

SECTION 02 4100 – DEMOLITION

PART 1 GENERAL

1. SUBMITTALS
- 1.1. Demolition plan; Submit demolition plan as specified by OSHA and local authorities as required for existing site components and structures.
- 1.2. Project record documents: Accurately record actual locations of capped and active utilities and subsurface construction.
- 1.3. Quality assurance
- 1.4. Demolition firm qualifications: Company specializing in the type of work required.
- PART 2 PRODUCTS
1. MATERIALS
- 1.1. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
- 1.1.1. Obtain required permits.
- 1.1.2. Comply with applicable requirements of NFPA 241.
- 1.1.3. Use of explosives is not permitted.
- 1.1.4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
- 1.1.5. Provide, erect, and maintain temporary barriers and security devices.
- 1.2. Do not begin removal until built elements to be salvaged or relocated have been removed.
- 1.3. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding sedimentation of public waterways or storm sewers, or other pollution.
- 1.4. If hazardous materials are discovered during removal operations, stop work and notify architect and owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- 1.5. Hazardous materials; Comply with 29 CFR 1926 and state and local regulations.
- 1.6. Perform demolition in a manner that maximizes salvage and recycling of materials.

2. EXISTING UTILITIES
- 2.1. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain easements; obtain permits.
- 2.2. Protect existing utilities to remain from damage.
3. SELECTIVE DEMOLITION FOR ALTERATIONS
- 3.1. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only. Verify all conditions and dimensions in field. Report any discrepancies affecting the scope of work to the architect immediately.
- 3.2. Maintain waterproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- 3.3. Remove existing work as indicated and as required to accomplish new work.
- 3.4. Services (including but not limited to HVAC, plumbing, fire protection, electrical, and telecommunications): remove existing systems and equipment as indicated.
- 3.5. Protect existing work to remain.
4. DEBRIS AND WASTE REMOVAL
- 4.1. Remove debris, junk, and trash from site

SECTION 03 3000 – CAST-IN-PLACE CONCRETE

PART 1 GENERAL

Requirements of structural documents shall supercede requirements listed below wherever a conflict occurs.

- PART 2 PRODUCTS
1. FORMWORK
- 1.1. Formwork design and construction: comply with guidelines of ACI 347 to provide formwork that will produce concrete complying with tolerances of ACI 117.
- 1.2. Form materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
2. REINFORCEMENT
- 2.1. Steel welded wire reinforcement: ASTM A 185/A 185M, plain type.
3. CONCRETE MATERIALS
- 3.1. Cement: ASTM C 150, Type I – normal Portland type.
- 3.2. Fine and coarse aggregates: ASTM C 33.
- 3.3. Lightweight aggregate: ASTM C 330.
- 3.4. Water: Clean and not detrimental to concrete
- 3.5. Fiber reinforcement: Synthetic fiber shown to have long-term resistance to deterioration when exposed to moisture and alkalis; ½ inch (12mm) length.
4. ACCESSORY MATERIALS
- 4.1. Under slab vapor retarder: Class "A" vapor retarder, 10 mil min. thickness, "STEGO" or equal. Taped seams with manufacturer approved product. Suitable for installation in contact with soil or granular fill under concrete slabs.
- 4.2. Non-shrink cementitious grout: ASTM C 1107/C 1107M; premixed compound consisting of non-metallic drawings for additional information.
5. CONCRETE MIX DESIGN
- 5.1. Proportioning normal weight concrete: comply with ACI 211.1 recommendations.
- 5.1.1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.
- 5.2. Proportioning structural lightweight concrete: comply with ACI 211.2 recommendations.
- 5.2.1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.
- 5.3. Concrete strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
- 5.4. Normal weight concrete:
- 5.4.1. Compressive strength, when tested in accordance with ASTM C 39/C 39M at 28 days: refer to structural drawings.
- 5.5. Structural lightweight concrete
- 5.6. Compressive strength, when tested in accordance with ASTM C 39/C 39M at 28 days: refer to structural drawings

- PART 3 EXECUTION
1. PLACING CONCRETE
- 1.1. Place concrete in accordance with ACI 304R.
- 1.2. Place concrete for floor slabs in accordance with ACI 302.1R.

SECTION 03 3500 – CONCRETE FINISHING

PART 1 GENERAL

- 1.1 SECTION INCLUDES
- A. HIGH PERFORMANCE COATINGS:
1. POLYASPARTIC COATINGS.
2. RELATED SECTIONS
- A. SECTION 03 30 00 – CAST-IN-PLACE CONCRETE.
3. REFERENCES
- A. ASTM D 2240 – STANDARD TEST METHOD FOR RUBBER PROPERTY DURETOMETER HARDNESS.
- B. SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) RULE 13 (2008).
- C. SSPC–SP1 – SOLVENT CLEANING.
- D. SSPC–SP2 – HAND TOOL CLEANING.
- E. SSPC–SP3 – POWER TOOL CLEANING.
4. SUBMITTALS
- A. SUBMIT UNDER PROVISIONS OF SECTION 01 30 00 – ADMINISTRATIVE REQUIREMENTS.
- B. PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:
1. SURFACE PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.
2. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.
3. INSTALLATION METHODS.
- C. MAINTENANCE INSTRUCTIONS: SUBMIT MANUFACTURER'S MAINTENANCE AND CLEANING INSTRUCTIONS.
- 1.5 QUALITY ASSURANCE
- A. INSTALLER QUALIFICATIONS:
1. SUCCESSFUL EXPERIENCE IN APPLICATION OF SIMILAR FINISH SYSTEMS.
2. EMPLOY PERSONS TRAINED FOR APPLICATION OF FINISH SYSTEMS.
- B. MOCK-UP: PROVIDE A MOCK-UP FOR EVALUATION OF SURFACE PREPARATION TECHNIQUES AND APPLICATION WORKMANSHIP.
1. FINISH AREAS DESIGNATED BY ARCHITECT.
2. DO NOT PROCEED WITH REMAINING WORK UNTIL WORKMANSHIP, COLOR, AND SHEEN ARE APPROVED BY OWNER.
3. REFINISH MOCK-UP AREA AS REQUIRED TO PRODUCE ACCEPTABLE WORK.
- C. SINGLE SOURCE RESPONSIBILITY: MATERIALS SHALL BE PRODUCTS OF A SINGLE MANUFACTURER.
- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. STORE PRODUCTS IN MANUFACTURER'S UNOPENED PACKAGING UNTIL READY FOR INSTALLATION.
- B. HANDLING: PROTECT MATERIALS DURING HANDLING AND APPLICATION TO PREVENT DAMAGE OR CONTAMINATION.
- 1.7 PROJECT CONDITIONS

- A. MAINTAIN ENVIRONMENTAL CONDITIONS (TEMPERATURE, HUMIDITY, AND VENTILATION) WITHIN LIMITS RECOMMENDED BY MANUFACTURER FOR OPTIMAL RESULTS. DO NOT INSTALL PRODUCTS UNDER ENVIRONMENTAL CONDITIONS OUTSIDE MANUFACTURER'S RECOMMENDED LIMITS.

1.8 SEQUENCING

- A. PREPARE SURFACE AND APPLY COATINGS AFTER OTHER INTERIOR FINISH WORK IS COMPLETED AND BEFORE BASEBOARDS AND TRIM ARE INSTALLED.
- PART 2 PRODUCTS
- 2.1 MANUFACTURERS
- A. ACCEPTABLE MANUFACTURER:
1. CROWN POLYMERS CORP
WWW.CROWNPOLYMERS.COM
INFO@CROWNPOLYMERS.COM
(888)732-1270
- B. SUBSTITUTIONS: NOT PERMITTED.
- 2.2 POLYASPARTIC COATINGS
- A. HIGH SOLIDS POLYASPARTIC
1. PRODUCT: CROWNPRO #B175.
2. COLORS: DARK GRAY

PART 3 EXECUTION

- 3.1 EXAMINATION
- A. DO NOT BEGIN INSTALLATION UNTIL SUBSTRATES HAVE BEEN PROPERLY PREPARED.
- B. IF SUBSTRATE PREPARATION IS THE RESPONSIBILITY OF ANOTHER INSTALLER, NOTIFY ARCHITECT OF UNSATISFACTORY PREPARATION BEFORE PROCEEDING.
- 3.2 PREPARATION FOR CONCRETE SUBSTRATES
- A. CLEAN SURFACES THOROUGHLY PRIOR TO INSTALLATION.
- B. PREPARE SURFACES USING THE METHODS RECOMMENDED BY THE MANUFACTURER FOR ACHIEVING THE BEST RESULT FOR THE SUBSTRATE UNDER THE PROJECT CONDITIONS.
- C. PROTECTION: PROTECT WALLS AND SURROUNDING SURFACES NOT TO RECEIVE FINISH.
- D. CONFIRM THAT CONCRETE SURFACE IS CLEAN, DRY, STRUCTURALLY SOUND, AND FREE FROM DIRT, DUST, OIL, GREASE, SOLVENTS, PAINT, WAX, ASPHALT, CONCRETE CURING COMPOUNDS, SEALING COMPOUNDS, SURFACE HARDENERS, BOND BREAKERS, ADHESIVE RESIDUE, AND OTHER SURFACE CONTAMINANTS.
- E. DO NOT ACID WASH OR USE HEAVY ALKALI CLEANERS.

3.3 CLEANING OF CONCRETE SUBSTRATES

- A. PER MANUFACTURE RECOMMENDATIONS.

3.4 POLYASPARTIC COATING APPLICATION

- A. APPLY COATING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AT LOCATIONS INDICATED ON THE DRAWINGS.
- B. CONCRETE:
1. REMOVE DIRT, DUST, OIL, GREASE, AND OTHER SURFACE CONTAMINANTS BEFORE ABRASIVE SURFACE PREPARATION, ACID ETCHING, AND WATER WASHING.
2. ENSURE SURFACES ARE CURED, DRY, AND FREE FROM ALKALI STAIN AND LAITANCE.
3. BLAS–TRAC, SSPC–SP7 BRUSH–OFF BLAST CLEANING OR OTHER APPROVED MECHANICAL METHOD TO ACHIEVE A 60 TO 80 GRIT PROFILE FOR LONG TERM ADHESION.
- C. MIX COMPONENTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- D. KEEP MATERIAL CONTAINERS CLOSED WHEN NOT IN USE TO AVOID CONTAMINATION.
- E. USE APPLICATION EQUIPMENT, TOOLS, PRESSURE SETTINGS, AND TECHNIQUES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- F. ENVIRONMENT: APPLIED AT SUBSTRATE AND ENVIRONMENTAL TEMPERATURES AS LOW AS 30 DEGREE F (MINUS 1 DEGREE C) AND AS HIGH AS 100 DEGREE F (38 DEGREE C) AND 5 DEGREE ABOVE DEW POINT PROVIDING THE MATERIAL TEMPERATURE IS MAINTAINED AT 60 DEGREE F TO 80 DEGREE F (16 DEGREE C TO 27 DEGREE C) DEPENDING ON APPLICATION METHOD.
- G. UNIFORMLY APPLY COATING AT SPREADING RATE REQUIRED TO ACHIEVE SPECIFIED DRY FILM THICKNESS.
- H. APPLY COATING TO BE FREE OF FILM CHARACTERISTICS AND DEFECTS THAT WOULD ADVERSELY AFFECT PERFORMANCE OR APPEARANCE.
- 3.5 PROTECTION
- A. PROTECT FINISHES FROM DAMAGE DURING CONSTRUCTION.
- B. PROTECT CONCRETE SURFACES FROM FOOT TRAFFIC FOR A MINIMUM OF 24 HOURS. AVOID WASHING CONCRETE SURFACES FOR A MINIMUM OF 48 HOURS.
- C. TOUCH-UP, REPAIR OR REPLACE DAMAGED PRODUCTS BEFORE SUBSTANTIAL COMPLETION.

SECTION 04 2000 – UNIT MASONRY

PART 1 GENERAL

*Contractor shall provide single source responsibility for all building waterproofing components. One contract shall be responsible for coordination / installation of all components affecting building water / air barrier.

PART 2 PRODUCTS

1. CONCRETE MASONRY VENEER UNITS
- 1.1. Concrete block: Comply with referenced standards and as follows:
- 1.1.1. Size: Standard units with nominal face dimensions of 16 x 8 inches (400 x 200 mm) and nominal depths as indicated on the drawings for specific locations.
- 1.1.2. Special shapes: Provide non-standard blocks configured for corners. Provide chamfered water table / sill block as indicated in contract drawings at transition to EIFS veneer above block.
- 1.1.3. Finish: Provide split face texture finish.
- 1.1.4. Color: As selected by architect from manufacturer's available standard colors
- 1.1.5. Load-bearing units: ASTM C 90, normal weight.
- 1.1.6. Non-loadbearing units: ASTM C 129.
- 1.1.7. Provide units with integral water repellent: Concrete block units as specified in this section with polymeric liquid admixture added to concrete masonry units at the time of manufacture.
2. MORTAR AND GROUT MATERIALS
- 2.1. Masonry cement: ASTM C 91, type N.
- 2.2. Portland cement: ASTM C 150, type I; color as required to produce approved color sample.
- 2.3. Mortar aggregate: ASTM C 144.
- 2.4. Grout aggregate: ASTM C 404.
- 2.5. Pigments for colored mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C 979.
- 2.6. Water: Clean and potable.
3. REINFORCEMENT AND ANCHORAGE
- 3.1. Reinforcing steel: ASTM A 615/A 615M grade 40 (280) deformed billet bars; galvanized.
- 3.2. Flexible anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not more than 1 inch (25 mm) and not less than ½ inch (13 mm) of mortar coverage from masonry face.
- 3.3. Masonry veneer anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup; hot dip galvanized to ASTM A 153/A 153M, Class B. Basis of design: Heckman POS–I–TIE (or equal) if U-shaped anchors are used in lieu of POS–I–TIE system provide self-adhering membrane flashing behind ties.
4. FLASHINGS
- 4.1. Metal flashing materials: As specified in section 07 6200.
- 4.2. Copper flashing: ASTM B 370, 960 soft annealed, 20 oz/sq ft (0.7 mm) thick; natural finish.
- 4.3. Pre-coated galvanized steel flashing: ASTM A 653/A 653M, with G90/Z275 coating, 24 gage (0.61 mm) total thickness, shop pre-coated with fluoropolymer coating in color matching masonry.
- 4.4. Rubberized asphalt flashing: Self-adhering polymer-modified asphalt sheet; 40 mil total thickness; with cross-linked polyethylene top and bottom surfaces. Self-adhering
- 4.5. Stainless steel flashing (drip edge exposed termination): ASTM A 666, type 304, soft temper; 26 gage (0.45 mm) thick; finish 2B to 2D
5. ACCESSORIES
- 5.1. Preformed control joints: Rubber material. Provide with corner and tee accessories, fused joints.
- 5.2. Cavity mortar control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
- 5.3. Weeps: Polyethylene tubing.
- 5.4. Cavity vents: Polyester mesh.
6. MORTAR AND GROUT MIXES
- 6.1. Mortar for unit masonry: ASTM C 270, using the proportion specification.
- 6.2. Colored mortar: Proportion selected pigments and other ingredients to match architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.
- 6.3. Grout: ASTM C 476. Consistency required to fill completely volumes indicated for grouting; fine grout for spots with smallest horizontal dimension of 2 inches (50 mm) or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches (50 mm).

PART 3 EXECUTION

1. COLD AND HOT WEATHER REQUIREMENTS
- 1.1. Comply with requirements of ACI 530.5/530.1/ERTA or applicable building code, whichever is more stringent.
2. COURSCING
- 2.1. Establish levels, lines, and coursing indicated. Protect from displacement.
- 2.2. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- 2.3. Concrete masonry units:
- 2.3.1. Bond: Running.
- 2.3.2. Coursing: One unit and on mortar joint to equal 8 inches (200 mm).
- 2.3.3. Mortar joints: Concave.
3. PLACING AND BONDING
- 3.1. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- 3.2. Lay hollow masonry units with face shell bedding on head and bed joints.
4. CAVITY MORTAR CONTROL
- 4.1. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- 4.2. Utilize cavity mortar control products (MESH) at all weep and through wall flashing locations; minimum of 24" above weeps
5. REINFORCEMENT AND ANCHORAGE – GENERAL
- 5.1. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches (400 mm) on center.
- 5.2. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.
- 5.3. Place continuous joint reinforcement in first and second joint below top of walls.
- 5.4. Lap joint reinforcement ends minimum 6 inches (150 mm).
- 5.5. Reinforce stack banded unit joint corners and intersections with strap anchors 16 inches (400 mm) on center.
- 5.6. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches (900 mm) horizontally and 24 inches (600 mm) vertically.
6. MASONRY FLASHINGS
- 6.1. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
- 6.2. Extend metal flashings through exterior face of masonry and turn down to form drip. Install joint sealer below drip edge to prevent moisture migration under flashing.
- 6.3. Extend metal flashings to within ¼ inch (6mm) of exterior face of masonry.
- 6.4. Extend rubberized asphalt flashings to within ¼ inch (6 mm) of exterior face of masonry. Provide separate, exposed metal drip flashing as specified.
- 6.5. Lap end joints of flashings at least 4 inches (100 mm) and seal watertight with mastic or elastic sealant.
7. GROUTED COMPONENTS
- 7.1. Place and consolidate grout fill without displacing reinforcing.
- 7.2. At bearing locations, fill masonry cores with grout for a minimum 12 inches (300 mm) either side of opening.

SECTION 04210 – BRICK MASONRY

1. SECTION INCLUDES
- A. BRICK MASONRY
- B. JOINT REINFORCING
- C. BUILDING IN ITEMS FURNISHED AND LOCATED BY OTHER TRADES.

2. REFERENCE STANDARDS

- A. AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
- B. BRICK INSTITUTE OF AMERICA (BIA): "TECHNICAL NOTES ON BRICK CONSTRUCTION"
3. MOCK–UP
- A. CONSTRUCT BRICK MASONRY MOCK–UP, 4 FEET LONG BY 4 FEET WIDE, WHICH INCLUDES MASONRY ANCHOR ACCESSORIES, SILL FLASHINGS, AND CORNER CONDITION.
- B. LOCATE WHERE DIRECTED BY OWNER.
- C. MOCK–UP MAY REMAIN AS PART OF THE WORK.
4. BRICK MASONRY UNITS
- A. FACE BRICK TO BE USED FOR THE PROJECT SHALL BE AS NOTED ON THE FINISH SCHEDULE IN THE DRAWINGS. MODULAR SIZE, OF A CONSISTENT COLOR RANGE APPROVED BY OWNER'S CONSTRUCTION MANAGER.
- B. COMMON BRICK: CONTRACTOR MAY, AT HIS OPTION, SUPPLY AND INSTALL A COMMON, MODULAR SIZE FACE BRICK WHERE BRICK WILL BE CONCEALED UPON PROJECT COMPLETION. ALL BRICK EXPOSED TO VIEW MUST BE AS SELECTED BY OWNER AS NOTED ABOVE.

5. ACCESSORIES

- A. JOINT REINFORCING: HOHMANN & BERNARD PRODUCTS, VENEER ANCHORS DW–10 WITH GALVANIZED MASONRY WIRE TIES, "VEE–TIES," LENGTHS AS REQUIRED FOR 2½" MINIMUM EMBEDDED TIE
- B. POLYETHYLENE TUBING, ½ INCH DIAMETER WITH INTERNAL SCREEN.
- C. MISCELLANEOUS: AS SHOWN ON THE DRAWINGS OR AS REQUIRED TO PROVIDE MASONRY INSTALLATIONS WHICH ARE WELL TIED.
6. MORTAR
- A. TYPE: MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI; ASTM C476, TYPE M OR S. MASONRY CEMENT WILL NOT BE ALLOWED.
- B. MATERIALS:
1. PORTLAND CEMENT: ASTM C150, type 1, ONE BRAND ONLY.
2. HYDRATED LIME: ASTM C207, TYPE S
3. SAND: WELL SCREENED, CLEAN, HARD, SILICEOUS PARTICLES FREE FROM LOAM, ALKALI, SALT, ORGANIC MATTER AND OTHER IMPURITIES; COMPOSED OF GRAINS OF VARYING SIZE WHICH PASS AN 8–MESH SCREEN, UNIFORMLY GRADED FROM COARSE TO FINE.
4. WATER: CITY TAP WATER.
- C. COLOR: AS NOTED OTHERWISE ON FINISH SCHEDULE ON DRAWINGS.

7. GROUT
- A. TYPE: MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI; ASTM C476, TYPE M OR S.
8. PRODUCT DELIVERY, STORAGE AND HANDLING
- A. STORE MORTAR MATERIALS ON DUNNAGE IN A DRY PLACE. MASONRY UNITS STORES ABOVE GROUND ON LEVEL PLATFORMS. COVER AND PROTECT UNITS AND ACCESSORIES AS NECESSARY FROM ELEMENTS.
9. CONDITIONS
- A. HOT WEATHER INSTALLATION: PROTECT MASONRY, ERECTED WHEN AMBIENT AIR TEMPERATURE IS MORE THAN 90 F, IN SHADE, AND RELATIVE HUMIDITY IS LESS THAN 50%, FROM DIRECT EXPOSURE TO WIND AND SUN FOR 48 HR AFTER INSTALLATION, AND RAIN FOR 12 HOURS AFTER INSTALLATION.
- B. COLD WEATHER INSTALLATION: DO NOT BUILD UPON FROZEN WORK. BEFORE ERECTING MASONRY DURING TEMPERATURES BELOW 40 F, SUBMIT A WRITTEN STATEMENT AND RECEIVE ACCEPTANCE OF METHODS PROPOSED TO HEAT MASONRY MATERIALS AND PROTECT MASONRY FROM FREEZING. DO NOT LAY MASONRY AT TEMPERATURES BELOW 35 F, UNLESS AUTHORIZED IN WRITING.
10. PREPARATION (MORTAR)
- A. ACCURATELY MEASURE AND MIX MORTAR MATERIALS WITH WATER TO PRODUCE WETTEST WORKABLE CONSISTENCY POSSIBLE. PLACE MORTAR IN FINAL POSITION WITHIN 2 1/2 HR AFTER MIXING; DISCARD MORTAR NOT USED OR THAT HAS STARTED TO SET WITHIN THIS TIME.

11. SCAFFOLDING
- A. PROVIDE SCAFFOLDING NECESSARY FOR MASONRY WORK AND MAKE SAME AVAILABLE TO OTHER TRADES REQUIRED TO EXECUTE WORK IN CONJUNCTION WITH MASONRY WORK.
- B. DESIGN AND ENGINEERING OF FORMWORK AND SCAFFOLDING AS WELL AS ITS CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ADEQUATELY SHORE BLOCK BEAMS, AND SIMILAR MEMBERS TO SAFELY SUPPORT ALL LOADS AND LATERAL PRESSURES LIABLE TO COME ON THE CONSTRUCTION. PROVIDE CLEAN-OUT OPENINGS AT EACH VERTICAL JOINT AT BOTTOM COURSE OR IN FOUNDATION WALL WHEN WALL IS ERECTED IN MORE THAN 5-FOOT LIFTS.
12. MASONRY CONSTRUCTION

- A. GENERAL: DO NOT LAY UNITS HAVING WATER OR FROST FILM ON SURFACES. LAY PLUMB, TRUE TO LINE, WITH LEVEL COURSES ACCURATELY SPACED. KEEP BOND PATTERN PLUMB THROUGHOUT. CORNERS AND REVEALS PLUMB AND TRUE. SHOW VERTICAL JOINTS TIGHT.

- ADJUST EACH UNIT TO FINAL POSITION WHILE MORTAR IS SOFT AND PLASTIC. REMOVE ANY UNIT DISTURBED AFTER MORTAR HAS STIFFENED AND RELAY WITH FRESH MORTAR.
- B. LAYING UNITS: WET IN SUCH MANNER THAT EACH UNIT IS NEARLY SATURATED, SURFACE DRY WHEN LAID. DO NOT USE BRICK THAT IS CORED, RECESSED, OR HAS OTHER MAJOR DEFORMATIONS WHERE DEFORMATIONS WILL BE EXPOSED TO VIEW. FILL JOINTS COMPLETELY WITH MORTAR. LAY WITH BETTER FACE OF BRICK EXPOSED. LAY IN ½ RUNNING BOND AND SPECIAL RELIEF AND PATTERNS SHOWN ON THE DRAWINGS. JOINTS NOT TO EXCEED 3/8 INCHES. INSTALL WEEP HOLES IN HEAD JOINTS, BUT NOT MORE THAN 2"–0" O.C.
- C. CUTTING AND FITTING: USE, WHEREVER POSSIBLE, FULL UNITS OF PROPER SIZE IN LIEU OF CUT UNITS. CUT EDGES CLEAN, TRUE, AND SHARP. CAREFULLY CUT, FORM, OR OTHERWISE NEATLY MAKE OPENINGS FOR RECESSED ITEMS AND FOR ELECTRICAL, PLUMBING, OR OTHER MECHANICAL INSTALLATIONS SO THAT WALL PLATES, COVER PLATES, OR ESCUTCHEONS WILL COMPLETELY CONCEAL OPENINGS AND WILL HAVE BOTTOMS IN ALIGNMENT WITH LOWER EDGE OF MASONRY UNIT.
- D. EMBEDDED ITEMS: POINT OPENINGS AROUND FLUSH MOUNTED ELECTRICAL OUTLET BOXES IN WET LOCATIONS FLUSH WITH MORTAR INCLUDING FLUSH JOINT ABOVE BOX. BUILD IN ANCHORS, TIES, WALL PLUGS, ACCESSORIES, FLASHINGS, PIPE SLEEVES, AND OTHER ITEMS AS THE MASONRY WORK PROGRESSES. ANCHORS AND TIES FULLY EMBEDDED IN MORTAR.
- E. UNFINISHED WORK: STEP BACK FOR JOINING WITH CONTINUING NEW WORK. RESORT TO TOOTHING ONLY WHEN SPECIFICALLY ACCEPTED. BEFORE LAYING NEW WORK, REMOVE LOOSE MORTAR, AND CLEAN EXPOSED JOINTS; DAMPEN SURFACES OF BRICK AFTER CLEANING.
- F. JOINTING:
1. TYPE: UNLESS NOTED OTHERWISE ON DRAWING FINISH SCHEDULE: CLIPPED JOINTS; MORTAR THOROUGHLY COMPACTED AND PRESSED AGAINST EDGES OF UNITS. TOOL WHEN MORTAR IS THUMBPRINT HARD.
2. WIDTH: EQUAL TO DIFFERENCE BETWEEN ACTUAL AND NOMINAL DIMENSIONS OF UNITS IN EITHER HEIGHT OR LENGTH; AVERAGE WIDTH OF ANY THREE ADJACENT JOINTS NOT LESS THAN 1/4 INCH (6.35 mm) AND NOT MORE THAN 1/2 INCH (12.7 mm); SAME WIDTH EXCEPT FOR INCONSPICUOUS VARIATIONS REQUIRED TO MAINTAIN BOND.
13. POINTING AND CLEANING
- A. COMPLETELY REMOVE MORTAR DAUBS OR SPLASHINGS FROM EXPOSED MASONRY SURFACES BEFORE SETTING. CLEAN MASONRY SURFACES, OTHER THAN REMOVING EXCESS SURFACE MORTAR, ONLY AFTER MORTAR HAS HARDENED. LEAVE SURFACES FREE OF MORTAR DAUBS, DIRT, STAINS, AND DISCOLORATION, INCLUDING SCUM FROM CLEANING. PLUMBING, OR OTHER METAL TOOLS AND METAL BRUSHES FOR CLEANING. BEFORE CLEANING PERMANENT CONSTRUCTION, CLEAN SAMPLE PANEL AND EXAMINE FOR DISCOLORATION OR STAIN. IF THE SAMPLE PANEL IS DISCOLORED OR STAINED, CHANGE METHOD OF CLEANING TO ASSURE PERMANENT MASONRY SURFACES WILL NOT BE ADVERSELY AFFECTED. WATER-SOAK EXPOSED SURFACES AND CLEAN WITH "DEXO" OR "SHURCLEAN," (PROPRIETARY MASONRY CLEANING AGENTS). USE CLEANING AGENTS IN ACCORD WITH MANUFACTURER'S INSTRUCTIONS.
14. POINTING AND CLEANING
- A. WASH MASONRY WORK WITH CLEAN WATER.
15. PROTECTION OF WORK
- A. PROTECT SURFACES OF MASONRY NOT BEING WORKED. WHEN RAIN OR SNOW IS IMMINENT, COVER TOPS OF EXPOSED MASONRY WITH STRONG NON-STAINING WATERPROOF MEMBRANE, WELL SECURED IN PLACE, IN A MANNER TO PREVENT MOISTURE FROM ACCUMULATING WITHIN UNFINISHED WALL. MAKE PROVISIONS TO PREVENT DAMAGE BY WIND.

SECTION 05 5000 – METAL FABRICATIONS

PART 1 GENERAL

PART 2 PRODUCTS

1. MATERIALS – STEEL
- 1.1. Steel sections: ASTM A 36/A 36M.
- 1.2. Steel tubing: ASTM A 500, grade B cold-formed structural tubing.
- 1.3. Plates: ASTM A 283.
- 1.4. PIPE: ASTM A 53/A 53M, grade B schedule 40, black finish.
- 1.5. Bolts, nuts, and washers: ASTM A 325 (ASTM A 325M), type 1, galvanized to ASTM A 153/A 153M where connecting galvanized components.
- 1.6. Welding materials: AWS D1.1/D1.1M; type required for materials being welded.
- 1.7. Shop and touch-up primer: SSPC–paint 15, complying with VOC limitations of authorities having jurisdiction.
2. MATERIALS – ALUMINUM
- 2.1. Extruded aluminum: ASTM B 221 (ASTM B 221M), 6063 Alloy, T6 Temper.
- 2.2. Sheet aluminum: ASTM B 209 (ASTM B 209M), 5052 Alloy, H32 or H22 Temper.
- 2.3. Aluminum–Alloy drawn seamless tubes: ASTM B 210 (ASTM B 210M), 6063 Alloy, T6 Temper.
- 2.4. Formed aluminum: Items noted in contract drawings as formed aluminum shall be of sufficient gauge to hold indicated forms and dimensions without oil canning or deformations. All required fasteners shall be concealed from view.
- 2.5. Bolts, nuts, and washers: Stainless steel.
- 2.6. Welding materials: AWS D1.2/D1.2M; type required for materials being welded.
3. FABRICATION
- 3.1. Fit and shop assemble items in largest practical sections, for delivery to site.
- 3.2. Fabricate items with joints tightly fitted and secured.
4. FINISHES – STEEL
- 4.1. Prime paint oil steel items.
5. FINISHES– ALUMINUM
- 5.1. Exterior aluminum surfaces: As indicated on contract drawings.
- 5.2. Interior aluminum surfaces: Class I natural anodized.
- 5.3. Formed aluminum surfaces: High performance organic coating for exposure to the elements, color as selected by the architect.

SECTION 05 5100 – METAL STAIRS

PART 1 GENERAL

1. WARRANTY
- 1.1. Alaco ladders carry a limited warranty of 5 years.

PART 2 PRODUCTS

- Basis of design product: Alaco ships ladders – Model H1000–65 (775H–65)
1. Height – up to 20' (6.1 M) / Width – 24" (610 MM) standard, 48" (1220 MM) maximum angles – 75 standard; 70, 65, 60 degrees available
2. Model H1000–65 (775H–65) ladder is designed for use with roof hatches. It can be ordered with or without handrails.
3. FINISHES & COATINGS
- 3.1. Mill finish is standard on aluminum ladders.
- 3.2. Factory applied paint coatings and chem–film treatment for field applied primers are available upon request.
- 3.3. Custom coatings and surface treatments are also offered. 2.01
4. LADDER CONSTRUCTION:
- 4.1. Alaco aluminum ladders and their components are fabricated from 6061 – T6 aluminum alloy for added safety, strength and long-lasting durability, with no painting required.
- 4.2. Model H1000–65 (775H–65) ships ladders feature extra heavy-duty capacity of 1000lb. Total, 500lb. Per step. 6" (153 MM) wide steps with non-slip ridges mounted on 12" (305 MM) centers. These (610 mm) wide steps are equipped with 4 mounting brackets. Flush handrails consist of 1–1/4" schedule 40 (42 MM OD) round aluminum pipe with cast aluminum fittings.
- PART 3 EXECUTION
1. PREPARATION
- 1.1. Handle and store product according to alaco recommendations.
2. INSTALLATION
- 2.1. Model H1000–65 (775H–65) aluminum ships ladder standard assembly
- 2.2. Establish distance from the floor to the underside of the roof hatch cover. Locate the mounting bracket 17" (432 MM) below the underside of the roof hatch. Check clear floor space required in installed position, then install the ladder to 65 angular degrees. Flush handrails are standard and can be installed singularly or on both sides of the ladder side rails.
- 2.3. Complete installation recommendations for all product models are available from the manufacturer.

SECTION 06 1000 – ROUGH CARPENTRY

PART 1 GENERAL

PART 2 PRODUCTS

1. GENERAL REQUIREMENTS
- 1.1. Dimension lumber: Comply with PS 20 and requirements of specified grading agencies.
- 1.2. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
- 1.3. Grading agency: Any grading agency whose rules are approved by the board of review. American lumber standard committee (www.ALSC.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

- 1.4. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.
2. DIMENSION LUMBER FOR CONCEALED APPLICATIONS
- 2.1. Sizes: Normal sizes as indicated on drawings, S4S/
- 2.2. Moisture content: S–DRY or MC19.
- 2.3. Stud framing (2 by 2 through 2 by 6 (50 by 50 MM through 50 by 150 MM):
- 2.3.1. Species: Any allowed under referenced grading rules.
- 2.3.2. Grade: NO. 2.
- 2.4. Joist, rafter, and small beam framing (2 by 6 through 4 by 16 (50 by 150 MM through 100 by 400 MM):
- 2.4.1. Machine stress-rated (MSR) as follows:
- 2.4.1.1. FB – single (Minimum extreme fiber stress in bending): 1350 PSI (9,300 KPA).
- 2.4.1.2. E (Minimum modulus of elasticity): 1,300,000 PSI (8960 MPA).
- 2.4.2. Species: Any allowed under grading rules.
- 2.4.3. Grade: NO. 1 & BTR.
- 2.5. Miscellaneous framing, blocking, nailers, grounds, and furring:
- 2.5.1. Lumber: S4S, NO. 2 or standard grade.
- 2.5.2. Boards: Standard or NO. 3.

3. CONSTRUCTION PANELS

- 3.1. Roof sheathing: APA PRP–108, structural I rated sheathing, exterior exposure class, and as follows:
- 3.1.1. Span rating: 24/0 (610/0).
- 3.1.2. Thickness: ½ inch (13 MM), nominal.
- 3.2. Wall sheathing: APA PRP–108, structural I rated sheathing, exterior exposure class, and as follows: ½" plywood or OSB, as indicated on structural drawings.
- 3.3. Communications and electrical room mounting boards: PS 1 A–D plywood, or medium density fiberboard; ¾ inch (19 MM) thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E 84.
4. FACTORY WOOD TREATMENT
- 4.1. Treated lumber and plywood: Comply with requirements of AWPA U1 – use category system for wood treatments determined by use categories, expected service conditions, and specific applications.

PART 3 EXECUTION

1. FRAMING INSTALLATION
- 1.1. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
- 1.2. Install structural members full length without splices unless otherwise specifically detailed.

SECTION 06 4100 – ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

PART 2 PRODUCTS

1. CABINETS
- 1.1. Quality grade: Unless otherwise indicated provide products of quality specified by AWI/ANMAC/MI architectural woodwork standards for premium grade.
- 1.2. Plastic laminate faced cabinets: Custom grade – in locations indicated on contract drawings.
- 1.3. Cabinets:
- 1.3.1. Finish – Exposed exterior surfaces: Decorative plastic laminate; type varies by location. Coordinate laminate selections with owner / architect.
- 1.3.2. Finish – Exposed interior surfaces: White melamine.
- 1.3.3. Door and drawer front edge profiles: Square edge with thin applied band.
- 1.3.4. Casework construction type: Type A – frameless.
2. LAMINATE MATERIALS
- 2.1. High pressure decorative laminate (HPDL): NEMA LD 3, types as recommended for specific applications.
3. COUNTERTOPS
- 3.1. Material and finish: Plastic laminate as selected by owner / architect.
- 3.2. Plastic laminate countertops: Plywood substrate covered with HPDL, conventionally fabricated and self-edge banded.
4. Shop finishing
- 4.1. Finish work in accordance with AWI/ANMAC/MI architectural woodwork standards, section 5 – finishing for grade specified
- PART 3 EXECUTION – NOT USED

SECTION 07 1300 – SHEET/FLUID APPLIED WATERPROOFING

PART 1 GENERAL

*Contractor shall provide single source responsibility for all building waterproofing components. One contract shall be responsible for coordination / installation of all components affecting building water / air barrier. Verify compatibility of all membrane flashing and building waps w/ adjacent materials. Do not mix asphaltic and bituminous based flashing / materials without appropriate separation.