

TECHNICAL SPECIFICATIONS FOR
COMFORT STATION RENOVATIONS

SAM HOUSTON JONES STATE PARK
CALCASIEU PARISH, LOUISIANA

PREPARED BY:
FACILITY SERVICES SECTION
OFFICE OF STATE PARKS
DEPARTMENT OF CULTURE, RECREATION AND TOURISM
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TECHNICAL SPECIFICATIONS

DIVISION 1 - GENERAL REQUIREMENTS

01010 Summary of Work

The Contractor shall provide all labor, materials and equipment necessary to complete the following items of work:

- 1) Contractor to remove and replace shower stalls, toilet partitions, and privacy screens.**
- 2) Contractor to repair any damaged tile.**
- 3) Contractor to paint entrance doors at all interior of Comfort Station.**
- 4) Contractor to remove and replace all equipment such as mirrors, changing table, benches, soap dispenser, stall equipment such as grab bars, paper dispenser, sanitary trash, hooks, folding seat, etc.**
- 5) Contractor to remove and replace existing dryers, lighting, and etc.**
- 6) All work to cover Men and Women's sides at area 2 comfort station. Contractor shall repair one side at a time and provide a time schedule to provide for men and women to alternate availability of facility. Schedule and signage to be provided by contractor and approved by project manager.**

All linear footage measurements are estimated, contractor is to verify all measurements in the field. All are to be field located by the Project Inspector. The desired number of days for this construction and the best window of time when the facility is not in use shall be coordinated with the project inspector and the park manager at the pre-construction meeting. This work is to be completed with as much expediency as possible in order to keep the inconvenience of the patrons using the facility to a minimum.

Any damage to the site, utilities or buildings will be repaired by the contractor at no additional cost to the State of Louisiana.

Unless specified otherwise all materials shall be new, manufactured items suitable for their intended use, installed according to manufacturer's directions or customary good trade practices, and in all cases materials and workmanship shall comply with all applicable building codes. Workmanship shall be at least as good as normal good trade practices with all lines, elevations, surfaces, finishes, etc. like those shown in the plans and/or contained in specifications.

01015 Contractor's Use of Premises

- 1) The Contractor shall have free use of restrooms and reasonable use of electrical power and water for construction purposes. In no way shall the contractor's use of the park impair the park's use or condition. The contractor shall promptly repair any damage to the satisfaction of the Inspector.
- 2) Free lodging of laborers on grounds is not permitted. Further, the contractor shall be subject to all other Park Regulations applying to the public.
- 3) The Contractor shall schedule his work to provide no interference with park visitation and shall keep utility outages to the minimum length required for construction.

01041 Project Coordination

The Project Inspector shall be the Office of State Parks' **Project Inspector, Jeff Jones ofc (318) 357-3192 or cell (318) 393-0596**, and his decision shall be final in all interpretations of the plans and these specifications. All communications shall be through the Project Inspector. Cooperate with the park manager in all matters pertaining to scheduling correlations with the public, access to the site and on site material storage.

01050 Field Engineering

The contractor is responsible for all quantities, measurements, and grades. Provide rough and final staking, elevations and benchmarks as required by the Inspector for approval.

01051 Grades, Lines, and Levels

All construction shall be plumb, level and true to the lines shown on the plans. All slopes shall be consist and drain as intended. The Inspector shall instruct the contractor on any incidental construction that may be necessary to accomplish a functional project. Slope to drain always.

01060 Regulatory Requirements

- 1) Obtain all permits, pay all fees, record the contract and comply with all state, federal and local requirements. All construction shall comply with the International Building Code for State-Owned Buildings. If either any provision of these specifications or the plans are in conflict with any code, the contractor shall notify the Inspector before construction or the contractor shall make remedial changes to bring the work into compliance at no additional cost to the state.
- 2) Safety is part of this contract. Abide by OSHA and all other safety regulations and take all other measures necessary (such as barriers, fences, warning signs, protective clothing, etc.) to protect the public and workmen.
- 3) Temporary Scaffolds, Staging and Safety Devices - The contractor shall provide, erect, maintain and remove, when directed, all scaffolding, staging, platforms, temporary flooring, temporary runways, guards, railing, stairs and ladders necessary for reaching all

portions of the work conveniently and safely and as required by local, federal and state codes or laws for the protection of workmen and the public.

The construction, inspection and maintenance of the above items shall comply with all safety codes and regulations, as applicable to the project.

- 4) Fire Protection - Verify availability and location of existing onsite fire protection equipment. Provide additional temporary equipment as required by applicable safety standards.

01150 Measurement and Payment

- 1) Bids – The Contractor's bid shall be lump sum with no qualifications, informalities or item payments or the bid will be disqualified.
- 2) Add alternates – If add alternates are part of project the contractor shall note them and their amount on his bid. The low bid, including any add alternates, will be accepted if that bid is within the construction budget, otherwise the bid will be awarded on the basis of the base bid.
- 3) Partial payments – See Progress Payments and Acceptance in bid documents. If the contractor requests partial payments, they shall be made using the invoice and schedule of values forms supplied in these specifications. The approved schedule of values shall be based upon the divisions of these specifications except that the value of Division One shall be zero. Upon completion of the project (acceptance), payment will be authorized for 90% of the contract amount (10% retainage) less the value of all punch list items which shall be computed at the actual cost of the items. No partial payments on the punch list. The Inspector's decision on payment approval shall be final.
- 4) Change orders – All changes in the work involving the contract amount, scope of work, or contract time shall be made only by change orders. Change orders shall be prepared by the contractor as directed by the Inspector and approved by State Procurement and the Inspector prior to the work/change being done.
Change orders shall contain:
 - a) An itemized list of material and labor costs for each subcontractor's work including quantities and unit costs for each item of labor and material, labor and material cost need to be shown separately.
 - b) Same as above for contractor's labor and material.
 - c) Overhead and profit.
 - d) Time.
- 5) Quantities – All quantities and dimensions expressed in the plans and these specifications reflect the intent of the project and best knowledge of State Parks. They are for the guidance of the Contractor and shall be verified by the Contractor. If discrepancies or errors exist, the inspector shall be notified prior to construction.

01200 Project Meetings

A pre-bid conference will be held at the job site and prospective bidders are expected to be familiar with site conditions and bid procedures.

NON-MANDATORY PRE-BID DATE: March 11, 2016 at 1:00 P.M.

A MANDATORY JOB SITE VISIT IS REQUIRED PRIOR TO BID OPENING.

After the contract is let, a pre-construction conference shall be held before commencing work. Progress meetings shall be held at least monthly to review the progress and quality of the work and to review requests for partial payment. At the completion of work, a Final Inspection shall be held after at least a **three (3) day notice** by the Contractor to prepare a punch list (if necessary) of items to be addressed before acceptance.

01300 Submittals

- 1) As equal determinations – Manufacturer's brand names, colors and model numbers are used for the sole purpose of obtaining competitive bids. Substitutions of products of other manufactures equal to or superior to those listed may be acceptable if approved by the Inspector prior to bidding. Otherwise, the Contractor's substitution may be rejected. For a substitution to be pre-approved by the Inspector, the Contractor may submit, ten (10) days before bid date, samples, brochures and technical data sufficient for the Inspector to make a decision.
- 2) Packaging – The Contractor shall retain all packaging and supplier's invoices in neat, clean, dry, legible condition for the Inspector to determine compliance with these specifications.
- 3) Shop drawings – Submit shop drawings wherever required by the plans, these specifications or when required by the inspector. Such drawings shall be drafted, dimensioned, and scaled drawings clearly showing the contractor's intended plan, materials and the like.

01510 Temporary Utilities

Provide temporary utilities as needed at no additional cost to the State. Contractor shall be responsible for contacting and providing the electric company with all necessary permits in order to make arrangements to connect the new facility to permanent power.

01700 Contract Closeout

See bidding and contract requirements regarding Final Payments and project meetings regarding acceptance, punch list, and final inspection. After completion, the Contractor shall remove all scraps, forms, packaging, debris, spatters, dust, dirt, etc. and leave the work in a neat and clean condition with all facilities ready for use by the Office of State Parks. Salvageable materials remain the property of the State and shall be delivered to the Park Manager. Materials deemed waste by the Project Inspector shall be removed from the park by the Contractor. Contractor

shall provide the project inspector with a Project Manual. This project manual shall include the following information:

- Contact information for both the general contractor and all subcontractors.
- Copies of inspection certificates from authorities having jurisdiction. Particularly the Office of the State Fire Marshal.
- Copy of all cut sheets.
- Maintenance schedule for all equipment.
- Care instructions for equipment and finishes.
- Chemical safety instructions if chemicals or chemical equipment is part of the project.
- Provide all equipment operating manuals, training and warranties.

The contractor shall provide the project inspector with two copies of the project manual. All information shall be provided in binders.

The project manual must be submitted with or prior to the retainage pay request. If not submitted the pay request shall be held until the manual is submitted to the project inspector.

01710 Cleaning

GENERAL

A. Work Included:

Throughout the construction period, maintain the building and the site in a standard of cleanliness as described in this section. Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.

MATERIALS

Provide all required personnel, equipment and materials needed to maintain specified standard of cleanliness. Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Project Manager.

EXECUTION

Progress Cleaning:

- A. Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials. Do not allow the accumulation of scrap, debris, waste material and other items not required for the construction of the work.
- B. Provide daily cleanup of areas adjacent to work area.
- C. At the end of each working day, store tools, small equipment (able to be carried by two -persons), building materials and debris.

- D. At the end of each working day, remove from the site all scrap, debris and waste material. Provide adequate storage for all items awaiting removal from the site, observing all requirements for fire protection and protection of the ecology.

Structures:

- A. At the end of each working day, sweep interior spaces clean. "Clean" for the purpose of this sub-paragraph, shall be interpreted as meaning (free from dust and other material capable of being removed by use of reasonable effort of a handheld broom).
- B. As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using all materials and equipment required achieving the required cleanliness.
- C. Clean the finish floor daily as required while work is being performed in the space in which finish materials have been installed. "Clean" for the purpose of this sub-paragraph shall be interpreted as meaning free from any foreign material which, in the opinion of the Project Inspector, may be injurious to the finish floor material.
- D. Carefully protect from damage or staining all installed finish material, equipment and fixtures without consideration of when they were installed. Damage of stained parts will be repaired or replaced by the contractor at no additional cost to the owner.

Final Cleaning:

- A. "Cleaning" for the purpose of this article shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial, quality building maintenance equipment and materials.
- B. Visually inspect all interior surfaces and remove all traces of soil, waste material, smudges, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. Remove all paint droppings, spots, stains and dirt from finished surfaces. Use only materials and equipment recommended by the manufacturer of the finish material.
- C. Clean all glass and frames inside and out. To all surfaces requiring the routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished or buffed.
- D. Schedule final cleaning as approved by the Project Inspector to enable the owner to accept a completely clean project.

01740 Warranties and Bonds

All materials and workmanship shall be warranted for a period of one (1) year.

DIVISION 2 – SITE WORK

02073 Selective Demolition

Demolition work shall take place throughout this project, as is necessary to coordinate timetable and accommodate the work of other trades.

Remove without damage to surrounding surfaces and dispose of offsite:

- Existing Shower stalls and dressing area where indicated (to be identified at the pre-bid meeting)
- Existing Toilet partitions and privacy screens where indicated (to be identified at the pre-bid meeting)
- Existing Vanities where indicated (to be identified at the pre-bid meeting)
- Existing entrance doors at Comfort Station
- Existing urinals and toilets to accommodate as required.
- Any work required to accommodate new
- Any trash
- Miscellaneous leftover debris resulting from this work
- Contractor must also make provisions to work around visitors and other park activities in a way that will incorporate safety in all regards.

Note: The Park Manager will have final word on whether he would like to keep any of the above components for use elsewhere on the park.

Division 8 – Doors and Windows

08115 Steel Doors and Frames

The Contractor shall strip, sand, and prepare all existing exterior doors and frames and shall be painted to match existing trim with a high-quality name-brand external paint, as described in Division 9 of this document. Thresholds shall have a factory applied baked on enamel finish. The contractor is responsible for verifying all conditions to minimize add-ons, etc. to make fit. Doors shall be weather-stripped on all edges. The Contractor shall be responsible for protecting any adjoining materials during the removal of the existing door units. Any damages shall be repaired to match existing in materials and finish at the contractors expense.

A. Adjust and Clean

- a. Adjust and check each operating item of hardware, to ensure proper operation or function of every unit. Lubricate moving parts with type lubrication recommended by manufacturer (graphite-type if no other recommended). Replace units that cannot be adjusted and lubricated to operate freely and smoothly as intended for the application made.
- b. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week

prior to acceptance or occupancy, and make a final check and adjustment of all hardware items in such space or area. Clean and re-lubricate operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

Division 9 – Finishes

09300 Tile

PART 1, GENERAL

- 1.0 Section Includes
 - A. Ceramic tile for interior floor and wall applications.
 - B. Thresholds at door openings.
- 1.1 Submittals
 - A. Product Data: Provide instructions for using grouts and adhesives.
 - B. Samples: Mount tile and apply grout on two plywood panels, 18"x18" in size illustrating pattern, color variations and grout joint size variations.
 - C. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods and polishes and waxes.

PART 2, PRODUCTS

- 2.0 Ceramic Tile Materials
 - A. Manufacturers: All products by same manufacturer.
 - 1. Daltile specified, as equals accepted if colors, textures, etc. match
 - B. Cermaic Mosaic Floor Tile: conforming to the following:
 - 1. Size: 2"x2"
 - 2. Shape: Square
 - 3. Edge: Cushioned.
 - 4. Surface Finish: Unglazed, Slip resistant.
 - 5. Color: match existing
 - C. Ceramic Wall Tile: conforming to the following:
 - 1. Size: 4W' x 4W'
 - 2. Shape: Square
 - 3. Edge: Cushioned
 - 4. Surface Finish: Crystaltex
 - 5. Color: match existing
 - D. Base: Match wall tile for moisture absorption, surface finish, and color.
 - E. Wainscot Cap: Top row of tile (match size of wall tile) and bull-nose cap to be Glazed wall tile.
- 2.1 Grout Materials
 - A. Standard Grout - use type as per manufactures recommendations. Submit color sample to project inspector for approval (see 5.1.E below for colors).

2.2 Accessory Materials

- A. Cementitious Backer Board: High density, cementitious, glass fiber reinforced, ½” thick; 2" wide coated glass fiber tape for joints and comers; use under all wall tile.
- B. Thresholds: Marble or cultured marble type, light color, matte finish, size by full width of wall or frame opening, beveled both sides. Submit sample for approval.

PART 3, EXECUTION

3.0 Installation – General

- A. Install cementitious backer board in accordance with board manufacturer's instructions. Tape joints and comers, cover with skim coat of dry-set mortar to a featheredge.
- B. Install tile, thresholds and grout in accordance with applicable requirements of ANSI A108.1 through A108.10, manufacturer's instructions, and TCA Handbook recommendations.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor-, base-, wall- and cap-joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar or excess grout.
- E. Grout tile joints. Use standard grout unless otherwise indicated. Gray joints on floor and on wall tiles. Grout type and colors to be approved by project inspector.

3.1 Installation – Floors

- A. Over interior concrete substrates, install in accordance with TCA Handbook Method F113, dry-set or latex-Portland cement bond coat, with standard grout. Use Flex-Bond or equal to bond over existing cracks in concrete substrates.

3.2 Installation – Wall Tile

- A. A. Over cementitious backer units install in accordance with TCA Handbook Method W244.

09900 Painting

The Project Inspector shall have the opportunity to inspect **all repairs** and preparation **prior** to any coverage with either primer or paint.

The contractor shall furnish all labor, materials and equipment necessary to complete work specified herein. This work shall include the surface preparation and application of field applied painting and coating. All work specified herein will be accomplished on the three gazebos, support structure and areas affected by construction activities.

Scrape, sand and feather existing painted surface, including roof, in preparation for proper application of new paint to the satisfaction of the Project Inspector. Use methods that will not cause damage to adjacent shrubbery and other plant life. Cover as necessary and do not allow chemicals to escape into surrounding soils. Prepared and cleaned surfaces will be primed with a high-quality compatible primer and painted with a latex paint with a minimum of (2) coats and until sufficient coverage is achieved. The contractor shall install his work to meet existing

conditions as found at the job site. The contractor shall furnish and provide for proper guards for the prevention of accidents and shall use equipment of prime condition for this project.

The contractor shall personally, or through an authorized competent representative, constantly supervise all work through final acceptance.

Primer and paint used for roofs shall be specifically designed for application on these metallic surfaces.

- A. **Warranty** - Warranty the work specified herein for one (1) year against becoming unserviceable or causing an objectionable appearance resulting from either defective or non-conforming materials and workmanship.
Defects shall include, but are not limited to the following:
- 1) Noticeable discoloration, streaking, blooming, darkening or fading.
 - 2) Mildewing
 - 3) Peeling, cracking, blistering, alligating or releasing from the substrate.
 - 4) Chalking or dusting.
 - 5) Changing sheen.
 - 6) Softening or becoming tacky.
 - 7) Splices separating or showing
- B. **Submittals** - Provide the project inspector with the manufacturer's name, product's name, number and generic description of each proposed product and its use.
- C. **Quality Assurance**
- 1) Inspect substrate before proceeding to verify proper preparation.
 - 2) Materials of coating for each type of surface shall be the "first line" products of a single manufacturer, and be the approved manufacturer's complete coating system with no substitution.
 - 3) Inspection
 - a) Verify condition of existing painted surfaces including type of paint, adherence to surface, etc., and confirm compatibility of new material to be applied to existing material. Adequate preparation shall be undertaken to ensure adherence. Peeling due to failure of existing coating to adhere will not be considered to be justification to exempt the contractor from warranty repairs.
 - b) Verify that all surfaces to be painted have been properly cleansed and free of dust or other materials which would affect adherence of paint. Do not proceed until satisfactory conditions have been achieved.
- D. **Delivery** – Approved paints shall be delivered in labeled, sealed containers.
- E. **Protection** - Cover or otherwise protect all finished work of other trades and surfaces not being painted.
- Acceptable Manufacturers:
- Glidden Coatings and Resins
 - Benjamin Moore- Devoe Paint company
 - Martin Semour Company
 - Sherwin Williams
 - Approved equal

- F. **Materials** - All paint and preservatives shall be the best grade materials manufactured. All materials to be amended with the addition of Di-all, or equal mildewcide, in accordance with the manufacturer's directions using the amount specified for best results.
- G. **Colors** – Shall match the existing colors.
- H. **Application**
- 1) Each coat of paint shall be applied uniformly with proper spreading rate listed by the approved paint manufacturer.
 - 2) Final coat of paint must have visual evidence of solid hiding and uniform appearance free from visual evidence of poor application.
 - 3) All coats shall be thoroughly dry before applying succeeding coats.
 - 4) Paint edges adjoining other materials or colors shall be sharp and clean with no overlapping.
 - 5) Brush-applied paint must be brushed out uniformly to eliminate laps, skips, and excess brush marks.
 - 6) Roller applied paint must be applied with proper skill to avoid all signs of lapping and excess paint lines from edge of roller. When cutting in with a brush is required, these areas must be of same texture, color and hiding as adjacent areas to assure good appearance.
 - 7) Spray application will not be allowed **unless approval for such has been obtained from the Project Inspector**. Should spray application be approved, all possibility of any over-spray beyond the structure being painted shall be eliminated by sealing the structure with materials that do not allow atomized paint to escape. Protect adjacent plant life by all means. If damage to shrubbery occurs as a result of this work, the contractor shall be required to repair or replace such shrubbery to the satisfaction of the site horticulturist at no additional cost to the Office of State Parks.
 - 8) Fill all voids and achieve a smooth surface.
 - 9) Each coat of color finish or enamel shall be lightly sanded and wiped free of dust before applying next coat. Wood trim must be sanded smooth between coats.
- I. **Cleaning**
- 1) Remove all paint splatter or spills from all surfaces.
 - 2) Touch up and restore damaged finishes prior to final acceptance.
 - 3) Leave premises clean and free from rubbish and materials from painting operations.

Division 10 – Specialties

10150 Compartments and Cubicles

PART 1, GENERAL

- 1.1 This section includes the following:
- 1.1.1 Plastic compartment work includes floor-mounted overhead-braced toilet compartments, vanities, dressing compartments and shower stalls, where indicated.
 - 1.1.2 Furnish all labor and materials necessary for the completion of work in this section as shown on the contract drawings and specified herein.

- 1.1.3 Work in this section shall include, but is not limited to:
 - 1.1.3.1 Toilet compartments, compartment doors, urinal screens, privacy screens and entry partitions
 - 1.1.3.2 Dressing compartments, including benches
 - 1.1.3.3 Shower stalls
 - 1.1.3.4 Hardware for toilet compartments and plastic partitions

1.2 Submittals

- 1.2.1 Product Data: Provide instructions for installation.
- 1.2.2 Maintenance Data: Include recommended cleaning methods, cleaning materials and stain removal methods.
- 1.2.3 Color samples and hardware samples shall be submitted to the Project Inspector for approval upon request at the pre-construction conference.
- 1.2.4 Submit two (2) sets of shop drawings and details for Project Inspector's approval.

PART 2, PRODUCTS

2.1 Manufacturer: Santana, or equal.

2.2 Materials

- 2.2.1 The following shall be 1" thick constructed from High Density Polyethylene (HDPE) resins: toilet compartment doors, panels and pilasters; dressing compartments and benches; shower stalls; shower bases and supports.
- 2.2.2 Colors to be provided by the Contractor at the pre-construction conference. The selection shall be from standard color offerings. The Project Inspector shall select colors from the submittal. Contractor to provide Project Inspector with samples from manufacturer for Poly-Granite, Poly-Mar, and Poly-Marble.
- 2.2.3 All plastic components shall be covered with a protective plastic masking.

2.3 Construction

- 2.3.1 The following shall be 1" thick with all edges rounded to a 1/4" radius: toilet compartment doors, panels and pilasters; dressing compartments and benches; shower stalls and supports.
- 2.3.2 Doors dividing panels shall be 55" high and mounted at 14" above the finished door. An aluminum heat sink shall be fastened to the bottom edges.
- 2.3.3 Pilasters shall be 32" high (standard) and fastened to a 3" high pilaster shoe with a stainless steel, torx-head sex bolt.
- 2.3.4 Install partition components secure, plumb and level in accordance with manufacturer's instructions.

2.4 Hardware

- 2.4.1 Hardware includes, but is not limited to the following: pilaster shoes, hinges, door latches, coat hooks, bumpers, seat mounts and supports.
- 2.4.2 Door hardware shall be as noted:
 - 2.4.2.1 Hinges shall be 5" and fabricated from heavy-duty extruded aluminum (6463-T5 alloy) with a bright dip anodized finish. Hinges shall include wrap-around flanges that are surface mounted and through bolted to doors and pilasters with stainless steel,

- torx-head sex bolts. Hinges shall operate with field adjustable nylon cams that can be field set in 30E increments; or hinges shall be integral, fabricated from the door and pilaster with no exposed metal parts.
- 2.4.2.2 Door strike/keeper shall be 6" long and made of heavy-duty extruded aluminum (6463-T5 alloy) with a bright dip anodized finish. The door strike/keeper shall include wrap-around flanges that are at least 5/32" wall thickness, and secured to the pilasters with stainless steel, torx-head sex bolts. Bumper shall be made of extruded black vinyl.
- 2.4.2.3 Latch and housing shall be made of heavy-duty extruded aluminum (8483-T5 alloy). The latch housing shall have a bright dip anodized finish and the slide bolt and button shall have a black anodized finish.
- 2.4.2.4 Each door shall be supplied with one bumper/hook made of chrome-plated samak. Outswing doors shall be supplied with one door pull and one doorstop made of chrome-plated samak.
- 2.4.3 Pilaster shoes shall be one of the following: 3" high HDPE molded plastic in color to match partition; or pilaster shoes shall be 3" high brushed stainless steel (type 304, 20 gauge), secured to the pilaster with a stainless steel, torx-head sex bolt.
- 2.4.4 2.4.4 Wall brackets shall be 54" long, made of extruded PVC plastic with a wall thickness of 3/16" and are available in single ear, double ear and "H" design. Wall brackets are available in white, black, gray, beige, brown, royal blue, teal, glacier gray, mint green, cappuccino and sand castle. Choose color to match partition. Wall brackets shall be fastened to pilasters with stainless steel, tamper resistant torx screws and fastened to the panels with stainless steel, torx-head sex bolts. Or, wall brackets shall be 1½" stirrup type made of heavy-duty aluminum (6463-TS alloy) with a bright dip anodized finish. Stirrup brackets shall be fastened to pilasters and panels with stainless steel, torx-head bolts.
- 2.4.5 Head-rail shall be made of heavy-duty extruded aluminum (6463-TS alloy) with anti-grip design and a curtain track integrated into its design. The head-rail shall have a brushed finish and shall be fastened to the head-rail bracket by a stainless steel, torx-head sex bolt, and fastened to the tops of pilasters with stainless steel, tamper resistant torx screws.
- 2.4.6 Head-rail brackets shall be 16-gauge, brushed stainless steel and secured to the wall with #14 stainless steel screws.
- 2.4.7 Shower stalls, dressing compartments, and compartment benches to attach to the wall and other plastic supports using 20' long heavy-duty extruded aluminum (6061-TS alloy) angle brackets.
- 2.4.8 Dimensions of new partitions to be similar to existing. Verify ADA shower and toilet compartments meet current ADA requirements.

PART 3, EXECUTION

- 3.1 Preparation
- 3.1.1 Examine areas to receive toilet partitions, screens and shower compartments for correct height and spacing of anchorage/blocking and plumbing fixtures that may affect installation of partitions. Report any discrepancies to the Project Inspector.
- 3.1.2 Take complete and accurate measurements of complete toilet compartment locations.
- 3.1.3 Handicapped toilet and shower compartments to comply with current ADA standards.

3.2 Installation

- 3.2.1 Install toilet partitions, shower stalls with bases, dressing compartments and compartment benches in a rigid, straight, plumb and level manner according to the manufacturer's installation instructions.
- 3.2.2 All doors and panels of toilet compartments to be mounted at 14" above the finished floor.
- 3.2.3 Dressing compartment benches to be mounted at 20" above the finished floor.
- 3.2.4 Clearance at vertical edges of doors shall be uniform top to bottom and shall not exceed ¼".
- 3.2.5 No evidence of cutting, drilling, and/or patching shall be visible on the finished work.
- 3.2.6 Finished surfaces shall be cleaned after installation and be left free of all imperfections. All protective plastic covering shall be removed.

10800 Toilet and Bath Accessories

1. General

A. Section Includes

- a. Toilet and washroom accessories
- b. Attachment hardware

B. References

- a. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible To and Usable by Physically Handicapped People.
- b. ANSI/ASTM A123 -Zinc (Hot-Dip Galvanized) Coatings on Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars, and Strips.
- c. ANSI/ASTM A366- Steel, Carbon, Cold-Rolled Sheet, Commercial Quality.
- d. ANSI/ASTM A386 -Zinc Coating (Hot-Dip) on Assembled Steel Products.
- e. ANSI/ASTM B456 - Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
- f. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- g. ASTM A269- Seamless and Welded Austenitic Stainless Steel Tubing for General Service.

C. Submittals

- a. Provide product data on accessories describing size, finish, details of function, attachment methods.

D. Regulatory Requirements

- a. Conform to applicable code for installing work in conformance with ANSI A117.1.

E. Sequencing and Scheduling

- a. Coordinate the work of this Section with the placement of internal wall reinforcement to receive anchor attachments.

2. Products

A. Manufacturers

- a. Bobrick.
- b. American Standard.
- c. Zurn Zems.

B. Materials

- a. Sheet Steel: ANSI/ASTM A366.
- b. Stainless Steel Sheet: ASTM A167, Type 304.
- c. Tubing: ASTM A269, stainless steel.
- d. Fasteners, Screws, and Bolts: Hot dip galvanized tamper proof.
- e. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.
- C. Fabrication
 - a. Weld and grind smooth joints of fabricated components.
 - b. Form exposed surfaces from single sheet of stock, free of joints.
 - c. Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.
 - d. Back paint components and package complete with anchors and fittings.
 - e. Shop assemble components and package complete with anchors and fittings.
 - f. Provide steel anchor plates, adapters, and anchor components for installation.
 - g. Hot dip galvanized exposed and painted ferrous metal and fastening devices.
- D. Factory Finishing
 - a. Galvanizing: ANSI/ASTM, A123, A386 to 1.25-oz/sq yd.
 - b. Shop Primed Ferrous Metals: Pre-treat and clean, spray apply one coat primer and bake.
 - c. Enamel: Pre-treat to clean condition; apply one coat primer and minimum two coats epoxy baked enamel.
 - d. Chrome/Nickel Plating: ANSI/ASTM B456, Type SC 2 polished finish.
 - e. Stainless Steel: Polished finish.
3. Execution
 - A. Examination
 - a. Verify that site conditions are ready to receive work and dimensions are as instructed by the manufacturer.
 - b. Beginning of installation means acceptance of existing conditions.
 - B. Preparation
 - a. Deliver inserts and rough-in frames to site at appropriate time for building-in.
 - b. Provide templates and rough-in measurements as required.
 - c. Verify exact location of accessories for installation.
 - C. Installation
 - a. Install fixtures, accessories and items in accordance with manufacturers' instructions.
 - b. Install plumb and level, securely and rigidly anchored to substrate.
 - D. Schedule (All numbers Bobrick or equal):
 - a. Mirrors - B-290 20 x 30 with shelf and sloped ADA compatible for identified sink
 - b. Toilet Tissue Dispensers – B-288
 - c. Sanitary Dispenser – like kind
 - d. Soap Dispenser – like kind
 - e. Hand Driers – B-7505-848 115V recessed sensor activated hand driers with 30 second cycle. Unit to be wired to GFI 20A breaker at panel.
 - f. Handicap Grab Bars – B-6206x42; B-6206 x36

Division 15 – Mechanical

15000 Plumbing Systems

Contractor will provide and install plumbing as specified herein and as needed for a complete and proper installation including but not necessarily limited to:

- Plumbing fixtures and trim;
- Installation of all new fixtures, sinks, faucets etc.;
- And all other items required for a complete and operating plumbing system.
- Contractor will cap off all unused plumbing and drains no longer needed.

Interpretation of Specifications: Plumbing subcontractors shall make all minor changes in plumbing systems required to meet code at no additional cost to the Owner. Any errors or inconsistencies in the Plans or Specifications which create a question for the plumbing subcontractor shall be brought to the attention of the Project Inspector prior to the contract signing.

Qualifications of installers: Use sufficient journeyman plumbers and competent supervisors in execution of this portion of the Work to ensure proper and adequate installation throughout. In the acceptance or rejection of installed plumbing, no allowance will be made for lack of skill on the part of workmen.

Codes and regulations: In addition to complying with the specified requirements, comply with pertinent regulations and codes of governmental agencies having jurisdiction, including the Uniform Plumbing Code, latest edition, and requirements of the National Fire Protection Association, latest editions. In the event of conflict between or among specified requirements and pertinent regulations and codes, the conflict shall be brought to the attention of the Engineer, and the more stringent requirement shall govern.

15030 Plumbing

1. General - This section applies to plumbing work included in the contract for construction. Refer to section on "General Conditions". These shall be considered as an included part of this section. Be familiar with and comply with all applicable provisions. The term contractor as used in this section refers to the plumbing subcontractor.
 - A. Scope: Furnish labor and materials necessary for complete installation of plumbing work. The plumbing work generally includes domestic water piping system, sanitary drainage and vent systems, water piping systems, roof drains, plumbing fixtures, and miscellaneous equipment connections. Consult plans for systems included on this specific project.
 - B. Codes and Standards: Applicable codes and standards apply as minimum standard for this work, including particularly:
 - a. Louisiana State Sanitary Code
 - b. Local Plumbing Code
 - C. Prior Approval: Attention is invited to prior approval procedure in "materials" paragraph. Prior approvals are required for plumbing fixtures, special grades of pipe and fittings, etc.

- D. Excavation: Excavate trenches for underground pipe to required depth and width. After pipe has been installed, inspected, and approved, backfill trench with earth free of trash and debris. Tamp backfill thoroughly in 9-inch layers. After settling is complete, repair surface or paving to its original condition. Under building follow compaction rules for general construction in the project.
 - E. Instruction Manuals: Provide operating and maintenance construction manuals on all systems and equipment furnished or installed that would require periodic inspection, adjustment, or cleaning. Materials shall be neatly and permanently mounted and bound in one or more moderately priced, canvas covered, hard backed, 3-ring notebook binders with appropriate label and Table of Contents. Include one copy of approved shop drawings.
 - F. Tests and Inspections: Assist in making periodic inspections or tests required by Project Inspector. When requested, provide the assistance of foremen and qualified craftsman.
 - G. Guarantee: contractor shall guarantee Workmanship and materials for one year from date of final acceptance of job. Be responsible for adjustments, replacements, and corrections.
 - H. As-Built Drawings: Keep accurate records of authorized changes in routing, locations, and conflicting utilities. On completion, mark a clean set of prints and deliver to the Project Inspector.
2. Products
- A. Plumbing Fixtures:
 - a. Plumbing fixtures shall be installed complete with all hardware, accessories, and fittings required for an operable system. Fixtures shall be installed in a finished manner and supported to make a strong, stable, and rigid assembly to the building.
 - b. At each fixture or group of fixtures, furnish and install air chambers and shut-off valves on supply lines. Air chambers shall be concealed in wall or chase.
 - c. Provide fixtures as indicated on the drawings and as described in schedule on plans.
 - B. Plumbing Fixture Schedule:
 - a. Fixtures: Equal to American Standard, Kohler
 - (1) Toilets - Contractor to replace seat on each toilet
 - (2) Lavatories - Contractor to remove and reinstall all lavatories to provide proper support and to caulk at attachment face to prevent debris to collect.
 - (3) Faucet - Moen #19605 Ceramic 2- Handle Lavatory faucet and ADA spout on ADA units.
 - C. Domestic Water Piping:
 - a. All domestic water piping on interior of building shall be type "L" hard copper pipe with wrought copper sweat fittings. Joints shall be made with 95-5 solder. Water piping underground shall be type "K" copper.
 - b. There shall be no cross connections in the water system of the building. All water lines to water closets, flushing rim sinks, and other items of equipment with inlets below the fixture overflow shall be fitted with approved siphon breaking devices.
 - c. Connections between galvanized steel pipe and copper tubing shall be made with insulating unions.
 - d. At water entrance to the building, provide cut-off valve in cast iron box with cover marked "water". Locate close to building and with top of box level with grade.
 - e. Disinfect water supply lines in building and device lines as described in Paragraph P 8.8 of LA State Sanitary Code. Use at least 50 parts per million of line contents and

allow to stand under service pressure overnight. If a short period is necessary use at least 100 parts per million for two hours.

- D. Sanitary Pipe and Fittings:
- a. Where permitted by applicable codes, use approved plastic systems; refer to "Soil, Waste and Vent" below. **Use Schedule 80 PVC general**, and Schedule 80 PVC under driveways, sidewalks, etc. Use schedule 80 PVC risers from PVC at entrance into buildings, or risers for cleanouts, etc.
- E. Soil, Waste, and Vent:
- a. Install soil, waste, drain, and vent lines to serve all the fixtures located in the building and such items of equipment that require same.
 - b. All joints on schedule 80 PVC pipe shall be bell and spigot with approved automatic joints. Joints on copper pipe shall be made with sweat fittings.
 - c. Vent system in accordance with drawings and local and state codes. Slope vents uniformly. Above grade, indoors, where not subject to damage, use plastic DWV type ABS, or Schedule 40 PVC that conforms with ASTM D2661, and with National Sanitation Foundation, Plastic Pipe Institute. Grade drain lines 1/4" fall per foot for 3" or smaller, and 1/8" for 4" or larger.
 - d. Flash around all vent pipes passing through roof with 2-1/2lb. Sheet lead; 10" min. up pipe, 8" radius from pipe, tum over into pipe cavity. On copper use copper flashings.
 - e. Exterior cleanouts to be Josam #58560-20; numbers given are to set type of cleanout only, equal to Wade, Zurn, or Jay R. Smith will be accepted. Provide cleanouts in drainage lines in change of direction, at end of horizontal runs over 20', and at intervals of 75' in long horizontal runs over 20', and at intervals of 75' in long horizontal runs. Cleanouts shall be same size as pipe up to 4" diameter, and 4" minimum for larger pipe unless otherwise noted.
3. Execution - Underground piping and fittings shall be same as for indoors except it shall be mill coated and wrapped with a bitumastic base and over wrap.
- A. Installation of Piping:
- a. Furnish and install complete piping systems as shown on plans. Valve equipment on both inlet and outlet. Provide automatic float vents to eliminate air from high points, or air trap points, in each system, and at each piece of equipment. Pipe vent valves and relief valves to nearest drain.
 - b. All pipe shall be run true and straight without sags or traps.
 - c. Furnish and install a drain valve in each of the supply and return mains at the low points in the system.
 - d. Furnish and install all gate valves, check valves, balancing valves, hangers, floor and ceiling plates, etc., to make the system complete.
 - e. Screw joints shall be made up with graphite and oil, or other approved compound for a water system.
 - f. Make all piping offsets etc., to meet conditions at building and to make neat workable system.
 - g. Furnish and install automatic fill valves in water systems. Provide by-pass quick fill line around automatic fill valves.

- h. Allow for expansion of piping; check that indicated changes in direction are adequate. Provide expansion joints or loop if required in the longer runs. Provide for draining and air venting.
 - i. Avoid the introduction of "traps" or "siphons".
 - j. Cut pipe square, ream and remove burrs inside and outside; clean. Make joints with standard factory fittings and with recommended flux. Cut threads with sharp dies and appropriate cutting compound. Apply suitable joint compound, non-hardening type.
- B. Pipe Testing:
- a. For water systems, 100 psi of water with pressure gauge; maintain at least 48 hours of observation. For soil pipe, 10 foot head of water. This is more than customary in most areas.
- C. Thermal Insulation:
- a. Insulate all water lines with 1/2" fiberglass with standard jacket, or standard polyform preformed sections of proper size. Insulation shall be installed in satisfactory and neat manner; mold around all fittings; provide suitable jacket or protective wrap.
- D. Insulating Unions:
- a. Where indicated and at any connection between ferrous and non-ferrous piping or equipment, provide accessible insulating (dielectric) unions. Unions or couplings shall be lined with nylon.
- E. Pipe sleeves and Supports:
- a. Provide pipe sleeves and inserts and set in place as other work progresses. Where pipes pass through walls above grade, sleeves shall be 26 gage-galvanized steel. Below ground use standard weight steel pipe. Pack between sleeve and pipe with non-hardening, moisture resistant material.
 - b. Provide inserts and braces to rigidly support all piping systems. Supplies for hose bibb, toilets, lavatories, etc., shall be firmly braces in wall or chase. Hose bibb trim flanges shall be accurately flush with wall.
 - c. Hangers shall be spaced according to type of piping system being supported. In no case will hangers be any farther apart than 20 feet for steel or wrought iron pipes, 8 feet for copper pipes, or 5 feet of horizontal cast iron pipes.
 - d. Provide insulation saddles between pipe hangers and insulation.
- F. Valve Boxes:
- a. Provide standard schedule 80 PVC box, or precast reinforced concrete box. Box shall have captive cover plate with work "water" or "valve" cast in cover.
- G. Utility Services:
- a. Connect all utility services such as water, sewage, etc., complete to mains prior to acceptance. Extent of utilities required is shown on drawings.

15450 Plumbing Fixtures and Trim

The intent of these specifications is to utilize, to the greatest extent possible, existing piping and plumbing. Where required for a complete and functional facility, supply all necessary ancillary piping, fixtures, appurtenances and the like at no additional cost. Do not reuse deteriorated, outdated or otherwise inferior components. All plumbing shall be neat, workmanlike and conform to the best practices of the trade. Insulate any new work. The contractor shall replace existing sinks and fixtures in comfort stations.

NOTE! All above to be supplied and installed with all fittings required for a functional project, such as but not limited to: automatic flush valves, mounting and support hardware, rough-ins, nipples, flush assemblies, new plumbing, etc.

Division 16 – Electrical Systems

16000 Electrical

1. General

- A. General Conditions are a part of this specification, and Contractor shall consult them in detail for instructions pertaining to his work. He shall consult all other relevant sections.
- B. Scope: The work covered by this specification shall include furnishing all labor, materials, equipment and services to construct and install the complete electrical system as shown on the accompanying plans and specified herein. This work will include the connection to existing power, power outlets, light fixtures, and branch wiring. The contractor is responsible for having a transformer set and underground power brought to the site.
- C. Electrical Distribution System:
 - a. All national, state and local building and electrical codes are to be considered a part of these specifications.
 - b. Plans and specifications are not intended to show all details which the Contractor may require or any special construction which may be found necessary as the work progresses. This Contractor must satisfy oneself on all points in regard to the work and obtain all necessary information before submitting his bid, and shall include all costs for same in his bid.
 - c. The electrical work shown on the plans show relation of wiring and connections and must not be scaled for exact outlet locations. The Contractor shall refer to the architectural plans and details for all dimensions and locations, and shall fit his work accurately to the building.
 - d. All electrical equipment shall be connected in accordance with the instructions of the manufacturer.
 - e. This Contractor is referenced to the Architectural and Structural Plans for information in regard to construction materials and details.
 - f. The work shall be performed in strict accordance with local and state ordinances governing this class of work.
 - g. The specifications are intended to describe a complete workable system of various sorts, and bidders shall report any discrepancies or omissions preventing such workability prior to bidding.
 - h. The Contractor is referred to the Architectural and Mechanical plans and specifications for detailed layouts and description of equipment that shall be connected.
- D. Rejected Work and Materials:
 - a. Should Contractor introduce any materials different from the sort and quality described in specifications or shown on plans, it must, on notification from Project Inspector, be immediately removed from building or premises.
- E. Additions and Changes:

- a. The Contractor shall note that the electrical drawings are intended to indicate only the extent diagrammatically, general character and location of the work included. Work intended, but having minor details obviously omitted or not shown, shall be furnished and installed complete to perform the functions intended. For building details, the Architectural and Structural Drawings and specifications shall be followed and the work of the electrical drawings and specifications shall be coordinated and fitted.
- F. Standard Materials and Workmanship:
 - a. All materials shall be new and listed by Underwriters Laboratories as conforming to its standards. All work shall be executed in a workmanlike manner and shall present a neat and mechanical appearance when completed.
- G. Guarantee:
 - a. Contractor for this work will be required to keep the work as installed by him in repair and perfect working order for one year from date of completion and acceptance of final certificate of payment. Said guarantee to be based upon defective materials and workmanship. Contractor shall furnish free of cost to owner all materials and labor necessary to comply with this guarantee.
- H. Laws, Permits, and Inspections:
 - a. This Contractor shall, at his own cost, obtain necessary permits, pay all legal fees and charges and comply with all state and municipal building and safety laws, ordinances and regulations relating to building and public health and safety.
 - b. The work shall be inspected before being permanently concealed, such as concrete slabs, etc. Final inspection certificates from both the Underwriters Inspection Bureau and the local inspection department shall be furnished to Project Inspector. All costs to comply with the above requirements shall be a part of this Contractor's contract and shall be paid by him.
 - c. The established standards of the following organizations and individual standards named, shall be followed by the same as if they were fully written herein and constitute a part of the specification requirements except where otherwise specified.
 - d. All work shall conform to applicable codes and standards of the following groups: The Institute of Electrical and Electronic Engineers (IEEE), National Board of Fire Underwriters (NBFU), National Electrical Manufacturer's Assn. (NEMA), American Standard Assn. (ASA), American Society for Testing Materials (ASTM), National Electrical Safety Code (Handbook H30), Safety Rules for the Installation and Maintenance of Electrical Supply and Communication Lines (Handbook 81) of the National Bureau of Standards, National Fire Protection Assn. (FPA); and, applicable Rules and Regulations of the local utility companies providing services.
 - e. The foregoing rules, standards, regulations, specifications, recommendations and requirements shall be followed by the Contractor as minimum requirements. They shall not relieve the Contractor as minimum requirements. They shall not relieve the Contractor from furnishing and installing higher grades of materials and workmanship that are specified herein or indicated on the drawings.
2. Materials - Unless otherwise specified, equipment or materials of same manufacture, type or classification, used for same purpose. Specific reference to materials and equipment by name, make or catalog number interpreted as establishing standard of quality and not construed to limiting competition. All electrical equipment to be installed shall be an essentially standard product of American manufacturers. Where two or more units of

equipment are required, these units shall be products of single manufacturer; however, component parts of systems need not be produced of same manufacturer. No products shall be bid on unless equipment has been in standard production with complete catalog data available for at least two years prior to bid date.

A. Prior Approval:

- a. Bidder may submit any product equivalent in quality, type, performance, and size a minimum of 7 days prior to bid date. Make submission to Project Inspector. Prior approval is defined as being acceptable for bidding purposes only subject to requirements as outlined on plans, in specifications or listed in addenda.
- b. Final review for equipment to be installed will be given when shop drawings are submitted after award of contract.
- c. Prior approvals required on all major pieces of equipment, including light fixtures. Written acceptance is required after award of contract for substitution.

B. Design:

- a. Equipment and accessories not specifically described or identified by manufacturer's catalog numbers shall be designed in accordance with AIEE, NEC, or others applicable technical standard, and approved by the Underwriters Laboratories, Inc.

C. Installation:

- a. Erect equipment, fixtures and conduit in neat and workmanlike manner; align and adjust for satisfactory operation. Install so that servicing can be made readily, and so that all parts are easily accessible for inspection and operation. Workmanship shall be of highest quality.

D. Record Drawings:

- a. Record changes in work caused by unforeseen difficulties. In event of such changes, confer with Project Inspector and obtain his written consent before deviating from plans.

E. Shop Drawings:

- a. Submit prints of drawings of all equipment and fixtures furnished under this contract. Drawings submitted show construction details, dimensions and capacities. Fixture brochures to show cuts and numbers of all fixture parts to be supplied.

F. Grounding:

- a. All conduit work, and other electrical equipment shall be effectively and permanently grounded. Grounding connections and conductor sizes shall be in accordance with requirements of the National Electrical Code, Article 250, and local ordinances.
- b. A separate grounding conductor, sized in accordance with NEC Table 250-95 shall be run in the conduit with the circuit conductors. The grounding conductor shall be green, insulated copper.

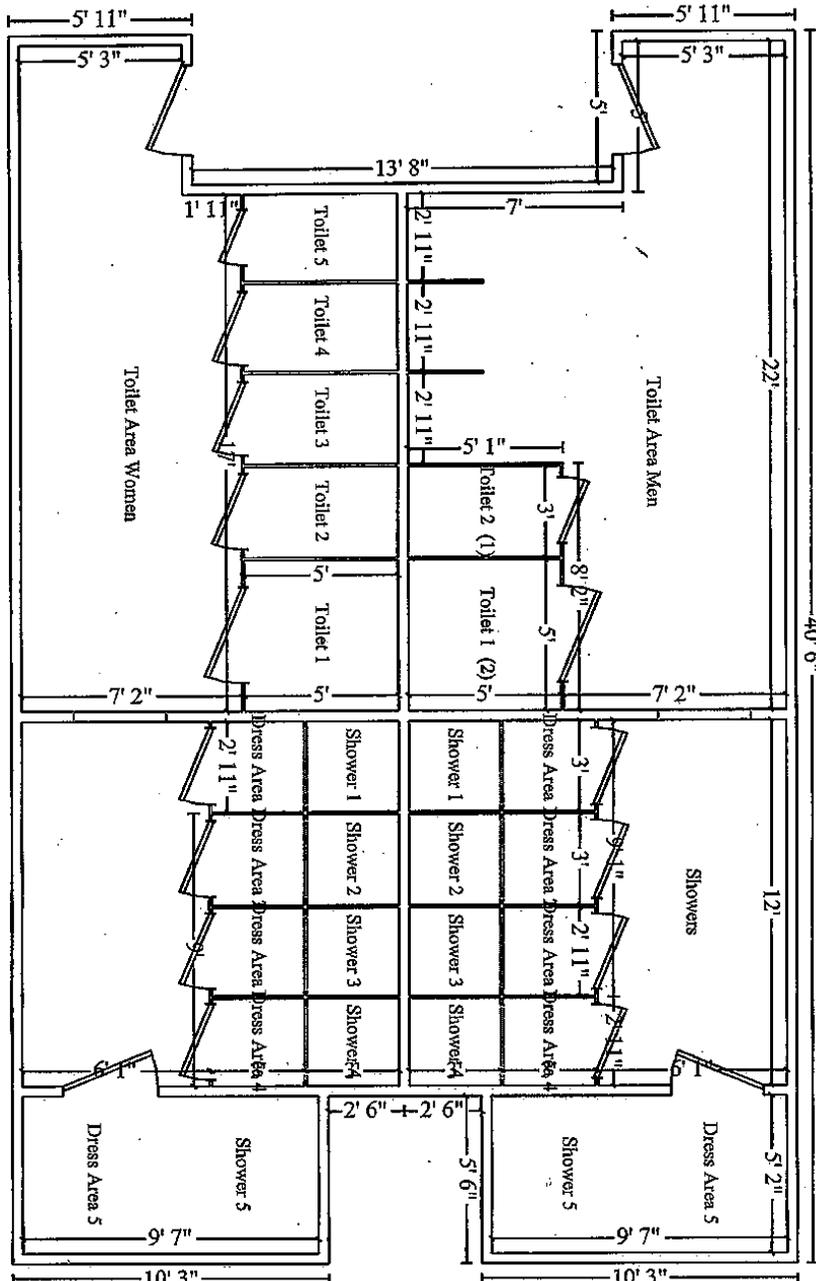
G. Conduit:

- a. Wiring systems shall be run in hot dipped galvanized or sheradized rigid conduit. Thin wall (EMT or flexible metal conduit) shall be used for branch circuits in dry non-hazardous locations entirely above floor slab and not subject to mechanical injury during or after installation. Rigid conduit shall be used for other runs, including panel feeders.
- b. Conduit ends shall be reamed out after application of dye and be kept corked and dry during construction. Conduit shall be swabbed out before wires are pulled in. Bends shall be made with an approved bending device. Crushed, deformed, or otherwise

- injured conduit shall not be installed. Fitting for EMT shall be T & B Nos. 5120-5520, 5121-5321, etc. Crimped or setscrew types are not acceptable.
- c. Conduit shall be of such size and so installed that conductors may be drawn in without injury or excessive strain. Conduit, entering panel boxes, pull boxes, support boxes, etc., shall be secured in place by galvanized bushings inside except that for conduit 1-1/4" and larger insulating bushings shall be used.
 - d. Conduit shall not be run within 3 inches of coverings and parallel pipes and 1" from crossing pipes.
 - e. Conduit horizontal runs and vertical risers shall be firmly secured by means of approved pipe straps, hangers, or clamps and fastened with metal expansion anchors in masonry.
 - f. Exposed conduit shall be installed with runs parallel or perpendicular to walls and ceiling with right angle turns consisting of symmetrical bends or outlets or junction boxes. Conduit systems shall be completed before installation of conductors.
 - g. Provide conduit expansion fittings on all conduit crossing an expansion joint. Fittings shall be O.Z. or Type EX, or equivalent, as manufactured by the O.Z. Electrical Co.
- H. Wire:
- a. All conductors used in the work shall be of soft drawn annealed copper having a conductivity of not less than 98% of that of pure copper. Conductors shall be standard code gauge in size, and shall have type THW or THWN 600 volt insulation.
 - b. Lighting fixture wire shall be in accordance with Article 402 of the National Electrical Code.
 - c. Wire shall be of the single conductor stranded type.
 - d. Throughout the system, conductors shall be identified as to phase and voltage of system by color-coding. Color-coding shall be continuous the full length of wire No. 8 and smaller. On larger sizes, identification by permanent paint bands or tags at outlets will be acceptable. Surface printing at regular intervals on all conductors shall indicate manufacturer, size, voltage, and insulation type, and shall show UL label. Green colored insulation shall be used for grounded conductors and only for grounded conductors.
3. Execution
- A. Wiring:
- a. Unless otherwise specified, all wiring shall be installed in conduit or surface metal raceway.
 - b. No wire shall be smaller than No. 12 for power or lighting service or for switch legs. Wire for each branch circuit shall be of a single size and type for the branch circuit protective device to the last outlet on the circuit.
 - c. Connectors of the non-metallic screw on type are to be used for joints and splices.
- B. Painting:
- a. All exposed conduit, supports and pull boxes, shall be painted with two coats of oil paint by Painting contractor. Requirements covering paint, workmanship, and preparation of surfaces, as stated in the Architectural Painting Specifications, shall apply to all painting work to be done under this subcontract. Colors shall be selected by Project Inspector and all paint approved by him before being applied.
- C. Cleaning:

- a. Prior to acceptance, Contractor shall clean all light fixtures and wiring device plates, shall remove dust and accumulated construction debris such as plaster, paint, or concrete splatter.
- D. Tests:
 - a. After installation is complete and at such time as Project Inspector may direct, Contractor shall conduct an operating test for approval. Equipment shall be demonstrated to operate in accordance with requirements of this specification. The test shall be performed in the presence of the Project Inspector or his representative. Contractor shall furnish all instruments and personnel required for the test.
- E. Sleeves, Inserts, and Openings
 - a. Electrical Contractor shall furnish and install all openings through walls required for passage of conduit, pipes or ducts installed by him.
 - b. Sleeves shall be of 16 gauge galvanized sheet steel, rigidly supported and suitably packed to seal all excess opening.
 - c. This Contractor shall furnish and install all inserts and hangers required support conduit, cables, pulling boxes, etc.
 - d. If the sleeves, hangers, inserts, etc., are improperly installed, this Contractor shall at his own expense, do all necessary cutting and patching to rectify the errors.
- F. Identification and Directory Frames:
 - a. Each lighting panel shall have typewritten directory frame identifying all branch circuits. Electrical Contractor shall be responsible for updating information directory pertaining to the changes made on this job.
- G. Device Plates:
 - a. General purpose device plates shall be ivory colored molded plastic to match device with smooth surface, Sierra "P" line or G. E. Services GE 91, and shall be provided in proper number of gangs. Ganged plates shall be in one piece.
- H. Outlets:
 - a. Lighting outlets, convenience outlets, and wall switches shall be installed as shown on drawings, and wiring shall be provided for switch control indicated. All outlets and switches shall be accurately located. Except as otherwise specified, locate outlets as follows (dimensions given are from finished floor to centerline of outlet).
 - (1) Wall Switches: 4'-6"
 - (2) Receptacles: 1'-6"
- I. Fixtures:
 - a. Light fixtures: 4 foot length, T8 bulbs, white color, clear prismatic diffuser, submit for approval.

Main Level



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