

- A. Prepare uncoated ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:
1. Exteriors: SSPC-SP 6 "Commercial Blast Cleaning".
  2. Interiors: SSPC-SP 3 "Power Tool Cleaning".
- B. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA 1 "Paint Application Specification No. 1" for shop painting. Use only top quality, rust-inhibiting primer.
1. Ensure that primer is compatible with finish, field paint. See Section 09900.

2.10 GALVANIZING:  
A. Any metal that has any surface or edge exposed to the weather shall be hot-dip galvanized after fabrication. All galvanized shall meet the requirements set forth in ASTM A 446-76 and ASTM A 525-60.

2.11 MANUFACTURED ITEMS:  
A. Manufactured items of types normally carried in stock inventories, as distinguished from items fabricated especially for this Project, shall be fabricated from materials customarily used by the manufacturer, irrespective of the requirements of this Specification, unless in particular instances, special materials shall be specified. With respect to shop prime coats of paint on such stocked items, manufacturer's standard finish will be accepted unless specified otherwise.

PART 3 - EXECUTION  
3.01 PREPARATION:  
A. Coordinate and furnish anchorage, setting drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

3.02 INSTALLATION - GENERAL:  
A. Fastening to in-place construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction. Include threaded fasteners for concrete and metal inserts, toggle bolts, through-bolts, wood screws, and other connectors as necessitated.  
B. Cutting, fitting, and placement: Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.  
C. Provide temporary bracing or anchors in from work for items that are to be built into concrete masonry or similar construction.  
D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.  
E. Field welding:  
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.  
2. Obtain fusion without undercut or overlap.  
3. Remove welding flux immediately.  
4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.  
F. Corrosion protection: Protect concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a minimum layer of 7/8" neoprene sheet, washer, or plywood. Bituminous paint may be allowed in certain areas as approved by the Architect.

3.03 CONTINUOUS BENT PLATES:  
A. Provide continuous single angles in long lengths where indicated or necessitated. Drill 2" holes for wood attachment at 24" o.c. where required.

3.02 MISCELLANEOUS CLIP ANGLES AND BENT PLATES:  
A. Provide as indicated or necessitated. Drill 2" holes for wood attachment at 24" o.c. where required.

3.03 ANGLES AT ROOF DECK OPENINGS:  
A. Provide angles in single lengths where indicated. Drill 2" holes for attachment of wood, with a minimum of two attachment points and a maximum spacing of 24" o.c.

3.04 LOOSE LINTELS:  
A. Make loose lintels long enough to provide 8" of bearing on each end.  
1. Hot-dip galvanized.  
2. Provide loose lintels to the masonry trade for installation.

3.05 WELDING PLATES:  
A. Fabricate plates of sizes indicated. Fabricate to have a minimum of two Nelson Studs on bottom side of plates. Use stud sizes indicated plates. Use stud sizes indicated.

3.06 SHOP COAT:  
A. Before steel leaves shop, remove loose mill scale, rust and foreign matter, and apply one coat of primer. Do not paint surfaces at places to be welded.

3.07 ERECTION:  
A. Use only experienced welders qualified by American Welding Society prescribed testing.  
B. Miscellaneous angles, bent plates, and clip angles: Install as indicated.  
C. Bent plates at roof edges: Before welding plates to structural members, accurately align them so that wood members shall be installed on bent plates that can be plumbed with face of brick. After bent plates are lined up, weld them securely in place.  
D. Welding plates: Install welding plates when concrete and bond beams are set. When concrete has begun to set, clean off tops of plates to assure clean welding surfaces.  
E. Steel plates: Install plates as indicated.  
F. Threaded anchor bolts: Have anchor bolts formed into slab as indicated.

3.08 CLEAN-UP:  
A. When steel has been installed, clean up spatter and debris resulting from welding. Where welding is rough and may interfere with smooth laying of metal deck, grind welds.

3.09 TOUCH-UP PAINTING:  
A. When steel has been installed, touch-up welds, scarred and abraded places on bent plates, structural steel and bar joints with rust-inhibiting paint. Ensure compatibility with finish, field paint. See Section 09900.

2.05 WOOD TREATMENT - FIRE-RETARDANT:  
A. Provide materials which comply with APA standards for pressure impregnation with fire-retardant chemicals, and which have a flame spread rating of not more than 25 when tested in accordance with UL Test 723 or ASTM E84, and shall show no increase in flame spread and significant progressive combustion upon continuation of test for additional 20 minutes.  
B. Where treated items are exposed to exterior or to high humidities or are to have a transparent finish in form of stain or sealer, provide materials which show no change in fire-hazard classification when subjected to standard rain test (UL 790 or ASTM B2898).  
C. Use fire-retardant treatment which will not bleed through or adversely affect type of finish indicated and which does not require brush treatment of field-made end cuts to maintain fire-hazard classification.  
D. Where transparent finish is indicated, use type of treatment and species which permits milling of lumber after treatment without altering indicated fire-hazard classification, as determined by fire testing.  
E. KDAT items to maximum moisture content of 19%.  
F. Provide UL label on each piece of fire-retardant lumber or plywood.  
G. Inspect each piece of treated lumber or plywood after drying and discard damaged or defective pieces.

2.06 WOOD NAILERS AT ROOF PERIMETER FOR ELASTOMERIC SHEET ROOFING:  
A. Nailers shall be #2 or better lumber, wolmanized pressure treated for fire and rot resistance. Creosote and asphaltic preservatives are not acceptable. Surface height of nailers shall be matched to that of the new insulation thickness being used.

PART 3 - GENERAL  
1.01 SCOPE:  
A. Provide all labor, materials, equipment and services required to complete the general carpentry work, miscellaneous equipment and material installation.

1.02 QUALITY ASSURANCE:  
A. Lumber standards: Comply with PS 20 and with applicable rules of the respective agencies for species and products specified.  
B. Plywood product standards: Comply with PS 1 (ANSI A199.1) or, for products not manufactured under PS 1 provisions, with applicable APA Performance Standard for type of panel indicated.

1.03 PRODUCT HANDLING:  
A. Do not deliver shop fabricated carpentry items until site conditions are adequate to receive the work. Protect items from weather while in transit.

2.07 FASTENERS AND ANCHORAGE:  
A. Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with Federal Specifications for nails, staples, screws, bolts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended site area of humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A 153).

PART 3 - EXECUTION  
3.01 GENERAL:  
A. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.  
B. Set carpentry work accurately to required levels and lines with members plumb, true and accurately cut and fitted.  
C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards. Countersink nail heads on exposed carpentry work and fill holes.  
D. Use common wire nails, except as otherwise noted. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where plate side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without spilling of wood shavings or resin.

3.02 WOOD GROUNDS, NAILERS, BLOCKING AND SLEEPERS:  
A. Provide for screeding of attachment of other work. Form and shapen as shown and cut as required for true line.  
B. Attach to wall using to support applied loading.  
1. Counter-sink bolts and nuts flush with surfaces, unless otherwise shown.  
2. Bolt to masonry during installation of masonry work.  
C. Where possible, anchor to formwork before concrete placement.  
D. In studs, walls, provide blocking for support of wall cabinets, toilet vanities, etc.  
E. Provide perimeters of dressed, preservative treated, key-banded lumber not less than 1 1/2" wide and of thickness required to bring face of ground to exact thickness of finish material indicated. Remove temporary grounds when no longer required.

3.03 WOOD NAILERS AT ROOF PERIMETER FOR ELASTOMERIC SHEET ROOFING:  
A. Anchor wood nailers at the roof perimeter for the installation of elastomeric roofing. Anchor firmly to deck at 3'-0" o.c. to resist a force of 175 lbs. per linear foot in any direction. Where the deck consists of material with limited holding capability, the anchoring shall be accomplished by fastening to the supporting steel or with toggle bolts penetrating to the underside of the deck or such means as may be approved in writing by the roof manufacturer. 2" vent spaces shall be provided between adjacent lengths of nailers.

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1.03 PRODUCT HANDLING:  
A. Do not deliver shop fabricated carpentry items until site conditions are adequate to receive the work. Protect items from weather while in transit.  
B. Store indoors, in ventilated area with a constant, minimum temperature of 60 degrees F, maximum humidity of 25 to 55 percent.

PART 1 - PRODUCTS  
2.01 LUMBER:  
A. Dimensions: Conform to standards established by the American Lumber Standards Committee. Moisture content: Insects: 19% maximum at the time of permanent closing in of the structure.  
B. Grading: S4S.  
C. Miscellaneous lumber:  
1. Provide FRT wood for support or attachment of other work including, but not limited to, bucks, nailers, plates, blocking, bracing, furring, grounds, stripping and similar members. Provide lumber of sizes indicated, worked into shapes shown.  
2. Shall be #2, FRT, GM, SYP, KDAT (Kiln Dried After Treatment).

2.02 PLYWOOD - GENERAL:  
A. Prior to fabrication, submit to the Architect for review the following:  
1. Shop drawings that at a minimum shall show the following:

- A. Identify each panel with the appropriate grade APA trademark and shall meet the requirements of the latest edition of U. S. Product Standard PSI or one of APA's Performance Standards.  
B. All plywood which has an edge or surface permanently exposed to the weather shall be classed Exterior.  
C. Panel thickness, grade, and Group or Identification Index shall be at least equal to that shown on the Drawings. Installation shall be in accordance with the APA recommendations.  
D. Fire rated plywood:  
1. Provide for mounting electrical or telephone equipment and as otherwise noted.  
2. 3/4", APA C-D Plugged INT with exterior glue.

2.03 SOFFITS:  
A. APA A-C EXT.  
B. Continuous soffit vent: Fry Reglet DCS-625-V-300 (verify profile and dimensions required).

2.04 WOOD TREATMENT - PRESERVATIVE:  
A. Lumber or plywood shall be preservative treated in the following instances:  
1. Whenever wood is placed in the ground;  
2. Whenever wood is placed in water;  
3. Wherever wood comes in contact with masonry or concrete;  
4. Wherever wood is exposed to wetting and corrosive environments;  
5. Wherever wood would be susceptible to decay organisms or insects.

B. Comply with applicable requirements of AWPA Standards C2 (Lumber) and C9 (Plywood) and of AWPB Standards listed below. Mark each treated item with the AWPB Quality Mark Requirements.  
C. Water-borne preservatives shall comply with AWPB LP-2, LP-3, LP-4 and LP-22 as applicable. After treatment, air-dry to a maximum moisture content of 15%.  
D. Complete fabrication of treated items prior to treatment, where possible. If cut after treatment, coat cut surfaces with heavy brush coat of same chemical used for treatment. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

2.05 WOOD TREATMENT - FIRE-RETARDANT:  
A. Provide materials which comply with APA standards for pressure impregnation with fire-retardant chemicals, and which have a flame spread rating of not more than 25 when tested in accordance with UL Test 723 or ASTM E84, and shall show no increase in flame spread and significant progressive combustion upon continuation of test for additional 20 minutes.  
B. Where treated items are exposed to exterior or to high humidities or are to have a transparent finish in form of stain or sealer, provide materials which show no change in fire-hazard classification when subjected to standard rain test (UL 790 or ASTM B2898).  
C. Use fire-retardant treatment which will not bleed through or adversely affect type of finish indicated and which does not require brush treatment of field-made end cuts to maintain fire-hazard classification.  
D. Where transparent finish is indicated, use type of treatment and species which permits milling of lumber after treatment without altering indicated fire-hazard classification, as determined by fire testing.  
E. KDAT items to maximum moisture content of 19%.  
F. Provide UL label on each piece of fire-retardant lumber or plywood.  
G. Inspect each piece of treated lumber or plywood after drying and discard damaged or defective pieces.

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2.07 FASTENERS AND ANCHORAGE:  
A. Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with Federal Specifications for nails, staples, screws, bolts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended site area of humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A 153).

PART 3 - EXECUTION  
3.01 GENERAL:  
A. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.  
B. Set carpentry work accurately to required levels and lines with members plumb, true and accurately cut and fitted.  
C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards. Countersink nail heads on exposed carpentry work and fill holes.  
D. Use common wire nails, except as otherwise noted. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where plate side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without spilling of wood shavings or resin.

3.02 WOOD GROUNDS, NAILERS, BLOCKING AND SLEEPERS:  
A. Provide for screeding of attachment of other work. Form and shapen as shown and cut as required for true line.  
B. Attach to wall using to support applied loading.  
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C. Where possible, anchor to formwork before concrete placement.  
D. In studs, walls, provide blocking for support of wall cabinets, toilet vanities, etc.  
E. Provide perimeters of dressed, preservative treated, key-banded lumber not less than 1 1/2" wide and of thickness required to bring face of ground to exact thickness of finish material indicated. Remove temporary grounds when no longer required.

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- a. All materials (solid wood, plywood, particleboard, fiberwood board, plastic laminate and hardware).  
b. All thicknesses and dimensions.  
c. Species, grade and cut of woods and veneers.  
d. Jointing and bolting.  
e. The name of the manufacturer and the model number of all factory fabricated items.  
f. Full size details drawn in related and dimensioned positions to facilitate checking of intersecting and string dimensions.  
g. Clear description of work to be done in the shop and work to be done in the field.  
2. Manufacturer's literature of specialty items not manufactured by the architectural woodworker.

1.04 PRODUCT HANDLING:  
A. Millwork shall not be delivered until the building and storage areas are sufficiently dry so that the millwork will not be damaged by excessive changes in moisture content.

PART 2 - PRODUCTS  
2.01 CASEWORK - PLASTIC LAMINATE FINISH:  
A. AWI quality grade (Section 400): Premium.  
B. Exposed surfaces - plastic laminate: 1/16" high pressure plastic laminate as required by AWI quality grade and conforming to NEMA Publication No. LD1-1964, Part 3 - Abrasion Class 1.  
C. Semi-exposed surfaces: As governed by selected AWI quality grade.

2.02 COUNTERTOPS:  
A. AWI quality grade (Section 400): Premium.  
B. Plastic laminate:  
1. 1/16" high pressure plastic laminate as required by AWI quality grade and conforming to NEMA Publication No. LD1-1964, Part 3 - Abrasion Class 1.  
2. All tops in which sinks occur shall have a core of exterior grade hardwood faced plywood or phenolic resin particleboard.

2.03 CASEWORK HARDWARE:  
A. All cabinet hardware shall be furnished and installed by the casework manufacturer.  
1. Drawer slides: Knape & Vogt No. 1300.  
2. Shelf standards and brackets: Knape & Vogt No. 255/256.  
3. Parts shelving: Provide extra heavy duty brackets.  
4. Shelf standards and support clips: Knape & Vogt No. 233/236.

a. Parts shelving: Provide extra heavy duty standards and clips.  
4. Hinges: Concealed casework hinges with self-closing feature.  
5. Pulls: 4" brushed aluminum wire pull.  
6. Locks: Corbin Cabinet Locks No. C2L cam lock.

2.04 CLOSET AND STORAGE SHELVING - PAINT FINISH:  
A. AWI quality grade (Section 600): Custom.  
B. Provide hardwood edge strips.

2.05 OTHER MATERIALS:  
A. All other materials, not specifically described, but required for a complete and proper installation of the millwork items, shall be as selected by the Contractor but subject to the approval of the Architect.

PART 3 - EXECUTION  
3.01 PREPARATION FOR FINISHING:  
A. Comply with referenced quality standard for sanding, filling countersink fasteners, sealing of concealed surfaces and semi-preparation for finishing of millwork, as applicable to each unit of work.

3.02 PREPARATION FOR INSTALLATION:  
A. Condition millwork to improve prevent unsatisfactory conditions of installation area prior to installing.  
B. Deliver concealed inserts and anchor devices to be built into substrates, well in advance of the time substrates are to be built.  
C. Prior to installation of architect millwork, examine shop fabricated work for completion, complete work as required, including back priming and removal of packing.  
D. Balance all surfaces that shall be concealed after installation.

3.03 INSTALLATION:  
A. Install case work plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level; and with 1/16" maximum offset flush adjoining surfaces. 1/8" maximum offsets in revealed adjoining surfaces.  
B. Scribble cut work to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.  
C. Anchor millwork to anchors or built-in blocking. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fastener heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with millwork, and matching final finish where transparent finish is indicated.

3.04 CASEWORK:  
A. Set and secure casework in place rigid, plumb and square.  
B. Use purpose designed fixture attachments for wall mounted components. Attach wall mounted cabinets in order that they can withstand all superimposed loading.  
C. Use thread steel concealed joint fasteners to align and secure adjoining cabinet units and counter tops.  
D. Permanently fix cabinet and counter bases to floor using appropriate angles and anchorages.  
E. Counter-sink semi-concealed anchorage devices used to wall mount components, and conceal with solid pils of species to match surrounding wood. Piece flush with surrounding surfaces.  
F. Carefully scribe cabinetwork which is against other building materials leaving gaps of 1/32" maximum. Seal gaps with sealant tinted to match adjacent surfaces. Do not use additional overlay trim for this purpose.  
G. Install and adjust cabinet hardware to ensure smooth and correct operation.

3.05 ADJUSTMENT, CLEANING, FINISHING AND PROTECTION:  
A. Repair damaged and defective millwork wherever possible to eliminate defects functionally and visually, where not possible to repair properly, replace millwork. Adjust joinery for uniform appearance.  
B. Clean hardware, lubricate and make final adjustments for proper operation.  
C. Clean millwork on exposed and semi-exposed surfaces. Touch-up shop-applied finishes to restore damaged or soiled areas.  
D. Provide final protection and maintain conditions, in a manner acceptable to fabricator and installer, which ensures millwork being without damage or deterioration at time of Substantial Completion.

PART 1 - GENERAL  
1.01 SCOPE:  
A. Provide all of the labor, materials, equipment, and services to furnish and install the foamed-in-place insulation.

1.02 QUALITY ASSURANCE:  
A. Installation shall be by an experienced installer who is approved by the manufacturer of the insulation material.  
B. Independent testing (ASTM E84-81A) shall be provided to verify that the  
1. Flame Spread Factor: 25 OR LESS.  
2. Smoke Density Factor: 450 OR LESS.  
3. This testing shall also verify that, when this standard test is extended to 30 minutes, there is no further flame progression.  
C. Independent testing and evaluations shall be provided to verify that the cementitious foam insulation does not contain formaldehyde and is approximately 95% inorganic.  
D. The manufacturer shall certify that the cementitious foam insulation is free from asbestos.

1.03 SUBMITTALS:  
A. Prior to installation, submit the following to the Architect for review:  
1. Complete and fully descriptive manufacturer's literature describing the product and its proper installation for this Project.

1.04 DELIVERY AND STORAGE OF MATERIALS:  
A. The Contractor shall transport materials to job site in his own vehicle and provide protection from damage and exposure.

1.05 JOB CONDITIONS:  
A. The installer shall examine the wall cavities and conditions under which the insulation work is

to be performed, and notify the Contractor in writing of unsatisfactory conditions. Do not proceed with the insulation work until the unsatisfactory conditions have been corrected in a manner acceptable to installer. Installation shall be done in a manner that will not endanger the building or its occupants.

PART 2 - PRODUCTS  
2.01 FOAMED-IN-PLACE INSULATION:  
A. Product/manufacturer:  
1. Air Krete Cementitious Foam Insulation - Thermal Krete (Density 2.0 lbs./cu.ft.), as manufactured by Air Krete, Inc.  
2. Core-Fill-500 as manufactured by Tailored Chemical Products, Inc.  
3. An approved equal.

PART 3 - EXECUTION  
3.01 GENERAL INSTALLATION:  
A. Comply with manufacturer's printed instructions for the application required in the Project.  
B. Coordinate cutting, patching and installation of insulation with project manager and project G.M. schedule.  
C. Clean up and remove all excess foam and other debris so that work area is ready for other trades.

3.02 BLOCK CORE FILL APPLICATION:  
A. Insert application hose into each core of cement block and push hose (no stiffener may be used) to the bottom of the cavity. Slowly withdraw application hose, leaving core full.

PART 1 - GENERAL  
1.01 SCOPE:  
A. Provide all of the labor, materials, equipment, and services required to furnish and install the roof deck insulation.

1.02 QUALITY ASSURANCE:  
A. Single source responsibility for insulation products: Obtain each type of building insulation from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.  
B. Work associated with roof deck insulation including (but not limited to) membrane roofing and flashing shall be performed by and be the responsibility of a single installer. Coordinate with Section 07531.

1.03 SUBMITTALS:  
A. Prior to fabrication, submit to the Architect for review the following:  
1. Manufacturer's literature fully and completely describing each product and its proper method of installation for this Project.  
2. Physical sample of each product named herein that the Contractor proposes to provide to the Project.  
3. Test data and calculations proving that the insulation in the thickness and number of layers to be installed will, in fact, meet the required "U" or "R" value.  
4. Manufacturer's certification that product faces is compatible with roofing membrane.  
5. Shop drawings: Insulation and cant thickness and layout. Coordinate with Section 07531, Elastomeric Sheet Roofing (EPDM).

1.04 DELIVERY, STORAGE, AND HANDLING:  
A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's recommendations for handling, storage, and protection during installation.  
B. Protect plastic insulation as follows:  
1. Do not expose to sunlight, except to extent necessary for period of installation and