATING IS CONTINUOUS AND FREE FROM BREAKS AND PINHOLES. SPREAD AROUND ALL JOINTS, GROOVES AND SLOTS AND INTO ALL CHASES, CORNERS, AND REVEALS. **MASONRY WING WALLS IF DETAILED SHALL BE DAMPPROOFED.**

NOTE: PREPARE A TEST AREA OF APPROXIMATELY 10' X 10' ON THE BUILDING FOR ARCHITECT'S REVIEW. CONTACT ARCHITECT TO REVIEW APPLICATION OF WORK AND SEEK APPROVAL PRIOR TO PROCEEDING WITH BALANCE OF DAMPPROOFING.

7. INSTALLATION:

- A. INSTALL BRICK WORK IN CONJUNCTION WITH CONCRETE UNIT MASONRY WORK. BUILD IN ALL FLASHING, LINTELS, REINFORCING, WEEPS AND RELATED ITEMS.
- B. ALL FLASHING LAPS SHALL BE SEALED WITH MANUFACTURER'S APPROVED LAP CEMENT.
- C. **PROTECT AGAINST WEATHER**, WHEN WORK IS NOT IN PROGRESS. COVER TOP OF WALLS WITH WATERPROOF MEMBRANE, EXTEND AT LEAST 4 FEET DOWN BOTH SIDES OF WALLS AND ANCHOR SECURELY.
- D. INSTALL ALL EXTERIOR BRICK IN RUNNING BOND WITH ACCENT SOLDIER COURSES AS INDICATED. INSTALL ALL CONCRETE MASONRY UNITS IN RUNNING BOND.
- E. BUILD WALLS TO THICKNESS INDICATED. USE A 50% MASONRY BOND ON ALL INTERSECTING WALLS.
- F. CUT MASONRY UNITS WITH MOTOR-DRIVEN MASONRY SAW, AS REQUIRED TO PROVIDE PATTERN INDICATED AND TO FIT ADJOINING WORK. USE FULL UNITS WHEREVER POSSIBLE. USE SOLID UNITS WHERE CUTTING OR LAYING WOULD EXPOSE HOLES.
- G. LAYOUT WALLS IN ADVANCE FOR UNIFORM AND ACCURATE SPACING BOND PATTERNS AND JOINTS. PROPERLY LOCATED OPENINGS, MOVEMENT TYPE JOINTS, RETURNS AND OFFSETS. AVOID USE OF LESS THAN HALF SIZE UNITS. COORDINATE WITH OTHER WORK.
- H. WHERE WORK IS STOPPED AND THEN LATER RESUMED, RAKE BACK 1/2 BRICK UNIT LENGTH IN EACH COURSE. WET UNITS LIGHTLY AND REMOVE LOOSE UNITS AND MORTAR PRIOR TO LAYING FRESH MASONRY.
- I. AS WORK PROGRESSES; BUILD-IN ITEMS SPECIFIED UNDER THIS AND OTHER SECTIONS. FILL IN SOLIDLY WITH MORTAR AROUND BUILT-IN ITEMS.

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- J. MAINTAIN 3/8 IN. JOINT WIDTHS, EXCEPT FOR MINOR VARIATIONS REQUIRED TO MAINTAIN BOND ALIGNMENT. CUT JOINTS FLUSH WHERE CONCEALED. TOOL EXPOSED JOINTS UNLESS OTHERWISE INDICATED. COMPRESS JOINTS BELOW GRADE.
 - K. COORDINATE CONTINUOUS JOINT REINFORCEMENT WITH BACKER MATERIAL TO PROVIDE REQUIRED REINFORCEMENT. FULLY EMBED LONGITUDINAL SIDE RODS IN MORTAR FOR THEIR ENTIRE LENGTH WITH A MINIMUM COVER OF 5/8 IN. ON EXTERIOR SIDE OF WALLS AND 1/2 IN. AT OTHER LOCATIONS. LAP REINFORCEMENT A MINIMUM OF 5 IN. AT ENDS. DO NOT BRIDGE CONTROL AND EXPANSION JOINTS WITH REINFORCING EXCEPT AT WALL OPENINGS. MAKE CORNER AND WALL INTERSECTIONS BY USE OF PREFABRICATED L AND T SECTIONS. CUT AND BEND UNITS AS REQUIRED FOR SPECIAL CONDITIONS. INSTALL REINFORCING AT 16 IN. O.C. VERTICALLY AND 8 IN. O.C. IN STARTER COURSES AND OVER OPENINGS.
 - L. CAULK JOINTS BETWEEN TILE AND RELIEVING LINTELS.
 - M. PROVIDE FORMED IN PLACE OR PRE-CAST CONCRETE LINTELS WHEREVER OPENINGS MORE THAN 12 IN. (30CM) ARE INDICATED WITHOUT OTHER STRUCTURAL SUPPORT OR OTHER SUPPORTING LINTELS. PROVIDE 8 IN. MINIMUM LINTEL BEARING. THOROUGHLY CURE LINTELS BEFORE HANDLING AND INSTALLATION. TEMPORARILY SUPPORT FORMED IN PLACE LINTELS.
 - N. GROUT FILL SPACE BETWEEN METAL FRAMES AND MASONRY.
 - O. EXTEND THROUGH WALL FLASHING A MINIMUM OF 8" BOTH SIDES OF OPENINGS ABOVE DOORS, WINDOWS, LOUVER, ETC. AND PAN ENDS IN A MANNER THAT WILL ORDER PREVENT MIGRATION OF WATER AT ENDS OF FLASHINGS.
 - P. CONCRETE FILL FOR VERTICAL CELLS OR BEAMS SHALL BE INSTALLED PER THE PORTLAND CEMENT ASSOCIATIONS CONCRETE MASONRY HANDBOOK, **LOW-LIFT METHOD**.
8. **REPAIR, POINTING AND CLEANING:**
- A. REMOVE AND REPLACE LOOSE, STAINED OR DAMAGED MASONRY. PROVIDE NEW UNITS TO MATCH ADJOINING. INSTALL IN FRESH MORTAR. POINT TO ELIMINATE EVIDENCE OF REPLACEMENT.
 - B. DURING TOOLING OF JOINTS, ENLARGES ANY VOIDS OR HOLES, EXCEPT WEEP HOLES, AND COMPLETELY FILLS WITH MORTAR. POINT-UP ALL JOINTS AT CORNERS, OPENINGS AND ADJACENT WORK TO PROVIDE A NEAT UNIFORM APPEARANCE.
 - C. CLEAN BRICK USING SURE KLEAN OR VANATROL.
 - D. FILL ALL VOIDS IN PRECAST LINTELS IN A MANNER SO AS TO RENDER A SMOOTH SURFACE PRIOR TO PAINTING.
9. **PATCHING AND IN FILL:**
- A. EXISTING WORK SHALL BE TOOTHED TO RECEIVE IN FILL.

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- B. EXISTING BOND SHALL BE MAINTAINED.
- C. IN FILL SHALL BE OF THE SAME MATERIAL AS THE SURROUNDING AREA.
- D. ADVISE ARCHITECT PRIOR TO PROCEEDING IF "B" OR "C" CAN NOT BE ACCOMPLISHED.

END OF SECTION