

SECTION 01 7800 — CLOSEOUT SUBMITTALS

- 1.01 SUBMITTALS
 - A. Project Record Documents: Submit documents to Owner when submitting final application for payment.
 - B. Operation and Maintenance Data: Submit two sets of final documents in final form.
 - C. Warranties and Bonds: Submit prior to final Application for Payment.
 - D. Certificate of Occupancy: Submit to owner when requesting Substantial Completion inspection.
- 3.01 PROJECT RECORD DOCUMENTS
 - A. Maintain on site one set of the following record documents; record actual revisions to the work: including but not limited to, Drawings, Specifications, Addenda, Change Orders, and reviewed submittals.
 - B. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction.
- 3.02 OPERATION AND MAINTENANCE DATA
 - A. For Each Product or System: List names, addresses and telephone numbers of 2 Subcontractors and suppliers.
 - B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to each product.
 - C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
 - D. For Each Product, Applied Material, and Finish:
 - 1. Material data, with catalog number, size, composition, and color and texture designations.
 - 2. Information for re-ordering custom mixed or manufactured products.
 - 3. Manufacturer's instructions for Care and Maintenance.
 - E. Moisture protection and weather-exposed products; Provide manufacturer recommendations for inspections, maintenance, and repair.
 - F. For Each Item of Equipment and Each System, provide the manufacturer's installation, operation and maintenance manuals. Include test and balancing reports.
- 3.03 WARRANTIES AND BONDS
 - A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

SECTION 02 4100 — DEMOLITION

- 1.01 SUBMITTALS
 - A. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.
- 1.02 QUALITY ASSURANCE
 - A. Demolition Firm Qualifications: Company specializing in the type of work required.
 - B. Comply with governing EPA notification regulations.
- 3.01 SCOPE
 - A. Remove portions the building, as indicated on drawings.
 - B. Remove paving and curbs as required to accomplish new work.
 - C. Within area of new construction, remove foundation walls and footings to a minimum of 2 feet below finished grade, or to a minimum of 12" below foundation bearing elevation for any construction within 4' of new foundations.
 - D. Outside area of new construction, remove foundation walls and footings to a minimum of 2 feet below finished grade.
 - E. Remove underground tanks.
 - F. Remove other items indicated, for salvage, relocation, and recycling.
 - G. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compacted as specified.
- 3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS
 - A. Perform an engineering survey of building to determine whether demolition operations might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures.
 - B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of OSHA, NFPA 241, ANSI A10.6 and the Building Code.
 - 3. 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.
 - 4. Provide, erect, and maintain temporary barriers and security devices.
 - 5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 6. Do not close or obstruct roadways or sidewalks without permit.
 - 7. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 - C. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
 - D. Do not begin removal until built elements to be salvaged or relocated have been removed.
 - E. Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.
 - F. Protect existing structures and other elements that are not to be removed.
 - 1. Provide bracing and shoring, prevent movement or settlement of adjacent structures and stop work immediately if adjacent structures appear to be in danger.
 - G. Minimize production of dust due to demolition operations.
 - H. If hazardous materials are discovered during removal operations, stop work and notify Owner.
 - I. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - J. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.
 - K. Grade demolition areas to level condition, sloped to drain, with smooth transitions to adjacent surfaces.
- 3.03 EXISTING UTILITIES
 - A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain written permits.
 - B. Protect existing utilities to remain from damage.
 - C. Do not disrupt public utilities without permit from authority having jurisdiction.
 - D. Do not close, shut off, or disrupt existing life safety systems that are in use.
 - E. Do not close, shut off, or disrupt existing utilities that are in use.
 - F. Locate and mark utilities to remain with identification of utility type.
 - G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
 - H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently connected, in same manner as other utilities to remain.
 - I. Refer to mechanical and electrical specifications for additional installation requirements for plumbing, mechanical and electrical items.
- 3.04 DEBRIS AND WASTE REMOVAL
 - A. Remove debris, junk, and trash from work areas.
 - B. Leave site in clean condition, ready for subsequent work.
 - C. Clean up spillage and wind-blown debris from public areas and lands.

SECTION 02 4100 — DEMOLITION

- 1.01 SUBMITTALS
 - A. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.
- 1.02 QUALITY ASSURANCE
 - A. Demolition Firm Qualifications: Company specializing in the type of work required.
 - B. Comply with governing EPA notification regulations.
- 3.01 SCOPE
 - A. Remove portions the building, as indicated on drawings.
 - B. Remove paving and curbs as required to accomplish new work.
 - C. Within area of new construction, remove foundation walls and footings to a minimum of 2 feet below finished grade, or to a minimum of 12" below foundation bearing elevation for any construction within 4' of new foundations.
 - D. Outside area of new construction, remove foundation walls and footings to a minimum of 2 feet below finished grade.
 - E. Remove underground tanks.
 - F. Remove other items indicated, for salvage, relocation, and recycling.
 - G. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compacted as specified.
- 3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS
 - A. Perform an engineering survey of building to determine whether demolition operations might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures.
 - B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of OSHA, NFPA 241, ANSI A10.6 and the Building Code.
 - 3. 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.
 - 4. Provide, erect, and maintain temporary barriers and security devices.
 - 5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 6. Do not close or obstruct roadways or sidewalks without permit.
 - 7. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 - C. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
 - D. Do not begin removal until built elements to be salvaged or relocated have been removed.
 - E. Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.
 - F. Protect existing structures and other elements that are not to be removed.
 - 1. Provide bracing and shoring, prevent movement or settlement of adjacent structures and stop work immediately if adjacent structures appear to be in danger.
 - G. Minimize production of dust due to demolition operations.
 - H. If hazardous materials are discovered during removal operations, stop work and notify Owner.
 - I. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - J. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.
 - K. Grade demolition areas to level condition, sloped to drain, with smooth transitions to adjacent surfaces.
- 3.03 EXISTING UTILITIES
 - A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain written permits.
 - B. Protect existing utilities to remain from damage.
 - C. Do not disrupt public utilities without permit from authority having jurisdiction.
 - D. Do not close, shut off, or disrupt existing life safety systems that are in use.
 - E. Do not close, shut off, or disrupt existing utilities that are in use.
 - F. Locate and mark utilities to remain with identification of utility type.
 - G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
 - H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently connected, in same manner as other utilities to remain.
 - I. Refer to mechanical and electrical specifications for additional installation requirements for plumbing, mechanical and electrical items.
- 3.04 DEBRIS AND WASTE REMOVAL
 - A. Remove debris, junk, and trash from work areas.
 - B. Leave site in clean condition, ready for subsequent work.
 - C. Clean up spillage and wind-blown debris from public areas and lands.

SECTION 06 1000 — ROUGH CARPENTRY

- 1.01 SUBMITTALS
 - A. Manufacturer Certificates: Certify that used products supplied for rough carpentry meet or exceed specified requirements.
- 1.02 DELIVERY, STORAGE, AND HANDLING
 - A. General: Cover and protect products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
 - B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.
- 2.01 GENERAL REQUIREMENTS
 - A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. 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.
 - 2. 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.
- B. Lumber fabricated from old growth timber is not permitted.
- 2.02 DIMENSION LUMBER
 - A. Sizes: Nominal sizes as indicated on drawings, S4S.
 - B. Moisture Content: 5-dry or MC19.
 - C. Miscellaneous Blocking, Nailers, and Furring: Lumber: S4S, No. 2 or Standard Grade. Boards: Standard or No. 3.
- 2.03 CONSTRUCTION PANELS
 - A. Roof Sheathing: Any PS 2 type, rated Structural I Sheathing. Bond Classification: Exterior. Span Rating: 60. Performance Category: 3/4 PERF CAT.
 - B. Wall Sheathing: Any PS 2 type. Bond Classification: Exterior. Grade: Structural I Sheathing. Span Rating: 24. Performance Category: 5/8 PERF CAT.
 - C. Wall Sheathing: Glass mat faced gypsum, ASTM C1177/C1177M, square long edges, 5/8 inch. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly.
 - D. Insulated Wall Sheathing: Extruded polystyrene foam plastic, ASTM C 578, Type IV; tongue and groove long edges; 3/4 inch thick, unless noted otherwise.
 - E. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.
- 2.04 ACCESSORIES
 - A. Fasteners and Anchors: Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for exterior, roof treated and preservative-treated wood locations, unfinished steel elsewhere.
- 2.05 FACTORY WOOD TREATMENT
 - A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 - 1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specific requirements.
 - 2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an AISC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.
 - B. Fire Retardant Treatment:
 - 1. Exterior Type: AWWA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Do not use treated wood in direct contact with the ground.
 - 2. Interior Type A: AWWA U1, Use Category UCFB, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Treat rough carpentry items as indicated.
 - c. Do not use treated wood in applications exposed to weather or where the wood may become wet.
 - C. Preservative Treatment:
 - 1. Preservative Pressure Treatment of Lumber Above Grade: AWWA U1, Use Category UCB3, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft retention.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - b. Treat lumber in contact with roofing, flashing, or waterproofing.
 - c. Treat lumber in contact with masonry or concrete.
 - d. Treat lumber less than 18 inches above grade.
 - 2. Preservative Pressure Treatment of Plywood Above Grade: AWWA U1, Use Category UCB3, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention.
 - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
 - b. Treat plywood in contact with roofing, flashing, or waterproofing.
 - c. Treat plywood in contact with masonry or concrete.
 - d. Treat plywood less than 18 inches above grade.
 - e. Treat plywood in other locations as indicated.
- 3.01 INSTALLATION — GENERAL
 - A. Select material sizes to minimize waste.
 - B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
 - C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.
- 3.02 BLOCKING, NAILERS, AND SUPPORTS
 - A. Provide framing and blocking members as indicated or as required to support finish fixtures, specialty items, and trim.
 - B. In frame assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between doors or between top story and roof/attic space; other material acceptable code authorities may be used in lieu of solid wood blocking.
 - C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other support is explicitly indicated.
 - D. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
 - E. Specifically, provide the following non-structural blocking:
 - 1. Handrails.
 - 2. Grab bars.
 - 3. Toilet room accessories.
- 3.04 INSTALLATION OF CONSTRUCTION PANELS
 - A. Sheathing: Construction panels with long dimension perpendicular to framing members, and ends staggered over every firm bearing.
 - 1. Long edges: Use shims, using clips, where joints occur between roof framing members.
 - 2. Stagger panels to minimize joints; are not permitted.
 - B. Wall Sheathing: Secure with 1x dimension perpendicular to wall studs, with ends over firm bearing and toenailed, using nails, screws, or staples.
 - C. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
 - 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
 - 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 - 3. Install adjacent boards without gaps.
- 3.05 SITE APPLIED WOOD TREATMENT
 - A. Apply preservative treatment compatible with factory applied treatment at site-sown cuts, complying with manufacturer's instructions.
 - B. Allow preservative to dry prior to erecting members.
- 3.06 TOLERANCES
 - A. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

SECTION 07 2100 — BOARD AND BATT INSULATION

- 1.01 SECTION INCLUDES
 - A. Board insulation at perimeter foundation wall, underside of floor slabs, and as indicated on drawings.
 - B. Batt insulation in exterior wall, ceiling, and roof construction.
- 1.02 SUBMITTALS
 - A. Provide data on product characteristics, performance criteria, and product limitations.
- 1.03 FIELD CONDITIONS
 - A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.
- 2.01 FOAM BOARD INSULATION MATERIALS
 - A. Extruded Polystyrene Board Insulation: ASTM C578, Type X; Extruded polystyrene board with either natural skin or cut cell surfaces, with the following characteristics:
 - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.

- 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
- 2.02 BATT INSULATION MATERIALS
 - A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
 - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 - 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136.
 - 4. Formaldehyde Content: Zero.
 - a. In Climate Zones 4c and above; where a separate vapor retarder is being used.
 - b. In Climate Zones 1, 2, 3, 4a & 4b; where no vapor retarder is required.
 - 6. Facing: Asphalt treated Kraft paper, one side.
 - a. In Climate Zones 4c and above; where a vapor retarder is required.
 - b. Facing can not be exposed.
- 2.03 ACCESSORIES
 - A. Sheet Vapor Retarder: Polyamide film with variable vapor permeability based on ambient humidity. Permeance of 1 perm or less by the dry cup method, increasing to 10 perms by the wet cup method. Flame spread rating of 25 or less, when tested in accordance with ASTM E84.
 - B. Tape: As recommended by manufacturer.
 - C. Insulation Fasteners: Impaling clip of unfinished steel with washer retainer and clips, to be adhered to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.
 - D. Adhesive: Type recommended by insulation manufacturer for application.
- 3.01 EXAMINATION
 - A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
 - B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.
- 3.05 BATT INSTALLATION
 - A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
 - B. Install in exterior wall, roof, and ceiling spaces without gaps or voids. Do not compress insulation.
 - C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
 - D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
 - E. Install with factory applied vapor retarder membrane facing warm side of wall assembly. Lap ends and side flanges of membrane over framing members.
 - F. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.
 - G. Place Sheet Vapor Retarder on warm side of insulation; lap and seal sheet retarder joints over member face.
 - H. Tape seal tears or cuts in vapor retarder.
 - I. Extend vapor retarder membrane tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.

SECTION 07 8400 — FIRESTOPPING

- 1.01 SUBMITTALS
 - A. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
 - B. Product Data: Provide data on product characteristics, performance ratings, and limitations.
- 1.02 QUALITY ASSURANCE
 - A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled ratings when tested in accordance with ASTM E 814 and ASTM E 119.
 - 1. Listing in the current-year classification or certification books of UL, or of ITS (Warnock Hersey) will be considered as constituting an acceptable test report.
 - 2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) or www.iccc-es.org will be considered as constituting an acceptable test report.
 - B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years experience in the work of this section and with minimum 3 years experience in the work of this section.
- 1.03 FIELD CONDITIONS
 - A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.
 - B. Provide ventilation areas where solvent-cured materials are being installed.
- 2.01 FIRESTOPPING — GENERAL REQUIREMENTS
 - A. Materials: Any material meeting the requirements.
 - B. Primers, Sealers, Grouts, Insulation, Packing, Stuffing, and Accessories: Type required for tested assembly.
 - C. Fire Ratings: See drawings for required ratings.
- 2.02 FIRESTOPPING ASSEMBLY REQUIREMENTS
 - A. Perimeter Fire Containment: Firestopping: Use any system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of the floor assembly.
 - B. Head-of-Wall Firestopping: Use any system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of floor or wall, whichever is greater.
 - C. Floor-to-Floor, Wall-to-Wall, and Wall-to-Floor Joints, Except Perimeter, Where Both Are Fire-Rated: Use any system that has been tested according to ASTM I1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.
 - D. Through Penetration Firestopping: Use any system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
- 3.01 EXAMINATION
 - A. Verify openings are ready to receive the work of this section.
- 3.02 PREPARATION
 - A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that could adversely affect bond of firestopping material.
 - B. Remove incompatible materials that could adversely affect bond.
 - C. Install backing materials to arrest liquid material leakage.
- 3.03 INSTALLATION
 - A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
 - B. Do not cover installed firestopping until inspected by authority having jurisdiction.
 - C. Install labeling required by code.

SECTION 08 1416 — FLUSH WOOD DOORS

- 1.01 SUBMITTALS
 - A. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
 - B. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
 - C. Samples: Submit two samples of door veneer, 4x4 inch in size illustrating wood grain, stain color, and sheen.
- 1.02 QUALITY ASSURANCE
 - A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of experience.
 - B. Installed Fire Rated Door and Transom Panel Assembly: Conform to NFPA 80 for fire rated class as scheduled.
- 1.03 DELIVERY, STORAGE, AND HANDLING
 - A. Package, deliver and store doors in accordance with specified quality standard.
 - B. Accept doors on site in manufacturer's packaging. Inspect for damage.
 - C. Protect doors with resilient packaging. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with linted sealer if stored more than one week. Break seal on site to permit ventilation.
- 1.04 WARRANTY
 - A. Interior Doors: Provide manufacturer's warranty. Interior Hollow Core Doors: One (1) year. Interior Solid Core Doors: Life of installation.
 - B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

- 2.01 DOORS AND PANELS
 - A. All Doors: See drawings for locations and additional requirements.
 - 1. Quality Level: Custom Grade, in accordance with AIA/AIAAC/WI Architectural Woodwork Standards.
 - 2. Wood Veneer Faced Doors: 5-ply or 7-ply unless otherwise indicated.
 - 3. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with NFPA 252, UL 10B, or UBC Standard 7-2-94 ("neutral pressure"); UL or WH (ITS) labeled without any visible seals when door is closed.
 - B. DOOR AND PANEL CORES
 - 1. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated above.
 - 2. Fire Rated Doors: Mineral core, Type FD, plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.
 - 3. Hollow Core Doors: Type Institutional (IHC/FHC); plies and faces as indicated above.
 - C. DOOR FACINGS
 - 1. Wood Veneer Facing for Transparent Finish: Species as scheduled on the drawings, veneer grade as specified by quality standard, plain sliced, book veneer match, running assembly match; unless otherwise indicated.
 - 1. Vertical Edges: Any option allowed by quality standard for grade.
 - 2. Pairs: Pair match each pair; set match pairs within 10 feet of each other when doors are closed.
 - B. Veneer Facing for Opaque Finish: Any material allowed by quality standard.
- 2.04 ACCESSORIES
 - A. Wood Louvers:
 - 1. Material and Finish: Species to match the door facing.
 - 2. Louver Blade: Flush louver.
 - 3. Louver Free Area: As indicated on mechanical drawings.
 - B. Metal Louvers: As specified in Mechanical Documents.
 - C. Glazing Stops: Wood, of same species as door facing, mitered corners; prepared for countersink style screws.
 - D. Astragals for Fire Rated Double Doors: Steel, shape as required to accomplish fire rating.
- 2.05 DOOR CONSTRUCTION
 - A. Fabricate doors in accordance with door quality standard specifications.
 - B. Cores Constructed with stiles and rails:
 - 1. Provide solid blocks of lock edge and top of door for closer or hardware reinforcement.
 - a. Provide solid blocking for other through-blocked hardware.
 - C. Where supplementary protective edge trim is required, edge trim and veneer facing shall be applied full-width.
 - D. Factory machine doors for hardware greater than surface-mounted hardware in accordance with hardware requirements and dimensions.
 - E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
 - 1. Exception: Doors to be field finished.
 - F. Provide edge clearances in accordance with quality standard specified.
- 2.06 FACTORY FINISHING — WOOD VENEER DOORS
 - A. Finish work in accordance with AIA/AIAAC/WI Architectural Woodwork Standards, Section 11.10 — Finishing for Grade specified and as follows:
 - 1. Transparent:
 - a. System — 12, Polyurethane, Water based.
 - b. Grain: As indicated on drawings.
 - 1. Sheen: As indicated on drawings.

SECTION 08 7100 — DOOR HARDWARE

- 1.01 ADMINISTRATIVE REQUIREMENTS
 - A. Coordinate the manufacture, fabrication, and installation of products onto which door hardware will be installed.
 - B. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.
 - C. Convey Owner's keying requirements to manufacturers.
- 1.02 SUBMITTALS
 - A. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project.
 - B. Hardware Schedule: Detailed listing of each item of hardware to be installed on each door. Use door numbering scheme as included in the Contract Documents. Identify electrically operated items and include power requirements.
 - C. Keying Schedule: Submit for approval of Owner.
 - D. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.
- 1.03 QUALITY ASSURANCE
 - A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of experience.
 - B. Hardware Supplier Personnel: Employ an Architectural Hardware Consultant (AHC) to assist in the work of this section.
- 1.04 DELIVERY, STORAGE, AND HANDLING
 - A. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.
- 1.05 WARRANTY
 - A. Grade 1: Provide 10 year warranty for door closers.
- 2.01 DOOR HARDWARE — GENERAL
 - A. Provide all hardware specified or required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.
 - B. Provide all items of a single type of the same model by the same manufacturer.
 - C. Provide products that comply with the following:
 - 1. Applicable provisions of federal, state, and local codes.
 - 2. ADA Standards for Accessible Design.
 - 3. ANSI/ACC A117.1, American National Standard for Accessible Buildings and Facilities.
 - 4. Applicable provisions of NFPA 101, Life Safety Code.
 - 5. Fire-Rated Doors: NFPA 80.
 - 6. All Hardware on Fire-Rated Doors: Listed and classified by UL as suitable for the purpose specified and indicated.
 - 7. Hardware for Smoke and Draft Control Doors: Provide hardware that enables door assembly to comply with air leakage requirements of the applicable code.
 - 8. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.
 - D. Function: Lock and latch function numbers and descriptions of manufactures series as shown on the drawings.
 - E. Finishes: Identified in schedule.
- 2.02 HINGES
 - A. Hinges: Provide hinges on every swinging door.
 - 1. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
 - 2. Provide ball-bearing hinges at All doors unless otherwise indicated.
 - 3. Provide hinges in the quantities indicated.
 - 4. Provide non-removable pins on exterior outswinging doors.
 - 5. Where electrified hardware is mounted in door leaf, provide power transfer hinges.
 - B. Butt Hinges: Comply with BHMA A156.1 and A156.7; heavy weight, unless otherwise indicated. Provide hinge width required to clear surrounding trim.
 - C. Quantity of Hinges Per Door:
 - 1. Doors From 60 inches High up to 90 inches High: Three hinges.
 - 2. Doors 90 inches High up to 120 inches High: Four hinges.
- 2.03 PUSH/PULLS
 - A. Push/Pulls: Comply with BHMA A156.6. On solid doors, provide matching push plate and pull plate on opposite faces.
- 2.04 LOCKS AND LATCHES
 - A. Locks: Provide a lock for every door, unless specifically indicated as not requiring locking.
 - 1. Hardware Schedule indicates locking functions required for each door.
 - 2. Trim: Provide lever handle or pull trim on outside of door. Locks unless specifically stated to have no outside trim.
 - 3. Lock Cylinders: Provide key access on outside of all locks unless specifically stated to have no locking or no outside trim.
 - B. Lock Cylinders: Manufacturer's standard tumbler type seven-pin interchangeable core. Provide cams and/or tailpieces as required for locking devices required.
 - C. Keying: System as directed by drawings.
 - 1. Include construction keying.
 - 2. Coordinate to existing keying system where one already exists.
 - 3. When providing keying information, comply with AIA Handbook "Keying systems and nomenclature."
- 2.05 CYLINDRICAL LOCKSETS
 - A. Locking Functions: As detailed in BHMA A156.2, and as follows:
 - 1. Passage: No locking, double free entry and exit.
 - 2. Privacy: Free emergency egress unlocks.
 - 3. Fire: Grade 1. Key not required to lock, unlocks upon exit.
 - 4. Storeroom: Key required to lock, may not be left unlocked.
- 2.08 STOPS AND HOLDERS
 - A. Stops: Complying with BHMA A156.8; provide a stop for every swinging door, unless otherwise indicated. Provide wall stops, unless otherwise indicated.
- 2.09 BLOCKING AND THRESHOLDS
 - A. Gaskets: Complying with BHMA A156.22.
 - 1. On each door in smoke partition, provide smoke gaskets; top, sides, and meeting stile of pairs. If fire/smoke partitions are not indicated on drawings, provide smoke gaskets on each door identified as a "smoke door" and 20-minute rated fire doors.
 - 2. On each exterior door, provide weatherstripping gaskets, unless otherwise indicated; top, sides, and meeting stiles of pairs.
 - a. Where exterior door is also required to have fire or smoke rating, provide gaskets functioning as both smoke and weather seals.
 - 3. On each exterior door, provide door bottom sweep, unless otherwise indicated.
 - B. Thresholds:
 - 1. At each exterior door, provide a threshold unless otherwise indicated.
 - 2. Field cut threshold to frame for tight fit.
 - C. Fasteners At Exterior Locations: Non-corroding.
- 2.10 PROTECTION PLATES AND ARCHITECTURAL TRIM
 - A. Drip Guard: Provide projecting drip guard over all exterior doors unless they are under a projecting roof or canopy.
- 2.11 KEY CONTROLS
 - A. Fire Department Lock Box: Heavy-duty, surface mounted, solid stainless-steel box with hinged door and interior gasket seal; single drill resistant lock with dust covers and tamper alarm.
 - 1. Capacity: Holds 2 keys.
 - 2. Finish: Manufacturer's standard black.
- 3.01 EXAMINATION
 - A. Verify that doors and frames are ready to receive work; labeled, fire-rated doors and frames are present and properly installed, and dimensions are as instructed by the manufacturer.
- 3.02 INSTALLATION
 - A. Install hardware in accordance with manufacturer's instructions and applicable codes.
 - B. Use templates provided by hardware item manufacturer.
 - C. Do not install surface mounted items until finishes applied to substrate are complete.
 - D. Install hardware on fire-rated doors and frames in accordance with code and NFPA 80.
 - E. Mounting heights for hardware from finished floor to center line of hardware item:
 - 1. For steel doors and frames: Comply with DHI "Recommended Locations for Architectural Hardware for Steel Doors and Frames."
 - 2. For wood doors: Comply with DHI "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 - F. Adjust hardware for smooth operation.
 - G. Adjust gasketing for complete, continuous seat; replace if unable to make complete seat.

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Project No: 1632
 Drawn By: BCR
 Date: 08-29-18 Issue
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SPECIFICATIONS