

*St. Lohle*

*St. Lohle*  
YOSEMITE PARK & CURRY CO.

SPECIFICATIONS

for

I CONVERSION OF DANCE PAVILION

II REMODELING OF CAFETERIA

III NEW EMPLOYEES QUARTERS

CAMP CURRY

for the

YOSEMITE PARK AND CURRY COMPANY

YOSEMITE NATIONAL PARK

CALIFORNIA

SPENCER AND LEE

Eldridge T. Spencer, F.A.I.A. Alton S. Lee, A.I.A.

Wesley A. Talley, A.I.A. William H. Busse, A.I.A.

Zach R. Stewart

ARCHITECTS

251 Kearny Street, San Francisco

February 24, 1961

# THE STANDARD FORM OF AGREEMENT BETWEEN CONTRACTOR AND OWNER FOR CONSTRUCTION OF BUILDINGS



*Issued by The American Institute of Architects  
for use when a Stipulated Sum Forms the Basis of Payment*

Approved by THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA; THE CONTRACTING PLASTERERS' AND LATHERS' INTERNATIONAL ASSOCIATION; COUNCIL OF MECHANICAL SPECIALTY CONTRACTING INDUSTRIES, INC.; THE NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS; THE NATIONAL BUILDING GRANITE QUARRIES ASSOCIATION, INC.; THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION; THE PAINTING AND DECORATING CONTRACTORS OF AMERICA, AND THE PRODUCERS COUNCIL, INC.

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This form is to be used only with the standard general conditions of the contract for construction of buildings.

THIS AGREEMENT made the 14th day of September

in the year Nineteen Hundred and Sixty-One by and between

Oscar Hedahi

hereinafter called the Contractor, and Yosemite Park & Curry Company

hereinafter called the Owner,

WITNESSETH, that the Contractor and the Owner for the considerations hereinafter named agree as follows:

## ARTICLE 1. SCOPE OF THE WORK

The Contractor shall furnish all of the materials and perform all of the work shown on the Drawings and described in the Specifications entitled Conversion of Dance Pavilion Camp Curry

Yosemite National Park

(Here insert the caption descriptive of the work as used on the Drawings and in the other Contract Documents)

prepared by Spencer & Lee, Architects  
acting as and in these Contract Documents entitled the Architect; and shall do everything required by this Agreement, the General Conditions of the Contract, the Specifications and the Drawings.

ARTICLE 2. TIME OF COMPLETION

The work to be performed under this Contract shall be commenced September , 1961  
and shall be substantially completed May 1, 1962

(Here insert stipulation as to liquidated damages, if any.)

ARTICLE 3. THE CONTRACT SUM

The Owner shall pay the Contractor for the performance of the Contract, subject to additions and deductions provided therein, in current funds as follows: \$126,200.00

(State here the lump sum amount, unit prices, or both, as desired in individual cases.)

Where the quantities originally contemplated are so changed that application of the agreed unit price to the quantity of work performed is shown to create a hardship to the Owner or the Contractor, there shall be an equitable adjustment of the Contract to prevent such hardship.

AGREEMENT BETWEEN CONTRACTOR AND OWNER.

1961 Edition / Five pages / Page 2.

ARTICLE 4. PROGRESS PAYMENTS

The Owner shall make payments on account of the Contract as provided therein, as follows:

On or about the Fifteenth day of each month ( 90% ) Ninety per cent of the value, based on the Contract prices of labor and materials incorporated in the work and of materials suitably stored at the site thereof or at some other agreed upon in writing by the parties up to the 1st day of that month, as estimated by the Architect, less the aggregate of previous payments; and upon substantial completion of the entire work, a sum sufficient to increase the total payments to 90 per cent of the Contract price \$126,200.00

(Insert here any provision made for limiting or reducing the amount retained after the work reaches a certain stage of completion.)

ARTICLE 5. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due 35 days after substantial completion of the work provided the work be then fully completed and the contract fully performed.

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Architect shall promptly make such inspection, and when he finds the work acceptable under the Contract and the Contract fully performed he shall promptly issue a final certificate, over his own signature, stating that the work provided for in this Contract has been completed and is accepted by him under the terms and conditions thereof, and that the entire balance found to be due the Contractor, and noted in said final certificate, is due and payable.

Before issuance of final certificate the Contractor shall submit evidence satisfactory to the Architect that all payrolls, material bills, and other indebtedness connected with the work have been paid.

If after the work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and the Architect so certifies, the Owner shall, upon certificate of the Architect, and without terminating the Contract, make payment of the balance due for that portion of the work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

AGREEMENT BETWEEN CONTRACTOR AND OWNER.

ARTICLE 6. THE CONTRACT DOCUMENTS

The General Conditions of the Contract, the Supplementary General Conditions, the Specifications and the Drawings, together with this Agreement, form the Contract, and they are as fully a part of the Contract as if hereto attached or herein repeated. The following is an enumeration of the Specifications and Drawings:

**Specification Sections 1 through 17 inclusive, dated February 24, 1961  
and Addenda No. 1, dated September 6, 1961.**

**Drawings : 1, 10, 11, 12, 12M, 13, 13M, 14, 15, 16, 17 & 18  
all bearing revision date of September 6, 1961,  
and including Revision Drawings R-13, R-14, R-16  
and R-18 all bearing the revision date of  
September 6, 1961.**

IN WITNESS WHEREOF the parties hereto have executed this Agreement, the day and year first above written.

YORK STATE PARK & CURRY CO.

*H. Bleeman*

*Oscar Herbst*

ADDENDUM NO. 1

TO THE  
SPECIFICATIONS

FOR

CONVERSION OF DANCE PAVILION

CAMP CURRY

September 6, 1961

This addendum shall supersede the specifications where it contradicts same. All other conditions shall remain unchanged.

ITEM 1. Section 1. General Provisions

In Paragraph 1-03, Divisions (II) Cafeteria Remodeling and (III) New Employees' Quarters are deleted. In subsequent sections of the specifications all descriptions pertaining solely to the 2 above named divisions are likewise deleted.

ITEM 2. Section 4. Carpentry and Millwork

In Paragraph 4-18, add the following after second sentence:

"For all bathroom doors, a wood slat louver shall be placed in the topmost panel as shown on Drawing R-14."

ITEM 3. Section 13. Plumbing Work

Paragraph 13-20B. Delete Symmons "Safetymix" #4500 thermostatically controlled mixing valves and substitute individual chrome plated manual control valves on hot and cold supplies, valves shall be as jointly approved by the Architect and the Owner's representative in charge of mechanical work.

ITEM 4. Section 13. Plumbing Work

Paragraph 13-25B is changed to read :

"All cold water piping shall be of galvanized steel pipe and galvanized malleable iron fittings."

ITEM 5. Section 14. Electrical Work

Paragraph 14-17A, Service Feeders, is changed to read:

"Feeder shall be installed in a manner approved by the Architect and the Owner's representative in charge of electrical work".

ITEM 6. Section 6. Heating and Ventilating

Paragraph 15-26B is changed to read :

"B. Heat exchanges, water to water, for domestic hot water heating in Pavilion shall be Bell and Gossett, No. T-20, tankless water heater, with shell for 30 lbs. working water pressure, to supply 360 g. p. h. water at 100 degrees F. rise, using heating water at 180 degrees F. "

ITEM 7. Section 15. Heating and Ventilating

Paragraph 15-28 is deleted in its entirety.

ITEM 8. Section 15, Heating and Ventilating

Paragraph 15-29; in lieu of the Rickwill underground conduit specified, the Contractor will be permitted to substitute another type of underground conduit for heating water mains, subject to the approvals of the Architect and the Owner's representative for mechanical work.

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INDEX

Form of Proposal  
Building Agreement  
General Conditions  
Guarantee

| <u>Section</u> | <u>Title</u>                     | <u>Pages</u> |
|----------------|----------------------------------|--------------|
| 1              | General Provisions               | 1 - 2        |
| 2              | Clearing, Excavating and Grading | 1            |
| 3              | Concrete Work                    | 1 - 3        |
| 4              | Carpentry and Millwork           | 1 - 10       |
| 5              | Drywall Construction             | 1 - 2        |
| 6              | Sheet Metal Work                 | 1            |
| 7              | Miscellaneous Metal Work         | 1 - 2        |
| 8              | Floor Finishing and Covering     | 1 - 2        |
| 9              | Glass and Glazing                | 1            |
| 10             | Painting and Finishing           | 1 - 5        |
| 11             | Finish Hardware                  | 1 - 4        |
| 12             | Miscellaneous Items              | 1            |
| 13             | Plumbing Work                    | 1 - 3        |
| 14             | Electrical Work                  | 1 - 5        |
| 15             | Heating and Ventilating          | 1 - 7        |
| 16             | Tray Conveyor                    | 1            |
| 17             | Acoustical Tile Work             | 1            |

## SECTION I. GENERAL PROVISIONS

1-01. General Conditions, Building Agreement and Preface. All work of all sections of these specifications is subject to the terms of the General Conditions, of the Building Agreement, and of the Preface.

1-02. General Intention. It is the declared and acknowledged intention and meaning of these specifications and of the drawings to provide and secure all buildings and appurtenances as shown on the drawings and/or hereinafter specified, complete and ready for use.

### 1-03. General Description.

(I) Conversion of the Dance Pavilion: The work of Division I shall consist of conversion of the existing dance pavilion to a guest cottage containing 18 guest rooms with bath. The existing roof and supporting structure shall be left virtually intact. Exterior walls shall be removed and new walls shall be constructed within the lines of the existing walls so as to produce a deep overhang around the entire building. Sections of the existing wood floor outside the new walls shall be removed and the spaces thus left shall be landscaped. Other sections shall be left as floored porches. New interior partitions shall be constructed to form guest rooms. Rooms occurring under the higher portions of the roof shall be provided with mezzanines. New plumbing, heating ventilating and electrical systems shall be installed throughout the building. Heating medium shall be hot water brought in underground mains from existing boiler room under Camp Curry Kitchen.

(II) Cafeteria Remodeling: The work of Division II includes the application of new acoustical tile to existing ceiling, construction of an orchestra platform of wood, installation of a new dish conveyor, a new entrance door, construction of a wood deck for outdoor dining and a wood frame kiosk for sales of light refreshments, all in connection with the existing Camp Curry Cafeteria Building.

(III) New Employees Quarters: The work of Division III consists of the construction of a new second story above the existing one story building containing timekeeper's office and employees toilet and shower rooms. New construction shall provide seven bedrooms, served by a covered balcony corridor and two stairways. Second floor and new walls shall be framed in wood with concrete slab poured over subfloor, board and batten exterior and drywall interior. Existing roof shall be raised to cover second floor or shall be reconstructed.

1-04. Protection of Existing Work. All existing trees, shrubbery, water, sewer and electric service lines, roads, parking areas, curbs, etc., or other items designated by the architect shall be protected from damage by suitable guards or barriers where practical. Existing services shall be maintained in constant operation. All work damaged or destroyed incident to the work of

the contract shall be replaced and/or made good by the contractor in a manner as directed and without expense to the Owner.

1-05. Demolition. The contractor shall perform demolition of such portions of existing structures as necessary to produce the completed work as shown on the drawings and described in these specifications. Salvable material such as sash, doors, sound framing lumber and stone shall be preserved for reuse in the new construction, as appropriate. Unsalvable materials shall be hauled to disposal areas designated by the National Park Service.

## SECTION 2. CLEARING, EXCAVATING AND GRADING.

2-01. Scope. Clearing of site, excavation for new construction, protection of adjacent areas, rough grading, filling and backfilling as required for work as shown on the drawings and/or as herein specified. Trenching for piping and conduits is specified elsewhere.

2-02. Clearing of Site (II). Clear the area to be covered by new wood deck at Cafeteria of all shrubs and small trees. Large trees shown on the drawing to remain shall be protected from damage as a result of these operations.

2-03. Excavation (I,II). Excavate as required for forms, footings and pits. Excavations shall be of sufficient depth to remove all organic material from beneath footing and as to provide firm bearing. Excess excavated material and material not approved for fill shall be hauled to dump as approved by the National Park Service.

2-04. Backfill and Grading (I,II). Backfill around footings after forms are removed with clean material. Backfill shall be placed in 6 inch layers and each layer shall be well compacted by tamping before next layer is placed.

2-05. Grading, (I,II). Grade surface of earth under wood deck so as to provide a minimum of 6" clearance below wood girders, sills and plates. Grade areas under roof of veranda of pavilion where sections of existing floor are removed to elevations indicated on the drawings, using clean topsoil for fill.

SECTION 3. CONCRETE WORK.

3-01. Scope. All concrete work herein specified or shown on the drawings including footings, pits for mechanical equipment, slabs and stairs and cement finishing. The furnishing and placing of sleeves, inserts and other fastenings for mechanical and electrical work are specified in other sections. The furnishing of metal frames and covers and of anchor bolts and inserts for wood framing members which are embedded in concrete is specified in other sections; however, the proper placement and embedment of such are a part of the work of this section.

3-02. Materials.

A. CEMENT shall conform to ASTM, C-150-56, Type I. In addition, the temperature of cement delivered to the plant shall not exceed 150° F.

B. AGGREGATES shall conform to ASTM, C-33-57 except as modified herein. Aggregates shall be hard, durable material from established sources with proven history of successful use and shall be free from harmful amounts of clay, shale or other deleterious substances.

GRADING OF COMBINED AGGREGATE

| Sieve Size         | Percentage by Weight Passing Sieve      |                  |
|--------------------|---|------------------|
|                    | <u>1-<math>\frac{1}{2}</math>" Max.</u> | <u>3/4" Max.</u> |
| 1- $\frac{1}{2}$ " | 95-100                                  |                  |
| 1"                 | 75- 90                                  |                  |
| 3/4"               | 55- 77                                  | 90-100           |
| 3/8"               | 40- 55                                  | 60- 80           |
| No.4               | 30- 40                                  | 40- 60           |
| No.8               | 22- 35                                  | 30- 45           |
| No.16              | 16- 30                                  | 20- 35           |
| No.30              | 10- 20                                  | 13- 23           |
| No.50              | 2- 8                                    | 5- 15            |
| No.100             | 1- 3                                    | 1- 5             |
| No.200             | 0- 1                                    | 0- 2             |

C. WATER: Clean and free from deleterious substances.

D. METAL REINFORCEMENT: New and comply with:

(1) Bars shall be deformed intermediate grade steel conforming to ASTM A-15-58T. Deformations shall conform to ASTM A-305-56T.

(2) Wire shall conform to ASTM A-82-58T.

(3) Welded Steel Wire Fabric shall conform to ASTM A-185-58T.

(4) Reinforcement shall be free from scale, rust, or coatings which will reduce the bond to concrete.

E. FORM LUMBER: Douglas Fir Construction boards. Reuse of form lumber is permitted providing lumber is straight, clean, free from nails, dirt, hardened concrete, or other injurious substances with all edges and surfaces in good condition.

F. NON-SLIP ABRASIVE: Fine grit aluminum oxide, Norton "Alundum" 14/36 mixed grit size, or approved equal.

G. CHEMICAL HARDENER: for interior concrete slabs shall be A.C. Horn "Hornstone", or equal.

3-03. Forms. Construction of formwork shall conform to the shape, lines and dimensions of concrete members as indicated on the drawings. Forms shall be tight enough to prevent mortar leakage and shall be thoroughly tied, braced and supported to insure stability. Before depositing concrete, all debris, spreaders, etc., shall be removed from the space to be occupied by concrete and the forms shall be thoroughly wetted. Reinforcement shall be secured in position and all inserts shall be installed. Free standing water shall be removed.

3-04. Reinforcement. All concrete shall be reinforced unless specifically marked "Not reinforced" on the drawings. If no reinforcement is shown, reinforce similar to that shown in similar locations. Reinforcement shall be free from rust, scale or coatings which will reduce the bond to the concrete. Bars shall be accurately bent and placed as indicated on the drawings and securely supported and fastened to prevent movement during the placing of concrete. Wire fabric shall have a minimum side and end lap of one full mesh.

3-05. Concrete Proportions and Consistency. Concrete shall consist of 1 part of cement to not more than 5-3/4 parts of fine and coarse aggregates. The designated proportion of aggregates shall be based on volume measurements in a loose condition as thrown into the measuring device.

3-06. Mixing Concrete. All concrete shall be mixed in a batch mixer having a rated capacity not in excess of 1 cubic yard. The mixer shall have a water storage tank with a measuring device which shall give an accurate control of the quantity of water used in each batch.

A. Each batch shall be mixed for not less than 1 minute and long enough for all of the materials to become incorporated into a homogeneous mixture of uniform consistency and color and must be completely discharged before the mixer is recharged.

B. No concrete shall be deposited in the work which has been mixed for a period of longer than  $\frac{1}{2}$  hour, or which has started to set and stiffen. The remixing of concrete which has started to set will not be permitted.

3-07. Handling and Placing Concrete. Concrete shall be handled from the mixer to the place of final deposit as rapidly as practicable by methods which will prevent the separation or loss of ingredients. Concrete shall be thoroughly worked into corners of the forms and around reinforcement and compacted by manual spading and tamping.

3-08. Concrete Slabs on Wood Supports (III). Wood sub-floors in Cooks' Quarters shown to be covered with concrete slabs shall be swept clean and covered with one layer of 15 lb. asphalt impregnated felt laid with 4 inch side and end laps. Reinforcing mesh shall be laid over felt with laps of one full mesh. Concrete slabs shall be placed in sections with slabs in rooms placed first, followed by alternate sections of balcony and deck as indicated on the drawings. Cold joints in slab shall occur under each door between bedrooms and balcony and expansion joints between sections of balcony slab. Expansion joints shall be formed of  $\frac{1}{4}$ " thick pre-molded expansion joint filler. The top edge of fillers shall be kept  $\frac{1}{4}$ " below the surface of adjoining slabs. The edges of slabs at cold joints and expansion joints shall be finished with an edging tool having  $\frac{1}{4}$  inch radius.

3-09. Finishing Concrete Slabs and Steps, (I, III). All concrete slabs and steps shall have integral finish of natural color cement. Screed and float surface to true alignment and elevation. Dust surface lightly with a mixture of one part Portland cement to not more than two parts of fine aggregate by volume. Steel trowel surface to produce a smooth, hard uniform surface. For exterior slabs, balcony, and deck slabs, brush surface with a fine hair broom in one direction only after final troweling. Bullnose edges of slabs and stair nosings as shown on the drawings.

A. NON-SLIP AGGREGATE. Apply specified non-slip aggregate to surfaces of all stair treads before performing steel troweling.

B.. CEMENT HARDENER. After proper time interval, apply two coats of specified floor hardener in strict accordance with the manufacturer's application directions to all new slab floors and stairs in Cooks' Quarters.

3-10. Protection and Curing. Concrete shall be kept thoroughly moist for a period of 10 days from the time it is placed. It shall be protected from injurious action of the elements and defacement of any nature during construction operations. Slabs and stairs shall be carefully protected from traffic or use that will damage them in any way.

3-11. Cleaning and Patching. Clean all exposed concrete surfaces and all adjoining work stained by leakage of concrete. Remove all projecting fins, wires, nails, etc., not necessary for the work. Voids, surface irregularities and holes left by removal of ties shall be filled with a 1:3 cement and sand mortar, placed as dry as possible and finished flush with the adjacent surface.

SECTION 4. CARPENTRY AND MILLWORK

4-01. Scope: All carpentry, millwork, rough hardware and setting of finish hardware as shown on the drawings and herein specified. Forms for concrete are specified under Section 3, "Concrete Work". Gypsum wallboard ceiling and interior wall sheathing is specified under Section 5, "Drywall Construction".

4-02. Materials:

A. Lumber shall be well seasoned; millwork shall be kiln dried. Doors and sash shall be fabricated in accordance with the standards of the National Door Manufacturers Association, except as otherwise detailed. All exposed, surfaced woodwork shall be sanded ready for painting, and with blemishes cut out which would mar the exposed surfaces.

B. Grades of lumber shall be in accordance with the grading rules of the association applicable for the species, as follows:

| <u>Purpose</u>  | <u>Kind</u> | <u>Grade</u>                            |
|---|-------------|---|
| Sills   | Redwood     | Foundation Grade                        |
| Rafters, joists and concealed beams and posts         | Douglas Fir | Construction, S4S                       |
| Exposed beams and posts                               | Douglas Fir | Select Structural, S4S                  |
| Exterior railing members at Pavilion                  | Douglas Fir | "B & BTR" Industrial M.G., K.D., S4S    |
| Exterior railing members at Cafeteria                 | Douglas Fir | Select Structural A.D., resawn          |
| Concealed Studs, plates blocking, furring and nailers | Douglas Fir | Standard, S4S                           |
| Exposed blocking                                      | Douglas Fir | Construction, S4S                       |
| Sheathing   | Douglas Fir | Construction Boards                     |
| Subflooring   | Douglas Fir | B-B Plyform 3/4" thick.                 |
| Exterior siding for Pavilion walls                    | Redwood     | Clear All Heart, T&G, sq. edges, resawn |
| Exterior finish for panels below Pavilion windows     | Redwood     | Clear All Heart, V.G., T&G, VLS         |

| <u>Purpose</u>                                   | <u>Kind</u>                   | <u>Grade</u>                                |
|--|-------------------------------|---|
| Exterior board and batten for Cooks' Quarters    | Redwood                       | Clear all Heart, V.G. S4S boards            |
| Exterior Trim                                    | Redwood                       | Clear All Heart, V.G.                       |
| Exterior steps                                   | Douglas Fir                   | "C"-V.G. Finish, K.D.                       |
| Interior Stepping                                | Douglas Fir                   | "B&BTR".-VG Stepping K.D.                   |
| Interior strings, risers, base, casings and trim | Douglas Fir                   | "B&BTR". M.F. finish                        |
| Interior wainscots and Wardrobes in Pavilion     | Douglas Fir                   | "Cor BTR"-Ceiling 1"x4" E&C.V. 1 S          |
| Wardrobes in Cooks' Quarters                     | Douglas Fir                   | A-A Plypanel                                |
| Mezzanine Flooring                               | Douglas Fir                   | "B&BTR".V.G.Flooring 2" x 8" T&G D&C.M.     |
| Exterior Decking at Cafeteria                    | Douglas Fir                   | Select Structural, S4S                      |
| Exterior frames for doors and windows            | Douglas Fir                   | "B&BTR"V.G. finish K.D.                     |
| Window sills                                     | Redwood                       | Clear All Heart, V.G.                       |
| Interior door frames                             | Douglas Fir or Ponderosa Pine | "B&BTR" - Finish K.D. C Select & Better     |
| Exterior Doors                                   | Ponderosa Pine                | First Quality                               |
| Interior Doors                                   | Ponderosa Pine or Douglas Fir | Paint Grade                                 |
| Wood Sash  | White or Ponderosa Pine       | Grade No. 1                                 |
| Shower compartments                              | Overlaid D.F. Plywood         | Super Harborite overlaid 1 side 3/8" thick  |
| Clothes poles and Handrails                      | Red or White Oak              | Clear dry                                   |
| Building Paper                                   |                               | "Brownskin", 32# per 500 sq. ft., or equal. |

4-03. Protection: Protect millwork from dampness during and after delivery. Cover adequately against weather and allow no lumber or millwork to come in contact with the ground. Protect edges and corners of millwork and trim from damage from traffic until the work is completed and accepted.

4-04. Anchoring and Nailing: All wood members shall be securely anchored to concrete or wood framing and nailed to adjoining wood members. Fastening of wood to steel shall be by means of bolts or special devices as shown on the drawings. Schedule for typical nailing of wood framing members is shown below. Non-typical nailing is indicated on the drawings. Where splitting or other damage to wood would occur by spiking or nailing, holes shall be drilled to avoid such damage. Nailing of interior trim members shall be done with finish nails. All other nailing shall be done with common nails. For exterior siding, finish and trim, nails shall be galvanized.

Typical Nailing Schedule

|   |                                       |
|---|---------------------------------------|
| Lapped joists   | 4 - 16d nails                         |
| Joists and rafters to bearings                            | 2 - 10d toenails each side            |
| Studs to bearings   | 2 - 10 d toenails each side           |
| Blocking between joists or rafters<br>to joist or rafter  | 2 - 10d toenail each side<br>each end |
| to plate or girder on which<br>joists rest                | 2 - 16d toenails each side            |
| Sheathing 1" x 6  | 2 - 8d per bearing                    |
| 1" x 8" and wider   | 3 - 8d per bearing                    |
| Blocking and cut-in bracing<br>between studs              | 2 - 10d each end                      |
| Double top plates   |                                       |
| Lower plate to top of stud                                | 2 - 20d nails each stud               |
| upper plate to lower plate                                | 16 d @ 16" o.c.                       |
| Bottom plate to joist or blocking<br>supporting partition | 20d @ 16" o.c.                        |
| Multiple studs  | internail with 16d @ 12" o.c.         |

4-05. Stud Wall Construction: Wood studding for walls and partitions shall be of sizes shown on the drawings, sized to uniform depths, spaced 16" on centers and provided with top and bottom plates of the same size as the studs. Top plates shall be doubled, with corners lapped and end joints staggered. Studs at corners and intersections shall be tripled. Studs shall be set plumb and in true alignment.

A. Openings in stud walls and partitions shall have double headers of the same size members as the studs, unless otherwise shown on the drawings with lintels of special size. Headers and lintels shall be supported on a cripple stud at each side of the opening.

B. Bracing: All bearing walls not diagonally sheathed shall have diagonal bracing cut in between studs, using material of the same dimensions as the stud. Such bracing shall be provided in both directions of the wall and shall occur at least once in every

bearing wall, and shall be repeated at intervals not exceeding 25 feet apart for walls over 25 feet in lengths. Cut-in bracing shall be provided with thrust blocks at ends of diagonal bracing members.

C. Horizontal Bridging of material of the same dimension as the studs shall be provided in all stud walls and partitions at floor levels and not less than once in the height of the wall nor more than 7'-0" on centers. Bridging shall be fitted tightly and nailed securely to each stud.

D. Blocking and Backing shall be provided as shown and necessary to receive edges of wallboard and for nailing of trim and attachment of fixtures and accessories.

4-06. Wood Floor Framing(III): Frame new floor of Cooks' Quarters with 2" x 8" joists spaced 16" o.c. Set joist with crowning edge upward. Install 2" x 8" solid blocking between joists over bearing walls, at mid-span and at ends of balcony cantilever. Install continuous 2" x 12" header at ends of cantilever toward pool as detailed. Construct wood joist framing for support of stairways as shown on the drawings.

4-07. Alterations to Existing Floor Framing of Pavilion (I):

A. Remove sections of the existing flooring and sub-flooring at new bathrooms to facilitate installation of new piping. Install blocking between existing joists as shown to provide support and nailing for edges of old and new flooring. Provide new joists and blocking under locations of new walls and partitions wherever existing floor structure is of insufficient strength or rigidity to support new construction. Level existing floor by means of shims wherever settlement has occurred.

B. Existing pavilion flooring to remain shall be covered and given such other protection as necessary to keep it in good condition during the period of construction of this work.

C. Existing pavilion flooring which will become the exterior deck areas shall have saw cuts 3/8" thick through the decking at the lines shown on drawings. These cuts shall be filled with mastic for the length and depth of the cuts. The saw cuts shall be made only as deep as the thickness of the flooring so as to not cut into any supports under the flooring.

4-08. Mezzanine Framing (I): Mezzanine floors in Pavilion shall be supported on partitions and posts and beams as detailed on the drawings. Provide support as necessary under existing flooring for bearing of new post. Let beam into post 1/2" and support opposite end on cripples in party walls. Nail beam to post with 8 - 16d finish toenails. Lay T & G planking down tight, and nail with 1 - 16d blind nail per bearing. If

necessary to produce a smooth surface, planks may also be top nailed with finish nails. Butt joints in planking will not be permitted.

4-09. Exterior Deck at Cafeteria (II): Construct deck as shown on the drawings and in the manner of the existing deck at the Camp Curry Dining Room. Erect post and girder supports on concrete piers. Lay 2" x 4" decking on edge with spacers of 1/8" tempered Masonite at bearings and 1/3 points of spans. Toenail each 2" x 4" to girders with 1-16d nail per bearing. Stagger end joints and locate only over bearings. Inter-nail 2" x 4" decking at each spacer with 16d nails, drawing upper surfaces into true plane before nailing. Keep Masonite spacers at least 1/4" below upper surface of deck.

4-10. Wood Sub-floors (I,III): Lay plywood sub-flooring with the long dimension of the panels at right angles to the joists. Make end joints on center line of joists and stagger in alternate rows. Nail plywood to joists with 8d nails spaced 6" o.c. at edges and 10" o.c. at intermediate bearings. At bath rooms in pavilion, make upper surface of sub-floor approximately 3/16" below surface of existing maple floor by the use of two layers of plywood in appropriate thicknesses or by means of stripping the tops of joists.

4-11. Wall Sheathing (I,III): Apply 1" x 6" or 1" x 8" wall sheathing to new exterior walls, laid diagonally to studs. Make end joints on center lines of studs and stagger in adjacent boards.

4-12. Building Paper (I,III): Cover all exterior wall sheathing with building paper applied shingle fashion. Lap horizontal joints 2" and vertical joints 6". Carry paper 6" around corners, both ways. Double thickness of paper around openings and flash against moisture penetration.

4-13. Pavilion Roof: The existing roof is to remain virtually unchanged. Extend porch roof across west end of building, constructed in manner and materials similar to existing roof. Patch framing, sheathing and shingles as made necessary by removal of chimney and any other items which penetrated the roofing. Install new beams and columns as shown on the drawings and as made necessary by removal of existing exterior walls. Do other shoring as necessary to eliminate the effects of settlement. Do any other patching in kind as may be necessary to present a uniform appearance. Roof flashings for new vent pipes through roof are specified under Section 13, Plumbing Work.

4-14. Cooks' Quarters Roof: It is hoped that the existing roof can be raised as a whole or in sections to cover the second floor rooms and gallery. If this is not feasible, construct a new roof over the second floor to the same details as the existing roof over the first floor. Provide new pipe columns and wood beams for support of joint roof above deck. Provide open joint

ceiling over deck, constructed of 1" x 4" boards to match existing ceiling over gallery. Provide similar ceiling to underside of cantilevered floor joists above first floor gallery.

4-15. Thermal Insulation. (I,III): Install thermal insulation in above ceilings of bed rooms in Pavilion and Cooks' Quarters. Insulation shall be of mineral or glass wool blanket, 3" thick, having a conductance value not greater than 0.27 per inch of thickness. Blanket shall be faced on one side with aluminum foil vapor barrier having flanges for attaching to wood rafters and ceiling joists. Fit blanket into spaces between rafter and joists spaces with vapor barrier toward inside of building. Tack flanges to sides of framing members with tacks or staples spaced not to exceed 6" o.c. Cut blankets to fit irregular spaces, leaving flanges for nailing. Blankets shall extend full length of spaces where possible, but where jointed, shall lap 6".

4-16. Exterior Siding (I,III): Exterior siding shall be of materials, sizes, patterns and surface textures shown and noted on the drawings and herein specified. It shall be applied over building paper as specified in paragraph 4 - 12 above. All matched boards shall be driven up with tight joints. All butt joints shall be accurately cut and tightly made. All nailing shall be done with galvanized common nails. T & G patterned boards shall be blind nailed. Boards and battens shall be face nailed with heads of exposed nails driven flush with board surfaces.

A. Resawn Boards: Where resawn boards are called for, the resawn surface shall present a uniform texture. Where skips occur, showing areas of smooth surface, such areas shall be cut out or the piece discarded.

B. Board and Batten Siding of second story of Cooks' Quarters shall match the existing boards and concealed battens of first floor exterior walls in quality of material, texture and detail.

4-17. Door and Window Frames and Trim: Shall be of materials specified in paragraph 4-02 above and shall be constructed to the details shown on the drawings. All frames shall be accurately machined, with all joints tight and properly assembled. All side jambs and vertical mullions shall be dadoed into sills and heads. Transom bars and horizontal mullions shall be dadoed into side jambs and vertical mullions. All sill and jamb dadoes shall be primed with white lead paste. Provide fitted wood stops for the setting of fixed sash in frames.

4-18. Doors: Doors shall conform to Commercial Standard CS73-48, Grade B. Doors shall be of Standard Stock patterns, except as otherwise detailed. All doors for Pavilion shall be 5-panel doors, Pattern F5, with raised panels. All doors for Cooks' Quarters shall be 5 panel doors, Pattern F5, with 3 ply laminated flat panels. New exterior door to Cafeteria, including side lights and transoms shall be glazed and of patterns shown on the drawings. Glass in door shall be set in wood stops.

A. Rework 2 existing entrance doors to Cafeteria as necessary to correct faults in structural condition and operation.

4-19. Wood Sash (I): New sash shall be manufactured of White or Ponderosa Pine and shall conform to the Standards of the Woodwork Institute of California. Sticking shall be of stock patterns, unless otherwise shown. Sash shall be toxic preservative treated in accordance with the standard of the National Wood Manufacturers Association.

A. Salvage existing casement sash in Pavilion and reuse in new frames where indicated on the drawings.

B. Operating sash shall be fitted with butts, casement fasteners and casement adjusters as specified in Section 11, Finish Hardware. Adjuster shall be installed so as to limit the arc of swing to 45°.

C. Transom sash shall be fixed in openings by nailing to frame with galvanized finish nails.

D. Glazing: New sash may be factory glazed, however, glass and glazing shall be in accordance with the requirements of Section 9, Glass and Glazing.

4-20. Louver Windows (III): Windows for Cooks' Quarters shall be CLEARVIEW Louver Windows Model 10, as manufactured by the Clearview Louver Window Corporation of San Mateo, California, or approved equal. Frames shall be of 6063-T5 extruded aluminum alloy having a minimum thickness of .064 inches. Joints of frame members shall be neatly fitted and securely connected. All standard hardware shall be included. Louvers shall be 7/32" clear crystal sheet glass, 4" wide. The two long edges of the glass shall have pencil-edge finish. Louver window size shall be 24" width by 33-1/2" high. Louver windows shall be installed in pairs in wood sub-frames as detailed on the drawings.

4-21. Weatherstripping (I): All entrance doors to bedrooms in Pavilion shall be equipped with Chamberlin #800 Series zinc weatherstrips at head and jambs. Door bottoms shall be equipped with Chamberlin No. 424 Out-Dor-Seal with neoprene seal. Door and seal shall clear floor by 5/8" when open.

4-22. Interior Wood Trim: Provide and install interior finish wood-work as shown and noted on the drawings. All members shall be machined straight and true, with edges clean cut, moulded contours and exposed faces smoothly machined and free from manufacturing defects, which cannot, with minimum effort be eliminated on the job. Casings and base shall have reverse side "backed out". All interior trim shall be accurately cut and securely and neatly installed, using mitered and coped joints, as appropriate. All woodwork shall be left with smoothed exposed surfaces, with external corners eased and nail heads set to receive painters finish

4-23. Casework: Exposed lumber shall be of species and grades specified above in Paragraph 4-02. Concealed members of casework may be of other species and lesser quality containing slight sap stains or other minor defects, but shall be dried stock. Casework shall conform to the details shown on the drawings and to the following requirements.

A. Lavatory Counters in Pavilion shall be constructed of exterior type 3/4" plywood, EXT-DFPA-C-C PLUGGED, or better. Counter tops shall be dadoed into side and back splashes and the entire assembly glued with waterproof glue and nailed. Countertops, side and back splashes, shelves and fascias shall be covered with plastic laminate, 1/16" thick, Formica, or approved equal, of color and pattern selected by the Architect. The plastic laminate shall be bonded to the plywood with water-resistant glue. Glueing shall be done in a press or clamp assembly which will exert a pressure of 5 lbs minimum to 25 lbs. maximum per sq. in. All exposed edges shall be self-edged. All joints shall be watertight and carefully and neatly made. Hole for lavatory shall be cut in counter top to receive lavatory and metal frames which are specified in Paragraph 13-19, as a part of Plumbing Work.

B. Wardrobes in Pavilion shall have side panels constructed of T & G boards nailed to horizontal cleats as shown. Side panels shall be erected separately. Panel next to counter shall provide support for the latter. Opposite panel shall be installed against inside edge of beam supporting balcony. After side panels have been plumbed and secured in place, cut and install plywood shelve to fit snugly between panels and resting on cleats. Exposed front edge of shelves shall be edge banded with a solid strip of finish material glued and nailed to the plywood shelf. These wardrobes shall have no backs other than the wall finish.

C. Wardrobes in Cooks' Quarters shall be constructed of 3/4" plywood as shown on the drawings. All exposed edges of plywood sides and shelves shall be edge banded with a solid strip of finish material. These wardrobes shall be provided with backs of 1/4" INT A-D plywood.

4-24. Wood Wainscots (I): Rear walls of mezzanine spaces in Pavilion shall have wainscots of 1" x 4" T & G applied over gypsum wallboard as shown on the drawings. Install boards vertically and blind nail through gypsum board into blocking previously installed between the studs. Install rail and shelf at top of wainscot with 1" diameter pegs cut from 1" diameter maple dowel stock spaced 12" o.c.

4-25. Interior Stairs to Mezzanines (I): Stairs shall have 2" x 12" closed stringers, housed to receive treads, risers and wedges. Treads shall be no less than 1" thick with half-round nosing. Risers shall be no less than 3/4" thick. Treads and risers shall be tongued together. Bottom step shall have returned riser with riser mitered to member with face stringer. Wedges shall be provided for all housed treads and risers. At least three glue blocks shall be provided for each riser. Entire stair assembly shall be glued together. Stairs shall be installed without fastenings between wall string and party wall. Install a 3/8" x 1-1/8" scribe strip nailed to top of wall stringer and barely contacting wall surface to conceal the gap between the wall and stringer.

A. Handrails shall be 2-3/8" diameter clear dry Red or White Oak. Each rail shall be installed with 3 Corbin No. 108 DB handrail brackets as shown on the drawings. Handrails shall be sanded smooth and ends cut square with edges eased to 1/4" radius.

4-26. Shower Compartments (I): After precast shower receptors have been installed, line shower compartments with 3/8" thick Super-Harborite plywood panels, overlaid 1 side, with overlain side exposed. Back and side panels shall be single pieces. Back panels shall be installed first. Rear edges of side panels shall overlap rear panel and shall be neatly fitted to insure tight joints. Cement plywood panels to gypsum wallboard backing with VARNI-LITE adhesive No. S0801 applied in accordance with manufacturers printed instructions. Seal all edges of plywood with the same adhesive. Keep panels under pressure until adhesive has set.

4-27. Fitting and Setting of Finish Hardware: Furnishing of finish hardware is specified in a separate section of these specifications. The complete fitting and setting of the finish hardware is a part of the work of this section. Hardware shall be fitted before the finish painter coats are applied, removed, and reset after painting is finished. All hardware, except those items supplied primed for painting, shall be free from paint stains at the completion of the work. At the completion of the construction of the building, all doors shall be hung straight and true, all doors and windows shall operate with snug fit and easy operation. Provide backing at all doors for all hinges when frames are being set.

4-28. Preparation of Ceilings and Walls in Dance Area and Cafeteria to receive Acoustical Tile Treatment: Remove existing celotex and acoustical tile on subject areas. Install one-inch thick furring strips as shown on drawings. Apply strips at 12" centers and make installation even, level and true. Acoustical tile shall be installed under Section 17, "Acoustical Tile Work".

SECTION 5. DRYWALL CONSTRUCTION

5-01. Scope. Gypsum wallboard installation and taping (I,III). Painting of gypsum wallboard is specified in another section.

5-02. Materials:

A. GYPSUM WALLBOARD: as made by U.S. Gypsum Company, or approved equal.

(1) Backing board as base for job-laminated double walls: 3/8" "baxboard", 2'x 8' panels.

(2) Surface board: 1/2" square edged "Sheetrock".

B. RESILIENT CLIPS: R-1 and R-2 as made by U.S. Gypsum Company, or approved equal.

C. METAL CORNER REINFORCEMENT: U.S. Gypsum Company No. 100 "Perf-A-Bead".

D. ADHESIVE FOR LAMINATED CONSTRUCTION: Contact cement as recommended by manufacturer of wallboard.

E. NAILS FOR SINGLE LAYER APPLICATION: GWB-54 type or 5d cooler type nails.

F. JOINT REINFORCING SYSTEM: Perf-A-Tape Joint System as made by U.S. Gypsum Company.

5-03. Gypsum Wallboard Application:

A. INSTALLATION OF WALLBOARD (SINGLE LAYER): Apply 1/2" wallboard to framing members with long edges set parallel to framing members. All abutting edges and ends shall occur over framing members. Joints on opposite sides of partitions shall occur on different studs. Nail to supports at not less than 3/8" from edges and ends of boards and spaced 6" to 8" apart on walls and 5" to 7" apart on ceilings. Drive nails home with heads slightly below the surface. Cut edges and mill ends shall be sanded down to provide a smooth joining.

B. INSTALLATION OF WALLBOARD (DOUBLE LAYER): Apply 3/8" Baxboard with long edges set horizontally, using resilient clips to keep board 3/8" away from framing members. Locate clips at 16 inch centers. Apply face layer 1/2" wallboard vertically. Spread adhesive over the laminating surfaces of the wallboards using notched spreader blade, to produce an irregular ribbon pattern of adhesive. Place adhesive to edges and ends of all board. Hold face layer in place temporarily using bracing or shoring to provide support every 16" to 24". Mix adhesive to the consistency recommended by the manufacturer.

C. INSTALLATION OF WALLBOARD (BACKING FOR PLYWOOD IN INDICATED WALLS IN SHOWERS)(I): Apply 3/8" Baxboard with long edges

set horizontally, using resilient clips to keep board 3/8" away from framing members. Locate clips at two feet centers.

D. METAL CORNER REINFORCEMENT: Install specified bead at all exposed external corners of gypsum board.

E. FINISHING: Except for first layer of double layer walls, all joints shall be finished smooth and ready for paint finish, using perforated tape to cover joints. Apply tape in accordance with wallboard manufacturer's printed instructions.

## SECTION 6. SHEET METAL WORK

6-01. Scope: All sheet metal work as shown or noted on drawings. Roof flashings for new vent pipes through roof areas are specified in Section 13, "Plumbing Work".

### 6-02. Materials:

A. METAL: 24 gauge galvanized Armco iron or copper-steel, except as otherwise noted.

B. SIZES OF ITEMS: As shown on drawings and in accordance with details submitted by Contractor and approved by Architect. Flashings shall be in lengths not exceeding eight feet (8'-0").

C. SCREWS, BOLTS AND ACCESSORIES: Galvanized steel.

D. JOINT SEALER: Johns-Manville black plastic.

E. SHOP DRAWINGS: Shall be submitted for approval for all sheet metal work. Installation shall be in accordance with approved shop drawings.

### 6-02. Workmanship:

A. INSTALLATION: Contractor shall make sure that all surfaces are in proper condition for receiving sheet metal work before starting installation. Sheet metal work shall be securely and neatly installed. All work shall be left free from broken, sharp or rough edges and well cleaned of all grease or other surface blemishes.

B. COORDINATION: Contractor shall coordinate installation of sheet metal and any roofing work to obtain a neat and workman-like finished result.

## SECTION 7. MISCELLANEOUS METAL WORK

7-01. Scope: Provide materials, fabrication, and installation of all miscellaneous metal work as shown on drawings and/or specified.

### 7-02. Materials:

A. STEEL SHAPES for miscellaneous fabrication: new, conforming to ASTM A-7.

B. STEEL PIPE: New, conforming to ASTM A-120.

C. BARS, ROUNDS AND SMALL SHAPES: New, Standard Grade mild steel.

D. PRIMER FOR SHOP PAINTING: Zinc chromate, red lead and oil, or approved equal.

E. HANDRAIL BRACKETS FOR STEEL PIPE HANDRAILS: Malleable iron, essentially of pattern shown on drawings.

7-03. Shop Drawings: Prepare and submit to Architect for approval. No work shall be fabricated before shop drawings have been approved. Verify all dimensions at building site before commencing fabrication.

7-04. Galvanizing: Galvanize items when so noted on drawings and/or specified. All bolts, nuts, clips, fittings and other appurtenances used in connection with galvanized items shall also be galvanized. Galvanizing shall be by hot-dip process, after fabrication.

7-05. Welding: Do welding in accordance with pertinent portions of the "Standard Code for Arc and Gas Welding in Building Construction" of the American Welding Society.

### 7-06. Fabrication:

A. FABRICATE work to required shape, dimensions and designs in a neat and workmanlike manner. Connections shall be secure and rigid. Exposed welds shall be dressed smooth. Exposed ends and edges of metal shall be smooth. Joints exposed to weather shall be formed to exclude water or to drain.

B. Provide all screws, bolts, nuts, washers, expansion shields, etc. required for fabrication and installation of miscellaneous metal work. Provide drilled or punched holes as necessary for attachment of work by other trades.

7-07. Shop Painting: Thoroughly clear and make miscellaneous metal work free from rust, scale and foreign matter. Items specified to be galvanized shall not be shop painted. All other miscellaneous metal work shall be given one complete shop coat of specified primer. After installation, field connections and

surface abrasions shall be touched up with specified primer.

7-08. Pipe Railings and Handrails (III):

A. Furnish and install pipe railings and pipe handrails as shown on drawings.

B. Fabricate pipe handrails of 1-1/2" I.D. steel pipe, with joints welded and ground smooth. Terminal ends shall be returned to wall. Support on specified metal brackets. Handrails and brackets shall be galvanized.

C. Fabricate and install pipe railings in locations shown on drawings. Fabricate of 1-1/2" I.D. steel pipe to design shown on drawings, with joints welded and ground smooth. Fabricate stanchion attachments as detailed. Galvanize all members after fabrication. Install as detailed.

7-09. Pipe Columns (III): Fabricate pipe column assembly as detailed. Galvanize completed assembly.

7-10. Pit Covers and Frames (I): Fabricate and install as detailed. Galvanize completed assemblies.

## SECTION 8. FLOOR FINISHING AND COVERING

8-01. Scope: Refinish certain areas of existing maple flooring (I). Place new resilient flooring (I).

### 8-02. Materials:

A. VINYL SHEET FLOORING (I): Armstrong "Vinyl Corlon", or approved equal 9" x 9" x 1/8". Colors selected by Architect from manufacturer's "Tessera" color group.

B. RUBBER BASE: Top set, coved 4" high, 1/8" minimum thickness, including preformed external corner units; Aetna Manufacturing Co., Burke Rubber Co., or approved equal. Colors selected by Architect from manufacturer's plain color range.

C. LINING FELT: Armstrong S-150 semi-saturated asphalt rag felt.

D. ADHESIVES FOR RESILIENT FLOORING AND BASE: As recommended by manufacturers of resilient flooring and base approved for use.

E. FINISH FOR EXISTING HARDWOOD FLOORING (EXTERIOR DECKING OF PAVILION): Pure boiled linseed oil.

### 8-03. Installation of Resilient Flooring:

A. Before installation is commenced, the floor shall be inspected by persons responsible for installation of the work of this section. No work shall be undertaken on any area until that area has been made clean, smooth, dry and in such condition as will allow a smooth, satisfactory, finished and permanent installation.

B. TEMPERATURE CONTROL: Resilient flooring shall be laid only when temperatures in the building have been maintained at 65° F or above for 48 hours prior to the beginning of the installation and are kept at such temperature for 7 days following the completion of the installation. Temperatures shall be maintained at 40° or above so long as construction traffic must use finished floors.

C. PREPARATION OF SURFACES: Clean all surfaces thoroughly of all paint, varnish, wax, grease, oil, or other foreign matter. Fill all cracks, expansion joints, etc. with crack filler. Fill depressions and uneven spaces with levelling compound.

D. LAYING TILE: Bond to lining felt over wood subfloors with recommended adhesives. Fit borders accurately, with snug fit to all walls and other vertical surfaces.

E. LAYING RUBBER BASE: Install over resilient flooring. Apply specified adhesive to both base and wall, and press firmly into place to obtain complete attachments. Use base material in full lengths. Make interval corners by cutting straight material on the miter. Make external corners with preformed units to match base.

F. FINISHING: Resilient flooring and base shall be cleaned of any excessive adhesive as soon as room is completed. After at least 7 days floors and base shall be given one coat of paste floor wax and buffed.

8-04. Refinishing of Hardwood Flooring (Exterior Decking of Pavilion):

A. SANDING: Use power-driven sander of approved type. Sweep floors clean before sanding. Use grades of sandpaper and number of sandings necessary to remove uneven surfaces and prepare for final finish with No. 0 or 00 or both, if required. Do sanding after saw cuts have been made, as specified in Section 4, "Carpentry and Millwork". All sanding shall be done parallel with the grain; no sanding across strips will be allowed. After sanding thoroughly sweep floors to remove all dust. Caulking for saw cuts as specified in Section 4, "Carpentry and Millwork", shall be done before finishing of hardwood.

B. FINISHING: After flooring surfaces are thoroughly cleaned apply two coats of boiled linseed oil. Heat oil before application. After each generous coat has been applied to surfaces and edges allow the oil time to penetrate and then wipe off excess oil. Allow first coat to remain for minimum of 24 hours before applying second coat.

## SECTION 9. GLASS AND GLAZING

9-01. Scope: Provide glass and glazing throughout the project as shown on drawings and/or herein specified.

New jalousies (III) are to be shop glazed under another section of these specifications.

Replace broken or cracked glass in existing openings.

Provide and install all mirrors.

9-02. Materials:

A. WINDOW GLASS; Clear flat-drawn sheet glass; single-strength "B" quality, as made by Libby Owens Ford, Mississippi Glass Co., American-Saint Gobain, or approved equal.

B. NEW WOOD ENTRANCE DOOR TO CAFETERIA (II): Flat-drawn sheet glass; double-strength "B" quality.

C. MIRRORS: Shall be of polished plate glass evenly silvered on the back with silvering protected by copper covering. Edges of mirror shall be blackened. Mirrors shall be framed with chrome plated channel type brass frames and shall be attached to the walls with concealed hangers. Sizes shall be as marked on drawings.

D. PUTTY FOR GLAZING WOOD SHAS: First grade pure linseed oil and whiting wood putty.

9-03. Glazing and Completion:

A. GLAZING WOOD FRAMES: Prime or seal rebates before glass is installed. Bed glass in putty. Run face putty neatly, cleanly and even with the inside edge of frame members.

B. COMPLETION: At completion of work all broken, cracked or otherwise imperfect glass shall be replaced and all glass thoroughly cleaned.

SECTION 10. PAINTING AND FINISHING

10-01. Scope:

A. Painting or other finishing of all new exterior and interior surfaces of the buildings as specified herein.

B. Refinishing of certain existing areas of buildings included in this work.

C. Lettering and numbering as herein specified.

D. Painting of exposed heating, plumbing and electrical items where required.

E. Items not required to be painted:

- (1) Aluminum sash.
- (2) Acoustical Tile.
- (3) Resilient Flooring.
- (4) Concrete Floors.

10-02. Materials :

A. Materials used on work shall be exactly as specified in brand and quality. No claim as to unsuitability or unavailability or any material specified, or unwillingness to use same, or inability to produce first class work with same, will be entertained unless such claims are made in writing, submitted with the proposal.

B. If Contractor desires to use materials other than those specified, accompany the Base Proposal with such request in writing for approval, giving manufacturer's name and specify name of each product offered as a substitute. After award, no substitution of materials for those mentioned in accepted Proposal will be permitted.

1. Lead and Oil: Lead shall be Dutch Boy, Pioneer, or equal, lead pigment in oil. Oil shall be pure boiled linseed oil, thinner shall be pure turpentine, except as otherwise noted. Colors shall be pure pigments ground in oil.

2. Wall Primer: Fuller's Pigment Wall Sealer.

3. Filler (for open grain wood): Pioneer Paste wood filler.

4. Enamel Finish : Fuller's #7093 Heavy Bodied Semi-Gloss Enamel.

5. Flat Wall Finish: Fuller's Interior Flat Latex Finish.

6. Interior Wood Stain: O'Brien "Pen-Chrome" in color as selected.

7. Primer for Galvanized Metals: Fuller's #7747 Zinc Dust-Zinc Oxide Primer.

8. Primer for Ferrous Metals: Fuller's #5037 Chex-Rust LZI Metal Primer.

9. Exterior Wood Finish: Pratt and Lambert's Okene with pigments added as directed by Architect.

10. Primer for Wood: O'Brien's Filler-Sealer.

11. Putty: Composed of pure white lead and whiting mixed with pure linseed oil; for woodwork the white lead content shall be 50%.

12. Shellac: Fuller's pure white shellac made with pure shellac cut in denatured alcohol; no rosin or substitute gums shall be added to shellac.

13. Finish for Shower Stalls (I): Varni-Lite "Marine" Finish #1250 as made by the Varni-Lite Corporation of America, Palo Alto, California.

14. Finish for Stairs and Mezzanine Decks (I): Fuller's #6505 Heavy-Duty Floor Finish.

10-03. Identification :

A. All paint materials shall be brought to the building in original, properly labeled packages, or shall be otherwise subject to identification by the Architect or his representative as to quality and manufacture.

10-04. Preparation;

A. Before commencing painting or other finish of any surface, painter shall clean surface thoroughly, make sure that surface is smoothed or sanded and in proper condition for painting, and that surfaces are clean and sufficiently dry for painting successfully. He shall do painting work only in rooms which have been cleaned of dust and debris which might mar the painting and finishing. The painter shall provide all equipment and protection required so that no damage to other work will result from his operation. Hardware and trim shall be removed before painting.

10-05. Painting Schedule:

A. EXTERIOR WORK:

1. Exterior Ferrous and Galvanized Metals: One appropriate metal primer and two coats exterior finish paint. Omit prime coat on items which are shop coat primed. Colors shall be as selected.

2. Exterior Woodwork:

(a) Back-priming: All wood frames, trim, wood porch ceilings, and wood siding shall be back-primed before installation. Boiled linseed oil only, without the addition of lead or pigment, shall be used for back-priming.

(b) All wood siding, including exposed sheathing or ceilings of porches, shall be given two coats of Pratt and Lambert's Okene with pigments added as directed.

(c) All other wood surfaces, including sash, doors, trim, posts, beams, shall be given a lead and oil prime coat, followed by two coats of lead and oil paint, color as selected. All knots and sapwood shall be coated with shellac before priming is done. Prime coat and finish coat shall be thinned as directed to obtain a semi-whitewashed effect.

B. INTERIOR WORK:

1. Interior wood Except in Bath Rooms and on Stairs and Mezzanine decks in Pavilion: Seal, fill and apply a pigmented coat and one finish coat of "Pen-Chrome" clear. Edges of all doors shall be finished to match face of doors; tops and bottoms shall be sealed against moisture before doors are permanently installed.

2. Interior Wood in Bath Rooms, including Doors:

First Coat: Primer and Sealer  
Second Coat: Enamel under coat  
Third Coat: Semi-Gloss Enamel.

3. Stairs and Mezzanine Decks(I):

First Coat: Stain  
Second Coat: Heavy Duty Floor Finish (thinned 10%)  
Third Coat: Heavy Duty Floor Finish.

4. Plywood Wardrobes in Dormitory Bedrooms (III): Sealed and given two coats of stain wax well buffed.

5. Wood Shelving in Utility Rooms and Storage Areas: One coat of pigmented sealer.

6. Gypsum Wallboard (Exposed Surfaces):

(a) Toilet and Bath Rooms, Janitor's Closet:

First Coat: Primer and Sealer  
Second Coat: Enamel Under Coater  
Third Coat: Semi-Gloss Enamel

(b) All other Exposed Gypsum Wallboard:

First Coat: Primer and Sealer  
Second Coat: Interior Flat Latex Finish  
Third Coat: Interior Flat Latex Finish.

7. Plywood Shower Stalls: Three coats of specified Varni-Lite finish, colors as selected.

8. Exposed Ferrous Metal: Metal with shop prime coat shall receive two coats of semi-gloss paint. Prime-coat unprimed surfaces and apply two coats as above.

9. Galvanized Piping (Exposed): One coat primer, one coat enamel undercoat and a finish coat of enamel. Piping shall be color coded to indicate its use.

10-06. LETTERING:

A. Lettering shall be painted on or near doors as directed and as indicated in the following schedule. Lettering not otherwise noted shall be done with 2" Roman Letters and Arabic numerals in color as selected.

1. Door to each guest room shall have a number.

2. Door to men's Bathroom in Cooks Quarters shall have the word "Men".

3. Door to Women's Bathroom in Cooks Quarters shall have the word "Women".

10-07. Colors and Samples:

A. Colors shall be as selected on the job by the Architect as determined with the painting foreman. As required, panels for finish and color shall be prepared with materials as specified. Samples shall be prepared on pieces of the same material as the finished material and each subsequent coat shall appear separately on the sample. Color formulas developed at the job shall be recorded for accurate reproduction.

10-08. Workmanship: Workmanship shall be of the highest quality by skilled mechanics. Material shall be spread evenly and flowed on smoothly by brush without runs or sags. Thoroughly clean the surfaces to be painted. Floors shall be cleaned of loose dirt and dust before painting is started. Knots, pitch streaks and sappy spots shall be sealed with shellac where interior finish calls for paint or enamel; on the exterior seal with an approved sealer.

A. Do necessary puttying of nail holes, cracks, etc., after the first coat has been applied. Use putty of a color to match the finish coat. Bring putty flush with adjoining surface in a neat and workmanlike manner.

B. Wash metal surfaces with mineral spirits to remove dirt or grease before applying finish coats. Where rust or scale is present, clean with wire brush or sandpaper before finish coats are applied. Clean all shop coats that have been marred and touch up with specified primer.

C. Before applying paint treat galvanized metal surfaces chemically with a compound designated for the purpose, (lithoform, Stibloy, solfo, metallic coating, etc.,) in accordance with manufacturer's directions.

D. Apply paste wood filler to open grain wood. When "set", wipe across the wood grain, then wipe parallel to the wood grain to secure a clean surface.

E. Surfaces to be stained shall be covered with uniform stain coat. Wipe off if required.

F. Tint undercoats of paint or enamel to the approximate but not exact shade of the final coat.

G. Sand smoothly woodwork to be finished with enamel; clean the surface before proceeding with first coat application. Use fine sandpaper between coats of enamel applied to wood or metal to produce an even, smooth finish.

H. Each coat shall be dry before applying succeeding coat. Each coat of material is to be inspected and approved by the Architect before application of succeeding specified coat, otherwise no credit for coat will be given and the Contractor automatically assumes responsibility to recoat work in question. Contractor shall notify Architect when particular coat is applied and ready for inspection.

I. Back prime interior trim before installation, using interior trim primer or aluminum paint. Back prime exterior trim before installation using House Paint exterior primer.

J. Apply finish to plywood shower stalls allowing 1-1/2 hours drying time between coats and three days after painting is completed. Each coat shall be a different color.

K. Do no exterior painting while surface is damp or during rainy or frosty weather.

L. Where exterior or interior wood or metal are primed in mill or shop, use material in every case the same as that specified for such surfaces and use as per manufacturer's directions for first or priming coat.

M. Protect finish work at all times and protect adjacent work, materials, and surfaces by suitable covering or other method during work progress. Upon completion of the work, remove paint or varnish spots from floors, glass and other surfaces. Remove from the premises rubbish and other accumulated materials and leave the work in a clean, orderly, and acceptable condition.

N. Hardware and trim shall be removed from final location and be replaced after painting as required to achieve good painter's finish and clean hardware.

O. Employ skilled capable mechanics to execute lettering in style and design as directed.

P. Application of paint by spray methods shall be limited to minor items approved in writing by the Architect.

10-09. Completion: At the completion of the work of this Contract, touch up and restore finishes where damaged or defaced and leave in first class condition. Shop painted or finished surfaces damaged in fitting or erection shall be restored.

## SECTION 11. FINISH HARDWARE

11-01. Scope: Furnish all finish hardware, whether specifically mentioned or not. Any item not listed but generally accepted as finish hardware shall be furnished and shall be consistent in design and function with materials listed below. All hardware shall be identified and delivered to the job. Cabinet hardware shall be provided and installed.

A. Except as otherwise specified, furnish all finish hardware, builders' hardware and cabinet hardware and related items necessary to complete the work shown or specified.

B. Rough hardware and hardware for mechanical and electrical equipment is specified in other Sections.

C. Where the size and shape of members to be equipped with hardware prevent or make unsuitable the use of the exact types specified, furnish a suitable type of adequate size for the service to which the individual items will be subjected in course of normal usage and as nearly as practicable the same in operation and quality as the type specified.

D. Should items of hardware, not definitely specified be required for completion of the work, furnish such items of type and quality suitable to the service required and comparable to adjacent hardware.

### 11-02. Quality and Make:

A. Catalog numbers referred to in this specification are taken from the catalogs of Schlage Lock Co., P & F. Corbin, The Stanley Works, Knappe & Vogt Co., and Glynn Johnson Co., and are used to establish the quality and type of hardware to be furnished. With the exception of locksets, hardware of other manufacturers will be acceptable subject to the approval of the Architect as being in all respects equal in quality and type to hardware items hereinafter specified. Burden of proof as to equality shall rest with the supplier who shall submit samples of all hardware items substituted, identified with their number and the manufacturer's name and number herein specified.

11-03. Finish: All butts and door closers shall be primed and paint finish. All hardware in toilet rooms shall have polished chrome finish US26. Other locksets and latchsets shall be oil rubbed bronze finish US 10B for Pavilion, and aluminum finish AL for Cafeteria and Cooks' Quarters.

### 11-04. Keying:

I. Pavilion: All locks to Pavilion shall be under the existing grand master key system for Camp Curry. All rooms shall be under a housekeeper's sub-master. Utility Closet shall be under a maintenance sub-master. All guest rooms shall be keyed differently.

A. Number of Keys:

1. All entrance doors to guest rooms: 6 keys each.
2. Utility Cabinet: 4 keys.

II. Cafeteria: Lock for new entrance door shall be keyed alike with locks of existing entrance doors. Furnish 2 keys for new lock.

III. Cooks' Quarters: All locks in this building shall be under the existing master key system for employee's buildings at Camp Curry. Each room shall be keyed differently. Furnish 6 keys for each lock.

11-05. Door Hardware Schedule

I Pavilion

ITEM 1: Guest Room Entrance Door:

|                  |            |                   |
|------------------|------------|-------------------|
| 1 Lockset        | Schlage    | D 85 PD Ply US10B |
| 1-1/2 pair Butts | Stanley    | 242 4 x 4         |
| Door Bumper      | G-J        | FB 14 X US10B     |
| 1 Threshold      | Chamberlin | 913 Aluminum      |

ITEM 2: Guest Room Bath Door:

|              |            |                           |
|--------------|------------|---------------------------|
| 1 Latchset   | Schlage    | A40S Ply US10B x<br>US 26 |
| 1 pair butts | Stanley    | 242 4 x 4                 |
| 1 Threshold  | Chamberlin | 913 Aluminum              |

ITEM 3: Utility Closet:

|                  |         |              |
|------------------|---------|--------------|
| 1 Latchset       | Schlage | B251PD US10B |
| 1-1/2 pair Butts | Stanley | 242 4 x 4    |

ITEM 4: Casement Windows - each pair 2'0" x 5'0"

|                      |         |                              |
|----------------------|---------|------------------------------|
| 2 pair Butts         | Stanley | 1345 3 x 3                   |
| 1 Casement Fastener  | Corbin  | 031605 US10B                 |
| 1 Surface Bolt       | Corbin  | 3580 $\frac{1}{2}$ 6" US10B  |
| 1 Surface Bolt       | Corbin  | 2580 $\frac{1}{2}$ 18" US10B |
| 2 Casement adjusters | Corbin  | 0045 10" US10B               |

II Cafeteria

ITEM 5: New Door - Exterior to Cafeteria:

|                  |         |                                    |
|------------------|---------|------------------------------------|
| 1 Deadlock       | Schlage | B261PXAL (Key from<br>inside only) |
| 1-1/2 Pair Butts | Stanley | ALDBB 181                          |
| 1 Closer         | Norton  | Size E PC                          |

|               |                |  |
|---------------|----------------|--|
| 1 Pull        | Corbin         | 4449 Aluminum  |
| 1 Push Bar    | Builders Brass | 7075-3 37" Aluminum  |
| 1 Threshold   | Chamberlin     | 912 AL   |
| 1 Door Holder | Builders Brass | BW-871-A   |
| 1 Kickplate   |                | 14 B&S gauge aluminum-width 1/2" less than height of bottom rail of door; length 1-1/2" less than door width beveled edges #6x 5/8" O.H. screws at approx 4" ctrs., finished to match plate. |

III Cooks' Quarters

ITEM 6: Bed Room Doors:

|               |         |                |
|---------------|---------|----------------|
| 1 Lockset     | Schlage | A 50 PD Ply AL |
| 1 pair Butts  | Stanley | 242 4 x 4      |
| 1 Door Bumper | Corbin  | 362            |

ITEM 7: Storage Closet

|              |         |                |
|--------------|---------|----------------|
| 1 Lockset    | Schlage | A 51 PD Ply AL |
| 1 pair Butts | Stanley | 242 4 x 4      |

ITEM 8: Bed Room Wardrobes:

|                 |        |                            |
|-----------------|--------|----------------------------|
| 1 Wardrobe Hook | Corbin | 1031 AL, 1 per compartment |
|-----------------|--------|----------------------------|

11-06. Hardware Locations: Unless otherwise required, hardware shall be located in accordance with the following:

- |                                    |  |
|------------------------------------|--|
| A. Door knobs, interior & exterior | 3'-1/2" from finish floor.                     |
| B. Push Bars, full width of door   | 3'-8" from finish floor to centerline of bars. |
| C. Kick Plates                     | 1/4" from bottom edge of door.                 |
| D. Door Pulls                      | 3'-4" from finished floor to cl of grip.       |
| E. Dead Lock                       | 4'-6" from finished floor to cl of cylinder.   |

11-07. Special Tools: Provide six (6) of each size and type of special tools required for adjusting items of hardware furnished herein.

11-08. Schedule of Hardware: Submit six (6) copies of hardware schedule stating locations on buildings of finish hardware required to be furnished herein.

11-09. Submission of Samples: Submit samples of hardware proposed when requested. Items listed in the Door Hardware schedule given above need not be submitted if supplied exactly as listed. Samples of other manufacturers proposed as alternates shall be submitted.

11-10. Wrapping, Protection, Delivery: Finish hardware items shall be properly wrapped for shipment. Deliver to manufacturing Contractors hardware items required to be installed by them; deliver the balance of the hardware to the job for storage in a location designated by the general contractor and under his control.

SECTION 12. MISCELLANEOUS ITEMS

12-01. Scope: This section includes the furnishing and installing complete and ready for use all items hereinafter specified. All anchors, brackets, or other devices for complete installation shall be provided as part of the work of this section.

12-02. Bathroom Accessories:

A. QUALITY STANDARD: For purpose of establishing quality, items are enumerated herein by manufacturer and pattern number. Substitutions will be accepted upon approval of submitted samples which demonstrate the equality of the items proposed.

B. SCHEDULE OF ACCESSORIES:

1. Guest Rooms (I): For each room group (Bedroom, Dressing, Bath and Mezzanine, where existing), provide and install accessories in quantities and located as shown on drawings:

|                               |                                  |
|-------------------------------|----------------------------------|
| Paper Holder                  | Hall-Mack #676                   |
| Vertical Soap and<br>Grab Bar | Miami-Carey #6019                |
| Towel Bars                    | Hall-Mack #495T (sizes as shown) |
| Double Clothes Hook           | Hall-Mack #482T                  |

2. Bedrooms in Employees Quarters (III): Provide and install accessories in quantities and located as shown on drawings.

|            |                                    |
|------------|------------------------------------|
| Towel Bars | Hall-Mack \$895A (sizes as shown). |
|------------|------------------------------------|

12-03. Shower Doors (I): Panel and Door Type 122E, as made by Agalite Bronson Co., Oakland, California, and distributed by California Shower Door Co., San Francisco, California

## SECTION 13. PLUMBING WORK

13-01. Scope: All labor, materials and equipment necessary to furnish and install all plumbing work as required to produce a complete, adequate and properly operating system of plumbing for Pavilion and roughing-in only for the Cafeteria Kiosk, including the following basic items.

A. Sanitary waste, vent and drainage system for Pavilion and Kiosk.

B. Domestic cold water and hot water systems for Pavilion and Kiosk. Converter and storage tank for domestic hot water system in Pavilion are specified as a part of Heating and Ventilating Work.

C. Fire protection system, including wet stand pipes, fire hose racks, cabinets and appurtenant items for the Pavilion.

D. Plumbing fixtures for the Pavilion.

E. Excavation and backfill for underground pipe of plumbing systems.

F. All pipe sleeves and all cutting and patching of concrete and wood structures as necessary for installation of plumbing work.

G. All frames, anchors, supports and backings required for installation of piping, fixtures and other items which are a part of the plumbing work.

H. Flashings for all pipes which pass through roof or exterior walls, and caulking around piping which passes through walls below grade.

I. Pipe insulation for domestic hot and cold water systems.

13-02. Rules and Regulations: Layout and installation of all work under this section shall be in accordance with all requirements of the latest edition of the Building Construction Manual, National Park Service, U.S. Department of the Interior, which may pertain thereto. In addition, the latest edition of the Plumbing Manual of the National Bureau of Standards is hereby made a part of this specification as the basis for determination of the minimum standards for plumbing work and materials in all cases where a higher standard is not required by the aforesaid Building Construction Manual.

13-03. Layout of Plumbing Work:

A. The locations of plumbing fixtures, shower stalls, hose bibbs and fire hose racks are indicated on the drawings.

B. The Contractor shall lay out and size all water piping as required for connections to all fixtures, hose bibbs and fire hose racks in a manner to produce an adequate, complete and properly operating water supply system in accordance with the rules and regulations pertaining thereto, conforming to the physical design of the structures and to the requirements hereinafter specified.

C. Layout of soil, waste and vent piping for Pavilion is shown on the drawings; however, variations in this layout will be permitted if approved by the Architect.

D. The Contractor shall prepare layout drawings for the plumbing system showing all water supply piping and all variations in soil, waste and vent piping systems. He shall submit same in duplicate to the Architect for approval before commencing installation of the work.

13-04. Materials and Substitutions: Plumbing materials and equipment hereinafter specified shall be considered as standard for the work. Materials and equipment equal in quality and utility to those specified may be accepted for use in the work when so approved by the Architect. No substitutions or materials or equipment shall be made by the Contractor unless the approval of the Architect for such substitutions has been first obtained. The decision of the Architect shall govern as to equality of any material or equipment to the corresponding item specified, but the burden of proof of such equality shall be upon the Contractor.

13-05. Wrought Steel Pipe. Wrought steel pipe shall conform to the A.S.T.M. Standard Specification No. A-120. Pipe shall be standard weight galvanized. If any close or short nipples are used, they shall be cut from extra-strong pipe.

13-06. Malleable Iron Fittings shall be 150 pound, threaded, flat banded, galvanized, Crane, Walworth, or approved equal. Unions shall be ground-joint type; unions 2-1/2" and larger shall be standard flanged type.

13-07. Cast Iron Drainage Fittings to be used for iron pipe size threaded connections shall be black, coated, recessed type, Crane, Walworth, or approved equal, and shall be used for all connections in steel waste piping.

13-08. Cast Iron Soil Pipe and Fittings shall conform to A.S.T.M. Standard Specification No. A-74, and shall be standard weight, except where extra-heavy weight is required by applicable code regulations.

13-09. Copper Tubing and Fittings:

A. Copper Tubing shall be hard-drawn, type "L", Mueller, Crane, or approved equal.

B. Fittings for use with copper tubing shall be wrought copper or forged brass, designed for soldered connections. Unions shall be ground-joint type.

C. Wrought male adapters shall be used at connections between copper tubing and brass or copper valves or tubing and brass or copper valves or nipples having threaded connections.

D. Epco, or approved equal dielectric unions shall be used wherever it is necessary to connect copper tubing to ferrous pipe.

E. Connections in copper tubing shall be made up with 95% tin and 5% antimony solder.

13-10. Brass pipe shall be standard weight (I.P.S.) conforming to A.S.T.M. Specifications No. B 43-52.

13-11. Unions, Steel Pipe. Unions 2" in size and smaller shall be Crane #519, Walworth #7715, or approved equal. Unions 2-1/2" and larger shall be standard flanged unions.

13-12. Gate Valves:

A. Steel Pipe

2" and smaller - Crane 437 (screwed ends)  
2-1/2" and larger - Crane 461 (flanged)

B. Copper Tubing

2" and smaller - Crane 1320 (solder ends)  
2-1/2" and larger - Crane 461 (flanged)

13-13. Globe Valves:

A. Steel Pipe

2" and smaller - Crane 14-1/2 P (screwed ends)  
2-1/2" and larger - Crane 351 (flanged)

B. Copper Tubing

2" and smaller - Crane 1310 (solder ends)  
2-1/2" and larger - Crane 351 (flanged)

13-14. Angle Valves:

A. Steel Pipe

2" and smaller - Crane 16-1/2 P (screwed ends)

B. Copper Tubing

2" and smaller - Crane 1311 (solder ends)

13-15. Check Valves:

A. Steel Pipe

2" and smaller - Crane 1303 (screwed ends)  
2-1/2" and larger - Crane 373 (flanged)

B. Copper Tubing

2" and smaller - Crane (soldered ends) #1303  
2-1/2" and larger - Crane 373 (flanged)

13-16. Cleanouts shall be Zurn #Z-1300, or approved equal.

13-17. Hose Bibbs shall be non-freeze type, Zurn #Z-1395-3/4", or approved equal.

13-18. Water Closets shall be American-Standard #F2112 "Cadet" vitreous china free standing close-coupled closet combination with N 3025-3 water control with backflow preventer, R-3504 3/4" supply pipe to wall with control stop, church #9700 white molded open front seat.

13-19. Lavatories shall be Crane #1-288-V "Charlotte" porcelain enameled cast iron lavatory with "V" trim consisting of #8-562-A "New-Rainier Dial-ese" supply and indirect lift waste fitting with aerator and #8-304 3/8" angle supplies with stops and flexible risers.

13-20. Stall Showers

A. Receptors shall be Fiat "Monterey" Model MFT, 36" x 36", monolithic precast terrazzo receptor. Terrazzo shall be of black and white marble chips in white cement. Drain body shall be wrought brass, cast integral and shall provide for a caulked lead connection not less than one inch deep, of a two inch pipe.

B. Shower combinations shall be Symmons "Safetymix" #4-500 thermostatically controlled mixing valve for concealed piping, American-Standard #R-1434 NU-RE-NU screw driver stops on supplies and Logan Model No. 150 adjustable spray, self-cleaning shower head with universal ball-joint, bent arm and wall flange.

13-21. Fire Hose Racks, Cabinets and Fire Extinguishers:

A. Cabinets shall be Potter-Roemer, American Rubber Mfg. Co., or approved equal, for recessed installation, and sized to accommodate 100 feet of hose and one 20 lb CO<sub>2</sub> fire extinguisher. Cabinets shall be made of 18 gauge stretcher leveled furniture steel; doors and trim shall be 12 gauge steel. Doors shall have wire glass panel and chrome plated handle with spring latch. Cabinets shall have factory prime coat for painting.

B. Hose Racks shall be Potter-Roemer "Radio", or American Rubber Mfg. Co. "lightning" to hold 100 feet of hose, complete with 1-1/2" valve, valve nipple, hose, hose coupling, nozzle and spanner. Finish shall be chrome plate. Hose shall be 1-1/2" Underwriters' Yellow-Label unlines linen hose, 100 feet long.

C. Fire extinguishers shall be 20 lb CO<sub>2</sub>; Buffalo, Wirt & Knox, or approved equal. Install one in each cabinet.

### 13-22. Piping Systems in General:

A. All pipes shall be installed essentially as shown on drawings. All pipe shall bear the manufacturer's name and/or mark for identification. Burrs formed by cutting tool shall be reamed out before installing and each section of pipe shall be examined to see that it is clean and clear. Pipes shall be threaded in accordance with the standards of the American Standards Association. New screwed pipe joints shall be caulked or screwed up with rope or packing of any kind. Screwed joints shall be made up using a white lead paste or an approved joint compound applied to the male threads only. Joints shall not be turned in the left hand direction after being tightened. Care shall be taken to see that no valve or piece of apparatus is supporting the weight of any pipe. Whenever changes in size of pipes occur, the changes shall be made with reducing fittings, as the use of bushings will not be permitted.

B. Joints in case iron bell and spigot soil pipe shall be made up using oakum, well packed, and finished with pig lead placed in one pouring and well caulked flush with the hub of the joint.

C. Joints in copper tubing shall be made by thoroughly cleaning the exterior surface of the tubing and the interior surface of the fitting or valve with steel wool or sandpaper immediately prior to soldering the joint.

### 13-23. Water Piping Systems

A. All mains and branches shall be arranged so as to permit complete drainoff of the system; lowest points of system shall be fitted with 1/2" gate valve with hose thread adapter placed at convenient locations on the perimeter of the building. Hose bibbs for irrigation shall be provided with a stop in the branch line and shall be arranged to permit drainage of branch line to prevent freezing in winter.

B. Stops shall be installed at all connections to fixtures and shut off valves provided in mains to facilitate maintenance and repair.

C. An air chamber 18" high and of the same size as the supply pipe shall be installed at each fixture supply connection.

D. Lines shall be supported by pipe hangers spaced not over 10 feet o.c. for steel pipe and 8 feet o.c. for copper tubing. Semco "Trisolators", or approved equal, shall be provided at all connections of pipe hangers to pipes to dampen sound transmission.

13-24. Domestic Hot Water System.

A. Provide and install a recirculating hot water system for the building, complete with hot water supply and return mains, valves, connections to all lavatories and showers, and connections to hot water source in attic. Converter, storage tank, circulating pumps and controls are specified under Heating and Ventilation. Hot water piping shall be hard copper tubing with solder fittings.

13-25. Cold Water System.

A. Provide and install a complete cold water system with connections to all plumbing fixtures, showers, fire hose racks, hose bibbs and cold water connection for make-up water to domestic water heater. Extend house main to a point 5 feet beyond building line for connection to service main by the National Park Service.

B. Cold water piping 2" and smaller shall be hard copper tubing with solder fittings; sizes larger than 2" may be galvanized steel pipe and fittings.

13-26. Soil, Waste, Drainage and Vent Piping.

A. The contractor shall furnish and install all the soil, waste, drainage and vent piping required for the connections of all fixtures, drains, etc. as shown on drawings. All pipes shall be run in the approximate locations shown and shall be of the sizes indicated. Soil and vent piping 3" and larger shall be cast iron, vent piping 2-1/2" and smaller shall be galvanized iron.

B. Horizontal soil, waste, drain, and vent pipes shall be give a grade of 1/4 inch per foot, unless otherwise specifically noted on drawings or approved. In no case shall such lines within a building have a grade of less than 1/8 inch per foot. All soil and waste stacks shall be installed with provision for expansion and shall be extended full size to 12 inches above the roof line as vents, unless otherwise shown or noted on drawings.

C. Cleanouts shall be installed where shown or required.

D. Vent pipes in roof spaces shall be run as close as possible to the underside of the roof using fittings as required,, with horizontal runs pitched down toward stacks without forming traps in lines.

E. All openings in the soil, waste, vent, etc., piping shall be closed during construction to keep the pipe free of foreign matter.

F. Cutting of structural members will not be permitted.

13-27. Flashings: Vent pipes shall be flashed and made water-tight at the roof with 26 gauge galvanized iron extending not less than 8 inches from the vent pipes in all directions. Flashings for vent pipes shall extend not less than 6 inches above the roof, at which point a threaded roof coupling shall form a counterflashing.

13-28. Hangers:

A. Horizontal runs of pipe shall be supported by adjustable hangers near joints, Grinnell #107R, or approved equal, spaced not over 10 feet apart for steel pipe, 8 feet apart for hard drawn copper tubing, and 5 feet apart for cast iron soil pipe. When space does not permit the use of an adjustable hanger, fixed hangers may be used as approved.

B. Perforated steel tape (plumbers tape) may be used to support concealed horizontal runs of pipe 1" and smaller.

13-29. Insulation:

A. Provide and install pipe insulation on all hot water mains within the structure and on all hot and cold water piping supported below the first floor level. All fittings occurring in insulated lines shall be insulated, excepting unions, stop and valves.

B. Insulation shall be 1" thick, having a K factor not exceeding .27 at 100° mean temperature. Insulation shall be canvas covered and bonded at intervals not exceeding 12" o.c. or fastened with #16 soft annealed wire at the same spacing.

C. Exposed insulation shall be covered with a layer of resin sized-paper, followed by 6 oz. canvas.

D. Insulation shall be applied in accordance with the manufacturer's instructions.

E. All piping to be insulated shall be tested prior to the application of insulation.

13-30. Pipe Collars shall be provided wherever pipes pass through walls, ceilings or floors. Collars shall be pressed steel, chrome plated B & C #20 BC floor and ceiling plates.

13-31. Protective Coating:

A. Galvanized and black steel or wrought iron pipes buried in earth shall be protected from electrolysis and corrosion as follows:

Pipes shall have all loose scale, dirt, oil or grease removed and shall be spiral wrapped with 20 mil thick polyvinyl-chloride tape lapped 1/2". Covering at field joints, etc., shall equal pipe covering.

13-32. Cleaning and Preservation:

A. The Contractor shall protect all vitreous finished surfaces of fixtures with heavy paper pasted thereon, or by other means, throughout the period of construction.

B. The cold and hot water piping systems shall be thoroughly flushed out until clean. They shall then be disinfected with chlorine before being placed in service. Amount of chlorine used shall equal at least 50 parts per million and shall remain in the systems for a period of 8 hours. Open and close all valves several times during the 8 hour period and then flush out the systems until the residual chlorine content is not greater than 0.2 ppm.

C. All openings into pipes shall be effectively capped to keep foreign matter out while under construction.

D. After completion of the work, all resulting debris shall be removed to leave the entire work in a complete and undamaged condition.

13-33. Tests and Adjustments:

A. All sewer, soil, waste and vent piping shall be tested and made tight by filling with water to the highest point, or by applying an equivalent hydrostatic pressure. Hot and cold water piping shall be tested and made tight under a hydrostatic pressure of 100 lbs p.s.i. All valves, stops, faucets, mixing valves, pumps, thermostatic controls, etc., shall be adjusted for proper operation under normal working conditions.

B. Should any material, apparatus, or equipment prove to be defective under test, it shall be removed and replaced with a perfect item in kind at the expense of the Contractor.

13-34. Guarantee: In addition to any specific guarantees mentioned in these specifications, this Contractor shall leave the entire installation in complete working order, free from any and all defects in material, workmanship or finish.

A. Contractor shall guarantee to repair or replace at his expense any part that may develop defects during a period of one year after the work is accepted by the Architect.

B. Contractor shall also guarantee to repair or replace with like materials any existing work of the building or equipment installed by other contractors which is damaged by him during the repairing of any such defective apparatus, materials, or workmanship.

## SECTION 14. ELECTRICAL WORK

14-01. Scope: All labor, materials and equipment required to furnish and install all electrical work as indicated on the drawings and/or hereinafter specified, and as required to complete this work. The general extent of the work shall be as follows:

A. New service feeder from the present transformer bank, located in Basement area of Camp Curry Kitchen, underground to the entrance location in the Pavilion.

B. Complete electrical distribution system for the Pavilion, including service entrance equipment, distribution panel, conduit, wiring devices, lighting fixtures, etc.

C. Complete electrical installation for Employees Quarters, including panel, feeder, conduit, wiring, wiring devices, and fixtures.

D. Wiring in conduit disconnects, and running protection for motors as required in connection with installation of space heating units, pumps, ventilating fans, etc., including line voltage wiring for thermostatic controls.

E. Excavation and backfill required for installation of electrical work.

14-02. Site Conditions: The Contractor shall visit the site, investigate existing conditions, take his own measurements, verify location and arrangement of electrical power source, and obtain for himself such other information as may be necessary for an intelligent bid.

14-03. Rules and Regulations: All work of this Section shall be in conformity with the applicable requirements of the latest edition of the National Electrical Code and the Building Construction Handbook of the National Park Service, 1958 Edition.

A. However, when these specifications or the drawings call for or describe materials, equipment or construction of better quality or larger sizes than required by the above noted rules and regulation, the provisions of the specifications and/or drawings shall govern.

B. The Contractor shall furnish, without extra charge, any labor or materials required for compliance with the above noted rules and regulations, though the work be not directly mentioned in the specifications or shown on the drawings.

14-04. Drawings: The general layout and arrangement of electrical work shown on the drawings is for the assistance and guidance of the Contractor, but exact locations, distances and levels will be governed by conditions of the building and site; and the Contractor shall accept the drawings with this understanding. Should it be necessary to deviate from the arrangements indicated on the drawings because of structural conditions, such deviations shall be made without additional expense to the Owner.

14-05. Supervision. The Contractor shall provide adequate and competent supervision at all times to insure proper installation of electrical work and coordination of this work in cooperation with the work of other trades involved.

14-06. Licenses, Permits and Fees: The Contractor shall procure all licenses and permits, obtain all required inspections, and pay all fees, as required to carry on and complete his work.

14-07. Materials and Substitutions: When brand or manufacturer's names and catalog numbers are hereinafter specified they are mentioned as standards, but this implies no right on the part of the Contractor to use other materials or methods unless the approval of the Architect has been obtained for their use prior to installation. The decision of the Architect shall govern as to whether a proposed substitute material or method is equal in quality and utility to the corresponding item specified, but the burden of proof of such equality shall be upon the Contractor.

A. Within fifteen (15) days after the award of the contract, a list of the materials and equipment the Contractor proposes to use in the work shall be submitted in triplicate to the Architect, and any proposed substitution shall be accompanied with complete data therefor as required for comparison with the corresponding specified item.

14-08. Trenching and Backfilling: The Contractor shall do all trenching, backfilling and compacting of backfill as required for installation of underground electrical work, including replacement of paved surfaces in kind; where same have been cut through.

14-09. Rigid Conduit shall be iron, pipe size, hot-dipped galvanized or sherardized. In sizes 1" and smaller, except where located underground, in concrete, or on exterior of building, galvanized or sherardized electric metallic tubing may be used. Connectors for electric metallic tubing shall be threaded water-tight compression fittings. No indentor type or set screw type connectors shall be used.

A. All rigid conduit and electric metallic tubing shall be new, and shall bear the label of the National Board of Fire Underwriters on each length.

14-10. Flexible Metal Conduit shall be zinc-coated steel, of interlocked construction to provide continuous metal to metal grounding contact throughout.

14-11. Wire and Cable: All wire and cable shall be new, 600 volt insulated N.E.C. Standard, of types specified hereinafter. Wire shall be solid for all conductors #8A.W.G. and smaller, and stranded for #6 A.W.G. and larger. All wire and cable shall bear the Underwriters' label and shall be brought to the job in unbroken packages.

A. Wire and cable #1 A.W.G. and smaller shall be Type TW.

B. Wire and cable larger than #1 A.W.G. in dry locations shall be Type RH.

C. Wire and cable larger than #1 A.W.G. installed underground, encased in concrete, or in damp locations shall be Type RHW with neoprene jacket.

D. Minimum wire size for power and lighting wiring shall be #12 A.W.G.

14-12. Outlets:

A. Outlets in moist and/or hazardous locations shall be cast metal conduit bodies; Crouse-Hinds or Appleton.

B. All other outlets shall be standard one-piece knockout boxes, sherardized or galvanized, of sizes and shapes best suited to their particular location and use.

14-13. Flush Wall Switches:

A. Flush wall switches shall be totally enclosed, bakelite body, 20 ampere, 227 volt, A&H #1991-I series, or approved equal.

B. Switch and pilot light combination shall consist of a switch, as required, with an A&H #1711, or approved equal intermediate base receptacle with 125 volt, C-7 filament incandescent lamp, mounted in a two-gang box with common two-gang face plate. Faceplate shall have a round green jewel over the pilot lamp; A&H #88, or equal.

C. Thermal-protective switches for fractional horsepower motor shall be A&H #RL-21-PL-F, or approved equal, two-pole, single throw; one pole to motor, one pole to pilot light. Flush plate shall have engraved identification.

14-14. Convenience Receptacles shall be flush duplex, 3 wire grounding type, 15 ampere, 125 volt, with ground shunt; A & H #5262, or pproved equal.

14-15. Flush Plates

A. Flush plates in Baths shall be satin finish stainless steel, types as required; A & H or approved equal.

B. Wiring devices in unfinished areas shall have galvanized or shearardized plates.

C. All other flush plates shall be .040" brass; types as required; A & H or approved equal.

14-16. Distribution Panels:

A. Panel for Pavilion shall be arranged for 3 wire, single phase, 115/230 volt, A.C., solid neutral mains, with main circuit breaker, and necessary number of branch circuits with thermal-type circuit breakers having trip ratings as required. Panel shall be enclosed in a code gauge steel cabinet complete with hinged door and combination spring latch and lock, surface mounted in location shown on drawings. Cabinet shall have factory-applied gray enamel finish. Provide circuit directory under glass on inside face of door.

B. Panel for Employees' Quarters shall be arranged for 3 wire, single phase, 115/230 volt A.C., solid neutral mains, and necessary number of branch circuits with thermal-type circuit breakers having trip ratings as required. Panel shall be enclosed in flush-mounted code gauge steel cabinet having hinged door with combination spring latch and lock, and circuit directory under glass on inside face of door. Cabinet shall have factory applied gray enamel finish.

14-17. Service Feeders:

A. New Service Feeder for Pavilion shall be connected to available power source at existing substation, in Basement of Kitchen Building, through a 2 pole SN circuit breaker of required capacity and trip rating. Feeder shall be routed through existing buildings and thence underground to service entrance location at Pavilion. Feeder shall be installed in conduit, with underground portion encased in concrete. Provide pull boxes as required for installation of wiring.

B. Feeder for distribution panel for Employees' Quarters shall be installed in conduit from nearest available power source in existing building to panel location, and shall be provided with a 2-pole SN circuit breaker of required capacity and trip rating. Feeder shall be installed in conduit.

14-18. Motors and Controls:

Motors for all mechanical equipment will be furnished with the equipment. Under this section provide all motor-starters, thermal-protective switches, etc., and all wiring, in conduit, required for these motors.

A. Each fractional-horsepower motor shall be equipped with a thermal-protective switch with proper heating element to protect motor.

B. Motor starters shall be magnetic, full voltage, with thermal overload trip and low-voltage protection.

14-19. Lighting Fixtures and Lamps:

A. Furnish and install all lighting fixtures complete with lamps as scheduled and indicated by fixture tags on the drawings.

B. Lamps shall be General Electric, Sylvania, or approved equal. Incandescent lamps shall be inside frosted.

C. All lamps shall be burning at time of acceptance of the work by the Owner.

14-20. Grounding:

Permanently and effectively ground neutral, all conduit systems, and all utilization equipment, in accordance with the Electrical Safety Orders of the State of California Department of Industrial Relations, Division of Industrial Safety.

14-21. Guarantee: In addition to any specific guarantee as mentioned in these specifications, the Contractor shall guarantee all material, apparatus, equipment, and workmanship furnished by him to be free from all defects of workmanship and material and agrees to replace at his expense, at any time within one (1) year from date of acceptance of the installation by the Architect, any and all defective parts that may be found.

A. He shall also guarantee to repair or replace with like materials, any existing work of the building or equipment installed by other workmen, damaged by him during the repairing of any such defective apparatus, materials or workmanship.

B. The signing of the contract for the work covered by these specifications and of which they shall become a part shall be considered as the written guarantee of the Contractor to carry out the provisions of this section of the specifications.

SECTION 15. HEATING AND VENTILATING.

15-01. Scope:

All labor, materials and equipment required to provide and install all heating and ventilating work as shown on the drawings and/or hereinafter specified, and as necessary to complete this work. The general extent of the work shall be as follows:

A. Installation of hot water space heating system for Pavilion, consisting of heating units in rooms and piping, valves, etc. therefor.

B. Installation of hot water space heating system for Employees' Quarters, consisting of radiators in rooms and piping, valves, etc. therefor. Radiators shall be existing 5 tube cast iron radiators, to be supplied by the Owner, modified as required and installed as part of this work.

C. Steam -to-water heat exchanger, expansion tank, circulating pump, auxiliary equipment, and steam and hot water piping, valves, etc., therefor, to provide heating water for Pavilion and Employee's Quarters. Auxiliary electric water heating equipment, arranged to heat water circulated in system sufficiently to prevent freezing during boiler shut-down periods in winter. This equipment to be installed in Boiler Room in existing Kitchen Building.

D. New heating water supply and return mains from heating water source equipment in Boiler Room to Pavilion and Employees' Quarters. Mains to Pavilion shall be routed through existing buildings and thence underground to Pavilion.

E. Provision of auxiliary circulating pump, located at Pavilion to provide circulation of heating water during boiler shut-down periods.

F. Installation of storage tank, water-to-water heat exchanger, circulating pumps, auxiliary equipment, and piping valves, etc. required for installation of this equipment to provide domestic hot water supply for Pavilion. Distribution piping to fixtures is specified under Plumbing Section.

G. Ventilation system for Pavilion, including fan units, ductwork, grilles, etc.

H. All temperature control equipment, including low voltage wiring therefor as required.

I. Excavation and backfill required for installation of the work of this section.

15-02. Site Conditions: The Contractor shall visit the site, investigate existing conditions, take his own measurements, and obtain for himself such other information as may be necessary for an intelligent bid.

15-03. Rules and Regulations:

All work of this section shall be in conformity with the applicable requirements of the Building Construction Handbook of the National Park Service, 1958 Edition.

A. However, when these specifications or drawings call for or describe materials, equipment or construction of better quality or larger sizes than required by the above noted rules and regulations, the provisions of the specifications and/or drawings shall govern.

B. The Contractor shall furnish, without extra charge, any labor or materials required for compliance with the above noted rules and regulations, though the work be not directly mentioned in the specifications or shown on the drawings.

15-04. Drawings: The general layout and arrangement of Heating and Ventilating work shown on the drawings is for the assistance and guidance of the Contractor, but exact locations, distances and levels will be governed by conditions of the building and site; and the Contractor shall accept the drawings with this understanding. Should it be necessary to deviate from the arrangements indicated on the drawings because of structural conditions, such deviations shall be made without additional expense to the Owner.

15-05. Supervision. The Contractor shall provide adequate and competent supervision at all times to insure proper installation of heating and ventilation work and coordination of this work in cooperation with the work of other trades involved.

15-06. Licenses, Permits and Fees : The Contractor shall procure all licenses and permits, obtain all required inspections, and pay all fees, as required to carry on and complete his work.

15-07. Materials and Substitutions: When brand or manufacturer's names and catalog numbers are hereinafter specified they are mentioned as standards, but this implies no right on the part of the Contractor to use other materials or methods unless the approval of the Architect has been obtained for their use prior to installation. The decision of the Architect shall govern as to whether a proposed substitute material or method is equal in quality and utility to the corresponding item specified, but the burden of proof of such equality shall be upon the Contractor.

15-08. Trenching and Backfilling: The Contractor shall do all trenching, backfilling and compacting of backfill as required for installation of work of this Section including replacement of paved surfaces in kind, where same have been cut through.

15-09. Steel Pipe. shall conform to ASTM standard A-120, and shall be Schedule 40, black or galvanized as required.

15-10. Malleable Iron Fittings. shall conform to ASTM Standard A-277, and shall be 150-pound, black or galvanized as required.

15-11. Welding Fittings shall conform to ASTM Standard A-234 and American Standard B-16.9, and shall be Schedule 40.

15-12. Flanges shall be 150-pound forged steel welding or screwed flanges conforming to A.S.A. Standard B-16e.

A. Gasket material shall be Crane Co. "Cranite" 1/16" asbestos sheet, or approved equal, coated with thread lubricant when being installed.

15-13. Unions for piping 2" and smaller shall be Crane 519, Walworth 7715, or approved equal.

A. Unions for piping 2½" and larger shall be made with flanges as specified.

15-14. Line Valves. Valves shall be Crane, or approved equal, in accordance with the following schedule:

| <u>TYPE</u> | <u>SIZE</u>  | <u>CRANE<br/>SCREWED ENDS</u> | <u>CRANE<br/>FLANGED</u> |
|-------------|--------------|-------------------------------|--------------------------|
| Gate        | 2" & smaller | 431                           |                          |
|             | 2½" & larger |                               | 461                      |
| Angle       | 2" & smaller | 16½-P                         |                          |
|             | 2" & larger  |                               | 353                      |
| Globe       | 2" & smaller | 14½-P                         |                          |
|             | 2" & larger  |                               | 351                      |
| Check       | 2" & smaller | 34                            |                          |
|             | 2" & larger  |                               | 373                      |

15-15. Radiator Valves for connections to heating units and radiators shall be angle pattern, hot water; American-Standard, Crane, or approved equal.

15-16. Balancing Cocks shall be American-Standard, Walworth, or approved equal.

15-17. Relief Valves shall be Bell & Gossett No. 1050, or approved equal.

15-18. Pressure Reducing Valves shall be Bell & Gossett No. 12 or approved equal.

15-19. Temperature Regulator Valve to control steam supply to steam-to-water heat exchanger shall be Fulton "Sylphon", Klipfel, or approved equal; range 180°/220°.

15-20. Steam Trap shall be Armstrong No. 863, or approved equal.

15-21. Strainers shall be Bailey No. 100, or approved equal.

15-22. Air Vents.

A. Air vents for installation in heating water distribution system shall be Bell & Gossett Automatic Air Vent, or approved equal.

B. Air vents for heating units and radiators shall be Bell & Gossett No. 17 Jr., or approved equal.

15-23. Expansion Tank shall be Bell & Gossett, 40 gal. capacity, equipped with gauge glass and Bell & Gossett No. 12 Airtrol Tank Fitting.

15-24. Air Separation Tank shall be Bell & Gossett No. CHC-5, or approved equal.

15-25. Circulation Pumps.

A. Pump for heating water main circulation shall be Bell & Gossett Universal No. U3T, 2H.P., 230 volt, single phase motor.

B. Auxiliary pump in heating water main at Pavillion shall be Bell & Gossett No. 60-4 in-the-line pump, 3/4 H.P., 230 volt, single phase motor.

C. Pumps for domestic hot water system in Pavilion shall be Bell & Gossett No. 1" H.V., 1/6 H.P., 115 volt, single phase motor.

15-26. Heat Exchangers.

A. Heat exchanger, steam-to-water, for heating water source located in Boiler Room will be supplied by Owner, to be installed as part of the work of this Section.

B. Heat exchanger, water-to-water, for domestic hot water heating in Pavillion, shall be Bell & Gossett No. WU-66-43, 150 lb. ASME.

15-27. Electric Immersion Heater for maintaining non-freezing temperature in heating water system during boiler shut-down periods in winter shall be Wesix No. 50DKTS2217, 5000 watt, complete with thermostatic control, or approved equal.

15-28. Domestic Hot Water Storage Tank located in attic space of Pavillion shall be 150 p.s.i. test, not less than 430 gal. capacity, with all tappings required for water connections, drain, temperature control equipment, etc. Diameter of tank not to exceed  $\pm$  42" because of space limitations. Tank shall be adequately supported and securely anchored in place, with bracing to prevent lateral movement.

15-29. Underground Heating Water Mains serving Pavillion shall be Rickwill Underground Conduit, consisting of two 2½" Schedule 40 black steel pipes, each insulated with 1½" thick pipe insulation, contained in a 12" diameter corrugated steel conduit coated with asphalt. Provide anchor unit installed in center of underground run, and two end seals for conduit where it connects into buildings at each end. Caulk between conduit and wall construction where conduit enters buildings.

15-30. Heating Units for Pavillion rooms shall be as follows:

A. Rooms 104 and 113: American-Standard "Remotaire" Model WP-150R, with dampered fresh air intake.

B. All other rooms: American-Standard Type 20 "Remotaire", Model SW-300, with unit base equipped with proportioning damper for fresh air intake.

C. Fan Motors for all heating units shall be 115 volts, single phase.

15-31. Pipe Hangers.

A. All horizontal piping within buildings shall be adequately supported by means of pipe hangers and rods, with suitable attachments to building construction. Pipe hangers shall be Grinnell, "Witch", or approved equal. Hanger rods shall be 3/8" diameter for piping 2" and smaller, and ½" for piping larger than 2".

B. Heating water supply and return mains in Pavillion shall have properly sized sound and vibration isolators installed over pipe at each pipe hanger; Potter-Roemer Isolator, Semco Trisolator, or approved equal.

15-32. Ventilating Fans for exhaust system in Pavillion shall be Marlo two-fan horizontal units, size C2G, horizontal discharge, 2400 c.f.m. at 970 r.p.m. and 3/4" S.P. Motors shall be 3/4 H.P., 230 volt, single phase. Fan units shall be hung from building construction with rod hangers equipped with Korfund Series R vibration isolators, and shall be adequately braced to prevent lateral motion.

15-33. Ductwork.

A. Ductwork shall be fabricated of galvanized sheet steel, 26 U.S. gage for ducts having largest dimension not over 12", and 24 U.S. gage where largest dimension exceeds 12". Ducts shall be fabricated and installed true to line, shall be practically air tight, and shall be securely and adequately supported in place.

B. Main ducts shall be insulated inside with neoprene-coated glass fibre duct liner, 1½ pound density, 1" thick, installed continuously on all sides of duct, and attached with suitable adhesive and insulation clips.

C. Flexible duct connections, made with neoprene-coated Fiberglas Cloth and Fiberglas tapes, shall be provided at all connections between ductwork and fan units.

15-34. Grilles.

Exhaust grilles for intakes of ventilating system in Pavillion shall be Krueger Series 80H with opposed blade damper, or approved equal, in sizes noted on drawings. Grilles shall have factory prime coat for field painting.

15-35. Insulation of Piping and Equipment.

A. Heat exchangers, air separation tank, and hotwater storage tank shall be insulated with Owens-Corning Kaylo, Johns-Manville Thermobestos, or approved equal, sectional block calcium silicate insulation,  $1\frac{1}{2}$ " thick, canvas covered.

B. Space heating water piping within buildings shall be insulated with Owens-Corning Kaylo, Johns-Manville Thermobestos or approved equal, sectional molded calcium silicate pipe covering, 1" thick, with canvas jacket. Insulate valves and fittings with plastic insulating cement, 1" thick, and cover with canvas. Omit insulation at unions; interrupt insulation at pipe hangers equipped with sound isolators.

15-36. Cleaning and Preservation.

A. All equipment, piping and materials furnished and/or installed under this Section shall be thoroughly cleaned free from rust, scale and all other dirt before any covering or painting is done, and before systems are placed in operation.

B. Ductwork shall be thoroughly cleaned before grilles are installed.

C. After completion of work, all resulting debris shall be removed, and the entire work shall be left in a complete and undamaged condition.

15-37. Tests and Adjustments.

A. Piping shall be tested under 100 p.s.i. water pressure and made tight.

B. Control and auxilliary equipment shall be tested and adjusted for required normal operation.

C. Ventilation system shall be adjusted for required air capacities at each grille, and for quiet operation.

D. Heating units shall be tested and adjusted for proper normal operation.

E. Should any piece of equipment or any material or work prove to be defective under test, it shall be removed and replaced with a new corresponding item, or otherwise made good to the satisfaction of the Architect, and shall then be retested, all at the expense of the Contractor.

15-38. Guarantee.

A. In addition to any specific guarantees mentioned in these specifications, this Contractor shall leave the entire installation in complete working order and free from any and all defects in material, workmanship or finish. He shall guarantee to repair or replace at his expense any part that may develop defects during a period of one year after the work is accepted by the Architect.

B. He shall also guarantee to repair or replace with like materials any existing work of the building or equipment installed by other Contractors which is damaged by him during the repairing of any such defective apparatus, materials or workmanship.

SECTION 16. TRAY CONVEYOR

16-01. Scope: Supply and install tray conveyor in Cafeteria (II).

16-02. Conveyor Unit: Pin-Type Conveyor as made by the Lamson Corporation, San Francisco, California. Conveyor shall be designed to the size and shape and location as shown on drawings. Exposed parts shall be stainless steel type 302 with number 4 finish.

16-03. Shop Drawings: Shall be submitted to the Architect for approval before any fabrication is commenced.

16-04. Installation: In accordance with approved shop drawings.

SECTION 17. ACOUSTICAL TILE WORK

17-01. Scope: Install acoustical treatment on ceilings and on walls above door height in Dance Area and Cafeteria.

17-02. Materials:

A. WALLS IN DANCE AREA AND CAFETERIA: Armstrong "Textured Cushiontone" 12" x 12" x 3/4", or approved equal.

B. CEILINGS IN DANCE AREA AND CAFETERIA: Armstrong "Full Random Cushiontone", 12" x 12" x 3/4", or approved equal.

C. ADHESIVE: as recommended by manufacturer of acoustical tile units for this specific use. Adhesive shall be insoluble in water and shall contain no ingredients that react chemically with paint or that have a stronger solvent action than naphtha. It shall not contain alcohol. It shall maintain its adhesive qualities between minus 40° and plus 120°F.

D. NAILS OR SCREWS: As recommended by manufacturer of acoustical tile units.

17-03. Installation:

A. Installation shall be by a contractor approved by the manufacturer of the acoustical tile. Tile shall be securely fastened to backing material indicated on drawings, using adhesive or nails as required. Border units shall fit neatly against abutting surfaces, with cutting of tile done smoothly without ragged edges. Only perfect acoustical tile units shall be used, and all tile units damaged or marred before acceptance of the building by Owner shall be replaced with whole, perfect units in kind.