

**JANUARY 28, 2015**

**ADDENDUM NO. 1  
TO THE DRAWINGS AND PROJECT MANUAL  
FOR THE OIF / OEF COTTAGE (BLDG. 147)  
DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER  
TUSCALOOSA, ALABAMA  
VA Project 670-CSI-311  
SS&A Project No. 2014-031**

All bidders are hereby notified that the Construction Documents (Drawings and Project Manual), dated December 5, 2014, are hereby amended and supplemented as follows:

**PROJECT MANUAL**

**ITEM NO. 1, REVISION NO. 1 SPECIFICATIONS:** The following "REVISION NO. 1" specification sections are to be replaced in the Construction Documents in their entirety:

06 10 00 – ROUGH CARPENTRY  
08 71 00 – DOOR HARDWARE  
09 06 00 – SCHEDULE FOR FINISHES  
10 99 00 – MISCELLANEOUS BUILDING SPECIALTIES  
28 31 00 – FIRE DETECTION AND ALARM

**DRAWINGS**

**ITEM NO. 2, REVISION NO. 1 DRAWINGS:** The following "REVISION NO. 1" drawings are to be replaced in the Construction Documents (these drawings bear a revision date of 1/28/15):

147-C-103, 147-L-101, 147-L-102, 147-S-101, 147-S-105, 147-S-513, 147-A-101, 147-A-102, 147-A-103, 147-A-105, 147-A-106, 147-A-203, 147-A-302, 147-A-401, 147-A-501, 147-A-502, 147-A-506, 147-A-601, 147-FA001, 147-FA101, 147-FA600, 147-P-001, 147-P-201, 147-P-301, 147-P-302, 147-P-501, 147-P-502, 147-P-503, 147-MH201, 147-MH202, 147-MH203, 147-MP301, 147-M-501, 147-M-502, 147-E-001, 147-ES103, 147-EL101, 147-EP101, 147-EP601, 147-EY101.

– End of Addendum No. 1 –

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- Attachments: 1. Specification Sections 06 10 00, 08 71 00, 09 60 00, 10 99 00, and 28 31 00 (5 sections)  
2. Drawings as stated above (total of 40 sheets – in both half size and full size)

**SECTION 06 10 00  
ROUGH CARPENTRY**

**PART 1 - GENERAL****1.1 DESCRIPTION**

- A. Section specifies wood blocking, sheathing, decking, furring, nailers, rough hardware, and light wood construction.

**1.2 RELATED WORK**

- A. Milled woodwork: Section 06 20 00, FINISH CARPENTRY.

**1.3 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings showing framing connection details, fasteners, connections and dimensions.
- C. LEED Submittals:
  - 1. Certificates for Credit MR 7: Chain-of-custody certificates indicating that wood used complies with forest certification requirements. Include evidence that manufacturer is certified for chain of custody by an FSC-accredited certification body. Include statement indicating cost for each certified wood product.
  - 2. Product Data for Credit IEQ 4.4: For adhesives and composite wood materials, documentation indicating that products contain no urea formaldehyde.

**1.4 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. Protect lumber and other products from dampness both during and after delivery at site.
- B. Pile lumber in stacks in such manner as to provide air circulation around surfaces of each piece.
- C. Stack plywood and other board products so as to prevent warping.
- D. Locate stacks on well drained areas, supported at least 6 inches above grade and cover with well ventilated sheds having firmly constructed over hanging roof with sufficient end wall to protect lumber from driving rain.

**1.5 APPLICABLE PUBLICATIONS**

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in the text by basic designation only.
- B. American Forest and Paper Association (AFPA):
  - National Design Specification for Wood Construction
  - NDS-05.....Conventional Wood Frame Construction

## C. American Society of Mechanical Engineers (ASME):

B18.2.1A-96(R2005).....Square and Hex Bolts and Screws

B18.2.2-87(R2005).....Square and Hex Nuts

B18.6.1-81 (R97).....Wood Screws

B18.6.4-98(R2005).....Thread Forming and Thread Cutting Tapping Screws  
and Metallic Drive Screws

## D. American Plywood Association (APA):

E30-07.....Engineered Wood Construction Guide

## E. American Society for Testing and Materials (ASTM):

A47-99(R2009).....Ferritic Malleable Iron Castings

A48-03(R2008).....Gray Iron Castings

A653/A653M-10.....Steel Sheet Zinc-Coated (Galvanized) or Zinc-  
Iron Alloy Coated (Galvannealed) by the Hot Dip  
ProcessC954-10.....Steel Drill Screws for the Application of Gypsum  
Board or Metal Plaster Bases to Steel Studs from  
0.033 inch (2.24 mm) to 0.112-inch (2.84 mm) in  
thicknessC1002-07.....Steel Self-Piercing Tapping Screws for the  
Application of Gypsum Panel Products or Metal  
Plaster Bases to Wood Studs or Metal StudsD2559-10.....Adhesives for Structural Laminated Wood Products  
for Use Under Exterior (Wet Use) Exposure  
ConditionsD3498-11.....Adhesives for Field-Gluing Plywood to Lumber  
Framing for Floor SystemsF844-07.....Washers, Steel, Plan (Flat) Unhardened for  
General Use

F1667-05.....Nails, Spikes, and Staples

## F. Federal Specifications (Fed. Spec.):

MM-L-736C.....Lumber; Hardwood

## G. Commercial Item Description (CID):

A-A-55615.....Shield, Expansion (Wood Screw and Lag Bolt Self  
Threading Anchors)

## H. Military Specification (Mil. Spec.):

MIL-L-19140E.....Lumber and Plywood, Fire-Retardant Treated

## I. U.S. Department of Commerce Product Standard (PS)

PS 1-95.....Construction and Industrial Plywood

PS 20-05.....American Softwood Lumber Standard

**PART 2 - PRODUCTS****2.1 LUMBER**

- A. Unless otherwise specified, each piece of lumber bear grade mark, stamp, or other identifying marks indicating grades of material, and rules or standards under which produced.
  - 1. Identifying marks in accordance with rule or standard under which material is produced, including requirements for qualifications and authority of the inspection organization, usage of authorized identification, and information included in the identification.
  - 2. Inspection agency for lumber approved by the Board of Review, American Lumber Standards Committee, to grade species used.
- B. Structural Members: Species and grade as listed in the AFPA, National Design Specification for Wood Construction having design stresses as shown.
- C. Lumber Other Than Structural:
  - 1. Unless otherwise specified, species graded under the grading rules of an inspection agency approved by Board of Review, American Lumber Standards Committee.
  - 2. Framing lumber: Minimum extreme fiber stress in bending of 1100.
  - 3. Furring, blocking, nailers and similar items 4 inches and narrower Standard Grade; and, members 6 inches and wider, Number 2 Grade.
  - 4. Framing Lumber at Exterior Screen Porch: Wood species western red cedar, heart redwood or cypress.
- D. Sizes:
  - 1. Conforming to Prod. Std., PS20.
  - 2. Size references are nominal sizes, unless otherwise specified, actual sizes within manufacturing tolerances allowed by standard under which produced.
- E. Moisture Content:
  - 1. At time of delivery and maintained at the site.
  - 2. Boards and lumber 2 inches and less in thickness: 19 percent or less.
  - 3. Lumber over 2 inches thick: 25 percent or less.
- F. Preservative Treatment:
  - 1. Do not treat Heart Redwood and Western Red Cedar.
  - 2. Treat wood members and plywood exposed to weather or in contact with plaster, masonry or concrete, including framing of open roofed structures; sills, sole plates, furring, and sleepers that are less than 24 inches from ground; nailers, edge strips, blocking, crickets, curbs, cant, vent strips and other members used in connection with roofing and flashing materials.

3. Treat other members specified as preservative treated (PT).
4. Preservative treat by the pressure method complying with ASTM D 1760, except any process involving the use of Chromated Copper arsenate (CCA) for pressure treating wood is not permitted.

## **2.2 PLYWOOD**

- A. Comply with Prod. Std., PS 1.
- B. Bear the mark of a recognized association or independent inspection agency that maintains continuing control over quality of plywood which identifies compliance by veneer grade, group number, span rating where applicable, and glue type.
- C. Sheathing:
  1. APA rated Exposure 1 or Exterior; panel grade CD or better.
  2. Roof sheathing:
    - a. Minimum 23/32 inch thick or span rating of 48/24 for supports 24 inches on center.

## **2.3 STRUCTURAL-USE PANELS**

- A. Gypsum Sheathing Board: See Section 09 29 00 GYPSUM BOARD.
- B. Roof Sheathing:
  1. APA Rated sheathing panels, durability classification of Exposure 1 or Exterior Span Rating of 16/0 or greater for supports 16 inches on center and 24/0 or greater for supports 24 inches on center.

## **2.4 STRUCTURAL CONCRETE FLOOR PANELS**

- A. Structural concrete panels for mechanically fastening to cold-formed steel joists or framing, 3/4 inch thick.
- B. Physical and Mechanical Properties:
  1. Non-Combustibility: Passed ASTM E136 (-04).
  2. Moment Capacity: ASTM C1185, 5.5, 1585 lb-in /ft.
  3. Bending Stiffness: ASTM C1185, 5.5, 315,000 lb-in<sup>2</sup> /ft.
  4. Compressive Strength: ASTM C109, 2500 psi.
  5. Concentrated Load: ASTM E661, 400 lbs static.

## **2.5 ROUGH HARDWARE AND ADHESIVES**

- A. Anchor Bolts:
  1. ASME B18.2.1 and ANSI B18.2.2 galvanized, 1/2 inch unless shown otherwise.
  2. Extend at least 8 inches into masonry or concrete with ends bent 2 inches.
- B. Miscellaneous Bolts: Expansion Bolts: C1D, A-A-55615; lag bolt, long enough to extend at least 2-1/2 inches into masonry or concrete. Use 1/2 inch bolt unless shown otherwise.

**C. Washers**

1. ASTM F 844.
2. Use zinc or cadmium coated steel or cast iron for washers exposed to weather.

**D. Screws:**

1. Wood to Wood: ANSI B18.6.1 or ASTM C 1002.
2. Wood to Steel: ASTM C 954, or ASTM C 1002.

**E. Nails:**

1. Size and type best suited for purpose unless noted otherwise. Use aluminum-alloy nails, plated nails, or zinc-coated nails, for nailing wood work exposed to weather and on roof blocking.
2. ASTM F 1667:
  - a. Common: Type I, Style 10.
  - b. Concrete: Type I, Style 11.
  - c. Barbed: Type I, Style 26.
  - d. Underlayment: Type I, Style 25.
  - e. Masonry: Type I, Style 27.
  - f. Use special nails designed for use with ties, strap anchors, framing connectors, joists hangers, and similar items. Nails not less than 1-1/4 inches long, 8d and deformed or annular ring shank.

**F. Adhesives:**

1. For field-gluing plywood to lumber framing floor or roof systems: ASTM D 3498.

**PART 3 - EXECUTION****3.1 INSTALLATION OF MISCELLANEOUS WOOD MEMBERS****A. Conform to applicable requirements of the following:**

1. AFPA National Design Specification for Wood Construction for timber connectors.
2. AFPA WCD-number 1, Manual for House Framing for nailing and framing unless specified otherwise.
3. APA for installation of plywood or structural use panels.

**B. Fasteners:**

1. Nails.
  - a. Nail in accordance with the Recommended Nailing Schedule as specified in AFPA Manual for House Framing where detailed nailing requirements are not specified in nailing schedule. Select nail size and nail spacing sufficient to develop adequate strength for the connection without splitting the members.

2. Bolts:
  - a. Fit bolt heads and nuts bearing on wood with washers.
  - b. Countersink bolt heads flush with the surface of nailers.
  - c. Embed in concrete and solid masonry or use expansion bolts.  
Special bolts or screws designed for anchor to solid masonry or concrete in drilled holes may be used.
  - d. Use toggle bolts to hollow masonry or sheet metal.
  - e. Use bolts to steel over 0.112 inch, 11 gage in thickness. Secure wood nailers to vertical structural steel members with bolts, placed one at ends of nailer and 24 inch intervals between end bolts. Use clips to beam flanges.
3. Drill Screws to steel less than 0.112 inch thick.
  - a. ASTM C 1002 for steel less than 0.033 inch thick.
  - b. ASTM C 954 for steel over 0.033 inch thick.
4. Power actuated drive pins may be used where practical to anchor to solid masonry, concrete, or steel.
5. Do not anchor to wood plugs or nailing blocks in masonry or concrete.  
Use metal plugs, inserts or similar fastening.
6. Screws to Join Wood:
  - a. Where shown or option to nails.
  - b. ASTM C 1002, sized to provide not less than 1 inch penetration into anchorage member.
  - c. Spaced same as nails.
- C. Set sills or plates level in full bed of mortar on masonry or concrete walls.
  1. Space anchor bolts 4 feet on centers between ends and within 6 inches of end. Stagger bolts from side to side on plates over 7 inches in width.
  2. Use shims of slate, tile or similar approved material to level wood members resting on concrete or masonry. Do not use wood shims or wedges.
  3. Closely fit, and set to required lines.
- D. Cut notch, or bore in accordance with NFPA Manual for House-Framing for passage of ducts wires, bolts, pipes, conduits and to accommodate other work. Repair or replace miscut, misfit or damaged work.
- E. Blocking Nailers, and Furring:
  1. Install furring, blocking, nailers, and grounds where shown.
  2. Use longest lengths practicable.
  3. Use fire retardant treated wood blocking where shown at openings and where shown or specified.

## 4. Layers of Blocking or Plates:

- a. Stagger end joints between upper and lower pieces.
- b. Nail at ends and not over 24 inches between ends.
- c. Stagger nails from side to side of wood member over 5 inches in width.

## F. Sheathing:

1. Use plywood or structural-use panels for sheathing.
2. Lay panels with joints staggered, with edge and ends 1/8 inch apart and nailed over bearings as specified.
3. Set nails not less than 3/8 inch from edges.
4. Install 2 inch by 4 inch blocking spiked between joists, rafters and studs to support edge or end joints of panels.

## G. Structural Concrete Floor Panels:

1. Do not install panels less than 24 inches wide. The minimum panel length shall be 32 inches. Install and fasten according to Manufacturer's recommendations.
2. Panels shall be sealed with an acrylic sealer on all upper surfaces. Acrylic sealer shall be equal to H&C (Sherman-Williams) Concrete and Masonry Water-Proofing Sealer. Apply according to Manufacturer's recommendations.

- - - E N D - - -





**SECTION 08 71 00  
DOOR HARDWARE**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. Door hardware and related items necessary for complete installation and operation of doors.

**1.2 RELATED WORK**

- A. Caulking: Section 07 92 00 JOINT SEALANTS.
- B. Application of Hardware: Section 08 14 33, STILE AND RAIL WOOD DOORS, Section 08 11 13, HOLLOW METAL DOORS AND FRAMES, Section 08 71 13, AUTOMATIC DOOR OPERATORS.
- C. Finishes: Section 09 06 00, SCHEDULE FOR FINISHES.
- D. Painting: Section 09 91 00, PAINTING.
- E. Electrical: Division 26, ELECTRICAL.
- F. Fire Detection: Section 28 31 00, FIRE DETECTION AND ALARM.

**1.3 GENERAL**

- A. All hardware shall comply with UFAS, (Uniform Federal Accessible Standards) unless specified otherwise.
- B. Provide rated door hardware assemblies where required by most current version of the International Building Code (IBC).
- C. Hardware for Labeled Fire Doors and Exit Doors: Conform to requirements of NFPA 80 for labeled fire doors and to NFPA 101 for exit doors, as well as to other requirements specified. Provide hardware listed by UL, except where heavier materials, large size, or better grades are specified herein under paragraph HARDWARE SETS. In lieu of UL labeling and listing, test reports from a nationally recognized testing agency may be submitted showing that hardware has been tested in accordance with UL test methods and that it conforms to NFPA requirements.
- D. Hardware for application on metal and wood doors and frames shall be made to standard templates. Furnish templates to the fabricator of these items in sufficient time so as not to delay the construction.
- E. The following items shall be of the same manufacturer, if possible, except as otherwise specified:
  - 1. Mortise locksets.
  - 2. Hinges for hollow metal and wood doors.

3. Surface applied overhead door closers.
4. Exit devices.
5. Floor closers.

#### 1.4 WARRANTY

- A. Automatic door operators shall be subject to the terms of FAR Clause 52.24-21, except that the Warranty period shall be two years in lieu of one year for all items except as noted below:
1. Locks, latchsets, and panic hardware: 5 years.
  2. Door closers and continuous hinges: 10 years.

#### 1.5 MAINTENANCE MANUALS

- A. Furnish maintenance manuals and instructions on all door hardware.

#### 1.6 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. Submit 6 copies of the schedule per Section 01 33 23 plus 2 copies to the VAMC Locksmith (VISN Locksmith if the VAMC does not have a locksmith).
- B. Hardware Schedule: Prepare and submit hardware schedule in the following form:

| Hardware Item | Quantity | Size | Reference Publication Type No. | Finish | Mfr. Name and Catalog No. | Key Control Symbols | UL Mark (if fire rated and listed) | ANSI/BHMA Finish Designation |
|---------------|----------|------|--------------------------------|--------|---------------------------|---------------------|------------------------------------|------------------------------|
|               |          |      |                                |        |                           |                     |                                    |                              |
|               |          |      |                                |        |                           |                     |                                    |                              |
|               |          |      |                                |        |                           |                     |                                    |                              |

- C. Samples and Manufacturers' Literature:

1. Samples: All hardware items (proposed for the project) that have not been previously approved by Builders Hardware Manufacturers Association shall be submitted for approval. Tag and mark all items with manufacturer's name, catalog number and project number.
2. Samples are not required for hardware listed in the specifications by manufacturer's catalog number, if the contractor proposes to use the manufacturer's product specified.

- D. Certificate of Compliance and Test Reports: Submit certificates that hardware conforms to the requirements specified herein. Certificates shall be accompanied by copies of reports as referenced. The testing shall have been conducted either in the manufacturer's plant and certified by an independent testing laboratory or conducted in an independent laboratory, within four years of submittal of reports for approval.

#### **1.7 DELIVERY AND MARKING**

- A. Deliver items of hardware to job site in their original containers, complete with necessary appurtenances including screws, keys, and instructions. Tag one of each different item of hardware and deliver to Resident Engineer for reference purposes. Tag shall identify items by Project Specification number and manufacturer's catalog number. These items shall remain on file in Resident Engineer's office until all other similar items have been installed in project, at which time the Resident Engineer will deliver items on file to Contractor for installation in predetermined locations on the project.

#### **1.8 PREINSTALLATION MEETING**

- A. Convene a preinstallation meeting not less than 30 days before start of installation of door hardware. Require attendance of parties directly affecting work of this section, including Contractor and Installer, Architect, Contracting Officer, Project Engineer and VA Locksmith, Hardware Consultant, and Hardware Manufacturer's Representative.

Review the following:

1. Inspection of door hardware.
2. Job and surface readiness.
3. Coordination with other work.
4. Protection of hardware surfaces.
5. Substrate surface protection.
6. Installation.
7. Adjusting.
8. Repair.
9. Field quality control.
10. Cleaning.

#### **1.9 INSTRUCTIONS**

- A. Hardware Set Symbols on Drawings: Except for protective plates, door stops, mutes, thresholds and the like specified herein, hardware requirements for each door are indicated on drawings by symbols.

Symbols for hardware sets consist of letters (e.g., "HW") followed by a number. Each number designates a set of hardware items applicable to a door type.

- B. Manufacturers' Catalog Number References: Where manufacturers' products are specified herein, products of other manufacturers which are considered equivalent to those specified may be used. Manufacturers whose products are specified are identified by abbreviations as follows:

|    |                            |                   |
|----|----------------------------|-------------------|
| AR | Adams Rite Mfg. Co.        | Pomona, CA        |
| MK | McKinney Manufacturing Co. | Scranton, PA      |
| RU | Corbin-Russwin             | Monroe, NC        |
| NO | Norton                     | Monroe, NC        |
| PE | Pemko Manufacturing Co.    | Ventura, CA       |
| RF | Rixson                     | Franklin Park, IL |
| RO | Rockwood Manufacturing Co. | Rockwood, PA      |
| SU | Securitron Magnalock Corp. | Sparks, NV        |

- C. Keying: All cylinders shall be keyed into new Grand Master Key System. Provide removable core cylinders that are removable only with a special key or tool without disassembly of knob or lockset. Cylinders shall be 7 pin type. Keying information shall be furnished at a later date by the Resident Engineer.
- D. Keying: A new Great Grandmaster key shall be established for this project. The key system shall be small format (Best size and profile) removable core type as previously described. The key blanks shall be protected by a utility patent with a minimum seven years remaining on the patent from the start of construction, and protected by contract-controlled distribution. The manufacturer shall furnish code pattern listings in both paper and electronic formats so keys may be reproduced by code.; provide electronic format in file type required by project's key control software. The manufacturer shall design the new key system with the capacity to rekey the existing system and also provide for 25 percent expansion capability beyond this requirement. Submit a keying chart for approval showing proposed keying layout and listing expansion capacity.
1. Keying information will be furnished to the Contractor by the Resident Engineer.

2. Supply information regarding key control of cylinder locks to manufacturers of equipment having cylinder type locks. Notify Resident Engineer immediately when and to whom keys or keying information is supplied. Return all such keys to the Resident Engineer.

#### 1.10 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. In text, hardware items are referred to by series, types, etc., listed in such specifications and standards, except as otherwise specified.
- B. American Society for Testing and Materials (ASTM):
  - F883-04.....Padlocks
  - E2180-07.....Standard Test Method for Determining the  
Activity of Incorporated Antimicrobial Agent(s)  
In Polymeric or Hydrophobic Materials
- C. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):
  - A156.1-06.....Butts and Hinges
  - A156.2-03.....Bored and Pre-assembled Locks and Latches
  - A156.3-08.....Exit Devices, Coordinators, and Auto Flush  
Bolts
  - A156.4-08.....Door Controls (Closers)
  - A156.5-01.....Auxiliary Locks and Associated Products
  - A156.6-05.....Architectural Door Trim
  - A156.8-05.....Door Controls-Overhead Stops and Holders
  - A156.12-05 .....Interconnected Locks and Latches
  - A156.13-05.....Mortise Locks and Latches Series 1000
  - A156.14-07 .....Sliding and Folding Door Hardware
  - A156.15-06.....Release Devices-Closer Holder, Electromagnetic  
and Electromechanical
  - A156.16-08.....Auxiliary Hardware
  - A156.17-04 .....Self-Closing Hinges and Pivots
  - A156.18-06.....Materials and Finishes
  - A156.20-06 .....Strap and Tee Hinges, and Hasps
  - A156.21-09.....Thresholds
  - A156.22-05.....Door Gasketing and Edge Seal Systems
  - A156.23-04.....Electromagnetic Locks

A156.24-03.....Delayed Egress Locking Systems  
A156.25-07 .....Electrified Locking Devices  
A156.26-06.....Continuous Hinges  
A156.28-07 .....Master Keying Systems  
A156.29-07 .....Exit Locks and Alarms  
A156.30-03 .....High Security Cylinders  
A156.31-07 .....Electric Strikes and Frame Mounted Actuators  
A250.8-03.....Standard Steel Doors and Frames

D. National Fire Protection Association (NFPA):

80-10.....Fire Doors and Fire Windows  
101-09.....Life Safety Code

E. Underwriters Laboratories, Inc. (UL):

Building Materials Directory (2008)

## **PART 2 - PRODUCTS**

### **2.1 BUTT HINGES**

- A. ANSI A156.1. Provide only three-knuckle hinges, except five-knuckle where the required hinge type is not available in a three-knuckle version (e.g., some types of swing-clear hinges). The following types of butt hinges shall be used for the types of doors listed, except where otherwise specified:
1. Exterior Doors: Type A2112/A5112 for doors 3 feet wide or less and Type A2111/A5111 for doors over 3 feet wide. Hinges for exterior outswing doors shall have non-removable pins. Hinges for exterior fire-rated doors shall be of stainless steel material.
  2. Interior Doors: Type A8112/A5112 for doors 3 feet wide or less and Type A8111/A5111 for doors over 3 feet wide. Hinges for doors exposed to high humidity areas (shower rooms, toilet rooms, kitchens, janitor rooms, etc. shall be of stainless steel material.
- B. Provide quantity and size of hinges per door leaf as follows:
1. Doors up to 4 feet high: 2 hinges.
  2. Doors 4 feet to 7 feet 5 inches high: 3 hinges minimum.
  3. Doors greater than 7 feet 5 inches high: 4 hinges.
  4. Doors up to 3 feet wide, standard weight: 4-1/2 inches x 4-1/2 inches hinges.
  5. Doors over 3 feet to 3 feet 6 inches wide, standard weight: 5 inches x 4-1/2 inches.
  6. Doors over 3 feet 6 inches to 4 feet, heavy weight: 5 inches x 4-1/2 inches.

7. Provide heavy-weight hinges where specified.
8. At doors weighing 150 lbs. or more, furnish 5 inch high hinges.
- C. See Articles 2.24 AND 3.5 "MISCELLANEOUS HARDWARE" and "HARDWARE SETS" for pivots and hinges other than butts specified above and continuous hinges specified below.

## **2.2 CONTINUOUS HINGES**

- A. ANSI/BHMA A156.26, Grade 1-600.
  1. Listed under Category N in BHMA's "Certified Product Directory."
- B. General: Minimum 0.120 inch thick, hinge leaves with minimum overall width of 4 inches; fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete
- C. Continuous, Barrel-Type Hinges: Hinge with knuckles formed around a Teflon-coated 0.25 inch minimum diameter pin that extends entire length of hinge.
  1. Base Metal for Exterior Hinges: Stainless steel.
  2. Base Metal for Interior Hinges: Stainless steel.
  3. Base Metal for Hinges for Fire-Rated Assemblies: Stainless steel.
  4. Provide with non-removable pin (hospital tip option) at lockable outswing doors.
  5. Where required to clear adjacent casing, trim, and wall conditions and allow full door swing, provide wide throw hinges of minimum width required.
  6. Provide with manufacturer's cut-outs for separate mortised power transfers and/or mortised automatic door bottoms where they occur.
  7. Where thru-wire power transfers are integral to the hinge, provide hinge with easily removable portion to allow easy access to wiring connections.
  8. Where models are specified that provide an integral wrap-around edge guard for the hinge edge of the door, provide manufacturer's adjustable threaded stud and machine screw mechanism to allow the door to be adjusted within the wrap-around edge guard.

## **2.3 DOOR CLOSING DEVICES**

- A. Closing devices shall be products of one manufacturer for each type specified.

## **2.4 OVERHEAD CLOSERS**

- A. Conform to ANSI A156.4, Grade 1.



B. Closers shall conform to the following:

1. The closer shall have minimum 50 percent adjustable closing force over minimum value for that closer and have adjustable hydraulic back check effective between 60 degrees and 85 degrees of door opening.
2. Where specified, closer shall have hold-open feature.
3. Size Requirements: Provide multi-size closers, sizes 1 through 6, except where multi-size closer is not available for the required application.
4. Material of closer body shall be forged or cast.
5. Arm and brackets for closers shall be steel, malleable iron or high strength ductile cast iron.
6. Where closers are exposed to the exterior or are mounted in rooms that experience high humidity, provide closer body and arm assembly of stainless steel material.
7. Closers shall have full size metal cover; plastic covers will not be accepted.
8. Closers shall have adjustable hydraulic back-check, separate valves for closing and latching speed, adjustable back-check positioning valve, and adjustable delayed action valve.
9. Provide closers with any accessories required for the mounting application, including (but not limited to) drop plates, special soffit plates, spacers for heavy-duty parallel arm fifth screws, bull-nose or other regular arm brackets, longer or shorter arm assemblies, and special factory templating. Provide special arms, drop plates, and templating as needed to allow mounting at doors with overhead stops and/or holders.
10. Closer arms or backcheck valve shall not be used to stop the door from overswing, except in applications where a separate wall, floor, or overhead stop cannot be used.
11. Provide parallel arm closers with heavy duty rigid arm.
12. Where closers are to be installed on the push side of the door, provide parallel arm type except where conditions require use of top jamb arm.
13. Provide all surface closers with the same body attachment screw pattern for ease of replacement and maintenance.
14. All closers shall have a 1-1/2" minimum piston diameter.

**2.5 COMBINATION CLOSER - HOLDER**

- A. Conform to ANSI A156.15; combination closer-holder with built-in electronic release.
- B. Combination closer-holder shall have the following features:
  - 1. Control door closing and latching sequence by hydraulic action.
  - 2. Wiring for 24V DC current. Current draw shall not exceed 0.16 amperes.
  - 3. Combination closer-holder type:
    - a. At doors with 90-110° hold-open point: Single lever arm with slide track closing action, and adjustable hydraulic back-check. Provide tracks with spring-cushion stop assemblies to avoid the necessity of a separate wall or floor stop. Provide with double egress arm where required.
    - b. At doors with over 110° to 175° hold-open point: Single or double lever arm and adjustable hydraulic back-check. Provide with long arms where required for deep frame reveals.
  - 4. Spring power for closing force shall conform to ANSI A156.4 and have 50% spring power adjustment.
  - 5. Size closers per manufacturer's printed catalog recommendations.
  - 6. Hold open mechanism shall hold door open between 85 degrees and 175 degrees depending on wall and frame conditions. Mount device to provide maximum door opening permitted by building construction or equipment.
  - 7. Electronic release shall release door when signaled by smoke detector. Smoke detectors shall not be incorporated as an integral part of door holders. Smoke detectors are specified in the ELECTRICAL Section.
  - 8. All closers to have full covers.
  - 9. All closers shall have a 1-1/2" minimum piston diameter and an adjustable back check position valve.

**2.6 DOOR STOPS**

- A. Conform to ANSI A156.16.
- B. Provide door stops wherever an opened door or any item of hardware thereon would strike a wall, column, equipment or other parts of building construction. For concrete, masonry or quarry tile construction, use lead expansion shields for mounting door stops.

- C. Where cylindrical locks with turn pieces or pushbuttons occur, equip wall bumpers Type L02251 (rubber pads having concave face) to receive turn piece or button.
- D. Provide floor stops (Type L02141 or L02161 in office areas; Type L02121 x 3 screws into floor elsewhere. Wall bumpers, where used, must be installed to impact the trim or the door within the leading half of its width. Floor stops, where used, must be installed within 4-inches of the wall face and impact the door within the leading half of its width.
- E. Where drywall partitions occur, use floor stops, Type L02141 or L02161 in office areas, Type L02121 elsewhere.
- F. Provide stop Type L02011, as applicable for exterior doors. At outswing doors where stop can be installed in concrete, provide stop mated to concrete anchor set in 3 inch core-drilled hole and filled with quick-setting cement.
- G. Omit stops where floor mounted door holders are required and where automatic operated doors occur.
- H. Provide appropriate roller bumper for each set of doors (except where closet doors occur) where two doors would interfere with each other in swinging.
- I. Provide appropriate door mounted stop on doors in individual toilets where floor or wall mounted stops cannot be used.
- J. Provide overhead surface applied stop Type C02541, ANSI A156.8 on patient toilet doors in bedrooms where toilet door could come in contact with the bedroom door.
- K. Provide door stops on doors where combination closer magnetic holders are specified, except where wall stops cannot be used or where floor stops cannot be installed within 4-inches of the wall.
- L. Where the specified wall or floor stop cannot be used, provide concealed overhead stops (surface-mounted where concealed cannot be used).

## **2.7 OVERHEAD DOOR STOPS AND HOLDERS**

- A. Conform to ANSI Standard A156.8. Overhead holders shall be of sizes recommended by holder manufacturer for each width of door. Set overhead holders for 110 degree opening, unless limited by building construction or equipment. Provide Grade 1 overhead concealed slide type: stop-only at rated doors and security doors, hold-open type with exposed hold-open on/off control at all other doors requiring overhead door stops.

## 2.8 FLOOR DOOR HOLDERS

- A. Conform to ANSI Standard A156.16. Provide extension strikes for Types L01301 and L01311 holders where necessary.

## 2.9 LOCKS AND LATCHES

- A. Conform to ANSI A156.2. Locks and latches for doors 1-3/4 inch thick or over shall have beveled fronts. Lock cylinders shall have not less than seven pins. Cylinders for all locksets shall be removable core type. Cylinders shall be furnished with construction removable cores and construction master keys. Cylinder shall be removable by special key or tool. Construct all cores so that they will be interchangeable into the core housings of all mortise locks, rim locks, cylindrical locks, and any other type lock included in the Great Grand Master Key System. Disassembly of lever or lockset shall not be required to remove core from lockset. All locksets or latches on double doors with fire label shall have latch bolt with 3/4 inch throw, unless shorter throw allowed by the door manufacturer's fire label. Provide temporary keying device or construction core of allow opening and closing during construction and prior to the installation of final cores.
- B. In addition to above requirements, locks and latches shall comply with following requirements:
  - 1. Mortise Lock and Latch Sets: Conform to ANSI/BHMA A156.13. Mortise locksets shall be series 1000, minimum Grade 2. All locksets and latchsets shall have lever handles fabricated from cast stainless steel. Provide sectional (lever x rose) lever design matching Corbin-Russwin 116T. No substitute lever material shall be accepted. All locks and latchsets shall be furnished with 4-7/8 inch curved lip strike and wrought box. At outswing pairs with overlapping astragals, provide flat lip strip with 7/8 inch lip-to-center dimension. Lock function F02 shall be furnished with emergency tools/keys for emergency entrance. All lock cases installed on lead lined doors shall be lead lined before applying final hardware finish. Furnish armored fronts for all mortise locks. Where mortise locks are installed in high-humidity locations or where exposed to the exterior on both sides of the opening, provide non-ferrous mortise lock case.
  - 2. Auxiliary locks shall be as specified under hardware sets and conform to ANSI A156.5.

**2.10 PUSH-BUTTON COMBINATION LOCKS**

- A. ANSI/BHMA A156.13, Grade 1. Battery operated pushbutton entry.
- B. Construction: Heavy duty mortise lock housing conforming to ANSI/BHMA A156.13, Grade 1. Lever handles and operating components in compliance with the UFAS and the ADA Accessibility Guidelines. Match lever handles of locks and latchsets on adjacent doors.
- C. Special Features: Key override to permit a master keyed security system and a pushbutton security code activated passage feature to allow access without using the entry code.

**2.11 KEYS**

- A. Stamp all keys with change number and key set symbol. Furnish keys in quantities as follows:

| <b>Locks/Keys</b>               | <b>Quantity</b>            |
|---------------------------------|----------------------------|
| Cylinder locks                  | 2 keys each                |
| Cylinder lock change key blanks | 100 each different key way |
| Master-keyed sets               | 6 keys each                |
| Grand Master sets               | 6 keys each                |
| Great Grand Master set          | 5 keys                     |
| Control key                     | 2 keys                     |

- B. Psychiatric keys shall be cut so that first two bittings closest to the key shoulder are shallow to provide greater strength at point of greatest torque.

**2.12 KEY CABINET**

- A. ANSI Standard A156.5. Provide key cabinet made of cold rolled, 0.0478 inch thick furniture steel electro-welded. Doors shall have "no sag" continuous brass-pin piano type hinge and be equipped with chrome plated locking door handles, hook cam and mechanical pushbutton door lock. Key Cabinet and Key Control System shall accommodate all keys for this project plus 25 percent. Provide minimum number of multiple cabinets where a single cabinet of largest size will not accommodate the required number of keys.
- B. Key tags shall consist of two sets: Permanent self-locking and loan key snaphook type with tag colors as follows: Red fiber marker of the permanent self-locking type approximately 1-1/4 inch in diameter engraved with the legend "FILE KEY MUST NOT BE LOANED." Also furnish

for each hook a white cloverleaf key marker with snap-hooks engraved with the legend "LOAN KEY."

- C. The manufacturer of the lock cylinders and locks shall attach a key tag to keys of each lock cylinder and shall mark thereon the respective item number and key change number. Provide each group of keys in a key gathering envelope (supplied by Key Cabinet Manufacturer) in which the lock manufacturer shall include the following information: Item number, key change number and door number. The contractor shall furnish the Key Cabinet Manufacturer the hardware and keying schedules and change keys.
- D. The Key Cabinet Manufacturer shall set up a three-way cross index system, including master keys, listing the keys alphabetically, the hooks numerically and the key changes numerically on different colored index cards. Index cards shall be typewritten and inserted in a durable binder. Attach the keys to the two sets of numbered tags supplied with the cabinet. (The permanent tag and the loan key tag). Instruct the owner in proper use of the system. Install cabinet as directed by the Resident Engineer.

#### **2.13 ARMOR PLATES, KICK PLATES, MOP PLATES AND DOOR EDGING**

- A. Conform to ANSI Standard A156.6.
- B. Provide protective plates as specified below:
  - 1. Kick plates, mop plates and armor plates of metal, Type J100 series.
  - 2. Provide kick plates and mop plates where specified. Kick plates shall be 10 inches or 12 inches high. Mop plates shall be 6 inches high. Both kick and mop plates shall be minimum 0.050 inches thick. Provide kick and mop plates beveled on all 4 edges (B4E). On push side of doors where jamb stop extends to floor, make kick plates 1-1/2 inches less than width of door, except pairs of metal doors which shall have plates 1 inch less than width of each door. Extend all other kick and mop plates to within 1/4 inch of each edge of doors. Kick and mop plates shall butt astragals. For jamb stop requirements, see specification sections pertaining to door frames.
  - 3. Kick plates and/or mop plates are not required on following door sides:
    - a. Armor plate side of doors;
    - b. Exterior side of exterior doors;
    - c. Closet side of closet doors;
    - d. Both sides of aluminum entrance doors.

**2.14 EXIT DEVICES**

- A. Conform to ANSI Standard A156.3. Exit devices shall be Grade 1; type and function are specified in hardware sets. Provide flush with finished floor strikes for vertical rod exit devices in interior of building. Trim shall have cast satin stainless steel lever handles of design similar to locksets, unless otherwise specified. Provide key cylinders for keyed operating trim and, where specified, cylinder dogging.
- B. Surface vertical rod panics shall only be provided less bottom rod; provide fire pins as required by exit device and door fire labels. Do not provide surface vertical rod panics at exterior doors.
- C. Concealed vertical rod panics shall be provided less bottom rod at interior doors, unless lockable or otherwise specified; provide fire pins as required by exit device and door fire labels. Where concealed vertical rod panics are specified at exterior doors, provide with both top and bottom rods.
- D. Where removable mullions are specified at pairs with rim panic devices, provide mullion with key-removable feature.
- E. At non-rated openings with panic hardware, provide panic hardware with key cylinder dogging feature.
- F. Exit devices for fire doors shall comply with Underwriters Laboratories, Inc., requirements for Fire Exit Hardware. Submit proof of compliance.

**2.15 FLUSH BOLTS (LEVER EXTENSION)**

- A. Conform to ANSI A156.16. Flush bolts shall be Type L24081 unless otherwise specified. Furnish proper dustproof strikes conforming to ANSI A156.16, for flush bolts required on lower part of doors.
- B. Lever extension manual flush bolts shall only be used at non-fire-rated pairs for rooms only accessed by maintenance personnel.
- C. Face plates for cylindrical strikes shall be rectangular and not less than 1 inch by 2-1/2 inches.
- D. Friction-fit cylindrical dustproof strikes with circular face plate may be used only where metal thresholds occur.
- E. Provide extension rods for top bolt where door height exceeds 7 feet 2 inches.

**2.16 FLUSH BOLTS (AUTOMATIC)**

- A. Conform to ANSI A156.3. Dimension of flush bolts shall conform to ANSI A115. Bolts shall conform to Underwriters Laboratories, Inc.,

requirements for fire door hardware. Flush bolts shall automatically latch and unlatch. Furnish dustproof strikes conforming to ANSI A156.16 for bottom flushbolt. Face plates for dustproof strike shall be rectangular and not less than 1-1/2 by 3-1/2 inches.

- B. At interior doors, provide auto flush bolts less bottom bolt, unless otherwise specified, except at wood pairs with fire-rating greater than 20 minutes; provide fire pins as required by auto flush bolt and door fire labels.

#### **2.17 DOOR PULLS**

- A. Conform to ANSI A156.6. Pull plate 3-1/2 inches by 14 inches, unless otherwise specified. Cut plates of door pulls for cylinders, or turn pieces where required.

#### **2.18 PUSH PLATES**

- A. Conform to ANSI A156.6. Metal, Type J302, 8 inches wide by 14 inches high. Provide metal Type J300 plates 4 inches wide by 14 inches high where push plates are specified for doors with stiles less than 8 inches wide. Cut plates for cylinders, and turn pieces where required.

#### **2.19 COMBINATION PUSH AND PULL PLATES**

- A. Conform to ANSI 156.6. Type J303, stainless steel 1/8 inch thick, 3-1/3 inches wide by 16 inches high, top and bottom edges shall be rounded. Secure plates to wood doors with 1-1/2 inch long No. 12 wood screws. Cut plates for turn pieces, and cylinders where required. Pull shall be mounted down.

#### **2.20 COORDINATORS**

- A. Conform to ANSI A156.16. Coordinators, when specified for fire doors, shall comply with Underwriters Laboratories, Inc., requirements for fire door hardware. Coordinator may be omitted on exterior pairs of doors where either door will close independently regardless of the position of the other door. Coordinator may be omitted on interior pairs of non-labeled open where open back strike is used. Open back strike shall not be used on labeled doors. Paint coordinators to match door frames, unless coordinators are plated. Provide bar type coordinators, except where gravity coordinators are required at acoustic pairs. For bar type coordinators, provide filler bars for full width and, as required, brackets for push-side surface mounted closers, overhead stops, and vertical rod panic strikes.



**2.21 THRESHOLDS**

- A. Conform to ANSI A156.21, mill finish extruded aluminum, except as otherwise specified. In existing construction, thresholds shall be installed in a bed of sealant with ¼-20 stainless steel machine screws and expansion shields. In new construction, embed aluminum anchors coated with epoxy in concrete to secure thresholds. Furnish thresholds for the full width of the openings.
- B. For thresholds at elevators entrances see other sections of specifications.
- C. At exterior doors and any interior doors exposed to moisture, provide threshold with non-slip abrasive finish.
- D. Provide with miter returns where threshold extends more than 0.5 inch from frame face.

**2.22 WEATHERSTRIPS (FOR EXTERIOR DOORS)**

- A. Conform to ANSI A156.22. Air leakage shall not to exceed 0.50 CFM per foot of crack length ( $0.000774\text{m}^3/\text{s}/\text{m}$ ).

**2.23 MISCELLANEOUS HARDWARE**

- A. Access Doors (including Sheet Metal, Screen and Woven Wire Mesh Types): Except for fire-rated doors and doors to Temperature Control Cabinets, equip each single or double metal access door with Lock Type E76213, conforming to ANSI A156.5. Key locks as directed. Ship lock prepaid to the door manufacturer. Hinges shall be provided by door manufacturer.
- B. Cylinders for Various Partitions and Doors: Key cylinders same as entrance doors of area in which partitions and door occur, except as otherwise specified. Provide cylinders to operate locking devices where specified for following partitions and doors:
  - 1. Folding doors and partitions.
  - 2. Wicket door (in roll-up door assemblies).
  - 3. Slide-up doors.
  - 4. Swing-up doors.
  - 5. Fire-rated access doors-Engineer's key set.
- C. Mutes: Conform to ANSI A156.16. Provide door mutes or door silencers Type L03011 or L03021, depending on frame material, of white or light gray color, on each steel or wood door frame, except at fire-rated frames, lead-lined frames and frames for sound-resistant, lightproof and electromagnetically shielded doors. Furnish 3 mutes for single doors and 2 mutes for each pair of doors, except double-acting doors. Provide 4 mutes or silencers for frames for each Dutch type door.

Provide 2 mutes for each edge of sliding door which would contact door frame.

## **2.24 PADLOCKS FOR VARIOUS DOORS, GATES AND HATCHES**

- A. ASTM E883, size 2 inch wide chain; furnish extended shackles as required by job conditions. Provide padlocks, with key cylinders, for each door in following areas as noted.
- B. Key padlocks as follows:
  - 1. Resident Storage Lockers, A6155M.

## **2.25 FINISHES**

- A. Exposed surfaces of hardware shall have ANSI A156.18, finishes as specified below. Finishes on all hinges, pivots, closers, thresholds, etc., shall be as specified below under "Miscellaneous Finishes." For field painting (final coat) of ferrous hardware, see Section 09 91 00, PAINTING.
- B. 626 or 630: All surfaces on exterior and interior of buildings, except where other finishes are specified.
- C. Miscellaneous Finishes:
  - 1. Hinges --exterior doors: 626 or 630.
  - 2. Hinges --interior doors: 652 or 630.
  - 3. Pivots: Match door trim.
  - 4. Door Closers: Factory applied paint finish. Dull or Satin Aluminum color.
  - 5. Thresholds: Mill finish aluminum.
  - 6. Cover plates for floor hinges and pivots: 630.
  - 7. Other primed steel hardware: 600.
- D. Special Finish: Exposed surfaces of hardware for dark bronze anodized aluminum doors shall have oxidized oil rubbed bronze finish (dark bronze) finish on door closers shall closely match doors.
- E. Anti-microbial Coating: All hand-operated hardware (levers, pulls, push bars, push plates, paddles, and panic bars) shall be provided with an anti-microbial/anti-fungal coating that has passed ASTM E2180 tests. Coating to consist of ionic silver (Ag+). Silver ions surround bacterial cells, inhibiting growth of bacteria, mold, and mildew by blockading food and respiration supplies.

**2.26 BASE METALS**

- A. Apply specified U.S. Standard finishes on different base metals as following:

| Finish | Base Metal      |
|--------|-----------------|
| 612    | Steel           |
| 612    | Brass or bronze |
| 630    | Stainless steel |

**PART 3 - EXECUTION****3.1 HARDWARE HEIGHTS**

- A. For new buildings locate hardware on doors at heights specified below, with all hand-operated hardware centered within 34 inches to 48 inches, unless otherwise noted:
- B. Hardware Heights from Finished Floor:
1. Exit devices centerline of strike (where applicable) 40-5/16 inches.
  2. Locksets and latch sets centerline of strike 40-5/16 inches.
  3. Deadlocks centerline of strike 48 inches.
  4. Hospital arm pull 46 inches to centerline of bottom supporting bracket.
  5. Centerline of door pulls to be 40 inches.
  6. Push plates and push-pull shall be 50 inches to top of plate.
  7. Push-pull latch to be 40-5/16 inches to centerline of strike.
  8. Locate other hardware at standard commercial heights. Locate push and pull plates to prevent conflict with other hardware.

**3.2 INSTALLATION**

- A. Closer devices, including those with hold-open features, shall be equipped and mounted to provide maximum door opening permitted by building construction or equipment. Closers shall be mounted on side of door inside rooms, inside stairs, and away from corridors. At exterior doors, closers shall be mounted on interior side. Where closers are mounted on doors they shall be mounted with sex nuts and bolts; foot shall be fastened to frame with machine screws.

## B. Hinge Size Requirements:

| Door Thickness                         | Door Width                              | Hinge Height |
|--|---|--------------|
| 1-3/4 inch                             | 3 feet and less                         | 4-1/2 inches |
| 1-3/4 inch                             | Over 3 feet but<br>not more than 4 feet | 5 inches     |
| 1-3/8 inch (hollow<br>core wood doors) | Not over 4 feet                         | 4-1/2 inches |

C. Hinge leaves shall be sufficiently wide to allow doors to swing clear of door frame trim and surrounding conditions.

D. Where new hinges are specified for new doors in existing frames or existing doors in new frames, sizes of new hinges shall match sizes of existing hinges; or, contractor may reuse existing hinges provided hinges are restored to satisfactory operating condition as approved by Resident Engineer. Existing hinges shall not be reused on door openings having new doors and new frames. Coordinate preparation for hinge cut-outs and screw-hole locations on doors and frames.

## E. Hinges Required Per Door:

|   |         |
|---|---------|
| Doors 5 ft. or less in height                         | 2 butts |
| Doors over 5 ft. high and not over 7 ft. 6 in. high   | 3 butts |
| Doors over 7 feet 6 inches high                       | 4 butts |
| Dutch type doors                                      | 4 butts |
| Doors with spring hinges 4 feet 6 inches high or less | 2 butts |
| Doors with spring hinges over 4 feet 6 inches         | 3 butts |

F. Fastenings: Suitable size and type and shall harmonize with hardware as to material and finish. Provide machine screws and lead expansion shields to secure hardware to concrete, ceramic or quarry floor tile, or solid masonry. Fiber or rawl plugs and adhesives are not permitted. All fastenings exposed to weather shall be of nonferrous metal.

G. After locks have been installed; show in presence of Resident Engineer that keys operate their respective locks in accordance with keying requirements. (All keys, Master Key level and above shall be sent Registered Mail to the Medical Center Director along with the bitting list. Also a copy of the invoice shall be sent to the Resident Engineer for his records.) Installation of locks which do not meet specified

keying requirements shall be considered sufficient justification for rejection and replacement of all locks installed on project.

### 3.3 FINAL INSPECTION

A. Installer to provide letter to VA Resident/Project Engineer that upon completion, installer has visited the Project and has accomplished the following:

1. Re-adjust hardware.
2. Evaluate maintenance procedures and recommend changes or additions, and instruct VA personnel.
3. Identify items that have deteriorated or failed.
4. Submit written report identifying problems.

### 3.4 DEMONSTRATION

A. Demonstrate efficacy of mechanical hardware and electrical, and electronic hardware systems, including adjustment and maintenance procedures, to satisfaction of Resident/Project Engineer and VA Locksmith.

### 3.5 HARDWARE SETS

#### SET #1

NOT USED.

#### SET #2

NOT USED.

#### SET #3

Doors: C1-2, C1-4, E1-2, E1-3, E1-4

Description: Sgle. - Corridor, Mechanical, Electrical, Telecomm.

|                        |                           |      |    |
|------------------------|---------------------------|------|----|
| Hinges                 | by door supplier          |      |    |
| 1 Exit Device          | ED5200S 116957            | 612  | RU |
| 1 Interchangeable Core | 8027 VKC1                 |      | RU |
| 1 Door Closer          | CLP7500 M                 | 690  | NO |
| 1 Kickplate            | K1050-8" x 2" LDW 3BE CSK | US10 | RO |
| 1 Door Stop            | 463                       | US10 | RO |
| 1 Sweep                | 345DV x LAR               |      | PE |
| 1 Electric Strike      | 9600 series               | US10 | HE |
| 1 Card Reader          | BY SECURITY CONTRACTOR    |      | HD |
| 1 REX                  | By Security Contractor    |      |    |
| 1 Power Supply         | BPS-24                    |      | SU |

Notes: Balance of hardware including threshold and weather stripping by Door Manufacturer. Access is gained by presenting a valid credential to reader.

This releases the strike allowing door to be opened for a preset time interval. Egress is always free by depressing inside push rail.

**SET #4**

Door: 12, 24C

Description: Sgle. - Front Porch, Dining Room Entry

|                      |                           |      |    |
|----------------------|---------------------------|------|----|
| Hinges               | by door supplier          |      |    |
| 1 Exit Device        | ED5200S 116957            | 612  | RU |
| 2 Door Switch        | 661                       |      | NO |
| 1 Automatic Operator | 5930                      | 690  | NO |
| 1 Kickplate          | K1050 8" x 2" LDW 3BE CSK | US10 | RO |
| 1 Door Stop          | 463                       | US10 | RO |
| 1 Electric Strike    | 9600 series               | US10 | HE |
| 1 Card Reader        | BY SECURITY CONTRACTOR    |      | HD |
| 1 Power Supply       | BPS-24                    |      | SU |

Notes: Balance of hardware including threshold and weather stripping by Door Manufacturer. After hours, exterior switch is shunted and access is gained by presenting a valid credential to the reader. This releases the strike and initiates the opening cycle of the operator. Egress is similar except cycle is initiated by wall switch.

**SET #5**

Doors: P1-4

Description: Sgle. - Screen Doors

Note: All hardware by Screen Door Supplier.

**SET #6**

Doors: C1-6, C1-8, 24A, 24B

Description: Sgle. - Screen Porch Entry, Telecomm.

|                            |                           |      |     |
|----------------------------|---------------------------|------|-----|
| 1 Hinges                   | by door supplier          |      |     |
| 1 Mortise Lock (Storeroom) | ML2057 116T               | 612  | RU  |
| 1 Interchangeable Core     | 8027 VKC1                 |      | RU  |
| 1 Electric Strike          | HES 1006 12/24 LBM        | 630  | HES |
| 1 Card Reader              | By Security Contractor    |      |     |
| 1 REX                      | By Security Contractor    |      |     |
| 1 Power Supply             | BPS-24                    |      | SU  |
| 1 Door Closer              | CLP7500 M                 | 690  | NO  |
| 1 Kickplate                | K1050-8" x 2" LDW 3BE CSK | US10 | RO  |
| 1 Door Stop                | 463                       | US10 | RO  |

NOTE: Balance of hardware including threshold and perimeter seal by Door and Frame Supplier. Access is gained by presenting a valid credential to reader. This releases the strike allowing door to be opened for a preset time interval. Egress is always free by using the inside lever.

**SET #7**

NOT USED.

**SET #8**

Doors: P1-3, CC1, CC1A

Description: Sgle. - Aluminum Storefront

|                        |                        |      |    |
|------------------------|------------------------|------|----|
| 1 Pivot Set            | 195                    | 612  | RX |
| 1 Intermediate Pivot   | M19                    | 612  | RX |
| 1 Exit Device          | ED5200S 116957         | 612  | RU |
| 1 Interchangeable Core | 8027 VKC1              |      | RU |
| 1 Door Closer          | CLP7500 M              | 690  | NO |
| 1 Door Stop            | 463                    | US10 | RO |
| 1 Electric Strike      | 9600 series            | US10 | HE |
| 1 Card Reader          | BY SECURITY CONTRACTOR |      | HD |
| 1 REX                  | By Security Contractor |      |    |
| 1 Power Supply         | BPS-24                 |      | SU |

Notes: Balance of hardware including threshold and weatherstripping by Door Manufacturer. Access is gained by presenting a valid credential to reader. This releases the strike allowing door to be opened for a preset time interval. Egress is always free by depressing inside push rail.

**SET #9**

Doors: 31

Description: Sgle. - Nursing Administrative Office

|                         |                       |      |    |
|-------------------------|-----------------------|------|----|
| 4 Hinges                | TA714 4-1/2" x 4-1/2" | US10 | MK |
| 1 Mortise Lock (office) | ML2051 116T CT7B PCS  | 612  | RU |
| 1 Interchangeable Core  | 8027 VKC1             |      | RU |
| 1 Wall Stop             | 409                   | US10 | RO |
| 1 Gasketing             | HSS2000xS88D x LAR    |      | PE |
| 3 Silencer              | 609                   |      | RO |

**SET #10**

NOT USED.

**SET #11**

Doors: C1-1, C1-5

## Description: Pair - Dble. Egress

|  |                           |      |    |
|--|---------------------------|------|----|
| 8 Heavyweight Hinge                              | TA786 5" x 4-1/2"         | US10 | MK |
| 2 Exit Device (surface<br>Vertical rod, passage) | ED5470B M55               | 612  | RU |
| 2 Door Closer                                    | PR7500 M                  | 690  | NO |
| 2 Kickplate                                      | K1050-8" x 2" LDW 3BE CSK | US10 | RO |
| 2 Electromagnetic Holder                         | 999 120VAC                | 690  | RF |
| 1 Gasketing                                      | HSS2000xS88D x LAR        |      | PE |
| 1 Astragal                                       | 375DR x LAR               |      | PE |
| 1 Riser Diagram                                  | RD                        |      | RU |
| 1 Wiring Diagram                                 | WD                        |      | RU |

NOTE: Doors are normally held open by magnetic holders. Holders must be wired to fire alarm to release immediately in the event alarm is triggered.

**SET #12**

Doors: 39

## Description: Sgle. - Domestic Kitchen W/HO

|                          |                           |      |    |
|--------------------------|---------------------------|------|----|
| 4 Hinges                 | TA714 4-1/2" x 4-1/2"     | US10 | MK |
| 1 Mortise Lock (passage) | ML2010 116T               | 612  | RU |
| 1 Door Closer            | PR7500 M                  | 690  | NO |
| 1 Kickplate              | K1050-8" x 2" LDW 3BE CSK | US10 | RO |
| 1 Electromagnetic Holder | 999 120VAC                | 690  | RF |
| 1 Wall Stop              | 409                       | US10 | RO |
| 1 Gasketing              | HSS2000xS88D x LAR        |      | PE |
| 1 Riser Diagram          | RD                        |      | RU |
| 1 Wiring Diagram         | WD                        |      | RU |

Notes: Door is normally held open by Electromagnetic Holder. Holder must be wired to fire alarm to release immediately if alarm is triggered.

**SET #13**

Doors: 40, 40A

## Description: Sgle. - Pantry

|                            |                       |      |    |
|----------------------------|-----------------------|------|----|
| 4 Hinges                   | TA714 4-1/2" x 4-1/2" | US10 | MK |
| 1 Mortise Lock (classroom) | ML2055 116T CT7B PCS  | 612  | RU |
| 1 Interchangeable Core     | 8027 VKC1             |      | RU |
| 1 Wall Stop                | 409                   | US10 | RO |
| 3 Silencer                 | 609                   |      | RO |

**SET #14**

Doors: 13

## Description: Sgle. - Quiet Room



|                          |                       |      |    |
|--------------------------|-----------------------|------|----|
| 4 Hinges                 | TA714 4-1/2" x 4-1/2" | US10 | MK |
| 1 Mortise Lock (passage) | ML2010 116T           | 612  | RU |
| 1 Wall Stop              | 409                   | US10 | RO |
| 1 Gasketing              | HSS2000xS88D x LAR    |      | PE |

**SET #15**

Doors: E1-1A

Description: Sgle. - Receiving Room

|                            |                           |      |    |
|----------------------------|---------------------------|------|----|
| 4 Hinges                   | TA714 4-1/2" x 4-1/2"     | US10 | MK |
| 1 Mortise Lock (storeroom) | ML2057 116T CT7B          | 612  | RU |
| 1 Interchangeable Core     | 8027 VKC1                 |      | RU |
| 1 Door Closer              | 7500 M                    | 690  | NO |
| 1 Kickplate                | K1050-8" x 2" LDW 3BE CSK | US10 | RO |
| 1 Wall Stop                | 409                       | US10 | RO |
| 1 Gasketing                | S88D x LAR                |      | PE |

**SET #16**

Doors: 16

Description: Sgle. - Resident Storage

|                            |                           |      |    |
|----------------------------|---------------------------|------|----|
| 4 Hinges                   | TA714 NRP 4-1/2" x 4-1/2" | US10 | MK |
| 1 Mortise Lock (storeroom) | ML2057 116T CT7B          | 612  | RU |
| 1 Interchangeable Core     | 8027 VKC1                 |      | RU |
| 1 Door Closer              | PR7500 M                  | 690  | NO |
| 1 Wall Stop                | 409                       | US10 | RO |
| 1 Gasketing                | HSS2000xS88D x LAR        |      | PE |

**SET #17**

Doors: 17, 18, 20

Description: Sgle. - Soiled, Clean Utility, Equipment Storage

|                            |                           |      |    |
|----------------------------|---------------------------|------|----|
| 4 Hinges                   | TA714 4-1/2" X 4-1/2"     | US10 | MK |
| 1 Mortise Lock (storeroom) | ML2057 116T CT7B          | 612  | RU |
| 1 Interchangeable Core     | 8027 VKC1                 |      | RU |
| 1 Door Closer              | 7500 M                    | 690  | NO |
| 1 Kickplate                | K1050-8" x 2" LDW 3BE CSK | US10 | RO |
| 1 Wall Stop                | 409                       | US10 | RO |
| 1 Gasketing                | HSS2000xS88D x LAR        |      | PE |

**SET #18**

Doors: 19

Description: Sgle. - Meds Room

|                            |                        |      |     |
|----------------------------|------------------------|------|-----|
| 4 Hinges                   | TA714 4-1/2" X 4-1/2"  | US10 | MK  |
| 1 Mortise Lock (storeroom) | ML2057 116T CT7B       | 612  | RU  |
| 1 Interchangeable Core     | 8027                   | VKC1 | RU  |
| 1 Electric Strike          | HES 1006 12/24 LBM     | 630  | HES |
| 1 Card Reader              | By Security Contractor |      |     |
| 1 Power Supply             | BPS-12/24              |      | SU  |
| 1 Door Closer              | 7500 M                 | 690  | NO  |
| 1 Wall Stop                | 409                    | US10 | RO  |
| 1 Gasketing                | HSS2000xS88D x LAR     |      | PE  |

**SET #19**

Doors: 32A, 32B

Description: Sgle. - Resident Laundry

|                          |                           |      |    |
|--------------------------|---------------------------|------|----|
| 4 Hinges                 | TA714 4-1/2" X 4-1/2"     | US10 | MK |
| 1 Mortise Lock (passage) | ML2010 116T               | 612  | RU |
| 1 Door Closer            | 7500 M                    | 690  | NO |
| 1 Kickplate              | K1050-8" x 2" LDW 3BE CSK | US10 | RO |
| 1 Wall Stop              | 409                       | US10 | RO |
| 1 Gasketing              | HSS2000xS88D x LAR        |      | PE |

**SET #20**

Doors: 33, 37

Description: Sgle. - Visitor Toilet, Bath Suite

|                    |                        |       |    |
|--------------------|------------------------|-------|----|
| 4 Hinges           | TA714 4 1/2 X 4 1/2    | 612   | MK |
| 1 Privacy Set      | ML2020 116T M19V       | 612   | RU |
| 1 Closer           | PR7500M                | 690   | NO |
| 1 Kickplate        | K1050 8" x LAR 3BE CSK | 612   | RO |
| 3 Door Silencers   | 609                    | GREY  | RO |
| 1 Intum. Door Seal | HSS2000 X LAR          | GRAP. | PE |

**SET #21**

Doors: 34

Description: Sgle. - HAC

|                            |                           |      |    |
|----------------------------|---------------------------|------|----|
| 4 Hinges                   | TA714 NRP 4-1/2" X 4-1/2" | US10 | MK |
| 1 Mortise Lock (storeroom) | ML2057 116T CT7B          | 612  | RU |
| 1 Interchangeable Core     | 8027 VKC1                 |      | RU |
| 1 Closer/Holder            | CLP7500T                  | 690  | NO |
| 1 Kickplate                | K1050-8" x 2" LDW 3BE CSK | US10 | RO |
| 1 Gasketing                | HSS2000xS88D x LAR        |      | PE |
| 3 Silencer                 | 609                       |      | RO |

**SET #22**

Doors: 35, 36

Description: Pair - Clean Lin., Wheelchair Stor.

|                             |                           |      |    |
|-----------------------------|---------------------------|------|----|
| 8 Hinges                    | TA714 NRP 4-1/2" X 4-1/2" | US10 | MK |
| 2 Flush Bolt                | 555 - 24"/12"             | US10 | RO |
| 1 Dust Proof Strike         | 570                       | US10 | RO |
| 1 Mortise Lock (storeroom)  | ML2057 116T CT7B          | 612  | RU |
| 1 Interchangeable Core      | 8027 VKC1                 |      | RU |
| 1 Concealed Overhead Holder | 1-X26                     | 612E | RF |
| 1 Gasketing                 | HSS2000xS88D x LAR        |      | PE |
| 2 Silencer                  | 609                       |      | RO |

**SET #23**

Doors: A-1, A-2

Description: Sgle. - Attic Doors

|                            |                           |      |    |
|----------------------------|---------------------------|------|----|
| 3 Hinges                   | TA714 NRP 4-1/2" X 4-1/2" | US10 | MK |
| 1 Mortise Lock (storeroom) | ML2057 116T CT7B          | 612  | RU |
| 1 Interchangeable Core     | 8027 VKC1                 |      | RU |
| 1 Door Closer              | PR7500 M                  | 690  | NO |
| 1 Wall Stop                | 409                       | US10 | RO |
| 1 Gasketing                | S88D x LAR                |      | PE |

**SET #24**

Doors: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

Description: Sgle. - Resident Entry, Therapy

|                            |                      |      |    |
|----------------------------|----------------------|------|----|
| 4 Heavyweight Hinges       | TA786 5" x 4-1/2"    | US10 | MK |
| 1 Mortise Lock (classroom) | ML2055 116T CT7B PCS | 612  | RU |
| 1 Interchangeable Core     | 8027 VKC1            |      | RU |
| 1 Wall Stop                | 409                  | US10 | RO |
| 1 Gasketing                | HSS2000xS88D x LAR   |      | PE |

**SET #25**

Doors: 14, 15, 22, 23, 25, 26, 27, 28, 29, 30

Description: Sgle. - Resident Bathrooms

|                             |                       |      |    |
|-----------------------------|-----------------------|------|----|
| 4 Hinges                    | TA714 4-1/2" x 4-1/2" | US10 | MK |
| 1 Mortise Lock (privacy)    | ML2020 116T M19V      | 612  | RU |
| 1 Concealed Overhead Holder | 1-X26                 | 612E | RF |
| 3 Silencer                  | 609                   |      | RO |

**SET #26**

Doors: E1-1B

Description: Roll-Up Doors

Note: All hardware by Roll-Up Door Supplier.

- - - E N D - - -



**SECTION 09 06 00**  
**SCHEDULE FOR FINISHES**

**PART I - GENERAL****1.1 DESCRIPTION**

A. This section contains a coordinated system in which requirements for materials specified in other sections shown are identified by abbreviated material names and finish codes in the room finish schedule or shown for other locations.

**1.2 MANUFACTURERS**

A. Manufacturer's trade names and numbers used herein are only to identify colors, finishes, textures and patterns. Products of other manufacturer's equivalent to colors, finishes, textures and patterns of manufacturers listed that meet requirements of technical specifications will be acceptable upon approval in writing by contracting officer for finish requirements. If no color is designated, selection shall be from manufacturer's full range for item specified.

**1.3 SUBMITTALS**

A. Submit in accordance with SECTION 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES—provide quadruplicate samples for color approval of materials and finishes specified in this section.

1. COLOR SLIDES-INTERIOR VIEWS:

| Room Number and Name    | Item/View to be Photographed |
|-------------------------|------------------------------|
| 1. Room 38, Living Area | East/West Views              |
| 2. Room 24, Dining Area | East/West Views              |
| 3. Typical Patient Room | Views all directions.        |

**1.4 APPLICABLE PUBLICATIONS**

A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in text by basic designation only.

B. MASTER PAINTING INSTITUTE: (MPI)

2001.....Architectural Painting Specification Manual

**PART 2- PRODUCTS****2.1 COLOR SLIDES**

A. Size 24 x 35 mm.

B. Labeled for:

1. Building name and Number.
2. Room Name and Number.

**2.2 DIVISION 32 - EXTERIOR IMPROVEMENTS**

A. Section 32 17 23, PAVEMENT MARKINGS.

| Color | Manufacturer | MFG. Color Name/No. |
|-------|--------------|---------------------|
| Blue  |              |                     |
| White |              |                     |

B. SITE AND STREET FURNISHINGS

| Item              | Style Name/No. | Finish | Manufacture              | Mfg. Color Name/No. |
|-------------------|----------------|--------|--------------------------|---------------------|
| Benches           | Wellspring     | Teak   | LandscapeForms           | Natural             |
| Chairs            | Wellspring     | Teak   | LandscapeForms           | Natural             |
| Tables            | Wellspring     | Teak   | LandscapeForms           | Natural             |
| Bike Rack         | Wellspring     | Metal  | Canterbury International | Black               |
| Trash Receptacles | Wellspring     | Teak   | LandscapeForms           | Natural             |

**2.3 DIVISION 04 - MASONRY**

A. Section 04 05 13, MASONRY MORTARING

| Finish Code | Manufacturer | Mfg. Color Name             |
|-------------|--------------|-----------------------------|
| None        |              | Match mortar at Building #5 |

## B. Section 04 20 00, UNIT MASONRY

| 1. FACE BRICK (FB) |                |         |              |                       |
|--------------------|----------------|---------|--------------|-----------------------|
| Finish Code        | Size           | Pattern | Manufacturer | Mfg. Color Name/No.   |
| Face Brick Veneer  | Modular        |         | Hanson Brick | Red Semi-smooth - 242 |
| Thin Brick Veneer  | Thin (Modular) |         | Hanson Brick | Red Semi-smooth - 242 |

## C. Section 04 72 00, CAST STONE MASONRY

| Stone Type | Color                            | Manufacturer | Mfg. Color & Texture No. |
|------------|----------------------------------|--------------|--------------------------|
| —          | Match Sill color at Building #5. |              |                          |

**2.4 DIVISION 05 - METALS**

## A. Sections 05 50 00, METAL FABRICATION and 05 51 33, METAL LADDERS

| Item                 | Finish                            |
|----------------------|-----------------------------------|
| Loose Lintels        | Paint to match opening trim color |
| Aluminum Ladders     | Mill Finish                       |
| Iron                 | Paint Black                       |
| Copper-Alloy: Bronze | Lacquer: Medium - Satin           |

**2.5 DIVISION 06 WOOD, PLASTICS, AND COMPOSITES**

## A. Section 06 20 00, FINISH CARPENTRY

| Room No. and Name | Component                          | Finish/Color                        |
|-------------------|------------------------------------|-------------------------------------|
| Buildings 147     | Cabinets and Trim                  | See Miscellaneous Building Finishes |
| Buildings 147     | Cabinet Hardware                   | Stainless Steel                     |
| Buildings 147     | Solid Surface Countertops and Trim | Corian/See Color Design Legend      |



## B. Section 06 44 60, ARCHITECTURAL POLYMER COMPOSITE COLUMNS

Section 06 44 70, POLYURETHANE BALUSTRADES

Section 06 66 10, MANUFACTURED TRIM AND ORNAMENTS

| Item | Finish | Color                               |
|------|--------|-------------------------------------|
| All  | Paint  | See Miscellaneous Building Finishes |

**2.6 DIVISION 07 - THERMAL AND MOISTURE PROTECTION**

## A. Section 07 31 13, ASPHALT SHINGLES

| Size      | Shape | Manufacturer | Mfg. Color Name/No.   |
|-----------|-------|--------------|---|
| 18" x 36" | Slate | CertainTeed  | Hatteras, Stormy Night or Similar. Color approved by Architect. |

## B. Section 07 41 13, METAL ROOF PANELS

| Size                    | Shape    | Manufacturer            | Mfg. Color Name/No.   |
|-------------------------|----------|-------------------------|---|
| 16" Wide / Smooth, Flat | Aluminum | Petersen Aluminum Corp. | As selected by Architect from all colors for roofs greater than 2:12 slope, provide SRI 29 or greater; for roofs equal to or less than 2:12 slope, provide SRI 78 or greater. |

## C. Section 07 60 00, FLASHING AND SHEET METAL

| Item                           | Material | Finish                    |
|--------------------------------|----------|---------------------------|
| Flashing at Roof               | Aluminum | As selected by Architect. |
| Hanging Gutters and Downspouts | Aluminum | White                     |

## D. Section 07 92 00, JOINT SEALANTS

| Location                 | Color        | Manufacturer | Manufacturer Color |
|--------------------------|--------------|--------------|--------------------|
| Masonry Sealed Joints    | Match Mortar |              |                    |
| Cast-Stone Sealed Joints | Match Mortar |              |                    |

## 2.7 DIVISION 08 - OPENINGS

## A. Section 08 11 13, HOLLOW METAL DOORS AND FRAMES

| Paint both sides of door and frames same color including ferrous metal louvers, and hardware attached to door |                               |
|---|-------------------------------|
| Component   | Color of Paint Type and Gloss |
| Door  | White, Semi-gloss             |
| Frame   | White, Semi-gloss             |

## B. Section 08 14 33, STILE AND RAIL WOOD DOORS

| Component                      | Finish/Color  |
|--------------------------------|---------------|
| Exterior Doors, Aluminum Clad  | Paint - White |
| Exterior Frames, Aluminum Clad | Paint - White |
| Interior Doors                 | Paint - White |
| Interior Frames                | Paint - White |

## C. Section 08 31 13, ACCESS DOORS AND FRAMES

| Material | Finish/Color                        |
|----------|-------------------------------------|
| Steel    | Paint - Match Ceiling or Wall Color |

## D. Section 08 36 13, SECTIONAL DOORS

| Material | Manufacturer       | Finish/Color |
|----------|--------------------|--------------|
| Steel    | Clopay Corporation | Paint/White  |

## E. Section 08 52 00, WOOD WINDOWS - SINGLE HUNG ALUMINUM CLAD WINDOWS

| Type        | Finish | Glazing   | Manufacturer | Mfg. Color Name/No. |
|-------------|--------|-----------|--------------|---------------------|
| Single Hung | Paint  | Insulated | Marvin       | White               |

## F. Section 08 71 00, DOOR HARDWARE

| Item                        | Material               | Finish              |
|-----------------------------|------------------------|---------------------|
| Hinges                      | Metal, Stainless Steel | 612 (Medium Bronze) |
| Door Closers                | Metal                  | 612, 690            |
| Pivot Sets                  |                        | 612                 |
| Closer/ Holder              |                        | 612, 690            |
| Floor Stops                 |                        | 612                 |
| Door Holders                |                        | 690                 |
| Lock/ Latches               |                        | 612                 |
| Key Cabinet                 |                        |                     |
| Silencers                   |                        | Grey                |
| Kick Mop Plates             | Plastic                | White               |
| Exit Device                 | Metal                  | 612                 |
| Flush Bolts                 | Metal                  | 612                 |
| Door Pulls                  | Metal                  | 612                 |
| Push Plates                 | Metal                  | 612                 |
| Combination Push Pull Plate | Metal                  | 612                 |
| Coordinators                | Metal                  | 612                 |

## G. Section 08 80 00, GLAZING

| Glazing Type          | Manufacturer         | Mfg. Color Name/No. |
|-----------------------|----------------------|---------------------|
| Insulating (Exterior) | Low E Insulated      |                     |
| All Interior (U.N.O.) | PPG                  | Clear               |
| Obscure (Interior)    | Supa Door / TruStile | White Lami          |

## H. Section 08 90 00, LOUVERS AND VENTS

| Finish   | Color |
|----------|-------|
| Aluminum | White |

**2.8 DIVISION 09 - FINISHES**

## A. Section 09 30 13, CERAMIC TILING

| 1. CERAMIC MOSAIC TILE (FT) |         |             |           |              |                      |
|-----------------------------|---------|-------------|-----------|--------------|----------------------|
| Color                       | Size    | Shape       | Pattern   | Manufacturer | Mfg. Color Name/No.  |
| CT7                         | 12 x 12 | Square      | City View | Dal Tile     | CY 03, District Gold |
| CT8                         | 6 x 12  | Rectangular | City View | Dal Tile     | S36C9T, Harbor Mist  |
| CT4                         | 5/8     | Rectangular | PTS Stone | Dal Tile     | SA5358 RANDMS LP     |
| CT9                         | 12 x 12 | Square      | City View | Dal Tile     | CY01, Harbor Mist    |

| 2. Section 09 30 13, MARBLE THRESHOLDS |                |                     |
|--|----------------|---------------------|
| Marble Type                            | Manufacturer   | Mfg. Color Name/No. |
| Georgia Marble                         | Georgia Marble | White               |

## B. Section 09 65 19, RESILIENT TILE FLOORING

| Finish Code | Size    | Material/Component | Manufacturer | Mfg Name/No.                   |
|-------------|---------|--------------------|--------------|--------------------------------|
| VCT1        | 12 x 12 | VCT; Stonetex      | Armstrong    | 52162, Cement                  |
| VWP1        | 4 x 36  | Vinyl Wood Plank   | Centiva      | WP-3321-ETG,<br>American Oak   |
| VWP2        | 4 x 36  | Vinyl Wood Plank   | Centiva      | WP-GW38-ENG, Antique<br>Walnut |
| VWP3        | 4 x 36  | Vinyl Wood Plank   | Centiva      | WP-3309-ENG, Limed<br>Oak      |

## C. Section 09 65 16, VINYL SHEET FLOORING, HEAT WELDED SEAMS (WSF)

| Finish Code | Pattern name | Manufacturer | Mfg. Color Name/No. |
|-------------|--------------|--------------|---------------------|
| SV1, IV1    | Medintone    | Armstrong    | H8313, Natural Tone |

## 1. Section 09 65 16, WELDING RODS (WSF)

| Finish code | Manufacturer | Mfg. Color Name/No. |
|-------------|--------------|---------------------|
| SV          | Armstrong    | Tan                 |

## 2. Section 09 65 16, CAP STRIPS (WSF)

| Finish Code | Manufacturer | Mfg. Color Name/No.     |
|-------------|--------------|-------------------------|
| Aluminum    | Armstrong    | Brushed Aluminum Finish |

## D. Section 09 65 13, RESILIENT BASE AND ACCESSORIES

| Finish Code | Item             | Height | Manufacturer | Mfg Name/No. |
|-------------|------------------|--------|--------------|--------------|
| RB          | Rubber Base (RB) | 4"     | Roppe        | #125 Fig     |

## E. Section 09 68 00, CARPETING

| Finish Code | Size    | Pattern direction | Manufacturer | Mfg. Color Name/No.                                       |
|-------------|---------|-------------------|--------------|---|
| CPT1        | 24 x 24 | NON               | J+J/Invision | Origin Series, Pattern:<br>Baroque - 1473<br>Color: Plush |

## F. Section 09 91 00, PAINT AND COATINGS

## 1. MPI Gloss and Sheen Standards

|               |   | Gloss @60          | Sheen @85     |
|---------------|---|--------------------|---------------|
| Gloss Level 1 | a traditional matte finish-flat               | max 5 units, and   | max 10 units  |
| Gloss Level 2 | a high side sheen flat-"a velvet-like" finish | max10 units, and   | 10-35 units   |
| Gloss Level 3 | a traditional "egg-shell like" finish         | 10-25 units, and   | 10-35 units   |
| Gloss Level 4 | a "satin-like" finish                         | 20-35 units, and   | min. 35 units |
| Gloss Level 5 | a traditional semi-gloss                      | 35-70 units        |               |
| Gloss Level 6 | a traditional gloss                           | 70-85 units        |               |
| Gloss level 7 | a high gloss                                  | more than 85 units |               |

| 2. Location  | Gloss   |
|--|---------|
| Walls  | Level 3 |
| Trim - Paint   | Level 5 |
| Trim - Stain   | Level 5 |
| Ceiling  | Level 2 |
| Walls in "wet areas": Baths, HAC, Laundry, Bath Suite, Toilets, Showers, Treatment Room, Screening Room, Exam Room | Level 4 |

| 3. Paint Code | Manufacturer   | Mfg. Color Name/No.         |
|---------------|----------------|-----------------------------|
| PT1           | Benjamin Moore | OC-10, White Sand           |
| PT2           | Benjamin Moore | HC-4, Hawthorne Yellow      |
| PT3           | Benjamin Moore | HC-5, Weston Flax           |
| PT4           | Benjamin Moore | OC-121, Mountain Peak White |
| PT10          | Benjamin Moore | HC-153, Marlboro Blue       |
| PT6           | Benjamin Moore | 722, Dolphins Cove          |
| PT7           | Benjamin Moore | HC-26, Monroe Bisque        |
| PT11          | Benjamin Moore | HC-118, Sherwood Green      |
| PT12          | Benjamin Moore | HC-51, Audubon Russet       |
| PT13          | Benjamin Moore | HC-137, Mill Spring Blue    |
| PT14          | Benjamin Moore | HC-24, Pittsfield Buff      |
| PT15          | Benjamin Moore | OC-10, White Sand           |
| APC           | Benjamin Moore | C435, Clear                 |

| 4. Stain Code (S) | Manufacturer     | Mfg. Color Name/No. |
|-------------------|------------------|---------------------|
| S                 | Sherwin Williams | Cherry              |

## 2.9 DIVISION 10 - SPECIALTIES

### A. Section 10 14 00, SIGNAGE

| Item                | Manufacturer             | Mfg. Color Name/No.                                 |
|---------------------|--------------------------|---|
| Interior Sign Frame | Creative Signage Systems | Beveled Satin Silver - Rose Gold                    |
| All Interior        | Creative Signage Systems | Match existing in Building No. 5 and Building No. 1 |
| Exterior            | Creative Signage Systems | Match existing in adjacent areas.                   |

## B. Section 10 21 23, HOSPITAL CUBICLE CURTAINS AND INTRAVENOUS SUPPORT TRACKS

| Finish Code | Manufacturer | Mfg. Color Name/No. |
|-------------|--------------|---------------------|
| Paint       | Imperial     | White               |

## C. Section 10 26 00, WALL AND DOOR PROTECTION

| Item          | Material | Manufacturer | Mfg. Color Name/No.       |
|---------------|----------|--------------|---------------------------|
| Corner Guards | Plastic  | C/S Acrovyn  | 949 White, Pebblette      |
| Corner Guards | Plastic  | C/S Acrovyn  | 102 Desert Sand Pebblette |

## D. Section 10 28 00, TOILET, BATH AND LAUNDRY ACCESSORIES

| Item | Material / Finish / Color                         |
|------|---|
| All  | Manufacturers Standard unless specified otherwise |

## E. Section 10 44 13, FIRE EXTINGUISHER CABINETS

| Component        | Material | Finish      |
|------------------|----------|-------------|
| Recessed Cabinet | Metal    | White Doors |

**2.10 DIVISION 22 - PLUMBING**

## A. Section 22 40 00, PLUMBING FIXTURES AND TRIM

| Item            | Color                                 |
|-----------------|---------------------------------------|
| Water Closet    | White                                 |
| Bathtubs        | White                                 |
| Lavatories      | White                                 |
| Service Sink    | White with Stainless Steel Rim Guards |
| Undermount Sink | Stainless Steel                       |



**2.11 DIVISION 16 - ELECTRICAL****A. Section 26 51 00, BUILDING LIGHTING INTERIOR**

| Fixture Type      | Exterior Finish    | Color                    |
|-------------------|--------------------|--------------------------|
| G-Wall Sconce     | Metal              | Brushed Nickel           |
| Q-Vanity Light    | Metal              | Brushed Nickel           |
| H-Wall Sconce     | Metal              | As selected by Architect |
| C - Cabinet Light | Heavy Duty Plastic | White                    |

**B. Section 26 56 00, SITE LIGHTING**

| Type and Component | Exterior Finish | Manufacturer | Mfg. Name/No.  |
|--------------------|-----------------|--------------|----------------|
| AA, AB, AB1, BB    | Black           | Sternberg    | Match Existing |
| M                  | Black           | Sternberg    | F32TBX/830/A   |

**PART III EXECUTION****3.1 FINISH SCHEDULES AND MISCELLANEOUS ABBREVIATIONS**

- A. See attached Finish Schedule, Miscellaneous Building Finishes, and Color Design Legend for the OIF/OEF Cottage (Building 147).

**3.2 FINISH SCHEDULE SYMBOLS**

Symbol Definition

- No color required  
 --- No finishes

**3.3 FINISH SCHEDULE NOTES**

- A. See attached Finish Schedule, Miscellaneous Building Finishes, and Color Design Legend for the OIF/OEF Cottage (Building 147).

**3.4 ROOM FINISH SCHEDULE**

- A. See attached Finish Schedule, Miscellaneous Building Finishes, and Color Design Legend for the OIF/OEF Cottage (Building 147).

- - - E N D - - -

# FINISH SCHEDULE – NOVEMBER 2014

OIF/OEF COTTAGE (BLDG. 147) – TUSCALOOSA, ALABAMA

## MATERIALS LEGEND FOR THE FINISH SCHEDULE

|      |  |
|------|--|
| ADO  | AUTOMATIC DOOR OPERATOR                          |
| AT   | ACOUSTICAL CEILING (TILE)                        |
| BR   | BRICK PAVERS (UNIT PAVERS)                       |
| BR   | BRICK (UNIT MASONARY)                            |
| C    | CONCRETE   |
| CC   | COLOR CODE                                       |
| CMU  | CONCRETE MASONRY UNITS (UNIT MASONARY)           |
| CP   | BROADLOOM CARPET WITH BOUND EDGE                 |
| CPT  | CARPET TILE                                      |
| CT   | CERAMIC TILE (FLOOR, BASE, AND WALL)             |
| EC   | ELEVATOR CEILING PANELS                          |
| EP   | ELEVATOR WALL PANELS                             |
| EPY  | EPOXY (COATINGS)                                 |
| EXP  | EXPOSED  |
| GL   | GLASS (GLAZING)                                  |
| GWB  | GYPSUM WALLBOARD SYSTEMS                         |
| HW   | HARDWARE SET (FINISH OR BUILDERS HARDWARE)       |
| MAT  | MATERIAL   |
| NF   | NATURAL FINISH                                   |
| NO   | NUMBER   |
| P    | PAINT (EXTERIOR, INTERIOR, TRANSPARENT FINISHES) |
| PC   | PRECAST (ARCHITECTURAL PRECAST CONCRETE PAVERS)  |
| PP   | PORCELAIN PAVERS                                 |
| PW   | PLYWOOD FLOORING                                 |
| RB   | RESILIENT BASE (RUBBER, VINYL)                   |
| RF   | RAISED RUBBER FLOORING                           |
| SC   | HIGH BUILD GLAZED COATING (SPECIAL COATING)      |
| SPEC | SPECIAL (ARCHITECT'S CHOICE)                     |
| ST   | STONE (CAST)                                     |
| RSF  | RESILIENT SHEET FLOORING                         |
| VCT  | VINYL COMPOSITION TILE                           |
| VWP  | VINYL WOOD PLANK                                 |
| WD   | WOOD   |
| WSF  | WELDED SEAM SHEET FLOORING                       |

## **NOTES IN THE REMARKS COLUMN OF THE FINISH SCHEDULE**

- A. SEE ARCHITECTURAL DRAWINGS FOR CERAMIC TILE ACCENT WALL TILE; CT11, LOCATIONS AND COLORATIONS.
- B. REFER TO FLOOR PATTERN PLANS FOR PAINT START STOP POINTS.
- C. FLOOR TO BE SCORED CONCRETE, SEE ARCHITECTURAL DRAWINGS FOR PATTERN STYLE.
- D. SEE ARCHITECTURAL DRAWINGS FOR PORCELAIN PAVER FLOORING PATTERNS AND DETAILS.
- E. WALLS TO HAVE CERAMIC TILE WAINSCOT WITH PAINTED WOOD TOP CAP. SEE ARCHITECTURAL DRAWINGS FOR LIMITS OF TILE.
- F. SEE ARCHITECTURAL DRAWINGS FOR VINYL WOOD PLANK FLOORING PATTERNS AND DETAILS.
- G. SEE ARCHITECTURAL DRAWINGS FOR DEDUCTIVE ALTERNATES.
- H. WALL PANELING TO MATCH COLOR OF KITCHEN CABINETS. REFER TO MISCELLANEOUS BUILDING FINISHES DOCUMENT NOTE 10 FOR ADDITIONAL FINISH INFORMATION.
- J. SEE ITEM 14 ON MISCELLANEOUS BUILDING FINISHES FOR WALL PROTECTION COLOR SELECTIONS AND APPLICATIONS.
- K. PAINT GYP CEILINGS PT15.
- L. SEE ITEM 15 ON MISCELLANEOUS BUILDING FINISHES FOR CASEWORK FINISH SELECTIONS.

# FINISH SCHEDULE - NOVEMBER 2014

VA COTTAGE VAMC  
BLDG # 147  
TUSCALOOSA, ALABAMA

|    | A     | B                    | C     | D         | E    | F          | G      | H        | I      | J        | K      | L        | M      | N        | O       | P         | Q       | R       |
|----|-------|----------------------|-------|-----------|------|------------|--------|----------|--------|----------|--------|----------|--------|----------|---------|-----------|---------|---------|
| 1  | RM NO | Rm. Name             | FLOOR | FLR COLOR | BASE | BASE COLOR | N WALL | N COLOR  | E WALL | E COLOR  | S WALL | S COLOR  | W WALL | W COLOR  | CEILING | CLG COLOR | CLG HGT | REMARKS |
| 2  | 01    | RESIDENT BEDROOM     | VWP   | VWP1      | WD   | WD1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   |         |
| 3  | 02    | RESIDENT BEDROOM     | VWP   | VWP1      | WD   | WD1        | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB     | PT4       | 9'-0"   |         |
| 4  | 03    | RESIDENT BEDROOM     | VWP   | VWP1      | WD   | WD1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   |         |
| 5  | 04    | RESIDENT BEDROOM     | VWP   | VWP1      | WD   | WD1        | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB     | PT4       | 9'-0"   |         |
| 6  | 05    | RESIDENT BEDROOM     | VWP   | VWP1      | WD   | WD1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   |         |
| 7  | 06    | RESIDENT BEDROOM     | VWP   | VWP1      | WD   | WD1        | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB     | PT4       | 9'-0"   |         |
| 8  | 07    | RESIDENT BEDROOM     | VWP   | VWP1      | WD   | WD1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   |         |
| 9  | 08    | RESIDENT BEDROOM     | VWP   | VWP1      | WD   | WD1        | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB     | PT4       | 9'-0"   |         |
| 10 | 09    | RESIDENT BEDROOM     | VWP   | VWP1      | WD   | WD1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   |         |
| 11 | 10    | RESIDENT BEDROOM     | VWP   | VWP1      | WD   | WD1        | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB     | PT4       | 9'-0"   |         |
| 12 | 11    | THERAPY              | VWP   | VWP1      | WD   | WD1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   |         |
| 13 | 11A   | STAFF TOILET         | CT    | CT7       | CT   | CT8        | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB     | PT4       | 9'-0"   | E       |
| 14 | 12    | VESTIBULE            | VWP   | VWP1      | WD   | WD1        | GWB    | PT11     | GWB    | PT11     | ---    | ---      | GWB    | PT11     | GWB     | PT4,PT15  | 10'-8"  | B,F,J,K |
| 15 | 13    | QUIET ROOM/ DEN      | CPT   | CPT1      | RB   | RB1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 10'-8"  |         |
| 16 | 14    | RESIDENT BATHROOM    | CT    | CT7       | CT   | CT8        | CT     | CT9      | CT     | CT9      | CT     | CT9      | CT     | CT9,CT4  | GWB     | PT4       | 9'-0"   | A       |
| 17 | 15    | RESIDENT BATHROOM    | CT    | CT7       | CT   | CT8        | CT     | CT9      | CT     | CT9,CT11 | CT     | CT9      | CT     | CT9      | GWB     | PT4       | 9'-0"   | A       |
| 18 | 16    | RESIDENT STOR.       | VCT   | VCT1      | RB   | RB1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   | L       |
| 19 | 17    | SOILED UTILITY       | SV    | SV1       | IV   | IV1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   |         |
| 20 | 18    | CLEAN UTILITY        | SV    | SV1       | RB   | RB1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   | L       |
| 21 | 19    | MED. PREP.           | VCT   | VCT1      | RB   | RB1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   | L       |
| 22 | 20    | EQUIPMENT STOR.      | VCT   | VCT1      | RB   | RB1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   |         |
| 23 | 22    | RESIDENT BATHROOM    | CT    | CT7       | CT   | CT8        | CT     | CT9      | CT     | CT9,CT11 | CT     | CT9      | CT     | CT9      | GWB     | PT4       | 9'-0"   | A       |
| 24 | 23    | RESIDENT BATHROOM    | CT    | CT7       | CT   | CT8        | CT     | CT9      | CT     | CT9      | CT     | CT9      | CT     | CT9,CT11 | GWB     | PT4       | 9'-0"   | A       |
| 25 | 24    | DINING               | VWP   | VWP1,2,3  | WD   | WD1        | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB     | PT15      | 11'-8"  | B,F,J   |
| 26 | 25    | RESIDENT BATHROOM    | CT    | CT7       | CT   | CT8        | CT     | CT9      | CT     | CT9,CT11 | CT     | CT9      | CT     | CT9      | GWB     | PT4       | 9'-0"   | A       |
| 27 | 26    | RESIDENT BATHROOM    | CT    | CT7       | CT   | CT8        | CT     | CT9      | CT     | CT9      | CT     | CT9      | CT     | CT9,CT11 | GWB     | PT4       | 9'-0"   | A       |
| 28 | 27    | RESIDENT BATHROOM    | CT    | CT7       | CT   | CT8        | CT     | CT9      | CT     | CT9      | CT     | CT9,CT11 | CT     | CT9      | GWB     | PT4       | 9'-0"   | A       |
| 29 | 28    | RESIDENT BATHROOM    | CT    | CT7       | CT   | CT8        | CT     | CT9,CT4  | CT     | CT9      | CT     | CT9      | CT     | CT9      | GWB     | PT4       | 9'-0"   | A       |
| 30 | 29    | RESIDENT BATHROOM    | CT    | CT7       | CT   | CT8        | CT     | CT9      | CT     | CT9      | CT     | CT9      | CT     | CT9,CT11 | GWB     | PT4       | 9'-0"   | A       |
| 31 | 30    | RESIDENT BATHROOM    | CT    | CT7       | CT   | CT8        | CT     | CT9      | CT     | CT9,CT11 | CT     | CT9      | CT     | CT9      | GWB     | PT4       | 9'-0"   | A       |
| 32 | 31    | NURSING ADMIN OFFICE | VWP   | VWP1      | RB   | RB1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 10'-8"  |         |
| 33 | 32    | RESIDENT LAUNDRY     | CT    | CT7       | CT   | CT8        | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB     | PT4       | 9'-10"  | E       |
| 34 | 33    | VISITOR TOILET       | CT    | CT7       | CT   | CT8        | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB     | PT4       | 9'-0"   | E       |
| 35 | 34    | HAC                  | CT    | CT7       | CT   | CT8        | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB     | PT4       | 9'-0"   | E       |
| 36 | 35    | CLEAN LIN. STOR.     | VWP   | VWP1      | WD   | WD1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   |         |
| 37 | 36    | WHEEL CHAIR STOR.    | VCT   | VCT1      | RB   | RB1        | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB    | PT14     | GWB     | PT4       | 9'-0"   |         |
| 38 | 37    | BATH SUITE           | CT    | CT7       | CT   | CT8        | GWB,CT | CT9,PT14 | GWB,CT | CT9,PT14 | GWB,CT | CT11     | GWB,CT | CT9,PT14 | GWB     | PT4       | 9'-0"   | E       |
| 39 | 38    | LIVING ROOM ACTIVITY | VWP   | VWP1,2,3  | WD   | WD1        | GWB    | PT11     | GWB    | PT11     | GWB    | PT11     | GWB2   | PT11     | GWB     | PT15      | 11'-8"  | B,F     |
| 40 | 39    | DOMESTIC KITCHEN     | VWP   | VWP1      | WD   | WD1        | GWB,WD | PT7      | ---    | ---      | GWB,WD | PT7      | GWB,WD | PT7      | GWB     | PT4,PT15  | 8'-6"   | F,H,J,K |

# FINISH SCHEDULE - NOVEMBER 2014

VA COTTAGE VAMC  
BLDG # 147  
TUSCALOOSA, ALABAMA

|    | A     | B                  | C     | D         | E    | F          | G      | H        | I      | J       | K      | L        | M      | N       | O       | P         | Q       | R       |
|----|-------|--------------------|-------|-----------|------|------------|--------|----------|--------|---------|--------|----------|--------|---------|---------|-----------|---------|---------|
| 1  | RM NO | Rm_Name            | FLOOR | FLR COLOR | BASE | BASE COLOR | N WALL | N COLOR  | E WALL | E COLOR | S WALL | S COLOR  | W WALL | W COLOR | CEILING | CLG COLOR | CLG HGT | REMARKS |
| 41 | 40    | PANTRY             | VCT   | VCT1      | RB   | RB1        | GWB    | PT14     | GWB    | PT14    | GWB    | PT14     | GWB    | PT14    | GWB     | PT4       | 9'-0"   |         |
| 42 | C1-1  | CORRIDOR           | VWP   | VWP1      | WD   | WD1        | GWB    | PT7      | GWB    | PT7     | GWB    | PT7      | GWB    | PT7     | GWB     | PT4       | 9'-10"  | F,J     |
| 43 | C1-2  | CORRIDOR           | VWP   | VWP1      | WD   | WD1        | GWB    | PT7      | GWB    | PT7     | GWB    | PT7      | ---    | ---     | GWB     | PT4       | 9'-10"  | F       |
| 44 | C1-3  | CORRIDOR           | VWP   | VWP1      | WD   | WD1        | ---    | ---      | GWB    | PT7     | ---    | ---      | GWB    | PT7     | GWB     | PT4       | 9'-10"  | F,J     |
| 45 | C1-4  | CORRIDOR           | VWP   | VWP1      | WD   | WD1        | GWB    | PT7      | GWB    | PT7     | GWB    | PT7      | GWB    | PT7     | GWB     | PT4       | 9'-10"  | F,J     |
| 46 | C1-5  | CORRIDOR           | VWP   | VWP1      | WD   | WD1        | GWB    | PT7      | GWB    | PT7     | GWB    | PT7      | GWB    | PT7     | GWB     | PT4       | 9'-10"  | F,J     |
| 47 | C1-6  | CORRIDOR           | VWP   | VWP1      | WD   | WD1        | GWB,WD | PT7      | GWB    | PT7     | GWB    | PT7      | GWB    | PT7     | GWB     | PT4       | 9'-10"  | F,H,J   |
| 48 | C1-7  | CORRIDOR           | VWP   | VWP1      | WD   | WD1        | GWB    | PT7      | GWB    | PT7     | GWB    | PT7      | GWB    | PT7     | GWB     | PT4       | 9'-10"  | F,J     |
| 49 | C1-8  | CORRIDOR           | VWP   | VWP1      | WD   | WD1        | GWB    | PT7      | GWB    | PT7     | GWB    | PT7      | GWB    | PT7     | GWB     | PT4       | 9'-10"  | F,J     |
| 50 | E1-1  | RECEIVING/ STOR.   | C     | CS1       | RB   | RB1        | GWB    | PT14     | GWB    | PT14    | GWB    | PT14     | GWB    | PT14    | GWB     | PT4       | 10'-8"  |         |
| 51 | E1-2  | ELEC.              | C     | CS1       | RB   | RB1        | GWB    | PT14     | GWB    | PT14    | GWB    | PT14     | GWB    | PT14    | GWB     | PT4       | 10'-8"  |         |
| 52 | E1-3  | MECH.              | C     | CS1       | RB   | RB1        | GWB    | PT14     | GWB    | PT14    | GWB    | PT14     | GWB    | PT14    | EXP     | EXP       | ---     |         |
| 53 | E1-4  | TELECOMM.          | C     | CS1       | RB   | RB1        | GWB    | PT14     | GWB    | PT14    | GWB    | PT14     | GWB    | PT14    | GWB     | PT4       | 10'-8"  |         |
| 54 | P1-1  | FRONT PORCH        | C     | CS1       | WD   | EXT TRIM   | WD     | EXT TRIM | ---    | ---     | WD     | EXT TRIM | ---    | ---     | WD      | EXT TRIM  | 9'-9"   | C       |
| 55 | P1-2  | RECEIVING/ PORCH   | C     | CS1       | BR   | ---        | BR     | ---      | BR     | ---     | ---    | ---      | ---    | ---     | WD      | PT6       | 11'-0"  | C       |
| 56 | P1-3  | PORCH              | C     | CS1       | BR   | ---        | ---    | ---      | ---    | ---     | BR     | ---      | BR     | ACT     | ACT     | ---       | 11'-0"  | C       |
| 57 | P1-4  | SCREEN PORCH       | C     | CS1       | BR   | ---        | ---    | ---      | BR     | ---     | BR     | ---      | ---    | ---     | WD      | PT6       | 11'-0"  | C       |
| 58 | A-1   | ATTIC-1            | APC   | ---       | ---  | ---        | ---    | ---      | ---    | ---     | ---    | ---      | GWB    | ---     | ---     | ---       | ---     |         |
| 59 | A-2   | ATTIC-2            | APC   | ---       | ---  | ---        | ---    | ---      | GWB    | ---     | ---    | ---      | ---    | ---     | ---     | ---       | ---     |         |
| 60 | CC1   | CONNECTOR CORRIDOR | VWP   | VWP1      | WD   | WD1        | GWB    | PT7      | GWB    | PT7     | GWB    | PT7      | GWB    | PT7     | ACT     | ---       | 8'-2"   |         |



## MISCELLANEOUS BUILDING FINISHES

**Re: The Cottages – OIF/OEF  
Veterans Administration Medical Center  
Tuscaloosa, Alabama  
SS&A Project No. 2014-031**

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- |    |  |  |
|----|--|--|
| 1. | Hardware   | Satin Bronze, Clear Coated   |
| 2. | Interior Wood Doors                              | Painted<br>Benjamin Moore Paints<br>Color # OC-121, Mountain Peak White<br>(Semi-gloss Finish)         |
| 3. | Interior Wood Trim, Columns<br>and Wood Casework | Painted<br>Benjamin Moore Paints<br>Color # OC-121, Mountain Peak White<br>(Semi-gloss Finish)         |
| 4. | Window Sills                                     | Painted; PT4 in Semi-gloss Finish  |
| 5. | Interior Signage                                 | Match VA Tuscaloosa Standards  |
| 6. | Kitchen Appliances                               | Finish: Satin Stainless Steel<br>On all front and side panels  |
| 7. | Fireplaces                                       | Cottages<br>Dimplex Manufacturing<br>Style # BF 45ST/DX  |
| 8. | Exterior Columns                                 | Painted Finish<br>High Build Epoxy Finish<br>Benjamin Moore Paints<br>Color: Brilliant White           |
| 9. | Exterior Soffits                                 | Painted in High Build Epoxy<br>Benjamin Moore Paints<br>Color: Brilliant White<br>(White like Columns) |



- |     |  |  |
|-----|--|--|
| 10. | Domestic Kitchen Counters<br>In Cottages | A. Countertops & Back Splash –<br>Granite<br>Color: TBD  |
| 11. | Vanities in Resident<br>Bathrooms        | Solid Surface Corian<br>Color: Fossil<br>(White Integral Bowls)  |
| 12. | Interior Wood Wainscots                  | Benjamin Moore Paints<br>Color: # OC-121, Mountain Peak White<br>(Semi-gloss Finish)   |
| 13. | Exterior Front Door                      | Cottage #149: Painted in Hi-Gloss Finish<br>Benjamin Moore Paints<br>Color: # 2160-30 Maple Sugar  |
| 14. | Corner Guards<br>Cottages                | <div style="margin-left: 20px;">A. CG: C/S Acrovyn, #SSM Series<br/>(height as shown on drawings)<br/>Standard at PT14 &amp; PT4<br/>Conditions<br/>Color: #102 Desert Sand<br/>Texture: Pebblette</div> <div style="margin-left: 20px;">B. CG: C/S Acrovyn, #SSM Series<br/>(height as shown on drawings)<br/>Applied within Vestibule, Dining &amp;<br/>Living Activity Room Zone<br/>Color: #949 White<br/>Texture: Pebblette</div> |
| 15. | Living Room<br>Solid Surfacing           | Corian<br>Color: Cameo White   |

**FLOOR:**

|             |  |
|-------------|--|
| <b>VWP1</b> | <b>Centiva Products</b><br>Style: Event Series<br>Color: # WP-3321-ETG, American Oak<br>Surface Texture: Tick (TK)<br>Edge: Square Edge (SE)   |
| <b>VWP2</b> | <b>Centiva Products</b><br>Style: Event Series<br>Color: # WP-GW38-ENG, Antique Walnut<br>Surface Texture: Tick (TK)<br>Edge: Square Edge (SE) |
| <b>VWP3</b> | <b>Centiva Products</b><br>Style: Event Series<br>Color: # WP-3309-ENG, Limed Oak<br>Surface Texture: Tick (TK)<br>Edge: Square Edge (SE)      |
| <b>CPT1</b> | <b>J+J / Invision</b><br>Origin Series<br>Style: Baroque Modular (7100)<br>Color: #1473, Plush<br>Size: 24" x 24", with Nexus backing          |
| <b>VCT1</b> | <b>Armstrong Industries</b><br>Excelon – Stonetex<br>Color: # 52162, Cement<br>Size: 12" x 12"   |
| <b>SV1</b>  | <b>Armstrong Industries</b><br>Medintone Series<br>Color: # H 8313, Natural Tone   |
| <b>CT1</b>  | <b>(Not Used)</b>  |
| <b>CT2</b>  | <b>(Not Used)</b>  |



|                      |  |
|----------------------|--|
| <b>CT7</b>           | <b>Dal Tile</b><br>Pattern: City View<br>Color: CY03, District Gold<br>Size: 12" x 12"<br><b>Grout:</b> C-Cure<br>Color: # 27, Sahara Brown                    |
| <b>CS1</b>           | Concrete Sealed  |
| <b>APC</b>           | Acrylic Polyurethane Coating   |
| <b><u>BASE:</u></b>  |  |
| <b>RB1</b>           | <b>Roppe Rubber Company</b><br>Color: # 125, Fig<br>Size: 4" High  |
| <b>CT3</b>           | <b>(Not Used)</b>  |
| <b>CT8</b>           | <b>Dal Tile</b><br>Pattern: City View<br>Color: Harbor Mist<br>Base: S—36C9T, Cove Base<br>Size: 6" x 12"<br><b>Grout:</b> C-Cure<br>Color: # 27, Sahara Brown |
| <b>IV1</b>           | <b>Armstrong Industries</b><br>Medintone Series<br>Color: # H 8313, Natural Tone   |
| <b>WD1</b>           | <b>Wood Base</b><br>Benjamin Moore Paints<br>Color: # OC-121, Mountain Peak White<br>(painted in semi-gloss finish)  |
| <b><u>WALLS:</u></b> |  |
| <b>PT1</b>           | <b>Benjamin Moore Paints</b><br>Color: # OC-10, White Sand   |
| <b>PT2</b>           | <b>(Not Used)</b>  |
| <b>PT3</b>           | <b>(Not Used)</b>  |

|             |  |
|-------------|--|
| <b>PT7</b>  | <b>Benjamin Moore Paints</b><br>Color: # HC-26, Monroe Bisque  |
| <b>PT10</b> | <b>(Not Used)</b>  |
| <b>PT11</b> | <b>Sherwin Williams</b><br>Color: # SW6204 Sea Salt  |
| <b>PT12</b> | <b>(Not Used)</b>  |
| <b>PT13</b> | <b>(Not Used)</b>  |
| <b>PT14</b> | <b>Benjamin Moore Paints</b><br>Color: # HC-24, Pittsfield Buff  |
| <b>CT4</b>  | <b>(Not Uses)</b>  |
| <b>CT5</b>  | <b>(Not Used)</b>  |
| <b>CT6</b>  | <b>(Not Used)</b>  |
| <b>CT9</b>  | <b>Dal Tile</b><br>Pattern: City View<br>Color: S—36C9T Harbor Mist<br>Size: 12" x 12"<br><b>Grout:</b> C-Cure<br>Color: # 27, Sahara Brown                          |
| <b>CT10</b> | <b>Dal Tile</b><br>Pattern: City View<br>Color: S—36C9T Harbor Mist<br>Trim: S-43C9<br>Size: 3" x 12"<br><b>Grout:</b> C-Cure<br>Color: # 27, Sahara Brown           |
| <b>CT11</b> | <b>Dal Tile</b><br>Pattern: Stone Radiance, Random Mosaic<br>Color: Whisper Green Blend SA51<br>Size: 12" x 12"<br><b>Grout:</b> C-Cure<br>Color: # 27, Sahara Brown |

**CEILINGS:**

|             |  |
|-------------|--|
| <b>PT3</b>  | <b>(Not Used)</b>  |
| <b>PT4</b>  | <b>Benjamin Moore Paints</b><br>Color: # OC-121, Mountain Peak White |
| <b>PT6</b>  | <b>Benjamin Moore Paints</b><br>Color: # 722, Dolphins Cove          |
| <b>PT15</b> | <b>Benjamin Moore Paints</b><br>Color: # OC-10, White Sand           |

**SECTION 10 99 00**  
**MISCELLANEOUS BUILDING SPECIALTIES**

**PART 1 - GENERAL****1.1 SECTION INCLUDES**

- A. Television Support Brackets
- B. Window Blinds
- C. Bathing Spa
- D. Fireplace
- E. Smoke Curtain
- F. Wall Mounted Shelving
- G. Aluminum Screen Door
- H. Winch Operated Jib Crane

**1.2 REFERENCES**

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
  - ASTM A 167.....(1999; R 2009) Standard Specification for  
Stainless and Heat-Resisting Chromium-Nickel  
Steel Plate, Sheet, and Strip
  - ASTM A 240/A 240M.....(2009) Standard Specification for Chromium and  
Chromium-Nickel Stainless Steel Plate, Sheet,  
and Strip for Pressure Vessels and for General  
Application
  - ASTM A 366.....(1985) Steel, Carbon, Cold-Rolled Sheet,  
Commercial Quality
  - ASTM A 666.....(2003) Standard Specification for Annealed or  
Cold-Worked Austenitic Stainless Steel Sheet,  
Strip, Plate, and Flat Bar
  - ASTM B 211.....(2003) Aluminum and Aluminum-Alloy Bar, Rod,  
and Wire
  - ASTM B 221.....(2008) Standard Specification for Aluminum and  
Aluminum-Alloy Extruded Bars, Rods, Wire,  
Profiles, and Tubes
  - ASTM B 241/B 241M.....(2002) Aluminum and Aluminum-Alloy Seamless  
Pipe and Seamless Extruded Tube
  - ASTM C 1002.....(2007) Standard Specification for Steel Self-  
Piercing Tapping Screws for the Application of

Gypsum Panel Products or Metal Plaster Bases to  
Wood Studs or Steel Studs

ASTM C 1381/C 1381M.....(2008 e1) Standard Specification for Molded  
Glass Fiber Reinforced Gypsum Parts

ASTM C 1467/C 1467M.....(2006) Standard Specification for the  
Installation of Molded Glass Fiber Reinforced  
Gypsum Parts

ASTM C 475/C 475M.....(2002; R 2007) Joint Compound and Joint Tape  
for Finishing Gypsum Board

ASTM C 840.....(2008) Application and Finishing of Gypsum  
Board

ASTM C 954.....(2007) Steel Drill Screws for the Application  
of Gypsum Panel Products or Metal Plaster Bases  
to Steel Studs from 0.033 in. to 0.112 in. in  
Thickness

### 1.3 SUBMITTALS

A. Submit the following in accordance with Section 01 33 23, SHOP  
DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Product Data

Submit for all items specified hereinafter.

C. Samples

1. Smoke Curtain Fabric

D. Operation and Maintenance Data

1. Item P1050H, Bathing Spa

2. Item U0045 Fireplace

3. Item Smoke Curtain

### 1.4 DELIVERY AND STORAGE

A. Items shall not be delivered to the site until the location of  
installation is ready for the item so that when they are delivered,  
they can be immediately installed, thus minimizing possibility of  
damage. Items when delivered shall be dry, free of warpage, and have  
packaging intact.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

A. Stainless Steel:

ASTM A 167, Class 304, for welded construction and Class 201, 202, 302  
or 304 for construction formed without welding. Exposed surfaces of  
stainless steel shall have a satin finish.

**B. Aluminum Alloy:**

ASTM B 221 equivalent in ultimate tensile, yield, and shear strengths to Alloy 6063-T5 or 6063-T6.

**C. Sheet Steel:**

ASTM A 366, cold rolled sheets, commercial bright finish.

**D. Whiteboards:**

Porcelain enamel whiteboard surfaces shall conform to PEI Performance Specifications.

**E. Tackboard:**

Tackboard shall comply with Mil. Spec. MIL-C-15116, Type I.

**2.2 ITEMS**

Basis-of-Design Product: Subject to compliance with requirements, provide product indicated or approved equal.

**A. Television Support Bracket****1. Wall Mount, A5210P**

Panasonic Corporation of North America; EZLCDP-02, tilt mount for 36 to 60 inch plasma and LCD screens.

**B. Window Blinds, A6309****1. Graber, 2 inch wide "Traditions" wood blind for paint finish.**

a. Finish: paint, color to be selected from manufacturers full range.

b. Accessories: Valance; Graber "Signature", 2-1/2 inch profile.

**C. Bathing Spa, P1050H**

Rane Tubs; RR7II "Atlantic" freestanding side access reclining bathing system. Tub is 3/16 inches thick reinforced polyester composite laminate with an ISO/NPG sanitary gel coat surface, aluminum frame base, stainless steel leveling legs adjustable up to 2 inches.

1. Reclining mechanism: 24 volt actuator with built in control panel.

2. Drain: 1.5 inch.

3. Water supply: 1/4 inch.

4. Electrical supply: 115 VAC, 60 Hz and 15 amps.

5. Performance data: fill time 1.4 minutes, drain time 1.86 minutes.

**D. Fireplace, U0045**

Dimplex North America Limited; Built-in "Purifier" Firebox BF45BXP air filtering electric fireplace with filter MERV 10 minimum; 45 inches wide by 32.8 inches high by 15.3 inches deep. Include 3 piece stainless steel decorative trim with tamperproof glass door; 3-stage remote control kit, white-wall mount thermostat.

#### E. Smoke Curtain

U.S. Smoke and Fire Curtain, LLC; Automatic Smoke Curtain, FCF60S, motorized curtain with force controlled speed of decent no less than 6 inches per second and no more than 24 inches per second complying with requirements of NFPA 105, paragraph 4.3.1.

1. Smoke curtain shall provide for gravity actuated fail-safe operation.
2. Comply with NFPA 70 and EN 12101-1 Specifications for smoke barriers and smoke partitions.
3. System to include Underwriters Laboratory or other test Certification acceptable to the authority having jurisdiction: UL10B, UL 10C, UL 10D, UL864 and UL 1784.
4. Installer Qualifications: A firm or individual experienced in installing automatic smoke curtains with a record of successful in-service performance.
5. Smoke curtain to be woven glass fiber fabric, nominal weight 540 g/square meter and tested to withstand up to 1800 degrees F for 90 minutes.
6. Install in accordance with manufacturer requirements, coordinate with fire alarm system and provide steel support structure in accordance with requirements of Section 05 50 00 METAL FABRICATIONS.
7. Engage a manufacturer authorized service representative for system testing and Owner training.

#### F. Wall Mounted Shelving:

1. Similar to "Triton Products" No. 1620 Wire Shelf with lock-on brackets and vertical hang rails.
2. Install in Clean Utility 18 as indicated on the drawings.

#### G. Aluminum Screen Door

PCA Products, Inc. A-100 Series Screen Door or equal, configured as indicated on drawings. Finish to match aluminum at aluminum clad wood doors.

#### H. Winch Operated Jib Crane

Vestil Model No. WTJ-4, 2,000 lbs. capacity, steel, hand crank winch, braided steel cable, hydraulic boom lift, bolted base mount. Place placard stating "MAXIMUM USEFUL LOAD 500 LBS." as close as possible to crane within plain sight. Placard shall be engraved laminated plastic, white lettering on red background, minimum dimensions of 12 inches wide by 4 inches high.

**PART 3 - EXECUTION****3.1 INSPECTION**

- A. Installer must examine the areas and conditions under which miscellaneous items are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

**3.2 INSTALLATION**

- A. Install all miscellaneous items where shown on the drawings and in strict accordance with the manufacturer's printed instructions. Touch up marred or damaged surfaces or replace if not acceptable to the Contracting Officer. Adjust items with movable parts for proper operation.

- - - E N D - - -





**SECTION 28 31 00**  
**FIRE DETECTION AND ALARM**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. This section of the specifications includes the furnishing, installation, and connection of the fire alarm equipment to form a complete coordinated system ready for operation. It shall include, but not be limited to, alarm initiating devices, alarm notification appliances, control units, fire safety control devices, annunciators, power supplies, and wiring as shown on the drawings and specified. The fire alarm system shall not be combined with other systems such as building automation, energy management, security, etc.
- B. Fire alarm systems shall comply with requirements of the most recent VA FIRE PROTECTION DESIGN MANUAL and NFPA 72 unless variations to NFPA 72 are specifically identified within these contract documents by the following notation: "variation". The design, system layout, document submittal preparation, and supervision of installation and testing shall be provided by a technician that is certified NICET level III or a registered fire protection engineer. The NICET certified technician shall be on site for the supervision and testing of the system. Factory engineers from the equipment manufacturer, thoroughly familiar and knowledgeable with all equipment utilized, shall provide additional technical support at the site as required by the Resident Engineer or his authorized representative. Installers shall have a minimum of 2 years experience installing fire alarm systems.
- C. Fire alarm signals:
  - 1. Building shall have an automatic digitized voice fire alarm signal with emergency manual voice override to notify occupants to evacuate.
  - 2. Building shall have a general evacuation fire alarm signal in accordance with ASA S3.41 to notify all occupants in the respective building to evacuate.
- D. Alarm signals (by device), supervisory signals (by device) and system trouble signals (by device not reporting) shall be distinctly transmitted to the main fire alarm system control unit.

- E. The main fire alarm control unit shall automatically transmit alarm signals to a listed central station using the existing campus fiber optic circuit in accordance with NFPA 72.

## 1.2 SCOPE

- A. A new fully addressable fire alarm system shall be designed and installed in accordance with the specifications and drawings. Device location and wiring runs shown on the drawings are for reference only unless specifically dimensioned. Actual locations shall be in accordance with NFPA 72 and this specification.
- B. Basic Performance:
  - 1. Alarm and trouble signals from the building fire alarm control panel shall be digitally encoded by UL listed electronic devices onto a multiplexed communication system.
  - 2. Response time between alarm initiation (contact closure) and recording at the main fire alarm control unit (appearance on alphanumeric read out) shall not exceed 5 seconds.
  - 3. Initiating device circuits (IDC) shall be wired Class B in accordance with NFPA 72.
  - 4. Signaling line circuits (SLC) within buildings shall be wired Class B in accordance with NFPA 72. Individual signaling line circuits shall be limited to covering 22,500 square feet of floor space or 3 floors whichever is less.
  - 5. Notification appliance circuits (NAC) shall be wired Class B in accordance with NFPA 72.

## 1.3 RELATED WORK

- A. Section 07 84 00 - FIRESTOPPING. Requirements for fire proofing wall penetrations.
- B. Section 21 13 13 - WET-PIPE SPRINKLER SYSTEMS. Requirements for sprinkler systems.
- C. Section 28 05 00 - COMMON WORK RESULTS FOR ELECTRONIC SAFETY AND SECURITY. Requirements for general requirements that are common to more than one section in Division 28.
- D. Section 28 05 13 - CONDUCTORS AND CABLES FOR ELECTRONIC SAFETY AND SECURITY. Requirements for conductors and cables.
- E. Section 28 05 26 - GROUNDING AND BONDING FOR ELECTRONIC SAFETY AND SECURITY. Requirements for grounding of equipment.
- F. Section 28 05 33 - RACEWAYS AND BACKBOXES FOR ELECTRONIC SAFETY AND SECURITY. Requirements for infrastructure.

**1.4 SUBMITTALS**

A. General: Submit in accordance with Section 28 05 00, COMMON WORK RESULTS FOR ELECTRONIC SAFETY AND SECURITY.

B. Drawings:

1. Prepare drawings using AutoCAD 2010 or later and include all contractors information. Layering shall be by VA criteria as provided by the Resident Engineer (RE). Bid drawing files on AutoCAD will be provided to the Contractor at the pre-construction meeting. The contractor shall be responsible for verifying all critical dimensions shown on the drawings provided by VA.
2. Floor plans: Provide locations of all devices (with device number at each addressable device corresponding to control unit programming), appliances, panels, equipment, junction/terminal cabinets/boxes, risers, electrical power connections, individual circuits and raceway routing, system zoning; number, size, and type of raceways and conductors in each raceway; conduit fill calculations with cross section area percent fill for each type and size of conductor and raceway. Only those devices connected and incorporated into the final system shall be on these floor plans. Do not show any removed devices on the floor plans. Show all interfaces for all fire safety functions.
3. Riser diagrams: Provide, for the entire system, the number, size and type of riser raceways and conductors in each riser raceway and number of each type device per floor and zone. Show door holder interface, HVAC shutdown interface, fire extinguishing system interface, and all other fire safety interfaces. Show wiring Classes on the riser diagram for all circuits. Provide diagrams both on a per building and campus wide basis.
4. Detailed wiring diagrams: Provide for control panels, modules, power supplies, electrical power connections, auxiliary relays and annunciators showing termination identifications, size and type conductors, circuit boards, LED lamps, indicators, adjustable controls, switches, ribbon connectors, wiring harnesses, terminal strips and connectors, spare zones/circuits. Diagrams shall be drawn to a scale sufficient to show spatial relationships between components, enclosures and equipment configuration.

5. Provide standby battery calculations under normal and alarm modes. Battery calculations shall include the magnets for holding the doors open for one minute.
6. Two weeks prior to final inspection, the Contractor shall deliver to the RE (1) set of reproducible as-built drawings, two blueprint copies and one set of the as-built drawing computer files (using AutoCAD 2007 or later). As-built drawings (floor plans) shall show all new conduit used for the fire alarm system.

C. Manuals:

1. Submit copies of complete maintenance and operating manuals including technical data sheets for all items used in the system, power requirements, device wiring diagrams, dimensions, and information for ordering replacement parts.
  - a. Wiring diagrams shall have their terminals identified to facilitate installation, operation, expansion and maintenance.
  - b. Wiring diagrams shall indicate internal wiring for each item of equipment and the interconnections between the items of equipment.
  - c. Include complete listing of all software used and installation and operation instructions including the input/output matrix chart.
  - d. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate, inspect, test and maintain the equipment and system. Provide all manufacturer's installation limitations including but not limited to circuit length limitations.
  - e. Complete listing of all digitized voice messages.
  - f. Include information indicating who will provide emergency service and perform post contract maintenance.
  - g. Provide a replacement parts list with current prices. Include a list of recommended spare parts, tools, and instruments for testing and maintenance purposes.
  - h. A computerized preventive maintenance schedule for all equipment. The schedule shall be provided on disk in a computer format acceptable to the VAMC and shall describe the protocol for preventive maintenance of all equipment. The schedule shall include the required times for systematic examination, adjustment and cleaning of all equipment. A print out of the schedule shall

also be provided in the manual. Provide the disk in a pocket within the manual.

- i. Furnish manuals in 3 ring loose-leaf binder or manufacturer's standard binder.
  - j. A print out for all devices proposed on each signaling line circuit with spare capacity indicated.
2. Two weeks prior to final inspection, deliver 4 copies of the final updated maintenance and operating manual to the RE.
- a. The manual shall be updated to include any information necessitated by the maintenance and operating manual approval.
  - b. Complete "As installed" wiring and schematic diagrams shall be included that shows all items of equipment and their interconnecting wiring. Show all final terminal identifications.
  - c. Complete listing of all programming information, including all control events per device including an updated input/output matrix.
  - d. Certificate of Installation as required by NFPA 72 for each building. The certificate shall identify any variations from the National Fire Alarm Code.
  - e. Certificate from equipment manufacturer assuring compliance with all manufacturers installation requirements and satisfactory system operation.

D. Certifications:

1. Together with the shop drawing submittal, submit the technician's NICET level III fire alarm certification as well as certification from the control unit manufacturer that the proposed performer of contract maintenance is an authorized representative of the major equipment manufacturer. Include in the certification the names and addresses of the proposed supervisor of installation and the proposed performer of contract maintenance. Also include the name and title of the manufacturer's representative who makes the certification.
2. Together with the shop drawing submittal, submit a certification from either the control unit manufacturer or the manufacturer of each component (e.g., smoke detector) that the components being furnished are compatible with the control unit.

3. Together with the shop drawing submittal, submit a certification from the major equipment manufacturer that the wiring and connection diagrams meet this specification, UL and NFPA 72 requirements.

#### **1.5 WARRANTY**

- A. All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of one year from the date of acceptance of the entire installation by the Contracting Officer.

#### **1.6 APPLICABLE PUBLICATIONS**

- A. The publications listed below (including amendments, addenda, revisions, supplements and errata) form a part of this specification to the extent referenced. The publications are referenced in text by the basic designation only and the latest editions of these publications shall be applicable.
- B. National Fire Protection Association (NFPA):  
NFPA 70.....National Electrical Code (NEC), 2011 edition  
NFPA 72.....National Fire Alarm Code, 2010 edition  
NFPA 101.....Life Safety Code, 2012 edition
- C. Underwriters Laboratories, Inc. (UL): Fire Protection Equipment Directory
- D. Factory Mutual Research Corp (FM): Approval Guide, 2007-2011
- E. American National Standards Institute (ANSI):  
S3.41.....Audible Emergency Evacuation Signal, 1990  
edition, reaffirmed 2008
- F. International Code Council, International Building Code (IBC), 2009 edition

### **PART 2 - PRODUCTS**

#### **2.1 EQUIPMENT AND MATERIALS, GENERAL (BASIS OF DESIGN - SIMPLEX GRINNELL)**

- A. All equipment and components shall be new and the manufacturer's current model. All equipment shall be tested and listed by Underwriters Laboratories, Inc. or Factory Mutual Research Corporation for use as part of a fire alarm system. The authorized representative of the manufacturer of the major equipment shall certify that the installation complies with all manufacturers' requirements and that satisfactory total system operation has been achieved.

**2.2 CONDUIT, BOXES, AND WIRE**

- A. Conduit shall be in accordance with Section 28 05 33 RACEWAY AND BACKBOXES FOR ELECTRONIC SAFETY AND SECURITY and as follows:
  - 1. All new conduits shall be installed in accordance with NFPA 70.
  - 2. Conduit fill shall not exceed 40 percent of interior cross sectional area.
  - 3. All new conduits shall be 1/2 inch minimum.
- B. Wire:
  - 1. Wiring shall be in accordance with NEC article 760, Section 28 05 13, CONDUCTORS AND CABLES FOR ELECTRONIC SAFETY AND SECURITY, and as recommended by the manufacturer of the fire alarm system. All wires shall be color coded. Number and size of conductors shall be as recommended by the fire alarm system manufacturer, but not less than 18 AWG for initiating device circuits and 14 AWG for notification device circuits.
  - 2. Addressable circuits and wiring used for the multiplex communication loop shall be twisted and shielded unless specifically excepted by the fire alarm equipment manufacturer in writing.
  - 3. Any fire alarm system wiring that extends outside of a building shall have additional power surge protection to protect equipment from physical damage and false signals due to lightning, voltage and current induced transients. Protection devices shall be shown on the submittal drawings and shall be UL listed or in accordance with written manufacturer's requirements.
  - 4. All wire or cable used in underground conduits including those in concrete shall be listed for wet locations.
- C. Terminal Boxes, Junction Boxes, and Cabinets:
  - 1. Shall be galvanized steel in accordance with UL requirements.
  - 2. All boxes shall be sized and installed in accordance with NFPA 70.
  - 3. Covers shall be painted red in accordance with Section 09 91 00, PAINTING and shall be identified with white markings as "FA" for junction boxes and as "FIRE ALARM SYSTEM" for cabinets and terminal boxes. Lettering shall be a minimum of 3/4 inch high.
  - 4. Terminal boxes and cabinets shall have a volume 50 percent greater than required by the NFPA 70. Minimum sized wire shall be considered as 14 AWG for calculation purposes.



5. Terminal boxes and cabinets shall have identified pressure type terminal strips and shall be located at the base of each riser. Terminal strips shall be labeled as specified or as approved by the RE.

### **2.3 FIRE ALARM CONTROL UNIT**

#### **A. General:**

1. Each building shall be provided with a fire alarm control unit and shall operate as a supervised zoned fire alarm system.
2. Each power source shall be supervised from the other source for loss of power.
3. All circuits shall be monitored for integrity.
4. Visually and audibly annunciate any trouble condition including, but not limited to main power failure, grounds and system wiring derangement.
5. Transmit digital alarm information to the main fire alarm control unit.

#### **B. Enclosure:**

1. The control unit shall be housed in a cabinet suitable for both recessed and surface mounting. Cabinet and front shall be corrosion protected, given a rust-resistant prime coat, and manufacturer's standard finish.
2. Cabinet shall contain all necessary relays, terminals, lamps, and legend plates to provide control for the system.

#### **C. Power Supply:**

1. The control unit shall derive its normal power from a 120 volt, 60 Hz dedicated supply connected to the emergency power system. Standby power shall be provided by a 24 volt DC battery as hereinafter specified. The normal power shall be transformed, rectified, coordinated, and interfaced with the standby battery and charger.
2. The door holder power shall be arranged so that momentary or sustained loss of main operating power shall not cause the release of any door.
3. Power supply for smoke detectors shall be taken from the fire alarm control unit.
4. Provide protectors to protect the fire alarm equipment from damage due to lightning or voltage and current transients.
5. Provide new separate and direct ground lines to the outside to protect the equipment from unwanted grounds.

- D. Circuit Supervision: Each alarm initiating device circuit, signaling line circuit, and notification appliance circuit, shall be supervised against the occurrence of a break or ground fault condition in the field wiring. These conditions shall cause a trouble signal to sound in the control unit until manually silenced by an off switch.
- E. Supervisory Devices: All sprinkler system valves, standpipe control valves, post indicator valves (PIV), and main gate valves shall be supervised for off-normal position. Closing a valve shall sound a supervisory signal at the control unit until silenced by an off switch. The specific location of all closed valves shall be identified at the control unit. Valve operation shall not cause an alarm signal. Low air pressure switches and duct detectors shall be monitored as supervisory signals.
- F. Trouble signals:
1. Arrange the trouble signals for automatic reset (non-latching).
  2. System trouble switch off and on lamps shall be visible through the control unit door.
- G. Function Switches: Provide the following switches in addition to any other switches required for the system:
1. Remote Alarm Transmission By-pass Switch: Shall prevent transmission of all signals to the main fire alarm control unit when in the "off" position. A system trouble signal shall be energized when switch is in the off position.
  2. Alarm Off Switch: Shall disconnect power to alarm notification circuits on the local building alarm system. A system trouble signal shall be activated when switch is in the off position.
  3. Trouble Silence Switch: Shall silence the trouble signal whenever the trouble silence switch is operated. This switch shall not reset the trouble signal.
  4. Reset Switch: Shall reset the system after an alarm, provided the initiating device has been reset. The system shall lock in alarm until reset.
  5. Lamp Test Switch: A test switch or other approved convenient means shall be provided to test the indicator lamps.
  6. Drill Switch: Shall activate all notification devices without tripping the remote alarm transmitter. This switch is required only for general evacuation systems specified herein.

7. Door Holder By-Pass Switch: Shall prevent doors from releasing during fire alarm tests. A system trouble alarm shall be energized when switch is in the abnormal position.
8. HVAC/Smoke Damper By-Pass: Provide a means to disable HVAC fans from shutting down and/or smoke dampers from closing upon operation of an initiating device designed to interconnect with these devices.
- H. System Expansion: Design the control units and enclosures so that the system can be expanded in the future (to include the addition of 20 percent more alarm initiating, alarm notification and door holder circuits) without disruption or replacement of the existing control unit and secondary power supply.

#### **2.4 STANDBY POWER SUPPLY**

##### **A. Batteries:**

1. Battery shall be of the sealed, maintenance free type, 24-volt nominal.
2. Battery shall have sufficient capacity to power the fire alarm system for not less than 24 hours plus 15 minutes of alarm to an end voltage of 1.14 volts per cell, upon a normal AC power failure.
3. Battery racks shall be steel with an alkali-resistant finish.

##### **B. Battery Charger:**

1. Shall be completely automatic, with constant potential charger maintaining the battery fully charged under all service conditions. Charger shall operate from a 120-volt, 60 hertz emergency power source.
2. Shall be rated for fully charging a completely discharged battery within 48 hours while simultaneously supplying any loads connected to the battery.
3. Shall have protection to prevent discharge through the charger.
4. Shall have protection for overloads and short circuits on both AC and DC sides.
5. A trouble condition shall actuate the fire alarm trouble signal.
6. Charger shall have automatic AC line voltage regulation, automatic current-limiting features, and adjustable voltage controls.

#### **2.5 ANNUNCIATION**

##### **A. Annunciator, Alphanumeric Type (System):**

1. Shall be a supervised, LCD display containing a minimum of 2 lines of 40 characters for alarm annunciation in clear English text.

2. Message shall identify building number, floor, zone, etc on the first line and device description and status (pull station, smoke detector, waterflow alarm or trouble condition) on the second line.
3. The initial alarm received shall be indicated as such.
4. A selector switch shall be provided for viewing subsequent alarm messages.
5. The display shall be UL listed for fire alarm application.

## **2.6 VOICE COMMUNICATION SYSTEM (VCS)**

### **A. General:**

1. An emergency voice communication system shall be installed throughout the building.
2. Upon receipt of an alarm signal from the building fire alarm system, the VCS shall automatically transmit a pre-recorded fire alarm message throughout the building.
3. A digitized voice module shall be used to store each prerecorded message.
4. The VCS shall be arranged as a single channel system.
5. The VCS shall supervise all speaker circuits, control equipment, remote audio control equipment, and amplifiers.

### **B. Speaker Circuit Control Unit:**

1. The speaker circuit control unit shall include switches to manually activate or deactivate speaker circuits grouped by floor in the system.
2. Speaker circuit control switches shall provide on, off, and automatic positions and indications.
3. The speaker circuit control unit shall include visual indication of active or trouble status for each group of speaker circuits in the system.
4. A trouble indication shall be provided if a speaker circuit group is disabled.
5. A lamp test switch shall be provided to test all indicator lamps.
6. A single "all call" switch shall be provided to activate all speaker circuit groups simultaneously.
7. A push-to-talk microphone shall be provided for manual voice messages.

8. A voice message disconnect switch shall be provided to disconnect automatic digitized voice messages from the system. The system shall be arranged to allow manual voice messages and indicate a system trouble condition when activated.

C. Speaker Circuit Arrangement:

1. Speaker circuits shall be arranged such that there is one speaker circuit per smoke zone.
2. Audio amplifiers and control equipment shall be electrically supervised for normal and abnormal conditions.
3. Speaker circuits shall be either 25 VRMS or 70.7 VRMS with a minimum of 50 percent spare power available.
4. Speaker circuits and control equipment shall be arranged such that loss of any one speaker circuit will not cause the loss of any other speaker circuit in the system.

D. Digitized Voice Module (DVM):

1. The Digitized Voice Module shall provide prerecorded digitized evacuation and instructional messages. The messages shall be professionally recorded and approved by the RE prior to programming.
2. The DVM shall be configured to automatically output to the desired circuits following a 10-second slow whoop alert tone.
3. Prerecorded magnetic taped messages and tape players are not permitted.
4. The digitized message capacity shall be no less than 15 second in length.
5. The digitized message shall be transmitted 3 times.
6. The DVM shall be supervised for operational status.
7. Failure of the DVM shall result in the transmission of a constant alarm tone.
8. The DVM memory shall have a minimum 50 percent spare capacity after those messages identified in this section are recorded. Multiple DVM's may be used to obtain the required capacity.

E. Audio Amplifiers:

1. Audio Amplifiers shall provide a minimum of 50 Watts at either 25 or 70.7 VRMS output voltage levels.
2. Amplifiers shall be continuously supervised for operational status.
3. Amplifiers shall be configured for either single or dual channel application.

4. Each audio output circuit connection shall be configurable for Style X.
5. A minimum of 50 percent spare output capacity shall be available for each amplifier.

F. Tone Generator(s):

1. Tone Generator(s) shall be capable of providing a distinctive 3-pulse temporal pattern fire alarm signal as well as a slow whoop.
2. Tone Generator(s) shall be continuously supervised for operational status.

**2.7 ALARM NOTIFICATION APPLIANCES (ADDRESSABLE)**

A. Speakers:

1. Shall operate on either 25 VRMS or 70.7 VRMS with field selectable output taps from 0.5 to 2.0W and originally installed at the 1/2 watt tap. Speakers shall provide a minimum sound output of 80 dBA at 10 feet with the 1/2 watt tap.
2. Frequency response shall be a minimum of 400 HZ to 4,000 HZ.

B. Strobes:

1. Xenon flash tube type minimum 15 candela in toilet rooms and 75 candela in all other areas with a flash rate of 1 HZ. Strobes shall be synchronized where required by the National Fire Alarm Code (NFPA 72).
2. Backplate shall be red with 1/2 inch permanent red letters. Lettering to read "Fire", be oriented on the wall or ceiling properly, and be visible from all viewing directions.
3. Each strobe circuit shall have a minimum of 20 percent spare capacity.
4. Strobes may be combined with the audible notification appliances specified herein.

**2.8 ALARM INITIATING DEVICES (ADDRESSABLE)**

A. Manual Fire Alarm Stations:

1. Shall be non-breakglass, address reporting type.
2. Station front shall be constructed of a durable material such as cast or extruded metal or high impact plastic. Stations shall be semi-flush type.
3. Stations shall be of single action pull down type with suitable operating instructions provided on front in raised or depressed letters, and clearly labeled "FIRE."

4. Operating handles shall be constructed of a durable material. On operation, the lever shall lock in alarm position and remain so until reset. A key shall be required to gain front access for resetting, or conducting tests and drills.
5. Unless otherwise specified, all exposed parts shall be red in color and have a smooth, hard, durable finish.
6. Stations identified as key operated only shall have a single standardized lock and key separate from the control equipment.

B. Smoke Detectors:

1. Smoke detectors shall be photoelectric type and UL listed for use with the fire alarm control unit being furnished.
2. Smoke detectors shall be addressable type complying with applicable UL Standards for system type detectors. Smoke detectors shall be installed in accordance with the manufacturer's recommendations and NFPA 72.
3. Detectors shall have an indication lamp to denote an alarm condition. Provide remote indicator lamps and identification plates where detectors are concealed from view. Locate the remote indicator lamps and identification plates flush mounted on walls so they can be observed from a normal standing position.
4. Photoelectric detectors shall be factory calibrated and readily field adjustable. The sensitivity of any photoelectric detector shall be factory set at 3.0 plus or minus 0.25 percent obscuration per foot.
5. Detectors shall provide a visual trouble indication if they drift out of sensitivity range or fail internal diagnostics. Detectors shall also provide visual indication of sensitivity level upon testing. Detectors, along with the fire alarm control units shall be UL listed for testing the sensitivity of the detectors.

C. Water Flow and Pressure Switches:

1. Wet pipe water flow switches and dry pipe alarm pressure switches for sprinkler systems shall be connected to the fire alarm system by way of an address reporting interface device.
2. All new switches shall have an alarm transmission delay time that is conveniently adjustable from 0 to 60 seconds. Initial settings shall be 30-45 seconds. Timing shall be recorded and documented during testing.

D. Extinguishing System Connections:

1. Kitchen Range Hood and Duct Suppression Systems:

- a. Each suppression system shall be equipped with a micro-switch connected to the building fire alarm control unit. Discharge of a suppression system shall automatically send a alarm signal to the building fire detection and alarm system for annunciation.
  - b. Operation of this suppression system shall also automatically shut off all sources of fuel and heat to all equipment requiring protection under the same hood.
2. Each gaseous suppression system shall be monitored for system alarm and system trouble conditions via addressable interface devices.

**2.9 SUPERVISORY DEVICES**

A. Duct Smoke Detectors:

1. Duct smoke detectors shall be provided and connected by way of an address reporting interface device. Detectors shall be provided with an approved duct housing mounted exterior to the duct, and shall have perforated sampling tubes extending across the full width of the duct (wall to wall). Detector placement shall be such that there is uniform airflow in the cross section of the duct.
2. Interlocking with fans shall be provided in accordance with NFPA 90A and as specified hereinafter under Part 3.2, "TYPICAL OPERATION".
3. Provide remote indicator lamps, key test stations and identification nameplates (e.g. "DUCT SMOKE DETECTOR AHU-X") for all duct detectors. Locate key test stations in plain view on walls or ceilings so that they can be observed and operated from a normal standing position.

B. Sprinkler and Standpipe System Supervisory Switches:

1. Each sprinkler system water supply control valve, riser valve or zone control valve, and each standpipe system riser control valve shall be equipped with a supervisory switch. Standpipe hose valves, and test and drain valves shall not be equipped with supervisory switches.
2. PIV (post indicator valve) or main gate valve shall be equipped with a supervisory switch.
3. Valve supervisory switches shall be connected to the fire alarm system by way of address reporting interface device. Connect tamper switches for all control valves shown on the approved shop drawings.



4. The mechanism shall be contained in a weatherproof die-cast aluminum housing that shall provide a 3/4 inch tapped conduit entrance and incorporate the necessary facilities for attachment to the valves.
5. The entire installed assembly shall be tamper-proof and arranged to cause a switch operation if the housing cover is removed or if the unit is removed from its mounting.

#### **2.10 ADDRESS REPORTING INTERFACE DEVICE**

- A. Shall have unique addresses that reports directly to the building fire alarm panel.
- B. Shall be configurable to monitor normally open or normally closed devices for both alarm and trouble conditions.
- C. Shall have terminal designations clearly differentiating between the circuit to which they are reporting from and the device that they are monitoring.
- D. Shall be UL listed for fire alarm use and compatibility with the panel to which they are connected.
- E. Shall be mounted in weatherproof housings if mounted exterior to a building.

#### **2.11 SMOKE BARRIER DOOR CONTROL**

- A. Electromagnetic Door Holders:
  1. Door Holders shall be standard wall mounted electromagnetic type. In locations where doors do not come in contact with the wall when in the full open position, an extension post shall be added to the door bracket.
  2. Operation shall be by 24 volt DC supplied from a battery located at the fire alarm control unit. Door holders shall be coordinated as to voltage, ampere drain, and voltage drop with the battery, battery charger, wiring and fire alarm system for operation as specified.
- B. A maximum of twelve door holders shall be provided for each circuit. Door holders shall be wired to allow releasing doors by smoke zone.
- C. Door holder control circuits shall be electrically supervised.
- D. Smoke detectors shall not be incorporated as an integral part of door holders.

#### **2.12 UTILITY LOCKS AND KEYS:**

- A. All key operated test switches, control units, annunciator panels and lockable cabinets shall be provided with a single standardized utility lock and key.

- B. Key-operated manual fire alarm stations shall have a single standardized lock and key separate from the control equipment.
- C. All keys shall be delivered to the RE.

#### **2.13 SPARE AND REPLACEMENT PARTS**

- A. Provide spare and replacement parts as follows:
  - 1. Manual pull stations - 1
  - 2. Fire alarm strobes - 1
  - 3. Fire alarm speakers - 1
  - 4. Smoke detectors - 2
  - 5. Duct smoke detectors with all appurtenances - 1
  - 6. Sprinkler system water flow switch - 1 of each size
  - 7. Sprinkler system water pressure switch - 1 of each type
  - 8. Sprinkler valve tamper switch - 1 of each type
  - 9. Control equipment keys - 2
  - 10. Monitor modules - 3
  - 11. Control modules - 3
- B. Spare and replacement parts shall be in original packaging and submitted to the RE.
- C. Furnish and install a storage cabinet of sufficient size and suitable for storing spare equipment. Doors shall include a pad locking device. Padlock to be provided by the VA. Location of cabinet to be determined by the RE.
- D. Provide to the VA, all hardware, software, programming tools, license and documentation necessary to permanently modify the fire alarm system on site. The minimum level of modification includes addition and deletion of devices, circuits, zones and changes to system description, system operation, and digitized evacuation and instructional messages.

#### **2.14 INSTRUCTION CHART:**

- A. Provide typewritten instruction card mounted behind a Lexan plastic or glass cover in a stainless steel or aluminum frame with a backplate. Install the frame in a conspicuous location observable from each control unit where operations are performed. The card shall show those steps to be taken by an operator when a signal is received under all conditions, normal, alarm, supervisory, and trouble. Provide an additional copy with the binder for the input output matrix for the sequence of operation. The instructions shall be approved by the RE before being posted.

**PART 3 - EXECUTION****3.1 INSTALLATION:**

- A. Installation shall be in accordance with NFPA 70, 72, 90A, and 101 as shown on the drawings, and as recommended by the major equipment manufacturer. Fire alarm wiring shall be installed in conduit. All conduit and wire shall be installed in accordance with, Section 28 05 13 CONDUCTORS AND CABLES FOR ELECTRONIC SAFETY AND SECURITY, Section 28 05 26 GROUNDING AND BONDING FOR ELECTRONIC SAFETY AND SECURITY, Section 28 05 33 RACEWAYS AND BACKBOXES FOR ELECTRONIC SAFETY AND SECURITY, and all penetrations of smoke and fire barriers shall be protected as required by Section 07 84 00, FIRESTOPPING.
- B. All conduits, junction boxes, conduit supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas.
- C. All exposed conduits shall be painted in accordance with Section 09 91 00, PAINTING to match surrounding finished areas and red in unfinished areas.
- D. All fire detection and alarm system devices, control units and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas. Exact locations are to be approved by the RE.
- E. Speakers shall be wall mounted and recessed in finished areas and surface mounted in unfinished areas.
- F. Strobes shall be flush wall mounted with the bottom of the unit located 80 inches above the floor or 6 inches below ceiling, whichever is lower. Locate and mount to maintain a minimum 36 inches clearance from side obstructions.
- G. Manual pull stations shall be installed not less than 42 inches or more than 48 inches from finished floor to bottom of device and within 60 inches of a stairway or an exit door.
- H. Where possible, locate water flow and pressure switches a minimum of 12 inches from a fitting that changes the direction of the flow and a minimum of 36 inches from a valve.
- I. Mount valve tamper switches so as not to interfere with the normal operation of the valve and adjust to operate within 2 revolutions toward the closed position of the valve control, or when the stem has moved no more than 1/5 of the distance from its normal position.
- J. Connect flow and tamper switches installed under Section 21 13 13, WET-PIPE SPRINKLER SYSTEMS.

### 3.2 TYPICAL OPERATION

- A. Activation of any manual pull station, water flow or pressure switch, kitchen hood suppression system, gaseous suppression system, or smoke detector shall cause the following operations to occur:
  - 1. Operate the emergency voice communication system and flash strobes continuously in the building.
  - 2. Continuously sound a temporal pattern general alarm and flash all strobes in the building until reset at the local fire alarm control unit.
  - 3. Release the magnetic door holders in the smoke zone after the alert signal.
  - 4. Transmit a separate alarm signal, via the main fire alarm control unit to the campus central station.
- B. Operation of a smoke detector at a corridor door used for automatic closing shall also release only the magnetic door holders in that smoke zone. Operation of a smoke detector at a shutter used for automatic closing shall also release only the shutters in that smoke zone.
- C. Operation of duct smoke detectors shall cause a system supervisory condition and shut down the ventilation system and close the associated smoke dampers as appropriate.
- D. Operation of any sprinkler or standpipe system valve supervisory switch, shall cause a system supervisory condition.

### 3.3 TESTS

- A. Provide the service of a NICET level III, competent, factory-trained engineer or technician authorized by the manufacturer of the fire alarm equipment to technically supervise and participate during all of the adjustments and tests for the system. Make all adjustments and tests in the presence of the RE. Results will be submitted to the Owner.
- B. When the systems have been completed and prior to the scheduling of the final inspection, furnish testing equipment and perform the following tests in the presence of the RE. When any defects are detected, make repairs or install replacement components, and repeat the tests until such time that the complete fire alarm systems meets all contract requirements. After the system has passed the initial test and been approved by the RE, the contractor may request a final inspection.
  - 1. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.

2. Test the insulation on all installed cable and wiring by standard methods as recommended by the equipment manufacturer.
3. Run water through all flow switches. Check time delay on water flow switches. Submit a report listing all water flow switch operations and their retard time in seconds.
4. Open each alarm initiating and notification circuit to see if trouble signal actuates.
5. Ground each alarm initiation and notification circuit and verify response of trouble signals.

### **3.4 FINAL INSPECTION AND ACCEPTANCE**

- A. Prior to final acceptance a minimum 30 day "burn-in" period shall be provided. The purpose shall be to allow equipment to stabilize and potential installation and software problems and equipment malfunctions to be identified and corrected. During this diagnostic period, all system operations and malfunctions shall be recorded. Final acceptance will be made upon successful completion of the "burn-in" period and where the last 14 days is without a system or equipment malfunction.
- B. At the final inspection a factory trained representative of the manufacturer of the major equipment shall repeat the tests in Article 3.3 TESTS and those required by NFPA 72. In addition the representative shall demonstrate that the systems function properly in every respect. The demonstration shall be made in the presence of a VA representative.

### **3.5 INSTRUCTION**

- A. The manufacturer's authorized representative shall provide instruction and training, which shall be videotaped for future use, to the VA as follows:
  1. Six 1-hour sessions to engineering staff, security police and central attendant personnel for simple operation of the system. Two sessions at the start of installation, 2 sessions at the completion of installation and 2 sessions 3 months after the completion of installation.
  2. Four 2-hour sessions to engineering staff for detailed operation of the system. Two sessions at the completion of installation and 2 sessions 3 months after the completion of installation.
  3. Three 8-hour sessions to electrical technicians for maintaining, programming, modifying, and repairing the system at the completion of installation and one 8-hour refresher session 3 months after the completion of installation.

- B. The Contractor and/or the Systems Manufacturer's representative shall provide a typewritten "Sequence of Operation" including a trouble shooting guide of the entire system for submittal to the VA. The sequence of operation will be shown for each input in the system in a matrix format and provided in a loose leaf binder. When reading the sequence of operation, the reader will be able to quickly and easily determine what output will occur upon activation of any input in the system. The INPUT/OUTPUT matrix format shall be as shown in Appendix A to NFPA 72.
- C. Furnish the services of a competent instructor for instructing personnel in the programming requirements necessary for system expansion. Such programming shall include addition or deletion of devices, zones, indicating circuits and printer/display text.

- - END - -

