

07/16/10

# County of Sierra Sierra City Community Hall

14 Castagna Alley  
Sierra City, California 96125

County of Sierra  
Department of Public Works  
Downieville, CA 95936

TECHNICAL SPECIFICATIONS

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## SECTION 011000 - SUMMARY

## PART 1 - GENERAL

## 1.1 PROJECT INFORMATION

- A. Project: Remodel of Sierra City Community Hall, project number 100515.
  - 1. Project Location: 14 Castagna Alley, Sierra City, Sierra County, California.
- B. Owner: County of Sierra, Department of Public Works, Tim Beals, Director.
- C. Architect: James Crippen Architect, 1005 Terminal Way, #140, Reno, Nevada 89502.
- D. The Work consists of adding an exterior walkway and interior remodel of existing kitchen and bathroom.
- E. Work Under Separate Contracts: None
- F. Owner-Furnished Items: None

## 1.2 WORK RESTRICTIONS

- A. Contractor's Use of Premises: During construction, Contractor will have full use of site indicated. Contractor's use of premises is limited only by Owner's right to perform work or employ other contractors on portions of Project.
- B. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

## SECTION 014200 - REFERENCES

## PART 1 - GENERAL

## 1.1 GENERAL REQUIREMENTS

- A. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- B. Abbreviations and Acronyms: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ACI	American Concrete Institute
AGA	American Gas Association
AIA	American Institute of Architects (The)
AITC	American Institute of Timber Construction
ALSC	American Lumber Standard Committee, Incorporated
ANSI	American National Standards Institute
APA	APA - The Engineered Wood Association
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute (See ASCE)
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	ASME International (American Society of Mechanical Engineers International)
ASTM	ASTM International (American Society for Testing and Materials International)
AWI	Architectural Woodwork Institute
AWPA	American Wood Protection Association

(Formerly: American Wood Preservers' Association)

BHMA	Builders Hardware Manufacturers Association
CGA	Compressed Gas Association
CPA	Composite Panel Association
CSI	Construction Specifications Institute (The)
DHI	Door and Hardware Institute
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
ISO	International Organization for Standardization Available from ANSI
NECA	National Electrical Contractors Association
NEMA	National Electrical Manufacturers Association
NFPA	NFPA (National Fire Protection Association)
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
RFCI	Resilient Floor Covering Institute
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)
UL	Underwriters Laboratories Inc.
WCLIB	West Coast Lumber Inspection Bureau
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association)
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California)
WIC	Woodwork Institute of California (Now WI)
WWPA	Western Wood Products Association

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

## SECTION 016000 - PRODUCT REQUIREMENTS

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS

- A. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
- B. Comparable Product Requests:
  - 1. Submit request for consideration of each comparable product. Do not submit unapproved products on Shop Drawings or other submittals.
  - 2. Identify product to be replaced and show compliance with requirements for comparable product requests. Include a detailed comparison of significant qualities of proposed substitution with those of the Work specified.
  - 3. Architect will review the proposed product and notify Contractor of its acceptance or rejection.
- C. Basis-of-Design Product Specification Submittal: Show compliance with requirements.
- D. Compatibility of Options: If Contractor is given option of selecting between two or more products, select product compatible with products previously selected.
- E. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
  - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  - 2. Deliver products to Project site in manufacturer's original sealed container or packaging, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  - 3. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
  - 4. Store materials in a manner that will not endanger Project structure.
  - 5. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
- F. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

## PART 2 - PRODUCTS

## 2.1 PRODUCT SELECTION PROCEDURES

- A. Provide products that comply with the Contract Documents, are undamaged, and are new at the time of installation.
  - 1. Provide products complete with accessories, trim, finish, and other devices and components needed for a complete installation and the intended use and effect.
  - 2. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
- B. Unless otherwise indicated, Architect will select color, gloss, pattern, density, or texture from manufacturer's product line of standard items.

## PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

## SECTION 017000 - EXECUTION AND CLOSEOUT REQUIREMENTS

## PART 1 - GENERAL

## 1.1 CLOSEOUT SUBMITTALS

- A. Record Drawings: Maintain a set of prints of the Contract Drawings as record Drawings. Mark to show actual installation where installation varies from that shown originally.
  - 1. Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
- B. Operation and Maintenance Data: Submit one copy of manual. Organize data into three-ring binders with identification on front and spine of each binder, and envelopes for folded drawings. Include the following:
  - 1. Manufacturer's operation and maintenance documentation.
  - 2. Maintenance and service schedules.
  - 3. Maintenance service contracts.
  - 4. Emergency instructions.
  - 5. Spare parts list.
  - 6. Wiring diagrams.
  - 7. Copies of warranties.

## 1.2 CLOSEOUT PROCEDURES

- A. Substantial Completion: Before requesting Substantial Completion inspection, complete the following:
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, maintenance service agreements, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Submit record Drawings, operation and maintenance manuals, and similar final record information.
  - 6. Deliver tools, spare parts, extra materials, and similar items.
  - 7. Complete startup testing of systems.
  - 8. Remove temporary facilities and controls.
  - 9. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  - 10. Complete final cleaning requirements, including touchup painting.
  - 11. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

- B. Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will proceed with inspection or advise Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will advise Contractor of items that must be completed or corrected before certificate will be issued.
- C. Request inspection for Final Completion, once the following are complete:
  - 1. Submit a copy of Substantial Completion inspection list stating that each item has been completed or otherwise resolved for acceptance.
  - 2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- D. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
- E. Submit a written request for final inspection for acceptance. On receipt of request, Architect will proceed with inspection or advise Contractor of unfulfilled requirements. Architect will advise Contractor of items that must be completed or corrected before final certificate will be issued.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 EXAMINATION AND PREPARATION

- A. Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance.
  - 1. Verify compatibility with and suitability of substrates.
  - 2. Examine roughing-in for mechanical and electrical systems.
  - 3. Examine walls, floors, and roofs for suitable conditions.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Take field measurements as required to fit the Work properly. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication.
- D. Verify space requirements and dimensions of items shown diagrammatically on Drawings.

### 3.2 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated. Make vertical work plumb and make horizontal work level.

1. Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections to form hairline joints.
  2. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
  3. Maintain minimum headroom clearance of 90 inches in occupied spaces and 84 inches in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations.
- C. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- D. Use products, cleaners, and installation materials that are not considered hazardous.
- E. Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place. Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed.

### 3.3 CUTTING AND PATCHING

- A. Provide temporary support of work to be cut. Do not cut structural members or operational elements without prior written approval of Architect.
- B. Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- C. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will minimize evidence of patching and refinishing.
  2. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

### 3.4 CLEANING

- A. Clean Project site and work areas daily, including common areas. Dispose of materials lawfully.
1. Remove liquid spills promptly.
  2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
  3. Remove debris from concealed spaces before enclosing the space.
- B. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion:
1. Remove labels that are not permanent.
  2. Clean transparent materials, including mirrors.

3. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Sweep concrete floors broom clean.
4. Vacuum carpeted surfaces and wax resilient flooring.
5. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures. Clean light fixtures, lamps, globes, and reflectors.
6. Clean Project site, yard, and grounds, in areas disturbed by construction activities. Sweep paved areas; remove stains, spills, and foreign deposits.

### 3.5 DEMONSTRATION AND TRAINING

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system. Include a detailed review of the following:
  1. Include instruction for basis of system design and operational requirements, review of documentation, emergency procedures, operations, adjustments, troubleshooting, maintenance, and repairs.

END OF SECTION 017000

## SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

## PART 1 - GENERAL

## 1.1 SUBMITTALS

- A. Waste Management Plan: Submit plan within seven (7) days of date established for commencement of the Work.
- B. Landfill and Incinerator Disposal Records: Manifests, weight tickets, receipts, and invoices.
- C. Waste Management Conference: Conduct conference at Project site to review methods and procedures related to waste management.
- D. Waste Management Plan: Develop a waste management plan consisting of waste identification and waste reduction work plan.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

## 3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
- C. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for disposal.

## 3.2 RECYCLING WASTE

- A. General: Recycle paper and beverage containers used by on-site workers.

## 3.3 DISPOSAL OF WASTE

- A. Remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
- B. Do not burn waste materials.

END OF SECTION 017419

## SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS

- A. Comply with EPA regulations and hauling and disposal regulations of authorities having jurisdiction. Comply with ANSI A10.6 and NFPA 241.
- B. It is not expected that hazardous materials will be encountered in the Work. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

## PART 2 - PRODUCTS (Not Applicable)

## PART 3 - EXECUTION

## 3.1 DEMOLITION

- A. Requirements for Building Reuse:
  - 1. Maintain existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing, excluding window assemblies and nonstructural roofing material) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.
  - 2. Maintain existing interior nonstructural elements (interior walls, doors, floor coverings, and ceiling systems) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.
- B. Maintain services/systems indicated to remain and protect them against damage during selective demolition operations. Before proceeding with demolition, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of the building.
- C. Locate, identify, shut off, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
- D. Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
- E. Protect walls, ceilings, floors, and other existing finish work that are to remain. Erect and maintain dustproof partitions. Cover and protect furniture, furnishings, and equipment that have not been removed.

- F. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.
- G. Promptly remove demolition waste materials from Project site and legally dispose of them. Do not burn demolished materials.
- H. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before demolition operations began.

END OF SECTION 024119

## SECTION 033000 - CAST-IN-PLACE CONCRETE

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS

- A. Ready-Mixed Concrete Producer Qualifications: ASTM C 94/C 94M.
- B. Comply with CRSI's "Manual of Standard Practice."

## PART 2 - PRODUCTS

## 2.1 MATERIALS

- A. Plain-Steel Welded Wire Reinforcement: ASTM A 185, as drawn, flat sheet.
- B. Portland Cement: ASTM C 150, Type I or II.
- C. Fly Ash: ASTM C 618, Type C or F.
- D. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- E. Silica Fume: ASTM C 1240, amorphous silica.
- F. Aggregates: ASTM C 33, uniformly graded.
- G. Synthetic Fiber: ASTM C 1116/C 1116M, Type III, polypropylene fibers, 1/2 to 1-1/2 inches long.
- H. Air-Entraining Admixture: ASTM C 260.
- I. Chemical Admixtures: ASTM C 494, Do not use calcium chloride or admixtures containing calcium chloride.
- J. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.
- K. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- L. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.
- M. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
- N. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

## 2.2 MIXES

- A. Comply with ACI 301 requirements for concrete mixtures.
- B. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301, as follows:
  - 1. Minimum Compressive Strength: 2500 psi at 28 days.
  - 2. Maximum Water-Cementitious Materials Ratio: 0.50.
  - 3. Slump Limit: 4 inches, plus or minus 1 inch.
  - 4. Air Content: Maintain within range permitted by ACI 301.
  - 5. For concrete exposed to deicing chemicals, limit use of fly ash to 25 percent replacement of portland cement by weight and granulated blast-furnace slag to 40 percent of portland cement by weight; silica fume to 10 percent of portland cement by weight.
- C. Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M.
  - 1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 CONCRETING

- A. Construct formwork according to ACI 301 and maintain tolerances and surface irregularities within ACI 347R limits of Class A, 1/8 inch for concrete exposed to view.
- B. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- C. Install construction, isolation, and contraction joints where indicated. Install full-depth joint-filler strips at isolation joints.
- D. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.
- E. Protect concrete from physical damage, premature drying, and reduced strength due to hot or cold weather during mixing, placing, and curing.
- F. Formed Surface Finish: Smooth-formed finish for concrete exposed to view, coated, or covered by waterproofing or other direct-applied material.
- G. Slab Finishes: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. Provide the following finishes:
  - 1. Nonslip-broom finish to exterior concrete walkway.
- H. Cure formed surfaces by moist curing for at least seven days.
- I. Begin curing concrete slabs after finishing. Apply membrane-forming curing and sealing compound to concrete.

- J. Protect concrete from damage. Repair surface defects in formed concrete.

END OF SECTION 033000

## SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

## PART 1 - GENERAL (Not Used)

## PART 2 - PRODUCTS

## 2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

## 2.2 LUMBER

- A. Dimension Lumber:
  - 1. Maximum Moisture Content: 19 percent.
  - 2. Interior Partition Framing: Construction, Stud, or No. 3: Western woods: WCLIB or WWPA.
  - 3. Other Framing: Construction or No. 2: Douglas fir-larch: WCLIB, or WWPA; Hem-fir: WCLIB, or WWPA.
- B. Miscellaneous Lumber: Construction, or No. 2 grade with 19 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

## 2.3 PLYWOOD BACKING PANELS

- A. Wall Paneling Backing Panels: Plywood or Oriented Strand Board not less than 3/8 inch nominal thickness.

## 2.4 FASTENERS

- A. Fasteners: Size and type indicated.
- B. Power-Driven Fasteners: CABO NER-272.

## PART 3 - EXECUTION

## 3.1 INSTALLATION

- A. Set miscellaneous rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Securely attach miscellaneous rough carpentry to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in the IBC.

END OF SECTION 061053

## SECTION 062000 - FINISH CARPENTRY

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS (Not Used)

### PART 2 - PRODUCTS

#### 2.1 MATERIALS, GENERAL

- A. Lumber: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.
- B. Softwood Plywood: DOC PS 1.
- C. MDF: ANSI A208.2, Grade 130.

#### 2.2 INTERIOR STANDING AND RUNNING TRIM

- A. Interior Softwood Lumber Trim: C Select (Choice), eastern white, Idaho white, lodgepole, ponderosa, or sugar pine.
  - 1. Maximum Moisture Content: 19 percent.

#### 2.3 SHELVING AND CLOTHES RODS

- A. Shelving: Melamine-faced particleboard with radiused and filled front edge.

#### 2.4 MISCELLANEOUS MATERIALS

- A. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Condition finish carpentry in installation areas for 24 hours before installing.
- B. Install finish carpentry level, plumb, true, and aligned with adjacent materials. Scribe and cut to fit adjoining work. Refinish and seal cuts.

- C. Install standing and running trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Stagger joints in adjacent and related trim. Cope at returns and miter at corners.

END OF SECTION 062000

## SECTION 066400 - PLASTIC PANELING

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS (Not Used)

### PART 2 - PRODUCTS

#### 2.1 PLASTIC SHEET PANELING

- A. General: Gel-coat-finished, glass-fiber-reinforced plastic panels complying with ASTM D 5319.
  - 1. Nominal Thickness: Not less than 0.075 inch.
  - 2. Surface Finish: Smooth.
- B. Trim Accessories: Manufacturer's standard one-piece vinyl extrusions designed to retain and cover edges of panels. Provide division bars, inside corners, outside corners, and caps as needed to conceal edges.
- C. Adhesive: As recommended by plastic paneling manufacturer.
- D. Sealant: Single-component, mildew-resistant, silicone sealant recommended by plastic paneling manufacturer.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Lay out paneling before installing. Locate panel joints so that trimmed panels at corners are not less than 12 inches wide.
  - 1. Locate trim accessories to allow clearance at panel edges according to manufacturer's written instructions.
- B. Install panels in a full spread of adhesive.
- C. Install trim accessories with adhesive and nails or staples. Do not fasten through panels.
- D. Fill grooves in trim accessories with sealant before installing panels and bed inside corner trim in a bead of sealant.
- E. Maintain uniform space between panels and wall fixtures. Fill space with sealant.

END OF SECTION 066400

## SECTION 081416 - FLUSH WOOD DOORS

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS (Not Used)

### PART 2 - PRODUCTS

#### 2.1 DOOR CONSTRUCTION, GENERAL

- A. Quality Standard: WDMA I.S.1-A.
- B. WDMA I.S.1-A Performance Grade:
  - 1. Standard Duty.

#### 2.2 FLUSH WOOD DOORS

- A. Doors for Transparent Finish:
  - 1. Interior Hollow-Core Doors: Premium grade, seven-ply, standard hollow cores with lock blocks on both sides.
    - a. Faces: Grade A, Fir or Pine, to substantially match existing wood doors.

#### 2.3 FABRICATION AND FINISHING

- A. Factory fit doors to suit frame-opening sizes indicated and to comply with clearances specified.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3.
- C. Field apply transparent finish with laquer or polyurethane to substantially match existing wood doors.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install doors to comply with manufacturer's written instructions and WDMA I.S.1-A, and as indicated.
- B. Align and fit doors in frames with uniform clearances and bevels.

- C. Clearances: As follows unless otherwise indicated:
  - 1. 1/8 inch at heads and jambs.
  - 2. 1/8 inch from bottom of door to top of decorative floor finish or covering.
  
- D. Repair, refinish, or replace doors damaged during installation, as directed by Architect.

END OF SECTION 081416

## SECTION 087100 - DOOR HARDWARE

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS (Not Used)

## PART 2 - PRODUCTS

## 2.1 HARDWARE

## A. Hinges:

1. Brass/bronze hinges with matching pins.
2. 3 hinges for 1-3/8-inch- thick wood doors.

## B. Locksets and Latchsets:

1. BHMA A156.2, Series 4000, Grade 2 for bored locks and latches.
2. Lever handles on locksets and latchsets.

## C. Provide hardware finishes as follows:

1. Hinges: Matching finish of lockset/latchset.
2. Locksets, Latchsets, and Exit Devices: Satin brass, clear coated.
3. Other Hardware: Matching finish of lockset/latchset.

## PART 3 - EXECUTION

## 3.1 INSTALLATION

- A. Mount hardware in locations recommended by the Door and Hardware Institute unless otherwise indicated.

## 3.2 HARDWARE SCHEDULE

## A. Hardware Set No. 01:

1. Hinges: One pair adjustable tension self-closing, and one standard. Adjust tension to be within the limits stated on Plans.
2. Bored privacy, bedroom or bath lock (F76).

END OF SECTION 087100

## SECTION 096513 - RESILIENT BASE AND ACCESSORIES

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data.
- B. Extra Materials: Deliver to Owner at least 6 linear feet of type and color of resilient wall base installed.

## PART 2 - PRODUCTS

## 2.1 RESILIENT BASE

- A. Color and Pattern: Dark Brown or Black, Smooth.
- B. ASTM F 1861, Type TV (vinyl).
- C. Group (Manufacturing Method): I (solid).
- D. Style: Cove (base with toe).
- E. Minimum Thickness: 0.080 inch.
- F. Height: 6 inches.
- G. Lengths: Cut lengths 48 inches long or coils in manufacturer's standard lengths.
- H. Outside Corners: Job formed or preformed.
- I. Inside Corners: Job formed or preformed.
- J. Finish: Satin.

## 2.2 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement- or blended hydraulic cement-based formulation provided or approved by flooring manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit products and substrate conditions.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Adhesively install resilient wall base and accessories.
- B. Install wall base in maximum lengths possible. Apply to walls, columns, pilasters, casework, and other permanent fixtures in rooms or areas where base is required.
- C. Install reducer strips at edges of floor coverings that would otherwise be exposed.

END OF SECTION 096513

## SECTION 096516 - RESILIENT SHEET FLOORING

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data.
- B. Extra Materials: Deliver to Owner at least 2 linear feet, in roll form and in full roll width, for type and color of resilient sheet flooring installed.

### PART 2 - PRODUCTS

#### 2.1 SHEET VINYL FLOOR COVERING

- A. Color and Pattern: Beige, plain pattern.
- B. Vinyl Sheet Floor Covering with Backing: ASTM F 1303, Type II, minimum binder content of 34 percent, Grade 1.
  - 1. Overall Thickness: As standard with manufacturer.
  - 2. Backing Class: Class B (nonfoamed plastic) or Class C (foamed plastic).
- C. Wearing Surface: Embossed.
- D. Sheet Width: As standard with manufacturer.
- E. Seaming Method: Chemically bonded Standard (butted).

#### 2.2 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement- or blended hydraulic cement-based formulation provided or approved by flooring manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit sheet vinyl floor covering and substrate conditions indicated.
- C. Chemical-Bonding Compound: Manufacturer's product for chemically bonding seams.
- D. Floor Polish: Provide protective liquid floor polish products as recommended by manufacturer.

## PART 3 - EXECUTION

## 3.1 INSTALLATION

- A. Unroll sheet floor coverings and allow them to stabilize before cutting and fitting.
- B. Maintain uniformity of resilient sheet flooring direction, and match edges for color shading at seams.
- C. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches away from parallel joints in substrates.
- D. Floor Polish: Remove soil, visible adhesive, and surface blemishes from floor covering before applying liquid floor polish.
  - 1. Apply one coat.

END OF SECTION 096516

## SECTION 099100 - PAINTING

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS

- A. Extra Materials: Deliver to Owner 1 quart of each color and type of finish coat paint used on Project, in containers, properly labeled and sealed.

## PART 2 - PRODUCTS

## 2.1 PAINT

- A. MPI Standards: Provide materials that comply with MPI standards indicated and listed in its "MPI Approved Products List."
- B. Material Compatibility: Provide materials that are compatible with one another and with substrates.
- C. Use interior paints and coatings that comply with the following limits for VOC content:
  - 1. Clear Wood Finishes, Lacquers: 550 g/L.
  - 2. Shellacs, Clear: 730 g/L.
  - 3. Stains: 250 g/L.
- D. Colors: To substantially match existing adjacent materials.

## PART 3 - EXECUTION

## 3.1 PREPARATION

- A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items that cannot be removed. Reinstall items in each area after painting is complete.
- C. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces.

## 3.2 APPLICATION

- A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

- B. Paint exposed surfaces unless otherwise indicated.
  - 1. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.
- C. Apply paints according to manufacturer's written instructions.
- D. Apply stains and transparent finishes to produce surface films without color irregularity, cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other imperfections. Use multiple coats to produce a smooth surface film of even luster.

### 3.3 INTERIOR PAINT APPLICATION SCHEDULE

- A. Dressed Lumber: Including architectural woodwork and doors.
  - 1. Semigloss, Alkyd Varnish: Two coats over stain and alkyd sanding sealer: MPI INT 6.3D.
  - 2. Satin Polyurethane: Two coats over stain: MPI INT 6.3E.

END OF SECTION 099100

## SECTION 101400 - SIGNAGE

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data.
- B. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), Type UVA (UV absorbing).
- B. Plastic Laminate: High-pressure laminate engraving stock with face and core in contrasting colors.

#### 2.2 SIGNS

- A. Interior Panel Signs: Engraved plastic laminate with beveled edges and square corners.
  - 1. Finishes and Colors: White characters on blue background .
  - 2. Tactile Characters: Characters and Grade 2 Braille raised 1/32 inch above surface with contrasting colors.
  - 3. Provide signs for Toilet room mounted on the door and wall beside the room door.
- B. Exterior Panel Signs: Acrylic panels and matte-finished opaque acrylic characters chemically welded to faces of panels.
  - 1. Finishes and Colors: White characters on blue background.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Locate signs where indicated or directed by Architect. Install signs level, plumb, and at heights indicated, with sign surfaces free from distortion and other defects in appearance.
- B. Wall-Mounted Signs:

1. Two-Face Tape: Mount signs to smooth, nonporous surfaces, other than vinyl.
2. Silicone-Adhesive Mounting: Attach signs to irregular, porous, or vinyl-covered surfaces.
3. Mechanical Fasteners: Use nonremovable mechanical fasteners placed through predrilled holes.

END OF SECTION 101400

## SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

## PART 1 - GENERAL (Not Used)

## PART 2 - PRODUCTS

## 2.1 MATERIALS

- A. Stainless Steel: ASTM A 666, Type 304, No. 4 finish (satin), 0.0312-inch minimum nominal thickness unless otherwise indicated.
- B. Baked-Enamel Finish: Factory-applied, gloss-white, baked-acrylic-enamel coating.
- C. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.
- D. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.
- E. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of two keys to Owner's representative.

## 2.2 TOILET AND BATH ACCESSORIES

- A. Paper Towel Dispenser:
  - 1. Mounting: Surface.
  - 2. Minimum Capacity: 400 single-fold towels.
  - 3. Material: Stainless steel, No. 4 finish (satin) or ABS plastic, gray.
  - 4. Lockset: Tumbler type.
  - 5. Refill Indicators: Pierced slots at sides or front.
- B. Toilet Tissue Dispenser:
  - 1. Type: Single-roll dispenser.
  - 2. Mounting: Surface mounted with concealed anchorage.
  - 3. Material: Satin-finish aluminum bracket with plastic spindle.
  - 4. Operation: Noncontrol delivery with standard spindle.
  - 5. Capacity: Designed for 4-1/2- or 5-inch- diameter-core tissue rolls.
- C. Grab Bar:
  - 1. Material: Stainless steel, 0.050 inch thick.
  - 2. Mounting: Exposed.
  - 3. Gripping Surfaces: Smooth, satin finish.
  - 4. Outside Diameter: 1-1/2 inches for heavy-duty applications.
- D. Seat-Cover Dispenser:
  - 1. Mounting: Surface.
  - 2. Material: Stainless steel, No. 4 finish (satin) or ABS plastic, gray.

3. Lockset: Tumbler type.
- E. Mirror Unit:
1. Frame: Stainless-steel channel.
- F. Underlavatory Guard:
1. Description: Insulating pipe coverings for supply and drain piping assemblies, which prevent direct contact with and burns from piping, and allow service access without removing coverings.
  2. Material and Finish: Antimicrobial, molded plastic, white.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install accessories using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
1. Install grab bars to withstand a downward load of at least 250 lbf, when tested according to method in ASTM F 446.
- B. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items. Remove temporary labels and protective coatings.

END OF SECTION 102800

## SECTION 114000 - FOOD SERVICE EQUIPMENT

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data, Shop Drawings.
- B. Comply with NFPA 54, "National Fuel Gas Code."
- C. Comply with NFPA 70, "National Electrical Code."
- D. Comply with NFPA 96, "Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations."
- E. Warranties: Provide standard manufacturer's written warranty, without monetary limitation, signed by manufacturer agreeing to promptly repair or replace products that fail in materials or workmanship for the periods specified in Part 2.

### PART 2 - PRODUCTS

#### 2.1 GAS RESTAURANT RANGE

- A. Size: 60 inches wide.
- B. Fuel: Propane (LP) gas.
- C. Burners: 6 @ 28,000 BTUH, Cast with lift off heads, heavy duty top grates and T knobs.
- D. Griddle: 5/8" thick, 24 inches wide @ 30,000 BTUH.
- E. Ovens: 2 Standard size @ 35,000 BTUH, with thermostat- Low to 500 degrees F, and rack.
- F. Gas Connection: Rear with Gas Pressure Regulator.
- G. Legs: 6 – 6 inch adjustable.
- H. Front, Back Riser, Lift-off Shelf Material: Stainless Steel
- I. Oven Doors: Compression spring hinge, with stainless steel handle.
- J. Warranty: 1 year

#### 2.2 COMMERCIAL WORK TABLE

- A. Size: 24 inches wide by 48 inches long.

- B. Material: 18 gage polished stainless steel, all edges finished
- C. Shelf: 1 bottom shelf, stainless steel.
- D. Feet: 4- Adjustable ABS

### 2.3 RANGE GREASE HOOD

- A. Size: 42 inches wide by 72 inches long
- B. Material: Stainless steel.
- C. Mount: Wall mount
- D. Filters: Aluminum
- E. Accessories: Grease Cup
- F. Warranty: 5 years

### 2.4 FIRE SUPPRESSION SYSTEM

- A. General: System to be pre-engineered automatic using a wet chemical agent for grease related fires. The system shall have minimum and maximum guidelines listed by Underwriters Laboratories, Inc (UL).
- B. Components:
  1. Regulated release mechanism to be spring-loaded, mechanical/pneumatic type capable of providing the expellant gas supply to the agent tanks, and include a factory installed regulator set at 110 psi with an external relief of approximately 180 psi. The mechanism shall have automatic actuation by a fusible link detection system and remote manual actuation by a mechanical pull station. The mechanism shall contain a release assembly, regulator, expellant gas hose, and agent storage tank housed in a stainless steel enclosure with cover containing an opening for a visual status indicator. The mechanism shall be compatible with mechanical gas shut-off devices.
  2. Wet chemical storage tank. Agent tank to be installed in a stainless steel enclosure or wall bracket. Tank to be stainless steel, 1.5 gallon minimum size, with a working pressure of 110 psi, a test pressure of 330 psi, and a minimum burst pressure of 600 psi. Tank to include an adaptor/tube assembly containing a burst disc union.
  3. Mechanical and electrical gas valves.
  4. Pressure switches.
  5. Electrical switches for automatic equipment and gas line shut-off.
  6. Wet chemical agent to be aqueous solution of organic salts designed for flame knockdown and foam securement of grease related fires.
  7. Discharge nozzles to be tested and listed with the system, and shall have a metal or rubber blow-off cap to keep the tip orifice free of cooking grease build-up.
  8. Distribution Piping to be Schedule 40 black iron, chrome plated, or stainless steel pipe conforming to ASTM A120, A53, or A106.
  9. Detectors to be fusible link style designed to separate at a specific temperature.

10. Cartridge to be sealed steel pressure vessel containing either carbon dioxide or nitrogen gas, with a seal designed to be punctured by the releasing device supplying the required pressure to expel wet chemical agent from the storage tank.
11. Agent distribution hose to be UL listed, and shall allow the appliance to be moved for cleaning purposes without disconnecting the appliance fire suppression system. The hose assembly to include a restraining cable kit to limit the appliance movement within the length of the flexible hose.
12. Conduit may be flexible or rigid EMT, UL listed.
13. Remote pull station assembly for manual system actuation to have a built-in guard to protect the pull handle, and be designed for three finger operation. The station shall be red color for quick visibility.

C. Warranty: 5 years

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Pressure regulator rating: 10.0 inches WC for Propane (LP) gas.
- B. Gas Supply Size: 1 inch diameter or larger.
- C. Set cooking appliance unit level, plumb, on adjustable legs or casters as required for combustion, and with clearances as required by manufacturer.
- D. Adjust operating parts and hardware for smooth, quiet operation. Lubricate hardware and moving parts.
- E. Test and operate all burners, ovens, griddle, fans, switches and controls.
- F. Provide manufacturer's assembly and instruction manuals.
- G. Fire suppression system shall be designed, installed, inspected, maintained, and recharged in accordance with the manufacturer's listed instruction manual. Training for the system shall be conducted by representatives of the manufacturer. The manufacturer to have at least 30 years experience in the design and manufacture of pre-engineered fire suppression systems, and be ISO9001 registered.
- H. Connect new range hood to existing metal ductwork at ceiling of room. Test the existing outdoor mounted fan for operation and airflow, minimum 2000 CFM.

END OF SECTION 114000

## SECTION 220500 - COMMON WORK RESULTS FOR PLUMBING

## PART 1 - GENERAL (Not Used)

## PART 2 - PRODUCTS

## 2.1 HANGERS AND SUPPORTS

- A. Hanger and Pipe Attachments: Factory fabricated with galvanized coatings; nonmetallic coated for hangers in direct contact with copper tubing.

## PART 3 - EXECUTION

## 3.1 GENERAL PIPING INSTALLATIONS

- A. Install piping free of sags and bends.
- B. Install fittings for changes in direction and branch connections.
- C. Install unions at final connection to each piece of equipment.
- D. Install dielectric unions and flanges to connect piping materials of dissimilar metals in gas piping.
- E. Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals in water piping.

## 3.2 GENERAL EQUIPMENT INSTALLATIONS

- A. Install equipment to allow maximum possible headroom unless specific mounting heights are not indicated.
- B. Install equipment level and plumb, parallel and perpendicular to other building systems and components, unless otherwise indicated.
- C. Install mechanical equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations.
- D. Install equipment to allow right of way for piping installed at required slope.

END OF SECTION 220500

SECTION 220523 - GENERAL-DUTY VALVES FOR PLUMBING PIPING

PART 1 - GENERAL (Not Used)

PART 2 - PRODUCTS

2.1 GENERAL-DUTY VALVES

- A. Valve Sizes: Same as upstream piping unless otherwise indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Locate valves for easy access and provide separate support where necessary.
- B. Install valves for each fixture and item of equipment.
- C. Install valves in a position to allow full stem movement.

END OF SECTION 220523

## SECTION 220700 - PLUMBING INSULATION

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Quality Assurance: Labeled with maximum flame-spread index of 25 and maximum smoke-developed index of 50 according to ASTM E 84.

### PART 2 - PRODUCTS

#### 2.1 INSULATION MATERIALS

- A. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.
- B. Flexible Elastomeric: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials and Type II for sheet materials.
- C. Polyolefin Insulation: Unicellular, polyethylene thermal plastic insulation. Comply with ASTM C 534 or ASTM C 1427, Type I, Grade 1 for tubular materials and Type II, Grade 1 for sheet materials.
- D. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I.

### PART 3 - EXECUTION

#### 3.1 PIPE INSULATION INSTALLATION

- A. Comply with requirements of the Midwest Insulation Contractors Association's "National Commercial & Industrial Insulation Standards" for insulation installation on pipes and equipment.
- B. Flexible Elastomeric Insulation Installation:
  - 1. Seal longitudinal seams and end joints with adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
  - 2. Insulation Installation on Pipe Fittings and Elbows: Install mitered sections of pipe insulation. Secure insulation materials and seal seams with adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- C. Polyolefin Insulation Installation:
  - 1. Seal split-tube longitudinal seams and end joints with adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

2. Insulation Installation on Pipe Fittings and Elbows: Install mitered sections of polyolefin pipe insulation. Secure insulation materials and seal seams with adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- D. Interior Piping System Applications: Insulate the following piping systems:
1. Domestic hot water.
  2. Exposed water supplies and sanitary drains of fixtures for people with disabilities.
- E. Do not apply insulation to the following systems, materials, and equipment:
1. Flexible connectors.
  2. Sanitary drainage and vent piping.
  3. Drainage piping located in crawlspaces unless otherwise indicated.
  4. Chrome-plated pipes and fittings, except for plumbing fixtures for people with disabilities.
  5. Piping specialties, including unions.

### 3.2 INDOOR PIPING INSULATION SCHEDULE

- A. Unless otherwise indicated, do not install insulation on the following:
1. Drainage piping located in crawlspaces.
  2. Underground piping.
  3. Chrome-plated pipes and fittings unless there is a potential for personnel injury.
- B. Domestic Cold Water:
1. 3 / 4 inch diameter Pipe and Smaller: Insulation shall be one of the following:
    - a. Flexible Elastomeric: 1/2 inch thick.
    - b. Polyolefin: 1/2 inch thick.
- C. Domestic Hot:
1. 3 / 4 inch diameter Pipe and Smaller: Insulation shall be one of the following:
    - a. Flexible Elastomeric: 1/2 inch thick.
    - b. Polyolefin: 1/2 inch thick.
- D. Exposed Sanitary Drains, Domestic Water, Domestic Hot Water, and Stops for Plumbing Fixtures for People with Disabilities:
1. All Pipe Sizes: Insulation shall be one of the following:
    - a. Flexible Elastomeric: 1/2 inch thick.
    - b. Polyolefin: 1/2 inch thick.

END OF SECTION 220700

## SECTION 221116 - DOMESTIC WATER PIPING

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Comply with NSF 61 for potable domestic water piping and components.

### PART 2 - PRODUCTS

#### 2.1 PIPE AND FITTINGS

- A. Hard Copper Tubing: ASTM B 88, Type L , water tube, drawn temper with wrought-copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.
  - 1. Copper Unions: Cast-copper-alloy, hexagonal-stock body, with ball-and-socket, metal-to-metal seating surfaces and solder-joint or threaded ends.
  - 2. Joining Materials: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder.
- B. Galvanized-Steel Piping: ASTM A 53/A 53M, Schedule 40, galvanized-steel pipe, with ASME B16.4, Class 125, galvanized, standard pattern gray-iron, threaded fittings.
- C. Transition Fittings: Manufactured piping coupling or specified piping system fitting. Same size as pipes to be joined and pressure rating at least equal to pipes to be joined.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Comply with requirements in Division 22 Section "Common Work Results for Plumbing" for basic piping installation requirements.
- B. Install domestic water piping with 0.25 percent slope downward toward drain for horizontal piping and plumb for vertical piping.
- C. Comply with requirements in Division 22 Section "Common Work Results for Plumbing" for basic piping joint construction.
  - 1. Soldered Joints: Comply with procedures in ASTM B 828 unless otherwise indicated.
- D. Comply with requirements in Division 22 Section "Common Work Results for Plumbing" for pipe hanger and support devices.

### 3.2 INSPECTING AND CLEANING

- A. Inspect and test piping systems as follows:
  - 1. Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.
  - 2. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired.

### 3.3 PIPING SCHEDULE

- A. Aboveground Distribution Piping: Type L, hard copper tubing.

### 3.4 VALVE SCHEDULE

- A. Install gate or ball valves on inlet to each plumbing equipment item and on each supply to each plumbing fixture not having stops on supplies.

END OF SECTION 221116

## SECTION 221316 - SANITARY WASTE AND VENT PIPING

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS

- A. Minimum Pressure Requirement for Soil, Waste, and Vent: 10-foot head of water.
- B. Comply with NSF 14, "Plastic Piping Components and Related Materials," for plastic piping components.

## PART 2 - PRODUCTS

## 2.1 PIPES AND FITTINGS

- A. PVC Plastic, DWV Pipe and Fittings: ASTM D 2665, Schedule 40, plain ends with PVC socket-type, DWV pipe fittings.

## PART 3 - EXECUTION

## 3.1 PIPING INSTALLATION

- A. Comply with requirements in Division 22 Section "Common Work Results for Plumbing" for basic piping installation requirements.
- B. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.
- C. Install soil and waste drainage and vent piping at the following minimum slopes, unless otherwise indicated:
  - 1. Building Sanitary Drain: 2 percent downward in direction of flow for piping NPS 3 and smaller; 1 percent downward in direction of flow for piping NPS 4 and larger.
  - 2. Horizontal Sanitary Drainage Piping: 2 percent downward in direction of flow.
  - 3. Vent Piping: 1 percent down toward vertical fixture vent or toward vent stack.
- D. Install PVC soil and waste drainage and vent piping according to ASTM D 2665.
- E. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

- F. Comply with requirements in Division 22 Section "Common Work Results for Plumbing" for basic piping joint construction.
- G. Comply with requirements in Division 22 Section "Common Work Results for Plumbing" for pipe hanger and support devices.

### 3.2 PIPE SCHEDULE

- A. Aboveground Applications: PVC plastic, DWV pipe and fittings with solvent-cemented joints.

END OF SECTION 221316

## SECTION 223300 - ELECTRIC DOMESTIC WATER HEATERS

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data.
- B. Comply with requirements of applicable NSF, AWWA, or FDA and EPA regulatory standards for tasteless and odorless, potable-water-tank linings.
- C. Comply with performance efficiencies prescribed in ASHRAE 90.2, "Energy Efficient Design of New Low-Rise Residential Buildings."
- D. Warranties: Submit a written warranty executed by manufacturer agreeing to repair or replace water heaters that fail in materials or workmanship within five years from date of Substantial Completion. Failures include, but are not limited to, tanks and elements.

## PART 2 - PRODUCTS

## 2.1 ELECTRIC WATER HEATER

- A. Flow-Control, Instantaneous Electric Water Heater: UL 499, 0.5-gal. capacity; with 150-psig working-pressure rating; 220 volts, 750 watts.

## PART 3 - EXECUTION

## 3.1 INSTALLATION

- A. Install shutoff valves and unions at hot- and cold-water piping connections.
- B. Make piping connections with dielectric fittings where dissimilar piping materials are joined.
- C. Electrically ground unit according to authorities having jurisdiction.

END OF SECTION 223300

## SECTION 224000 - PLUMBING FIXTURES

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data for each type of plumbing fixture, including trim, fittings, accessories, appliances, appurtenances, equipment, and supports.
- B. Regulatory Requirements: Comply with requirements in ICC A117.1, "Accessible and Usable Buildings and Facilities"; Public Law 90-480, "Architectural Barriers Act"; and Public Law 101-336, "Americans with Disabilities Act"; for plumbing fixtures for people with disabilities.
- C. Regulatory Requirements: Comply with requirements in Public Law 102-486, "Energy Policy Act," about water flow and consumption rates for plumbing fixtures.
- D. NSF Standard: Comply with NSF 61, "Drinking Water System Components - Health Effects," for fixture materials that will be in contact with potable water.

## PART 2 - PRODUCTS

## 2.1 WATER CLOSET

- A. Vitreous-China Water Closet: Round front, siphon-jet type, floor-mounted, floor outlet with close-coupled, gravity-type tank.
  - 1. Design Consumption: 1.6 gal./flush.
- B. Toilet Seat: Round front, solid plastic closed front with cover with bumpers and hardware, Standard class.

## 2.2 LAVATORY

- A. Vitreous-China Lavatory: Accessible, wall-mounting, 22 inches by 17 inches.
- B. Faucets: ASME A112.18.1; solid brass.
  - 1. Type: Center set with inlets on 4-inch centers or Widespread with inlets on 8-inch centers and with pop-up waste.
  - 2. Finish: Polished chrome-plate.
  - 3. Handle(s): Dual, 4-inch wrist blade or Dual, 6-inch wrist blade.
  - 4. Maximum Flow Rate: 0.5 gpm.
- C. Drain: Pop up with NPS 1-1/4 tailpiece, included with faucet.

- D. Trap: Chrome-plated, tubular brass cast-brass with slip-joint inlet and wall flange.
- E. Supply and Drain Insulation: Soft-plastic covering; removable at stops.
- F. Fixture Support: Concealed arm Hanger plate for wall-mounting, lavatory-type fixture.

## 2.3 KITCHEN SINK

- A. Stainless-Steel Sink: Free-standing type, 0.075 inch (16 gauge) thick Type 304 stainless steel, 24 inch wide x 90 inch long with three (3) 14 inch deep bowls and two (2) 18 inch drainboards (one each side of bowls).
  - 1. Four (4) stainless steel or galvanized steel legs with adjustable non-corrosive feet.
  - 2. 9- inch height by full length integrated backsplash.
  - 3. Basket-type waste drains.
- B. Faucet: Stainless Steel. Maximum 2.5-gpm flow rate.
  - 1. Type: Backsplash-mount, with inlets on 8-inch centers.
  - 2. Finish: Stainless Steel.
  - 3. Handle(s): Dual lever.
  - 4. Spout: 10- inch Swing.
- C. Drain(s): 3-1/2-inch grid strainer with NPS 1-1/2 tubular stainless-steel tailpiece.

## PART 3 - EXECUTION

### 3.1 INSTALLATIONS

- A. Install fitting insulation kits on fixtures for people with disabilities.
- B. Install fixtures with flanges and gasket seals.
- C. Install tanks for accessible, tank-type water closets with lever handle mounted on wide side of compartment.
- D. Fasten wall-hanging plumbing fixtures securely to supports attached to building substrate when supports are specified, and to building wall construction where no support is indicated.
- E. Fasten floor-mounted fixtures to substrate. Fasten fixtures having holes for securing fixture to wall construction, to reinforcement built into walls.
- F. Secure supplies to supports or substrate within pipe space behind fixture.
- G. Install individual supply inlets, supply stops, supply risers, and tubular brass traps with cleanouts at fixture.
- H. Install water-supply stop valves in accessible locations.

- I. Install traps on fixture outlets. Omit traps on fixtures having integral traps.
- J. Install escutcheons at wall, floor, and ceiling penetrations in exposed, finished locations and within cabinets and millwork. Use deep-pattern escutcheons where required to conceal protruding pipe fittings.
- K. Seal joints between fixtures and walls, floors, and counters using sanitary-type, one-part, mildew-resistant, silicone sealant. Match sealant color to fixture color.
- L. Install piping connections between plumbing fixtures and piping systems and plumbing equipment. Install insulation on supplies and drains of fixtures for people with disabilities.
- M. Ground equipment.

END OF SECTION 224000

## SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

## PART 2 - PRODUCTS

## 2.1 RACEWAYS

- A. Raceways:
  - 1. EMT: ANSI C80.3, zinc-coated steel, with setscrew or compression fittings.
  - 2. FMC: Zinc-coated steel.
  - 3. Raceway Fittings: Specifically designed for raceway type used in Project.

## 2.2 CONDUCTORS AND CABLES

- A. Conductors:
  - 1. Conductors, No. 10 AWG and Smaller: Solid or stranded copper.
  - 2. Insulation: Thermoplastic, rated at 75 deg C minimum.
  - 3. Wire Connectors and Splices: Units of size, ampacity rating, material, type, and class suitable for service indicated.
- B. Cable Type NM-B Cable: Comply with UL 719 with Type THHN/THWN conductors complying with UL 83.

## 2.3 GROUNDING MATERIALS

- A. Conductors: Solid for No. 8 AWG and smaller, and stranded for No. 6 AWG and larger unless otherwise indicated.
  - 1. Insulated Conductors: Copper or tinned-copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts with clamp-type pipe connectors sized for pipe.

## 2.4 SUPPORT AND ANCHORAGE COMPONENTS

- A. Raceway and Cable Supports: As described in NECA 1.
- B. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and fittings.
- C. Mounting, Anchoring, and Attachment Components:
  - 1. Power or Hand Driven Fasteners: Threaded-steel wood screws.

## PART 3 - EXECUTION

### 3.1 RACEWAY AND CABLE INSTALLATION

- A. Indoor Raceways Applications:
  - 1. Exposed: EMT.
  - 2. Boxes and Enclosures: Metallic, NEMA 250, Type 1, unless otherwise indicated.
- B. Conceal cables, unless otherwise indicated, within finished walls, ceilings, and floors.
- C. Install raceways and cables at least 6 inches away from parallel runs of flues and steam or hot-water pipes.

### 3.2 WIRING METHODS

- A. Exposed Feeders, Branch Circuits, and Class 1 Control Circuits, Including in Crawlspace: Type THHN-THWN, single conductors in raceway.
- B. Feeders and Branch Circuits Concealed in Ceilings, Walls, Partitions, and Crawlspace: Nonmetallic-sheathed cable, Type NM or NMC.

### 3.3 INSTALLATION OF HANGERS AND SUPPORTS

- A. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods, unless otherwise indicated or required by Code:
  - 1. To Wood: Fasten with lag screws or through bolts.

END OF SECTION 260500

## SECTION 262726 - WIRING DEVICES

## PART 1 - GENERAL

## 1.1 SECTION REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

## PART 2 - PRODUCTS

## 2.1 DEVICES

- A. Convenience Receptacle: NEMA WD 1, NEMA WD 6, Configuration 5-20R, and UL 498.
- B. Wall Switch at Toilet Room: Standard SPST toggle switch set in surface-mounted die cast metal one gang waterproof box, NEMA standards and UL listed for use in wet location.
- C. Wall Plates, Finished Areas: Smooth, high-impact thermoplastic, fastened with metal screws having heads matching plate color.
- D. Finishes:
  - 1. Wiring Devices Connected to Normal Power System: Ivory or White As selected by Architect Insert color unless otherwise indicated or required by NFPA 70 or device listing.

## PART 3 - EXECUTION

## 3.1 INSTALLATION

- A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
- B. Install devices and assemblies plumb, level, and square with building lines.
- C. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.

END OF SECTION 262726