# PROJECT MANUAL

**FOR** 

PROPOSED ADDITIONS AND IMPROVEMENTS TO

# HINDU COMMUNITY AND CULTURAL CENTER

# 1200 & 1232 Arrowhead Avenue Livermore, CA 94551

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# **DOCUMENT 00010**

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Bid Breakdown Form 1 Bid Breakdown Form 2

AIA G705 List of Subcontractors (not included, part of Contract)

# **CONTRACTING REQUIREMENTS**

Document	00700	General Conditions (AIA A201-2007)
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00800 Supplementary Conditions

#### **SPECIFICATIONS**

# **DIVISION 1 GENERAL REQUIREMENTS**

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	01300	Administrative Requirements
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#### **DIVISION 2 TO DIVISION 10**

Refer to Drawing Sheets for specifications.

#### **DIVISION 11 EQUIPMENT**

Kitchen Equipments as indicated on Sht. K-1 & K-2 Owner furnished Contractor installed including co-ordination with Kitchen Hood Manufacturer/Installer.

# **DIVISION 12 FURNISHINGS**

Not used.

# **DIVISION 13 SPECIAL CONSTRUCTION**

Not used.

# **DIVISION 14 CONVEYING SYSTEMS**

Not used.

# **DIVISION 15 MECHANICAL**

For Building B Addition: Specifications on Drawings. For Building C: Specifications attached.

# **DIVISION 16 ELECTRICAL**

Specifications attached for Building B & C.

# **END OF DOCUMENT**

# **DOCUMENT 00011**

# **BID BREAKDOWN FORM 1**

# Bid Breakdown:

Description Sub Contractor Amount

Site Work

Precast Concrete Fence

Landscape

Concrete

Masonry

Structural & Misc. Steel

Rough Carpentry

Finish Carpentry

Granite tops & shwr. surrounds

Roofing: Built up

**EPDM** 

Flashing & sheet metal

Insulation

Caulking & Sealants

Windows

Glass & Glazing

Door, Frames & Hardware

Lath & Plaster

**Drywall Assemblies** 

**Acoustical Ceiling** 

**Paint** 

Ceramic tile

Specialties

**Toilet Accessories** 

**HVAC** 

Fire Sprinkler System

Plumbing

Electrical

Fire Alarm

Signage

**Subtotal:** 

**General Conditions** 

General Liability Insurance

G. Contractor's Fee, Overhead & Profit \_\_\_\_\_\_%

Performance Bond

**Total Contract Amount:** 

# DOCUMENT 00012

BID BREAKDOWN FORM 2				
Bid Breakdown:				
Description	Amount			
Site Work				
Landscaping				
Site Utilities (Power from PG&E Transformer)				
Administration Building "C"				
Trash Enclosure				
Compost Enclosure				
Building B" including installation of Equipments.				
Covered Walkways including Fire Sprinklers				
Arrowhead Ave. Improvements				
Demolition				
	Subtotal:			
General Conditions				
General Liability Insurance				
G. Contractor's Fee, Overhead & Profit%				
Performance Bond				
m . 10				

**Total Contract Amount:** 

# **DOCUMENT 00700**

# **GENERAL CONDITIONS**

# 1 GENERAL CONDITIONS

A. The General Conditions of the Contract for Construction, AIA Document A201, 2007 Edition, is a part of this Contract, and is incorporated herein as fully as if here set forth.

# **END OF DOCUMENT**

#### **DOCUMENT 00800**

#### SUPPLEMENTARY CONDITIONS

#### 1.1 REFERENCE TO DIVISION 1 - GENERAL REQUIREMENTS

- A. Where provisions of General Conditions relate to Project administration or work-related requirements of the Contract, those paragraphs are expanded in Division 1 General Requirements of the Specifications.
- B. General Conditions, Supplementary Conditions and Division 1 General Requirements contain information necessary for completion of every part of Project.
  - 1. Where items of Work are done under subcontracts, each item shall be subject to these conditions.

#### 1.2 SUPPLEMENTS

- A. The following supplements modify, change, delete from or add to General Conditions of the Contract as indicated in Section 00700 General Conditions.
- B. Where any part of the General Conditions is modified or deleted by these supplements, unaltered provisions of the modified article, paragraph, subparagraph or clause shall remain in effect.
- C. General: The Term "Architect" used throughout the AIA A201 shall refer to the Project Engineer of Record (hereinafter "EOR").

#### **ARTICLE 1: CONTRACT DOCUMENTS**

**ADD** to 1.1 the following definitions:

- 1.1.8 **Approved**: The terms approved, directed, selected, required, ordered, designated, accepted, acceptable and satisfactory shall require written action by EOR.
- 1.1.9 **Equal, or Approved Equal:** The terms equal or approved equal shall require requests for substitutions for products or manufacturers not specified; requests for substitutions shall be in accordance with requirements of Section 01630 Product Substitution Procedures.
- 1.1.10 **Furnish:** The term furnish means supply and deliver to Project, unless otherwise defined in greater detail.
- 1.1.11 **Install:** The term install is used to describe operations at Project, from inspecting and unloading, to completion in place, ready for intended use.
- 1.1.12 **Provide:** The term provide means furnish and install, complete and ready for intended use, unless otherwise defined in greater detail.

#### **ARTICLE 2: OWNER**

**DELETE** Subparagraph 2.2.5 in its entirety and substitute the following:

2.2.5 **Copies of Contract Documents:** Contractor will be furnished a reasonable number of copies of Drawings and Project Manuals, along with a reproducible set of Drawings.

# **ARTICLE 3: CONTRACTOR**

**ADD** the following to Subparagraph 3.4.2:

3.4.2.1 **Substitutions:** After Contract has been executed, the Owner and EOR will consider formal requests for substitution of products in place of those specified only under conditions set forth in Section 01630 - Product Substitution Procedures.

#### **ARTICLE 5: SUBCONTRACTS**

ADD the following to Paragraph 5.3:

5.3.2 **Materials Suppliers:** For purposes of this Contract materials suppliers shall be considered a Subcontractor regardless of whether or not they perform their portion of the Work at the site. Do not agree that material suppliers should be considered as Subcontractors.

#### ARTICLE 9: PAYMENTS AND COMPLETION

**ADD** the following to 9.3.2.

9.3.2.1 **Stored Materials:** Payments for materials stored off-site will be made, subject to Owner's approval, if Contractor provides invoice, lien release, certificate of insurance covering stored materials, and stores material in approved, bonded warehouse. Such payments should be limited to no more than 75% of each invoice.

#### ARTICLE 11: INSURANCE AND BONDS

**ADD** the following to Subparagraph 11.1.2:

11.1.2.1 **Insurance Amounts:** Amount of insurance shall be as approved by Owner. When additional insurance is required, Owner reserves right to negotiate difference in cost directly with Contractor's Insurance Carrier. Insurance requirement amounts must be listed herein if not listed elsewhere.

**ADD** the following to 11.1.3:

- 11.1.3.1 **Certificate of Insurance:** Furnish one copy of each Certificate of Insurance required for each copy of Agreement. Owner should be listed as insured.
- 11.1.3.1.1 Form of certificate shall be an approved certificate which specifically sets forth evidence of all coverage required.
- 11.1.3.1.2 Furnish to Owner copies of any endorsements subsequently issued amending coverage or limits.
- 11.1.3.2 Upon receipt of any notice of cancellation or alteration, Contractor shall, within five days, procure other policies of insurance similar in all respects to policy or policies about to be canceled or altered.
- 11.1.3.2.1 If Contractor fails to provide acceptable policies of insurance, Owner may obtain such insurance at cost and expense of Contractor.

#### **END OF DOCUMENT**

#### SCOPE OF WORK

#### **PART 1 - GENERAL**

#### 1.1 SUMMARY

- A. Project involves Phase 1A, an addition to the existing building "B". The project also involves Phase 1B, Site development of adjacent lot (south of existing temple) as indicated on drawings including trash enclosure building, compost structure, connecting walkway structure in the north lot and demolition and refurbishing as called out or shown on drawings, construction of building "C" and entry walkway structure in the south lot of the Hindu Community and Cultural Center, 1200 &1232 Arrowhead Avenue, Livermore, California 94551. Arrowhead Ave Improvements. Also include Asphalt driveways to the East lot.
  - 1. Items noted "NIC" (Not in Contract) in Building "B" will be furnished and installed by the Owner or under separate contract.
    - a. Hazardous Materials Removal: Known hazardous materials will be removed under separate contract (NIC); inform Owner immediately where materials suspected of being hazardous are encountered.
  - 2. Owner reserves right to remove and retain possession of existing items prior to start of Contract.
  - 3. All Utilities shown as existing in the South lot part of this contract.
  - 4. All work from new transformer in the North lot included in this contract.

#### 1.2 REQUIREMENTS INCLUDED

- A. This section includes administrative provisions:
  - 1. Work sequence.
  - 2. Contractor use of premises.
  - 3. Building occupancy.
  - 4. Lines and levels.
  - 5. Regulatory requirements and reference standards.

#### 1.3 WORK SEQUENCE

- A. Coordinate construction schedule and operations with the EOR.
  - Construction work to accommodate building occupancy requirements during construction period.
- B. Perform construction in phases as directed by the Owner.

C. All work on Phase 1B & driveways to East lot to be completed before any work can start on phase 1A. All work on new addition of Building B in phase 1A to be completed before any work on existing portion of Building B work can start.

# 1.4 CONTRACTOR USE OF PREMISES

- A. Limit use of premises for work and construction operations to allow for:
  - 1. Building occupancy.
  - 2. Work by other contractors.
  - 3. Authorized access.
  - 4. Public access to public areas.
- B. Coordinate use of premises and access to site under direction of the EOR.

#### 1.5 BUILDING OCCUPANCY

A. Building will be occupied during construction for conduct of normal operations; cooperate with the EOR to minimize conflict and to facilitate building operations.

#### 1.6 LINES AND LEVELS

A. Establish lines and levels by use of recognized engineering practices.

# 1.7 REGULATORY REQUIREMENTS AND REFERENCE STANDARDS

- A. Regulatory Requirements:
  - 1. EOR has reviewed design requirements of local, state and federal agencies for applicability to Project.
  - 2. Contractor shall be responsible for contacting governing authorities directly for necessary information and decisions bearing upon performance of Work.

# B. Reference Standards:

- For Products specified by association or trade standards, comply with requirements of referenced standard, except when more rigid requirements are specified or are required by applicable codes.
- 2. Applicable date of each standard is that in effect as of date on proposal or date on Contract where no proposal is available, except when a specific date is specified.

#### **ADMINISTRATIVE REQUIREMENTS**

#### **PART 1 - GENERAL**

# 1.1 SUMMARY

- A. This section describes general procedural requirements for ongoing submittals.
- B. Related Requirements:
  - Section 01630: Product substitution request procedures. There must be a time limit stated for cut-off of all substitutions and a statement requiring that the Contractor is to be responsible for all costs and no delays will be forthcoming relative to substitutions. This has no bearing on products found to no longer be available, etc.
  - 2. Section 01770: Closeout requirements including Project Record Documents.

#### 1.2 PROCEDURES

- A. Submittals: Transmit each item under form acceptable to EOR.
  - 1. Identify Project, Contractor, subcontractor, major supplier.
    - a. Date and attach sequential identification number for each new submittal.
    - b. Identify each resubmittal using original submittal number and sequential identification clearly indicating item is resubmitted.
  - 2. Identify pertinent Drawing sheet and detail number, and Specification section number as appropriate.
  - 3. Identify deviations from Contract Documents.
  - 4. Provide space for Contractor and EOR review stamps.
  - 5. Contractor: Review and stamp submittals from subcontractors prior to submitting to EOR. Review submittals and indicate where conflicts occur with Contract Documents and with work of other subcontractors.
- B. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- C. After EOR review of submittal, revise and resubmit as required, identify changes made since previous submittal.
- D. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply.

# 1.3 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit construction progress schedule with separate item for each major trade and operation, identifying first day of each week.
- B. Progress Schedule Format: Horizontal bar chart as approved. This form of scheduling is OK, but not much compatible with a Schedule of Values.

# 1.4 SCHEDULE OF VALUES

- A. Submit typed schedule on AIA Form G703 or another approved 8-1/2" by 11" paper format; Contractor's standard media-driven printout will be considered on request. Submit within 15 days after award of Contract.
- B. Format: Table of Contents of this Project Manual, identify each line item with number and title of major Specification sections.

#### 1.5 SHOP DRAWINGS

- A. Submit three reproducible prints; minimum sheet size 8-1/2" by 11". All Shop Drawings shall be accompanied by a licensed stamp of the submitter. No substantial changes to the Contract Plans and Specs will be allowed.
- B. After review, reproduce and distribute.

# 1.6 PRODUCT DATA/MANUFACTURERS' LITERATURE

- A. Mark each copy to identify applicable Products, models, options, and other data; supplement manufacturers' standard data to provide information unique to the Work.
- B. Include manufacturers' installation instructions only when required by Specifications or specifically requested by EOR.
  - 1. Maintain copy of manufacturer installation instructions and recommendations in Contractor's field office for review.
- C. Submit number of copies Contractor requires, plus one copy to be retained by EOR.

#### 1.7 SAMPLES

- A. Submit full range of manufacturers' standard colors, textures, and patterns for EOR's selection.
- B. Submit samples to illustrate functional characteristics of Product, with integral parts and attachment devices.
- C. Coordinate submittal of different categories for interfacing work.
- D. Include identification on each sample, giving full information.
- E. Submit number of samples required by Contractor plus one to be retained by EOR.
  - 1. Maintain one set of approved samples at Project Field Office.

- F. Sizes: Provide following sizes unless otherwise specified.
  - 1. Flat or Sheet Products: Minimum 6" square, maximum 12" by 12".
  - 2. Linear Products: Minimum 6", maximum 12" long.
  - 3. Bulk Products: Minimum one pint, maximum one gallon.
- G. Full size samples may be used in the Work upon approval.

# 1.8 MANUFACTURERS' CERTIFICATES

A. Submit certificates, in duplicate in accordance with requirements of each Specification section.

#### PROJECT MANAGEMENT AND COORDINATION

#### **PART 1 - GENERAL**

# 1.1 SUMMARY

- A. Section Includes: Description of Project management and coordination.
- B. Related Sections:
  - 1. Section 01300: Administrative requirements.

# 1.2 COORDINATION

- A. Coordination: Coordinate construction operations included in various Specifications sections to ensure efficient and orderly installation of each part of Work.
  - 1. Coordinate construction operations that depend on each other for proper installation, connection, and operation.
  - 2. Coordinate work to assure efficient and orderly sequence of installation of construction elements.
  - 3. Make provisions for accommodating items installed by Owner or under separate contracts.
- B. Prepare memoranda for distribution to each party involved as needed, outlining special procedures required for coordination.
  - 1. Include required notices, reports, and list of attendees at meetings; include EOR in distribution.
- C. Coordinate space requirements and installation of mechanical and electrical work indicated diagrammatically on Drawings.
  - 1. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated; coordinate locations of fixtures and outlets with finish elements.
- E. Administrative Procedures: Coordinate scheduling and timing of administrative procedures with other construction activities and activities of other contractors to avoid conflicts and ensure orderly progress of Work.

# 1.3 PROJECT MEETINGS

- A. Schedule and administer Project meetings throughout progress of Work:
  - 1. Pre-construction meeting.
  - 2. Progress meetings at weekly intervals.
  - 3. Pre-installation conferences.
  - 4. Coordination meetings.
  - 5. Special meetings.
- B. Weekly meetings will be held at existing Building B, prepare agenda with copies for participants, preside at meetings, record minutes and distribute copies within two days to EOR, participants, and those affected.
- C. Attendance: Project Manager, Job superintendent, major subcontractors and suppliers as appropriate to agenda along with EOR, reps of Temple Construction Committee and consultants
- D. Suggested Agenda: Review of Work progress, status of progress schedule and adjustments, delivery schedules, submittals, requests for information, maintenance of quality standards, pending changes and substitutions, and issues needing resolution.

# **SECTION 01400**

# **QUALITY REQUIREMENTS**

# **PART 1 - GENERAL**

- 1.1 SUMMARY
  - A. This section describes general quality control requirements.
- 1.2 QUALITY CONTROL, GENERAL
  - A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of best practices and quality.

#### TEMPORARY FACILITIES AND CONTROLS

#### **PART 1 - GENERAL**

#### 1.1 SUMMARY

- A. This section describes temporary construction facilities and temporary controls.
- B. Related Requirements:
  - 1. Section 01700: Progress cleaning and final cleaning.
- C. Provide temporary construction facilities and temporary controls as required to conform to applicable authorities and as required to complete Project in accordance with Contract Documents.
  - 1. Authorities: Contact EOR to establish extent of temporary facilities and temporary controls required by authorities.
  - 2. General Contractor: Contact EOR to establish extent of temporary facilities and temporary controls required by EOR.

#### 1.2 ELECTRICITY AND LIGHTING

- A. Provide electrical service required for construction operations, with branch wiring and distribution boxes located to allow service and lighting by means of construction-type power cords.
  - 1. Contractor will pay costs of energy used from existing on-site services unless otherwise directed by EOR.
- B. Provide lighting for construction operations.
  - 1. Permanent lighting may be used during construction; maintain lighting and make routine repairs.

#### 1.3 WATER AND SANITARY FACILITIES

- A. Provide water service required for construction operations; extend branch piping with outlets located so water is available by use of hoses.
  - 1. Connection to existing facilities is permitted unless otherwise directed by EOR.
  - 2. Contractor will pay for water used from existing on-site services.
- B. Provide and maintain required sanitary facilities and enclosures.
  - 1. Existing facilities shall not be used unless otherwise directed by EOR.

#### 1.4 CONSTRUCTION AIDS

- A. Noise, Dust and Pollution Control: Provide materials and equipment necessary to comply with local requirements for noise, dust and pollution control.
- B. Fire Protection: Maintain on-site fire protection facilities as required by applicable authorities and insurance requirements.
- C. Use of Existing Facilities: Verify availability of existing facilities for construction operations with the Manager prior to beginning on-site construction.

# 1.5 CLEANING DURING CONSTRUCTION

- A. Control accumulation of waste materials and rubbish; recycle or dispose of off-site.
- B. Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

#### 1.6 PROJECT IDENTIFICATION

A. Signs: Subject to approval by EOR.

#### 1.7 FIELD STORAGE

- A. Storage for Tools, Materials, and Equipment: Limit on-site storage to Project area; provide weather-tight storage, with heat and ventilation for products requiring controlled conditions.
  - 1. Maintain adequate space for organized storage and access.
  - 2. Provide lighting for inspection of stored materials.

# 1.8 SITE WASTE MANAGEMENT

- A. Site Waste Management: Comply with applicable regulations for diverting Project waste from landfill; aim for waste management goal of 50% or higher.
  - 1. Effect optimum control of solid wastes.
  - 2. Prevent environmental pollution and damage.
- B. Reports: Provide as required by applicable authorities.
- C. Recycling: Implement recycling program that includes separate collection of waste materials of types as applicable to Project; recycling program to be applied by Contractors and subcontractors.
- D. Handling: Keep materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling process.
  - 1. Clean materials contaminated prior to placing in collection containers.

#### HINDU CULTURAL and CULTURAL CENTER

- 2. Arrange for collection by or delivery to appropriate recycling center or transfer station that accepts construction and demolition waste for purpose of recycling.
- E. Participate in Re-Use Programs: Rebates, tax credits, and other savings obtained for recycled or re-used materials shall accrue to Owner.

# 1.9 REMOVAL

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion Inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.
- C. Restore existing facilities used during construction to specified or original condition.

#### PRODUCT REQUIREMENTS

#### **PART 1 - GENERAL**

#### 1.1 SUMMARY

- A. This section describes basic product requirements governing material and equipment.
  - 1. General product requirements.
  - 2. Product list.
  - 3. Quality assurance.
  - 4. Delivery, storage, and handling.
- B. Related Requirements:
  - 1. Section 01300: Submittal of manufacturers' certificates.
  - 2. Section 01630: Product substitution procedures.
  - 3. Section 01770: Operation and maintenance data.

#### 1.2 GENERAL PRODUCTS REQUIREMENTS

- A. Products include material, equipment, and systems.
- B. Comply with Specifications, referenced standards, and applicable codes and regulations as minimum requirements.
- C. Provide new materials except as specifically allowed by Contract Documents.
- D. Materials to be supplied in quantity within a Specification section shall be by one manufacturer, shall be the same, and shall be interchangeable.
- E. Provide equipment and systems composed of materials from a single manufacturer except where otherwise recommended by equipment or systems manufacturer or where otherwise indicated in Contract Documents.

# 1.3 SUBMITTALS

- A. Product List: Prior to submittal of second Request for Payment, submit to EOR complete list of major products which are proposed for installation, with name of manufacturer, trade name, and model.
  - 1. Tabulate products by Specification number and title.
- B. Substitutions: Refer to Section 01630 Product Substitution Procedures.

# 1.4 QUALITY ASSURANCE

A. Comply with industry standards and applicable codes except when more restrictive tolerances or requirements indicate more rigid standards or precise workmanship.

- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Install products straight, true-to-line, and in correct relationship to adjacent materials, with hairline joints, free of rough, sharp and potentially hazardous edges.
- D. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.
  - 1. Seismic Anchors: Conform to code requirements.

# 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Transport products by methods to avoid product damage, deliver in undamaged condition in manufacturer's unopened containers or packaging.
- B. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.
- C. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- D. For exterior storage of fabricated products, place on sloped supports above ground.
- E. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- F. Arrange storage to provide access for inspection; periodically inspect to assure products are undamaged and are maintained under required conditions.
- G. Provide equipment and personnel to handle products by methods to prevent soiling and prevent damage.
- H. Promptly inspect shipments to assure products comply with requirements, quantities are correct, and products are undamaged.
- I. Immediately remove from Project products damaged, wet, stained, and products with mold and products with mildew.
  - 1. Take special care to prevent absorbent products such as gypsum board and acoustical ceiling units from becoming wet.

#### PRODUCT SUBSTITUTION PROCEDURES

#### **PART 1 - GENERAL**

# 1.1 SUMMARY

- A. Provide products listed in Contract Documents, products by manufacturers listed in Contract Documents, and products meeting specified requirements.
  - 1. Contract Amount: Base on materials and products included in Contract Documents.
    - a. Where listed in Contract Documents, materials and products by manufacturers not listed shall not be used without EOR's approval of Contractor's written request for substitution.
  - Purpose: Substitutions will only be considered where Owner will receive benefit or because specified materials are no longer available due to conditions beyond Contractor control.
    - a. Owner benefits either from a Contractor proposed reduction of the Contract amount or from a reduction in Contract time based on acceptance of proposed substitution.
    - b. List proposed cost or time reductions on request for substitution.
    - c. Requests not including a proposed cost or time reduction will not be considered unless Contractor submits supporting information indicating specified materials are not available.
- B. Procedures are described for requesting substitution of unlisted materials in lieu of materials named in Specifications or approved for use in addenda.

# 1.2 CONTRACTOR'S OPTIONS

- A. Products Identified by Reference Standards: Select product meeting referenced standard for products specified only by reference standard.
- B. Named Manufacturers and Named Products: Select products of any named manufacturer meeting Specifications for products specified by naming one or more products or manufacturers.
- C. Substitutions for Named Manufacturers and Named Products: Submit request for substitution for products and for manufacturers not specifically named where products or manufacturers are named in Specifications.
- D. "Or Equal" Clauses: Submit request for substitution for product or manufacturer not specifically named in Specifications where terms "or equal", "or approved equal", or similar references are made.

# 1.3 SUBSTITUTIONS

- A. Prior to submittal of second Request for Payment EOR will consider formal requests for substitutions from Contractor as specified in 1.1 Summary.
  - 1. EOR will consider only one request for substitution for each material; where requests are denied Contractor shall be required to provide specified materials.
  - 2. After payments begin, requests will be considered only when a product becomes unavailable through no fault of Contractor; more than one request for substitution will be considered if necessary.
- B. Submit each request with sequentially numbered "Substitution Request Transmittal" acceptable to EOR; submit separate request for each product and support each request with:
  - 1. Product identification with manufacturer's literature and samples where applicable.
  - Name and address of similar projects on which product has been used, and date of installation.
- C. Submit itemized comparison of proposed substitution with product specified and list significant variations.
- D. Submit data relating to changes in construction schedule.
- E. Note effect of substitution on other work, products, or separate contracts.
  - 1. Note if acceptance of substitution could require revision of Contract Documents, Drawings, details or Specifications.
- F. Include accurate cost data comparing proposed substitution with product and amount of net change in Contract price.
  - Include costs to other contractors and costs for revisions to Drawings, details or Specifications.
- G. Substitutions will not be considered for acceptance when:
  - 1. They are indicated or implied on submittals without a formal request from Contractor.
  - 2. They are requested directly by a subcontractor or supplier.
  - 3. Acceptance will require substantial revision of Contract Documents.
- H. Substitute products shall not be ordered without written acceptance of Owner and EOR.
- I. Owner and EOR will determine acceptability of proposed substitutions and reserves right to reject proposals due to insufficient information.

# 1.4 CONTRACTOR'S REPRESENTATION

- A. Requests constitute a representation that Contractor:
  - 1. Has investigated proposed product and determined it meets or exceeds, in all respects, specified product.
  - 2. Will provide same warranty or longer warranty for substitution as for specified product.
  - 3. Will coordinate installation and make other changes that may be required for Work to be complete in all respects.
  - 4. Waives claims for additional costs that subsequently become apparent.
  - 5. Will pay costs of changes to Contract Documents, Drawings, details and Specifications required by accepted substitutions.

# 1.5 EOR'S DUTIES

- A. Review Contractor's requests for substitutions with reasonable promptness.
  - 1. EOR will recommend that accept or reject substitution request.
  - 2. Upon request, EOR will provide cost for changes to Contract Documents, Drawings, details and Specifications required for substitutions.
- B. Notify Contractor in writing of decision to accept or reject requested substitution.

#### **EXECUTION REQUIREMENTS**

#### **PART 1 - GENERAL**

#### 1.1 SUMMARY

- A. This section describes execution requirements.
- B. Related Requirements:
  - 1. Section 01500: Cleaning during construction.
  - 2. Section 01770: Closeout procedures.

#### 1.2 INSTALLER QUALIFICATIONS

A. Experienced Installers: Installers to have minimum five years successful experience installing items similar to those required for Project, except for individuals in training under direct supervision of experienced installer.

#### 1.3 EXAMINATION

- A. Acceptance of Conditions: Beginning installation of a product signifies installer has examined substrates, areas, and conditions for compliance with manufacturer requirements for tolerances and other conditions affecting performance.
- B. Field Measurements: Take field measurements as required to fit Work properly; recheck measurements prior to installing each product.
  - Where portions of Work are to fit to other construction verify dimensions of other construction by field measurements before fabrication; allow for cutting and patching in order to avoid delaying Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

# 1.4 MANUFACTURERS' INSTRUCTIONS

- A. Manufacturer's Recommendations: When work is specified to comply with manufacturers' recommendations or instructions, distribute copies to persons involved and maintain one set in field office.
  - Conform to requirements specified in Section 01300 for submittal of recommendations or instructions to EOR; submit to EOR only where specified or where specifically requested.
- B. Perform work in accordance with details of recommendations and instructions and specified requirements.
  - 1. Should a conflict exist between Specifications and recommendations or instructions consult with EOR.
- C. Where manufacturer's information notes special recommendations in addition to installation instructions, comply with both recommendations and instructions.

# 1.5 INSTALLATION

- A. Pre-Installation Meetings: Installers and suppliers are to attend pre-installation meetings scheduled by Contractor.
- B. Comply with manufacturers written recommendations and installation instructions unless more restrictive requirements are specified.
- C. Locate Work and components accurately, in correct alignment and elevation.
  - 1. Make vertical work plumb and horizontal work level.
  - 2. Install components to allow space for maintenance and ease of removal for replacement.
- D. Install products at time and under conditions to ensure best possible results; maintain conditions required for product performance until Substantial Completion.
- E. Conduct operations so no part of Work is subject to damaging operations or loading in excess of that expected during normal conditions.
- F. Securely anchor permanent construction in place, accurately located and aligned with other portions of Work.
- G. Allow for building movement including thermal expansion and contraction.
- H. Make joints of uniform width; arrange joints as indicated, for best visual effect where not otherwise indicated; fit exposed connections together to form hairline joints except where otherwise indicated.

# 1.6 CLEANING

- A. Cleaning During Construction: Specified in Section 01500 Temporary Facilities and Controls.
- B. Progress Cleaning: Keep installed areas clean using cleaning materials specifically recommended by manufacturers of product being cleaned; where not otherwise recommended use nontoxic materials that will not damage surfaces.
  - 1. Remove debris from concealed spaces before enclosing space.
  - Supervise construction operations to assure no part of construction, completed
    or in progress, is subject to harmful, dangerous, damaging, or otherwise
    deleterious exposure during construction period.
- C. Final Cleaning: Execute final cleaning at Substantial Completion.
  - Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces.
    - a. Vacuuming Equipment: Type with high efficiency particulate arrestor (HEPA) type filters; properly maintained.

- 2. Clean equipment and fixtures to a sanitary condition, clean filters of mechanical equipment, replace filters where cleaning is impractical.
- 3. Clean site; sweep paved areas.
- 4. Remove waste, surplus materials and rubbish from Project and site; recycle to maximum extent feasible.

#### 1.7 PROTECTION

- A. Protect products subject to deterioration with impervious cover. Provide ventilation to avoid condensation and trapping water.
- B. Take care to use protective covering and blocking materials that do not soil, stain, or damage materials being protected.
- C. After installation, provide coverings to protect products from damage from traffic and construction operations, remove when no longer needed.
- D. Protect interior materials from water damage; immediately remove wet materials from site to prevent growth of mold and mildew on site.

#### **CUTTING AND PATCHING**

#### **PART 1 - GENERAL**

#### 1.1 SUMMARY

- A. Contractor shall be responsible for cutting, fitting and patching required to complete Work and to:
  - 1. Make its parts fit together properly.
  - 2. Uncover work to provide for installation of ill-timed work.
  - 3. Remove and replace defective work.
  - 4. Remove and replace work not conforming to Contract Documents.
  - 5. Remove samples of installed work as required for testing.
  - 6. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.

# B. Related Requirements:

- 1. Section 01500: Temporary facilities and controls.
- 2. Section 01735: Selective demolition for remodeling.

# 1.2 SUBMITTALS

- A. Submit a written request to EOR well in advance of executing cutting or alteration which affects:
  - 1. Work of Owner or separate contractor.
  - 2. Structural value or integrity of any element of Project.
  - 3. Integrity of weather-exposed or moisture-resistant elements.
  - 4. Efficiency, operational life, maintenance or safety of operational elements.
  - 5. Visual qualities of sight-exposed elements.

# B. Request shall include:

- 1. Identification of Project and description of affected work.
- 2. Necessity for cutting or alteration.
- 3. Effect on work of Owner or separate contractor.
- 4. Effect on structural integrity, or weatherproof integrity of Project.
- 5. Alternatives to cutting and patching.
- 6. Cost proposal, when applicable.
- 7. Written permission of separate contractor whose work will be affected.
- 8. Description of proposed work including:
  - a. Scope of cutting, patching, alteration, or excavation.
  - b. Products proposed to be used.
  - c. Extent of refinishing to be included.

- Should conditions of Work or schedule indicate a change of products from original installation, Contractor shall submit request for substitution as specified in Section 01630 -Product Substitution Procedures.
- D. Submit written notice to EOR designating date and time work will be uncovered.

#### **PART 2 - PRODUCTS**

# 2.1 MATERIALS

- A. Comply with Specifications and standards for each specific product involved.
- B. Where Specifications and standards have not been provided, provide materials and fabrication consistent with quality of Project and intended for commercial construction.
- C. Provide new materials for cutting and patching unless otherwise indicated.

#### **PART 3 - EXECUTION**

#### 3.1 INSPECTION

- A. Inspect existing conditions of Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of products, or performance of work.
- C. Report unsatisfactory or questionable conditions to EOR in writing; do not proceed with work until EOR has provided further instructions.

#### 3.2 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of Work.
- B. Protect other portions of Project from damage.

#### 3.3 PERFORMANCE

- A. Execute cutting by methods that provide proper surfaces to receive installation of repairs and finishes.
- B. Employ same installer or fabricator to perform cutting and patching work as employed for new construction for sight-exposed finished surfaces.
- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- D. Restore work that has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
- E. Fit work tight to pipes, sleeves, ducts, conduit and penetrations through surfaces.

- F. Refinish entire surfaces as necessary to provide even finish to match adjacent finishes:
  - 1. For continuous surfaces, refinish to nearest intersection.
  - 2. For an assembly, refinish entire unit.

#### SELECTIVE DEMOLITION FOR REMODELING

#### **PART 1 - GENERAL**

#### 1.1 SUMMARY

- A. Remove materials, systems, components, fixtures and equipment as designated and as required for completion of remodeling as indicated.
  - 1. Cap and identify active utilities.
- B. Related Requirements:
  - 1. Section 01500: Site waste management requirements.
  - Section 01730: Cutting and patching.

# 1.2 PROTECTION

- A. Do not interfere with use of adjacent building spaces; maintain free and safe passage to and from.
  - 1. Cover and protect existing materials when demolition work is performed in areas where existing materials have not been removed.

#### 1.3 EXISTING SERVICES

- A. Disconnect or remove utility services as required for completion of Project; disconnect, stub off, and cap utility service lines not required for new construction.
  - 1. Do not remove utilities discovered during demolition but not indicated without first determining purpose for utility coordinate with EOR and Engineers.
- B. Do not disrupt services to adjacent building areas not in Project.
- C. Place markers to indicate location of disconnected services; identify service lines and capping locations on Project Record Documents.

#### **PART 2 - PRODUCTS**

# 2.1 MATERIALS

- A. Debris: Maintain possession of materials being demolished unless otherwise noted, immediately remove from site.
- B. Materials for Reinstallation: Carefully remove, store and protect materials indicated for reinstallation; where stored materials are damaged, repair to original condition or replace with new undamaged materials.
  - 1. Immediately remove from site wet materials and materials with water stains, with mold, and with mildew.

C. Materials to be Retained by Owner: Verify extent of materials to be retained by Owner prior to beginning selective demolition. Carefully remove materials indicated to be retained by Owner; deliver and store on-site where directed by Building Manager.

#### **PART 3 - EXECUTION**

# 3.1 DEMOLITION

- A. Demolish indicated appurtenances in an orderly and careful manner.
  - 1. Use methods that do not damage materials indicated to remain.
- B. Perform demolition in accordance with authorities having jurisdiction.
- C. Remove tools and equipment upon completion of work; leave area in condition acceptable to Owner and EOR.
- D. Remove demolished materials from site, unless otherwise directed.
  - Remove from site, contaminated, vermin infested, and dangerous materials encountered and dispose of by safe means so as not to endanger health of workers or public.

#### 3.2 REPAIR

- A. Repair damage to adjacent construction caused as result of this work.
- B. Repair demolition beyond that required.

#### **CLOSEOUT PROCEDURES**

#### **PART 1 - GENERAL**

# 1.1 SUMMARY

- A. This section describes Contract closeout procedures.
- B. Related Requirements:
  - 1. Section 01780: Warranties.

# 1.2 COMPLETION

- A. When Work is complete, submit written certification indicating:
  - 1. Work has been inspected for compliance with Contract Documents.
  - Work has been completed in accordance with Contract Documents and deficiencies listed (in 'Punch List") with Certificate of Substantial Completion have been corrected.
  - 3. Equipment and systems have been tested in presence of Owner's representative and are operational.
  - 4. Work is complete and ready for final inspection.
- B. Special Submittals: In addition to submittals required by Contract, submit following.
  - 1. Provide submittals required by governing authorities to governing authorities with copies included in Project Record Documents.
  - 2. Submit final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.

# 1.3 PROJECT RECORD DOCUMENTS

- A. Keep documents current; do not permanently conceal any work until required information has been recorded.
  - 1. Owner will provide Contractor with a separate set of Drawings to maintain for Project Record Documents.
  - 2. Indicate actual work on Drawings; indicate actual products used in Project Manual, including manufacturer, model number and options.
  - 3. Update Project Record Documents daily and allow for EOR inspection at least once a month.

B. At Contract close-out submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.

#### 1.4 MATERIAL AND FINISH DATA

- A. Provide data for primary materials and finishes.
- B. Submit two sets prior to final inspection, bound in 8-1/2" by 11" three-ring binders with durable plastic covers, clearly identified regarding extent of contents.
  - 1. Electronic Format: Where available in electronic format, submit computerized compact disk (CD's) of material and finish data.
- C. Arrange by Specification division and give names, addresses, and telephone numbers of subcontractors and suppliers. List:
  - 1. Trade names, model or type numbers.
  - 2. Cleaning instructions.
  - 3. Product data.

# 1.5 OPERATION AND MAINTENANCE DATA

- A. Provide data for:
  - 1. Electrically operated items.
  - 2. Mechanical equipment and controls.
  - 3. Electrical equipment and controls.
- B. Submit two sets prior to final inspection, bound in 8-1/2" by 11" three-ring binders with durable plastic covers, clearly identified regarding extent of contents.
- C. Provide a separate volume for each system, with a table of contents and index tabs for each volume.
- D. Arrange by Specification division and gives names, addresses, and telephone numbers of subcontractors and suppliers. List:
  - 1. Appropriate design criteria.
  - 2. List of equipment and parts lists.
  - 3. Operating and maintenance instructions.
  - 4. Shop drawings and product data.
- E. Electronic Format: Where available in electronic format, submit computerized compact disk (CD's) of operation and maintenance data.
- F. Submit all keys and other physical properties required to maintain facilities all properly tagged and identified.

# **FINISH CARPENTRY**

#### **PART 1 - GENERAL**

#### 1.1 SUMMARY

- A. Section Includes: Provide finish carpentry with accessories as required for complete installation.
  - 1. Provide wood benches.
  - 2. Provide new metal vent covers.
  - 3. Provide wood base (alternate).
    - a. Refer to Section 01230 Alternates.

#### 1.2 SUBMITTALS

- A. Product Data: Submit literature for manufactured items.
- B. Shop Drawings: Indicate materials and wood species, component profiles, fastening, joining details, finishes, and accessories.
- C. Samples: Furnish samples of wood for benches, one metal vent cover, and section of wood base.
- D. Quality Standards Certification: WI MoM certification will not be required however Owner reserves right to retain Woodwork Institute if quality of work is questionable.

#### 1.3 QUALITY ASSURANCE

A. Standards: Perform finish carpentry in accordance with standards of Woodwork Institute (formerly Woodwork Institute of California) "Manual of Millwork."

# 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver materials until site conditions are adequate to receive work; protect items from weather while in transit.
- B. Store materials indoors, in ventilated areas with constant but minimum temperature of 60 degrees F and maximum relative humidity of 25% to 55%.
- C. Immediately remove from site materials with visible mold and materials with mildew.

#### **PART 2 - PRODUCTS**

# 2.1 MATERIALS

#### A. Wood Benches:

- Quality: WI MoM/Premium Grade for transparent/stained finish.
- 2. Wood: Refer to Drawings.
- 3. Cut: Vertical Grain.
- 4. Texture: Surfaced.

# B. Metal Vent Covers:

- 1. Quality: Comparable to WI MoM/Custom grade for opaque painted finish.
- 2. Metal Gage: Not less than 16 gage.
- 3. Finish: Prime paint; comply with requirements in Section 09900.

# C. Opaque Painted Wood Base:

- 1. Quality: WI MoM/Custom Grade.
- 2. Wood Trim: Medium density fiberboard (MDF), with no added formaldehyde.
- 3. Height: 4" high unless otherwise indicated.
- 4. Texture: Surfaced.
- D. Anchors, Nails and Screws: Select the material, type, size and finish required by each substrate for secure anchorage; provide toothed steel or lead expansion bolt screws for drilled-in-place anchors.
- E. Wood Filler: Color to match wood being filled.

# 2.2 FABRICATION

- A. Fabricate finish carpentry items in accordance with specified quality standard.
- B. Use exposed fastening devices or nails only when approved and unavoidable; arrange neatly.

#### **PART 3 - EXECUTION**

#### 3.1 EXAMINATION

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication where possible; do not delay job progress, allow for trimming and fitting.
- B. Verify surfaces are ready to receive work and field measurements are as shown on shop drawings.
  - 1. Beginning installation signifies acceptance of conditions.
- C. Ensure mechanical and electrical items affecting work are properly placed, complete, and have been inspected by applicable authorities prior to commencement of installation.
- D. Inspect each piece of finish carpentry and discard damaged and defective pieces.

## 3.2 INSTALLATION

- A. Install work consistent with specified WI MoM quality grade, plumb, level, true and straight with no distortions; shim as required, using concealed shims.
  - Prime paint surfaces in contact with cementitious materials prior to installation; comply with requirements of Section 09900 – Paints and Coatings.
- B. Secure work to blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation.
- C. Scribe and cut for accurate fit to other finished work.
- D. Install trim in single, unjointed lengths for openings and for runs less than 10'-0".
  - 1. For longer runs, use only one piece less than 10'-0" in any straight run; provide scarf joints between members.
  - 2. Stagger joints in adjacent members.
  - 3. Cope at returns and miter at corners.
- E. Accessories: Install accessories in accordance with manufacturer's recommendations in locations indicated or as directed by EOR.
- F. Acceptable Tolerances:
  - 1. Variation from True Position: Maximum 1/16" at any position and maximum 1/8" in any 10'-0" length.
  - 2. Adjoining Surfaces of Same Material: No variation permitted.
  - 3. Offset with Abutting Materials: Maximum 1/32".
- G. Preparation for Field Finishing:
  - 1. Sand work smooth and set exposed nails and screws.
  - 2. Apply wood filler in exposed nail and screw indentations and leave ready to receive site-applied finishes.
  - 3. Seal concealed and semi-concealed surfaces; brush apply only, using primer consistent with finish coats specified under Section 09900 Paints and Coatings.

## **JOINT SEALERS**

#### **PART 1 - GENERAL**

## 1.1 SUMMARY

A. Section Includes: Provide joint sealers for interior joints with backing rods and accessories as required for complete installation.

## 1.2 SYSTEM DESCRIPTION

A. Performance Requirements: Select materials for compatibility with joint surfaces and indicated exposures.

## 1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, cure time, and mixing instructions.

## **PART 2 - PRODUCTS**

## 2.1 MATERIALS

- A. Acrylic-Emulsion Sealant: ASTM C834 acrylic or latex-rubber-modified acrylic sealant, permanently flexible, non-staining and non-bleeding; recommended for general interior exposure; compatible with paints specified in Section 09900.
  - 1. Provide at general interior applications.

## 2. Manufacturers:

- a. Pecora Corp./AC-20.
- b. Sonneborn Division of ChemRex/Sonolac.
- c. Tremco/Ultrem 1500
- d. Substitutions: Refer to Section 01630.

## B. Miscellaneous Materials:

- Primers/Sealers: Non-staining types recommended by joint sealer manufacturer for joint surfaces to be primed or sealed.
- 2. Joint Cleaners: Non-corrosive types recommended by joint sealer manufacturer; compatible with joint forming materials.
- 3. Bond Breaker Tape: Polyethylene tape as recommended by joint sealer manufacturer where bond to substrate or joint filler must be avoided for proper performance of joint sealer.

- 4. Sealant Backer Rod: Compressible polyethylene foam rod or other flexible, permanent, durable non-absorptive material as recommended by joint sealer manufacturer for compatibility with joint sealer.
  - a. Oversize backer rod minimum 30% to 50% of joint opening.
- C. Colors: Provide colors indicated or as selected by EOR from manufacturer's full range of colors.

## **PART 3 - EXECUTION**

## 3.1 PREPARATION

- A. Prepare joint surfaces in accordance with ASTM C1193 and as recommended by joint sealer manufacturer.
- B. Clean joint surfaces immediately before installation of joint sealer; remove dirt, insecure materials, moisture and other substances which could interfere with bond of joint sealer.
- C. Prime or seal joint surfaces where recommended by joint sealer manufacturer; do not allow primer/sealer to spill or migrate onto adjoining surfaces.

## 3.2 INSTALLATION

- A. Comply with manufacturer's printed instructions and ASTM C1193, except where more stringent requirements are shown or specified.
- B. Set sealant backer rods at proper depth or position in joint to coordinate with other work, including installation of bond breakers and sealant; do not leave voids or gaps between ends of backer rods.
  - 1. Do not stretch, twist, puncture or tear backer rods.
- C. Install bond breaker tape as required to avoid three-sided bond of sealant to substrate and where required by manufacturer's recommendations to ensure joint sealers will perform properly.
- D. Size materials to achieve required width/depth ratios.
- E. Employ installation techniques that will ensure joint sealers are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of bond surfaces equally on opposite sides.
- F. Joint Configuration: Fill sealant joint to a slightly concave surface, slightly below adjoining surfaces, unless otherwise indicated.
- G. Install joint sealers to depths recommended by joint sealer manufacturer but within 75% to 125% of joint width, measured at center (thin) section of bead.

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- H. Spillage: Do not allow sealants or compounds to overflow or spill onto adjoining surfaces, or to migrate into voids of adjoining surfaces.
  - 1. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.
- I. Cure joint sealers in compliance with manufacturer's instructions and recommendations to obtain high early bond strength, internal cohesive strength and surface durability.
- J. Maintain finished joints free of embedded matter, ridges and sags.

## **END OF SECTION**

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# **GYPSUM BOARD ASSEMBLIES**

## **PART 1 - GENERAL**

#### 1.1 SUMMARY

- A. Section Includes: Provide gypsum board systems including gypsum board, light gage metal framing, joint treatment, and general accessories for complete installation.
  - 1. Provide channel stud supported gypsum board at ceilings as indicated; design system to allow attachment of 1/4" thick gypsum board to channel studs without requiring fastening through existing ceiling system (with asbestos).
    - a. Provide side channel studs fastened to walls and provide channels fixed to side channels spanning hallway, maximum 16" on center.
  - 2. Patch holes from electrical boxes no longer in use.

## 1.2 REFERENCES

- A. ASTM C754: Installation of Steel Framing Members to Receive Screw-Attached Gypsum Wallboard, Backing Board, or Water-Resistant Backing Board.
- B. ASTM C840: Application and Finishing of Gypsum Board.

## 1.3 SYSTEM DESCRIPTION

- A. Performance Requirements: Perform gypsum board systems work in accordance with recommendations of ASTM C754 and ASTM C840 unless otherwise specified.
  - 1. Ceiling Deflection: Maximum L/240 typical.
- B. Openings: Obtain dimensions and locations from other trades and provide openings and enclosures for accessories, specialties, equipment, and ductwork.

# 1.4 PROJECT CONDITIONS

A. Immediately remove from site gypsum board for interior use exposed to water, including gypsum board with water stains, with signs of mold, and gypsum board with mildew.

## **PART 2 - PRODUCTS**

## 2.1 MANUFACTURERS

- A. National Gypsum Co.
- B. Georgia-Pacific Corp.
- C. United States Gypsum Co., USG Corp.
- D. Substitutions: Refer to Section 01630.

## 2.2 MATERIALS

- A. Framing Materials: Comply with ASTM C754, 20 gage and lighter, coordinate with Section 05400; where not otherwise indicated, provide gages as recommended by manufacturer for spans and loads indicated and as required by applicable codes.
  - 1. Channel Studs: ASTM C645, screw-type Cee-shaped.
  - Side Channel Studs: Match studs.
  - 3. Fasteners and Anchorages: As recommended by gypsum board system manufacturer.
- B. Gypsum Board: Comply with ASTM C840; maximum permissible lengths; ends square cut, tapered edges on boards to be finished.
  - 1. Typical: ASTM C1396, gypsum board, unless otherwise indicated.
    - a. Ceilings: 1/4" thick unless thicker gypsum required to prevent sagging.
    - b. Wall Patches: Match adjacent gypsum board.
- C. Gypsum Board Accessories: Comply with ASTM C840.
  - 1. Provide protective coated steel corner beads and edge trim; type designed to be concealed in finished construction by tape and joint compound.
  - Corner Beads: Manufacturer's standard metal beads.
  - 3. Edge Trim: "J", "L", "LK", or "LC" casing beads.
  - 4. Reinforcing Tape, Joint Compound, Adhesive, Water, Fasteners: Types recommended by system manufacturer and conforming to ASTM C475.
    - a. Typical Joint Compound: Chemical hardening type for bedding and filling, ready-mixed or powder vinyl type for topping.
  - 5. Control Joints: Back to back casing beads.
    - a. Back control joints with 4 mil thick polyethylene air seal.

## **PART 3 - EXECUTION**

## 3.1 INSTALLATION

- A. Metal Channel Framing Erection: Erect framing in accordance with ASTM C754 and manufacturer's recommendations.
  - 1. Install members true to lines and levels to provide surface flatness with maximum variation of 1/8" in 10'-0" in any direction.
  - 2. Install backing where required for support of fixtures.

- B. Gypsum Board Installation: Install in accordance with ASTM C840 and manufacturer's recommendations.
  - 1. Use screws when fastening gypsum board to furring and to framing.
  - 2. Erect gypsum board with ends and edges occurring over firm bearing.
  - 3. Place control joints to be consistent with lines of building spaces and as directed by EOR.
    - a. Provide where system abuts structural elements.
    - b. Provide at dissimilar materials.
    - c. Lengths exceeding 30'-0" in partitions.
    - d. Ceiling areas exceeding 50'-0" or 2500 square feet.
    - e. Wings of "L", "U" and "T" shaped ceilings.
  - 4. Place corner beads at external corners; use longest practical lengths.
  - 5. Place edge trim where gypsum board abuts dissimilar materials.
  - 6. Tape, fill, and sand exposed joints, edges, corners and openings to produce surface ready to receive finishes; feather coats onto adjoining surfaces.
  - 7. Finishing: Comply with Gypsum Association (GA) "Levels of Gypsum Board Finish".
    - a. GA Level 4 (Typical): Provide three coat finishing and sanding is required for surfaces indicated to be painted; provide flush, smooth joints and surfaces ready for applied paint finishes.
  - 8. Remove and replace defective work.

#### RESILIENT BASE

#### **PART 1 - GENERAL**

## 1.1 SUMMARY

- A. Section Includes: Provide resilient base, including base for carpeted areas, and accessories as required for complete installation.
- B. Alternates: Refer to Section 01230 Alternates.
- C. Related Sections:
  - 1. Section 09680: Carpet edge strips.

#### 1.2 SYSTEM DESCRIPTION

A. Performance Requirements: Provide materials tested under ASTM E648, Flooring Radiant Panel Test, with results of 0.45 watts/cm<sup>2</sup> or higher.

## 1.3 SUBMITTALS

- A. Product Data: Furnish manufacturer's product literature.
- B. Samples: Furnish samples of each base color and type.

## 1.4 PROJECT CONDITIONS

- A. Maintain minimum 70 degree F air temperature at installation area for 3 days prior to, during, and for 24 hours after installation.
- B. Store materials in area of application; allow three days for material to reach same temperature as area.

## **PART 2 - PRODUCTS**

## 2.1 MATERIALS

- A. Resilient Base: Conform to ASTM F1861, with premolded end stops and external corners; 1/8" gage; provide coved base at hard floor surfaces, straight base at carpet unless otherwise indicated.
  - 1. Type: Molded rubber, available in 4' lengths.
  - 2. Manufacturers:
    - a. Burke-Mercer Flooring Products.
    - b. Roppe Rubber Corporation.
    - c. Flexco Co.
    - d. Substitutions: Refer to Section 01630.

- 3. Height: 4" unless otherwise indicated.
- 4. Color: As selected by EOR from manufacturer's full range of available colors.
- B. Primers and Adhesives: Water-resistant nontoxic types recommended by base manufacturer for specified material and application.

## **PART 3 - EXECUTION**

## 3.1 INSTALLATION

- A. Apply to walls in accordance with manufacturer recommendations and installation instructions. Fit base joints tight and vertical; maintain minimum measurement of 18" between joints.
- B. Miter internal corners; use molded sections for external corners and exposed ends.
- C. Install base on solid backing, adhere tightly to wall and floor surfaces; fill voids along top edge of base with manufacturer's recommended adhesive filler.
- D. Scribe and fit to door frames and other obstructions.
- E. Install straight and level to variation of plus or minus 1/8" over 10'-0".

## 3.2 CLEAN-UP

- A. Remove excess adhesive from floor, base and wall surfaces without causing damage.
- B. Clean surfaces in accordance with manufacturer's recommendations.

#### **CARPET**

## **PART 1 - GENERAL**

## 1.1 SUMMARY

A. Section Includes: Provide stretched (tackless) carpeting, with underlay and accessories, including edge strips where carpeting terminates at other floor finishes, for complete finished installation.

## B. Related Sections:

1. Section 09657: Resilient base for carpeted areas.

## 1.2 SYSTEM DESCRIPTION

- A. Flammability: Carpet and underlay shall have passed following tests.
  - 1. DOC-FF-1-70: Pass.
  - 2. NFPA 258 (Smoke Density): 450 or less.
  - 3. ASTM E648 (Flooring Radiant Panel Test): 0.45 or higher.
- B. Static: Carpet shall develop less than 3.5 kilovolts of static at 70 degrees F and 20% relative humidity.

#### 1.3 SUBMITTALS

- A. Product Data: Furnish manufacturer's literature for carpet and accessories.
- B. Shop Drawings: Clearly indicate location of seams, method of joining seams, direction of carpet, adhesive to be used, integrating edge strips with carpet, and installation procedures.
- C. Samples: Furnish samples of each type, color and pattern of carpet and edge strip.
- D. Maintenance Recommendations: Prior to final acceptance of carpet installation, furnish carpet manufacturer's detailed maintenance recommendations for care, cleaning and repair of carpets installed.

## 1.4 QUALITY ASSURANCE

A. Installer Qualifications: Approved by carpet manufacturer; upon request, submit letter from carpet manufacturer stating installer is acceptable.

## 1.5 PROJECT CONDITIONS

A. Do not commence carpet installation until painting and finishing work is complete and ceiling and other overhead work has been tested, approved and completed, unless specifically approved.

## 1.6 WARRANTY

- A. Special Warranty: Provide for promptly repairing or replacing carpet which exhibits evidence of defective materials or workmanship.
  - 1. Repairs: Make repairs within ten days of Owner's written notification.
  - 2. Special Warranty Period: Two years.

## 1.7 MAINTENANCE

- A. Extra Materials: Roll excess carpet on separate rolls for each type and size; label rolls to identify type, width, length, and locations installed.
  - Wrap and deliver unused portions greater than 2'-0" square and more than 12" wide.

## **PART 2 - PRODUCTS**

#### 2.1 MANUFACTURERS

- A. Designweave Carpet.
- B. Substitutions: Refer to Section 01630.

## 2.2 MATERIALS

- A. Carpet: As indicated on Finish Schedule, where not otherwise indicated as selected by EOR based on following criteria.
  - 1. Type: Dense tufted level loop pile carpet.
  - 2. Yarn: Sixth or later generation continuous filament soil hiding nylon.
  - 3. Face Weight: 36 oz/sy.
  - 4. Primary Backing: Polypropylene.
  - 5. Secondary Backing: Polypropylene or ActionBak.
- B. Underlay: Natural or synthetic fiber cushions recommended for use in commercial applications, complying with Carpet Cushion Council recommendations; mildew resistant.
  - 1. Type: Minimum 36 oz/sy weight, 1/4" to 5/16" thick.
    - a. Manufacturers:
      - 1) Hartex/Contract.
      - 2) Nova/Supreme.
      - 3) Carpenter/Marquis Classic.
      - 4) Substitutions: Refer to Section 01630.
- C. Carpet Gripper: Type recommended by carpet manufacturer to suit application, complete with attachment devices.
- D. Adhesive: Nontoxic type recommended by carpet and underlay manufacturers to suit application and expected service.

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- E. Leveling and Ramping Material: Latex-cement material designed for providing thin solid surface for leveling and minor ramping of subsurface to adjacent floor finishes.
  - 1. Use material capable of being applied and feathered out to adjacent floor without spalling.
- F. Edge Strips: Rubber; manufacturer's standard colors as selected.

#### **PART 3 - EXECUTION**

#### 3.1 PREPARATION

- A. Clean floors of dust, dirt, solvents, oil, grease, paint, plaster and other substances detrimental to proper performance of adhesive and carpet; allow floors to thoroughly dry.
- B. Ensure floors are level, with maximum surface variation of 1/4" in 10 feet.
- C. Ensure concrete floors are free from scaling and irregularities and exhibit neutrality relative to acidity and alkalinity.
- D. Use leveling and ramping material to patch cracks, small holes, leveling and for ramping to provide finished carpet within 1/2" of adjacent flooring materials.

## 3.2 INSTALLATION

- A. Underlay Installation: Install in accordance with underlay manufacturer recommendations and installation instructions.
  - Install underlay using maximum sized pieces, securely adhered to subfloor; butt edges firmly together, without overlap.
  - 2. Remove air pockets and ridges in underlay and slightly stretch.
  - 3. Butt underlay tightly to carpet gripper and projections, tape joints and seams.
  - 4. Carpet seams shall not fall directly over underlay seams.
- B. Install carpet in accordance with carpet manufacturer recommendations and installation instructions.
  - 1. Check matching of carpet before cutting and ensure there are no visible defects or variations between dye lots.
  - 2. Lay out rolls of carpet for EOR's approval.
- C. Cut carpet, where required, in manner to allow proper seam and pattern match; ensure cuts are straight, true, and unfrayed.

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- D. Where possible and practical, locate seams in areas of least amount of traffic; no seams shall be perpendicular to doors or entries; seams parallel to doors shall be centered directly under door.
  - 1. Follow wall line parallel to carpet direction for seams occurring at corridor change of direction.
  - Join seams in recommended manner so as not to detract from appearance of carpet installation and decrease its life expectancy; ensure seams are straight, not overlapped or peaked, and free of gaps.
- E. Stretch carpet and secure to carpet grippers.
- F. Lay carpet with run of pile in direction of anticipated traffic; do not change run of pile in any one room or from one room to next where continuous through a wall opening.
- G. Cut and fit carpet neatly around projections through floor and to walls and other vertical surfaces.
- H. Fit carpet snugly to walls or other vertical surfaces where no base is scheduled, leaving no gaps.
- I. Do not place heavy objects such as furniture on carpeted surfaces for minimum of 24 hours or until adhesive is set.
- J. Lay installation tight and flat to sub-floor, well fastened, and uniform in appearance; ensure monolithic color, pattern and texture match within any one area.
- K. Edging Strips: Install in accordance with manufacturer recommendations and installation instructions.
  - 1. Install edging strips where carpet terminates at other floor coverings.
  - 2. Use full length pieces only, butt tight to vertical surfaces. Where splicing cannot be avoided, butt ends tight and flush.

## **END OF SECTION**

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## **PAINTS AND COATINGS**

## **PART 1 - GENERAL**

#### 1.1 SUMMARY

## A. Section Includes:

- 1. Provide painting and finishing of exposed items and surfaces related to Project.
  - a. Specified surface preparation, priming and coats of paint are in addition to shop-priming and surface treatment specified under other sections of work.
  - b. Painting and finishing includes field finishing of exterior and interior items not listed as "Surfaces not to be Painted" unless clearly indicated otherwise.
  - c. Painting and finishing includes field finishing of select shop finished items where indicated as required to match adjacent surfaces, such as mechanical grilles and registers.
  - d. Field paint exposed bare and covered pipes, ducts, and hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work in occupied spaces.
- B. Alternates: Refer to Section 01230 Alternates (field painting wood base).
- C. Surfaces Not To Be Painted:
  - 1. Finished items including finished metal surfaces.
  - 2. Walls and ceilings in concealed areas and generally inaccessible areas.

## 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's technical information, including paint label analysis and application instructions for each material.
- B. Samples: Submit samples for review of color and texture; provide list of material and application for each coat of each finish sample.
  - 1. Brush-Outs: Submit samples of each color and material with texture to simulate actual conditions, on hardboard.
    - Submit 8" by 10" samples of wood finishes on actual wood surfaces; label and identify each as to location and application.
  - 2. Field Samples: Duplicate painted finishes of approved samples on actual surfaces and components for approval prior to commencing work.
    - a. Size: Minimum 100 sf located where approved.
    - b. Components: One full component as directed.

## 1.3 QUALITY ASSURANCE

- A. Regulatory Requirements: Furnish materials approved for use by applicable air quality management district for limitations of volatile organic compounds for architectural or special coatings as applicable.
- B. Obtain Owners approval of each coat application before commencing next coat.

## 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, with:
  - 1. Name of material, color and sheen.
  - 2. Manufacturer's name, stock number and date of manufacture.
  - 3. Contents by volume, for major pigment and vehicle constituents.
  - 4. Thinning and application instructions.

## 1.5 SITE CONDITIONS

A. Apply water-base paints when temperature of surfaces and surrounding air are between 50 and 90 degrees F.

#### **PART 2 - PRODUCTS**

## 2.1 MANUFACTURERS

- A. Benjamin Moore & Co.
- B. Sherwin-Williams Co.
- C. P.P.G. Industries, Inc., Coatings and Resins Division.
- D. Dunn-Edwards Corp.
- E. ICI Paints.
- F. Kelly Moore Paint Co.
- G. Vista Paint Co.
- H. Substitutions: Refer to Section 01630.

## 2.2 MATERIALS

- A. Definition: "Paint" as used herein means coating systems including primers, emulsions, enamels, stains, sealers and fillers, whether used as prime, intermediate or finish coats.
- B. Material Quality: Provide top line quality commercial grade (professional painter) paints; materials not bearing manufacturer's identification as a best-grade product shall not be acceptable.

- 1. Primers: Provide premium grade primers recommended by paint manufacturer for substrates indicated and for finish systems specified.
- Undercoats and Barrier Coats: Provide undercoat paints produced by same manufacturer as finish coats; use only thinners approved by paint manufacturer, and use only within recommended limits.
- 3. Finish Coats: Provide finish coats capable of being washed with mild detergent without loss of color, sheen, or pigments.
  - a. Color pigments: Pure, non-fading, applicable types to suit substrates and service indicated; no lead content permitted.
- 4. Finish Coat Coordination: Provide finish coats which are compatible with prime paints, undercoats, and barrier coats used.
  - Review other Specification sections in which prime paints are provided; ensure compatibility of total coatings systems.
  - b. Upon request from other trades furnish information on characteristics of finish materials proposed for use.
  - c. Provide barrier coats over incompatible primers or remove and prime as required.
  - d. Notify EOR in writing of any anticipated problems in use of specified coating systems with substrates primed by others.
- C. Colors and Finishes: Prior to commencement of painting work, EOR will furnish color chips for surfaces to be painted.
  - 1. Use of proprietary names in color selection is not intended to imply exclusion of equivalent products of other manufacturers.
  - 2. Final acceptance of colors will be from samples applied on site.
- D. Volatile Organic Compound (VOC) Emissions: Select materials that generate least amount of pollution; consider pollution and volatile organic compound (VOC) emissions generated during manufacturing, transport, installation, use, and disposal.
  - Avoid materials that contain ozone depleting chemicals and that emit potentially harmful volatile organic compound (VOC) emissions.
  - 2. Avoid materials that can leach harmful chemicals into ground water; do not allow potentially harmful chemicals to enter sewers nor storm drains.
  - 3. Select materials that can be reused or recycled and materials with significant percentage of recycled content; set specific recycled content percentages for individual materials; avoid materials difficult to recycle.

#### **PART 3 - EXECUTION**

## 3.1 PREPARATION

- A. Inspection: Examine areas and conditions under which painting work is to be applied.
  - Start of painting work indicates acceptance of surfaces and conditions of surfaces and conditions within any particular area.
  - 2. Where exposed items or surfaces are not specifically mentioned in Schedules, paint same as adjacent similar materials or areas.
  - 3. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to a durable paint film.
- B. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as specified for substrate condition.
  - 1. Existing Painted Finishes:
    - a. Clean existing painted surfaces and remove oil, grease, dust, stains, scale, efflorescence, mildew, mold, algae, blisters, and non-adhering paint.
    - b. Measure adhesion of existing paints using ASTM D3359 tape test; remove existing coatings where poor adhesion is indicated.
    - c. Feather edges of severely deteriorated paint where several coats are removed as part of cleaning, to provide smooth transition for new paint.
    - d. Fill holes, cracks, and defects and fill and sand smooth, ready for new paint finish.
- C. Remove hardware, accessories, and items in place and not to be painted, or provide protection prior to surface preparation and painting; after painting reinstall removed items.
- D. Clean surfaces before applying paint; remove oil and grease prior to mechanical cleaning; program cleaning so contaminants from cleaning process do not fall onto wet, newly painted surfaces.
- E. Wood: Clean wood surfaces of dirt, oil, and other foreign substances; sandpaper smooth surfaces exposed to view, and dust off.
  - 1. Scrape and clean seasoned knots and apply thin coat of recommended knot sealer, before application of priming coat.
  - 2. Prime, stain, or seal wood required to be job-painted immediately upon delivery to job; prime edges, ends, faces, undersides, and backsides of wood.
  - 3. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler; sandpaper smooth when dry.

- F. Ferrous Metals: Touch up shop-applied prime coats wherever damaged using same type of primer as applied in shop or barrier coat compatible with finish paint.
  - 1. Bare Surfaces: Clean surfaces that are not galvanized or shop-coated, of oil, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.
  - 2. Galvanized Surfaces: Clean free of oil and surface contaminants, using non-petroleum based solvent; primer and touch-up primer to be zinc-rich primer.
- G. Mix painting materials in accordance with manufacturer's directions.
- H. Store materials in tightly covered containers; maintain containers used in storage, mixing and application of paint in a clean condition, free of foreign materials and residue.
- I. Stir materials before application to produce mixture of uniform density, and stir as required during application; do not stir surface film into material, if necessary, strain material before using.

## 3.2 APPLICATION

- A. Apply paint in accordance with manufacturer's directions; use applicators and techniques best suited for substrate and type of material being applied.
  - 1. Apply additional coats when stains or blemishes show through final coat, until paint is a uniform finish, color and appearance.
  - 2. Provide extra attention to assure dry film thickness at corners and crevices is equivalent to that of flat surfaces.
  - 3. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
  - 4. Sand lightly between each succeeding enamel coat and each varnish coat.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated or prepared for painting as soon as practicable after preparation.
  - 1. Allow time between successive coatings to permit proper drying.
  - 2. Do not recoat until paint feels firm and does not deform or feel sticky under moderate thumb pressure.
- C. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as recommended by coating manufacturer.
- D. Prime Coats: Apply to items not previously primed; recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat.

- E. Finish Coats: Provide even texture; leave no laps, irregularity in texture, skid marks, or other surface imperfections.
  - 1. Opaque Finishes: Provide opaque, uniform finish, color and coverage; cloudiness, spotting, holidays, brush marks, runs, sags, ropiness, and other surface imperfections are not acceptable.
  - 2. Transparent and Stained Finishes: Produce glass smooth surface film of even luster; provide with no cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, and other surface imperfections.
- F. Completed Work: Match approved samples for color, texture and coverage; remove, refinish or repaint work not accepted.

#### 3.3 PAINTING SCHEDULE

- A. Provide following paint systems.
  - 1. Gypsum Board Systems: Eggshell (satin) sheen at walls, flat sheen at ceilings.
    - a. 1st Coat: Universal primer.
    - b. 2nd and 3rd Coat: Interior latex or acrylic latex emulsion.
  - 2. Metal: Semigloss sheen.
    - a. 1st Coat: Touch-up primer, prime if none.
    - b. 2nd and 3rd Coat: 100% acrylic enamel.
  - 3. Opaque Finished Wood: Semigloss sheen.
    - a. 1st Coat: Primer undercoat.
    - b. 2nd and 3rd Coat: 100% acrylic enamel.
  - 4. Stained Wood (Benches where Stained): Satin rubbed sheen.
    - a. 1st Coat: Wood stain.
    - b. 2nd Coat: Sanding sealer.
    - c. 3rd and 4th Coat: Acrylic modified urethane.
    - d. Fill open grained wood with filler and wipe before 2nd coat.
  - 5. Transparent Finished Wood (Benches where Transparent Finished): Satin rubbed sheen.
    - a. 1st Coat: Bleached shellac.
    - b. 2nd and 3rd Coat: Acrylic modified urethane rubbing varnish.
    - c. Fill open grained wood with filler and wipe before 1st coat.
- B. Sheens: Comply with ASTM D523, reflectance of paint.
  - 1. Flat: 1-10.
  - 2. Satin: 15-30.
  - 3. Eggshell: 30-45.
  - 4. Semigloss: 45-75.
  - 5. Gloss: 75-100.

# 3.4 CLEAN-UP, PROTECTION, AND REPAIR

- A. Clean-Up: During progress of work, remove discarded paint materials, rubbish, cans and rags from site at end of each work day.
  - 1. Clean glass and paint-spattered surfaces immediately by proper methods of washing and scraping, using care not to scratch or damage finished surfaces.
- 3. Protection: Protect work of other trades, whether to be painted or not; correct damage by cleaning, repairing or replacing, and repainting, as acceptable to EOR.
  - 1. Provide "Wet Paint" signs to protect newly-painted finishes.
  - 2. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
- C. Repair: At completion of work of other trades, touch-up and restore damaged surfaces or defaced painted surfaces.

#### **SIGNAGE**

## **PART 1 - GENERAL**

#### 1.1 SUMMARY

A. Section Includes: Provide individual unit number signage system by 100Watt as indicated complete with attachment devices and accessories as required for complete installation.

## 1.2 SUBMITTALS

- A. Product Data: Furnish manufacturer's literature and indicate each sign type, style, color, and method of attachment.
- B. Shop Drawings: Furnish listing of sign types, lettering and locations, along with overall dimension of each sign.
- C. Samples: Furnish full size samples where requested.

## 1.3 QUALITY ASSURANCE

- A. Access for Persons with Disabilities: Provide signs for assuring access for persons with disabilities in accordance with state and federal regulations.
  - 1. California Regulations: Comply with California Building Code.
  - 2. Federal Regulations: Comply with Americans with Disabilities Act Accessibility Guidelines (ADAAG).

## 1.4 DELIVERY, STORAGE, AND HANDLING

A. Package separately or in like groups of names, labeled as to names enclosed; include installation template, attachment system and installation instructions.

# **PART 2 - PRODUCTS**

## 2.1 MANUFACTURERS

- A. 100Watt
- B. Substitutions: Refer to Section 01630.

# 2.2 MATERIALS

- A. Unit Signage: Provide individual letter signs as indicated.
  - 1. Fabrication: Fabricate as indicated, and finished to match adjacent metal finishes.
  - 2. Attachment: Secure signage using connections concealed after installation; method subject to EOR approval.

# **PART 3 - EXECUTION**

# 3.1 INSTALLATION

- A. General: Install signs in accordance with manufacturer recommendations and installation instructions, free from distortions and defects.
- B. Signage: Secured to structure as required to resist anticipated loads.
  - 1. Final Location: As approved in field by EOR based on full size drawings.

# **END OF SECTION**

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#### **ELECTRICAL DESIGN/BUILD**

## **PART 1 - GENERAL**

## 1.1 SUMMARY

- A. Section Includes: Design/Build complete electrical system in conformance with applicable codes and standards, state and local.
  - 1. Obtain electrical permit; provide drawings and specifications as required for approvals of authorities.

## 1.2 SYSTEM DESCRIPTION

- A. Design Requirements: Modify existing electrical system as required for new construction, including design services.
  - 1. Service and distribution.
  - 2. Repair existing and add new light fixtures and lamps.
  - 3. Moving existing exit signs.
  - 4. Provide new emergency lighting with battery backup.
  - 5. Provide new door bells.
  - 6. Conceal wiring and conduit including electrical, cable television, and fire alarm.
  - 7. Incidental work called for on Drawings or required by codes.

## 1.3 SUBMITTALS

- A. Product Data: Furnish manufacturer's literature on electrical fixtures, components, accessories and ballast data.
- B. Samples: Submit as requested.

## 1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with requirements of applicable codes and regulations.
  - 1. Codes: California and San Francisco Electrical Code requirements.
  - 2. Standards on tests by independent agencies whose classifications and requirements have general acceptance as regulatory:
    - a. Underwriters' Laboratories, Inc. (UL).
    - b. Certified Ballast Manufacturers (CBM).
    - c. Electrical Testing Laboratories (ETL).
    - d. National Electrical Manufacturer Assoc. (NEMA).
  - 3. Conform to California Building Code requirements for Energy Conservation.
  - 4. Conform to California Building Code and Americans with Disabilities Act Accessibility Guidelines requiring access for persons with disabilities.

## 1.5 SPECIAL WARRANTY

- A. Special Warranty: Warrant electrical system to be free of faults and defects.
  - 1. Special warranty to be signed by Contractor, subcontractor and manufacturer.
  - 2. Special Warranty Period: Two years.

## **PART 2 - PRODUCTS**

## 2.1 MATERIALS

- A. Conduit: Comply with applicable codes and regulations.
- B. Wiring: Minimum number 12, TW, unless larger wiring required by code.
  - 1. Insulate and tape splices in accordance with code.
- C. Switch Plates and Outlet Plates: Match existing.
- D. Duplex Receptacles: 3-pole grounding type.
- E. Lighting Fixtures: As indicated on Drawings.
- F. Door Bell System: Provide as indicated.

## **PART 3 - EXECUTION**

## 3.1 INSPECTION

- A. Examine areas and conditions under which electrical work will be installed.
- B. Do not proceed until unsatisfactory conditions have been corrected.

## 3.2 INSTALLATION OF ELECTRICAL EQUIPMENT

- A. Electrical Equipment: Wired with white wire for neutral and colored wire for phase wires.
  - 1. Where conduit is installed in concrete slabs, on ground, underground or exposed to weather, make joints liquid tight and gas tight.
  - 2. Bury underground conduit to minimum depth of 2 feet below finished grade, unless otherwise approved.
  - 3. Unless specifically approved by code authorities, install cables and wires in conduit, metal raceways or pull boxes.
- B. Ground electrical system, including housing of fixtures.

- C. Electrical Equipment: Complete with holders, screws, sockets, wires, lamps, as necessary for complete installation.
  - 1. Install electrical equipment, including light fixtures, straight and true with reference to adjacent walls and surfaces.
  - 2. Install lighting fixtures directly to building structure with code approved fastening systems and including required seismic bracing.
  - 3. Provide conduit and wiring for work of other trades as specified in other specification sections.
  - 4. Install and support electrical equipment in accordance with manufacturer's recommendations.
  - 5. Mount outlets and switches in accordance with state handicapped access requirements.
  - 6. Switch Plates: Centered maximum 48" above floor.
  - 7. Wall Outlets: Centered minimum 15" above floor.

## 3.3 FIELD QUALITY CONTROL

- A. Site Tests: Upon completion of installation, furnish personnel and equipment necessary and test and re-test complete system, and securing approval of applicable code authorities.
  - 1. Test circuits for proper neutral connections.
  - 2. Measure minimum and maximum voltages.
  - 3. Test for proper grounding.