SPECIFICATIONS FOR

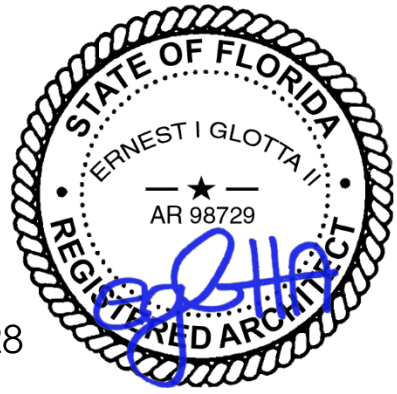
CareSpot Urgent Care

8132 Lee Vista Boulevard, Suite 102
Orlando, Florida 32801

Project No: 1821

29 October 2018

RENEE LYNN+ | GLØTTA



PREPARED BY:

RENEE LYNN + GLOTTA
2232 Dana Drive
Flower Mound, Texas 75028
Phone 214.799.5031

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END OF SECTION

00 10 00 – INVITATION TO BID AND INSTRUCTIONS TO BIDDERS

PART 1 – GENERAL

1.1 INVITATION TO BID

You are hereby invited to submit a **LUMP SUM** bid for furnishing labor, materials, services and equipment necessary to construct the Work called for in the Drawings and Specifications for a **CareSpot Urgent Care** located at **8132 Lee Vista Boulevard, Suite 102, Orlando, FL 32801.**

1.2 DRAWINGS AND SPECIFICATIONS

Bidders will receive electronically, one complete set of Drawings and Specifications for the General Construction, H.V.A.C., Plumbing and Electrical Trades.

1.3 LUMP SUM BID

A. Bids must be submitted on forms prepared by the Architect and shall be subject to all requirements of the Drawings, the Specifications and any other documents issued in connection with the Project, including this Invitation to Bid. Any bid not submitted on the accompany Bid Form, properly and completely filled out, will not be considered. An electronic version of the Bid Form will be made available to all bidders.
B. Bids shall be submitted properly signed. The signatures must be in longhand and executed by a principal duly authorized to make contracts. The Bidder's legal name must be fully stated. The completed forms shall be without interlineation, alteration or erasures.
C. Oral or telephoned Bids, or modifications thereof, will not be considered.
D. All blank spaces on the Bid forms must be fully filled in.

1.4 SUBMISSION OF BIDS

A. Bids shall be submitted no later than **Date to be determined, at 3:00 pm, Eastern**.
B. Bids are to be received electronically by the Construction Manager at the following address:

sjgruner@hankdickerson.com

Sam Gruner
Dickerson Design Build
8333 Douglas Avenue, Ste. 1300
Dallas, TX 75225

C. The Owner and Design-Builder reserves the right to reject any or all Bids without explanation, and to waive all formalities in connection with Bid opening.
D. The opening of the Bids and the determination of the successful Bidder will be in private session. Determination will be based on all pertinent data contained in the Bid Form.
E. Bids submitted by Contractor as a result of this invitation to submit a proposal shall not obligate the Owner, Design-Builder or Architect in any way.

1.5 COST BREAKDOWNS, ALTERNATES AND UNIT PRICES

The Bidders' attention is directed to the request for cost breakdowns, alternates and unit prices which may be listed in the Bid Forms. Bidders' are required to furnish this information since it is an important element in degerming the successful Bid.

1.6 FORM OF CONTRACT

The successful Bidder will be required to enter into a Contract with the Design-Builder based on a form of Agreement which is standard with the Owner and Design-Builder.

1.7 INQUIRIES

Inquiries shall be direct to the Architect:

Ernie Glotta
Renee Lynn + GLOTTA
214-799-5031

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

00 41 00 – BID FORM

DATE: _____.

GENERAL CONTRACTOR:

ARCHITECT:
Renee Lynn + **GLOTTA**
2232 Dana Drive
Flower Mound, TX 75028
214-799-5031
ernie@glotta.design

1.1 We hereby submit our proposal for constructing the **CareSpot Urgent Care** located at:

8132 Lee Vista Boulevard, Suite 102, Orlando, Florida 32801.

1.2 Work will be done in accordance with accompanying drawings, specifications and Addendum No._____ to Addendum No._____.

1.3 LUMP SUM (Base Bid)

A. After having carefully examined Drawings, Specifications and Addenda, the undersigned proposes to furnish labor, materials, transportation, services and equipment required to construct the Project for a complete and operating facility for the Lump Sum of:

_____Dollars

($_____)

B. The undersigned affirms that the above LUMP SUM represents the entire cost per Drawings, Specifications and Addenda, and that no claim will be made on account of any increase in wage scales, material prices, taxes, insurance cost indexes or any other rates affecting the construction industry or this project.

1.4 BID BREAKDOWN

The above LUMP SUM bid is broken down per the attached spreadsheet.

1.5 MODIFICATIONS

A. The undersigned further agrees to modify this Bid to include, at the Owner and Design-Builder's option, alternates, or modifications, if any, negotiated before the execution of the construction Contract.

B. The undersigned understands that there may be changes, omissions or modifications in the Work, and that appropriate adjustments will be made in the Contract price, any disputes with respect thereto will be determined by arbitration. The undersigned also agrees that the charges for extra Work, or credits for omitted Work, shall be determined in one of the following ways. The Owner will determine the methods to be used in each case:
   1. By estimate and acceptance of a lump sum cost.
   2. By unit prices named in the Contract, or subsequently agreed upon.

3. By cost plus a percentage fee.
4. by cost plus a fixed fee.

C. If Work is added or deducted by written order of the Owner, and such Work is not covered by unit prices or Alternate Bids quoted in this Bid, the costs of such changes shall be determined prior to the time Work is ordered, and the Contract amount shall be adjusted accordingly on the following basis:
   1. Additional Work performed by subcontractors will be charged at the subcontractor's estimate price for the work plus 10% thereof as full compensation for the undersigned supervision and general job expense, overhead and profit.
   2. For additional Work performed by undersigned's forces, charges shall be computed as the estimated cost of labor and material entering into the work, plus 10% thereof as full compensation to cover all job costs for supervision (employees above the level of foreman), timekeeping, checking expending, unassignable job costs such as utility services, job cleanup (except removal of debris resulting from demolition of work installed), tools, equipment, and the like, and the Contractor's overhead and profit.
   3. For Work omitted, credit will be allowed in the amount of the actual savings in costs, computed on the same basis as for added work, but without application of the above percentages covering the undersigned's job supervision and general expense, overhead and profit.
   4. In cases where changes result in Work both added and omitted, the percentage covering the undersigned's job supervision, general expense, and overhead and profit, shall be applied to the net difference between the costs of work added and deducted if the net result is additive, otherwise the aforesaid percentage shall not be applied to either the costs of work added or omitted.
   5. Estimates for changes will be accompanied by itemized breakdowns of charges and credits, and such breakdowns shall be completed to the satisfaction of the Owner and Architect.

D. The undersigned agrees not to delay the progress of the Work pending final determination of value of the change in the Work, provided he receives a written order from the Owner to proceed.

E. The undersigned agrees that each subcontract, if any, made by him will contain similar appropriate provisions for extra Work, changes and omissions in the Work.

1.6 CONTRACT

If the undersigned be notified of the acceptance of this Bid within five (5) days after the date of the Bid, he agrees to execute a Contract for the above Work for the above stated compensation.

1.7 COMPLETE COST BREAKDOWN

A. The undersigned agrees, if awarded the Contract and within ten (10) calendar days thereafter, to deliver to the Owner, through the Architect, a complete and correct cost breakdown including General Conditions items for the purpose of establishing monthly payments to the Contractor based on the progress of the Work. Such complete breakdown shall be furnished in addition to any partial breakdown hereinafter contained. The undersigned agrees to review his original breakdown in necessary to satisfy the Owner and/or Architect as to content, distribution of costs, and form.

B. The undersigned will provide the Owner with all estimates and cost segregation covering various portions of the work as and when they may be required and

requested by the Owner for purposes of accounting, insurance evaluation, or any other purpose.

1.8 LIST OF SUBCONTRACTORS

The undersigned agrees, if notified of the acceptance of this Bid, to furnish to the Owner through the Architect, a typewritten list of the names, addresses, and telephone numbers of all subcontractors with whom he intends to enter into Contracts for the execution of portions of the entire work under consideration. He agrees that such a list must be submitted on or before the tenth calendar day following the acceptance of this Bid, and before execution of the contract, and that no substitutions shall be made in the employment of subcontractors without written approval first having been obtained through the Architect/Engineer.

1.9 CONSTRUCTION TIME SCHEDULE

A. The undersigned is aware that the Time Schedule for this Project is **Seventy-Five (75) CALENDAR DAYS** for construction after award of Contract.

B. The undersigned declares his Bid is based on the above time schedule and sequence and that he understands he must prepare a detailed construction time schedule for all trades based on the above. The undersigned will submit such detailed construction time schedule in triplicate to the Owner through the Architect not later than ten (10) calendar days after notice of acceptance of the proposal.

C. The undersigned hereby declares that the Lump Sum (Base Bid) contains sufficient amounts to assure completion of the Work within the time limits and in the sequence of the above time schedule.

1.10 SUBMISSION AND ACCEPTANCE OF PROPOSALS

A. The undersigned agrees to the Owner's right to reject any and all Bids without explanation.

B. The undersigned declares that the preparation and submission of the Bids and other quotations herein contained, to not obligate the Owner, Design-Builder and Architect in any way.

C. The undersigned agrees and understands that the Owner and Design-Builder assumes no obligation to enter into a contract for the work.

Signed: _____

Title: _____

Company: _____

END OF SECTION

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00 41 01 - BID SUMMARY

Contractor: _____

CareSpot MedPost Improving Urgent Care Together

Bid Date _____
Current Date _____
Duration (days) _____
Bldg Area 3,574

CareSpot Urgent Care | **8132 Lee Vista Boulevard, Suite 102** | **Orlando, Florida 32801**

#	Item of Work		Cost	$ per SF	% of Total	Comments
1	General Conditions		$ -	$ -	#DIV/0!	
2	Demolition		$ -	$ -	#DIV/0!	
3	Exterior Wall Patch & Paint		$ -	$ -	#DIV/0!	
4	Concrete		$ -	$ -	#DIV/0!	
5	Rough Carpentry		$ -	$ -	#DIV/0!	
6	Building Insulation		$ -	$ -	#DIV/0!	
7	Roofing		$ -	$ -	#DIV/0!	
8	Roof Specialties & accessories		$ -	$ -	#DIV/0!	
9	Millwork		$ -	$ -	#DIV/0!	
10	Doors / Frames / Access Panels		$ -	$ -	#DIV/0!	
11	Hardware		$ -	$ -	#DIV/0!	
12	Millwork Install		$ -	$ -	#DIV/0!	
13	Glass & Glazing		$ -	$ -	#DIV/0!	
14	Faux Stone Accent Wall		$ -	$ -	#DIV/0!	
15	Metal Studs / Drywall		$ -	$ -	#DIV/0!	
16	Radiation Protection		$ -	$ -	#DIV/0!	
17	ACT		$ -	$ -	#DIV/0!	
18	Tape, Float & Paint		$ -	$ -	#DIV/0!	
19	Flooring		$ -	$ -	#DIV/0!	
20	Toilet Accessories		$ -	$ -	#DIV/0!	
21	Specialties		$ -	$ -	#DIV/0!	
22	Plumbing		$ -	$ -	#DIV/0!	
23	Fire Sprinklers		$ -	$ -	#DIV/0!	
24	Mechanical		$ -	$ -	#DIV/0!	
25	Electrical		$ -	$ -	#DIV/0!	
26	Speech Privacy		$ -	$ -	#DIV/0!	
27	Low Voltage systems		$ -	$ -	#DIV/0!	
28	Misc Installations		$ -	$ -	#DIV/0!	
29	Interior Signage		$ -	$ -	#DIV/0!	
30	Fire Alarm		$ -	$ -	#DIV/0!	
	Sub Total		**$ -**	**$ -**	**#DIV/0!**	
31	General Liability		$ -	$ -	#DIV/0!	
32	Contractor Fee		$ -	$ -	#DIV/0!	
33	Remodel Tax		$ -	$ -	#DIV/0!	N/A
	TOTAL BID		**$ -**	**$ -**	**#DIV/0!**	
34	Building Permit Fee		$ -	$ -	#DIV/0!	Allowance
	Total Cost		**$ -**	**$ -**	**#DIV/0!**	

00 41 01 - BID SUMMARY

Contractor:		Bid Date	
		Current Date	
		Duration (days)	
		Bldg Area	3,574

Improving Urgent Care Together

CareSpot Urgent Care **8132 Lee Vista Boulevard, Suite 102** **Orlando, Florida 32801**

SECTION 01 10 00 – SUMMARY

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project Information.
2. Project Description.
3. Codes.
4. Unforeseen Conditions.
5. Work by Owner/Others.
6. Overtime.
7. Access to Site.
8. Work Restrictions.
9. Specification and Drawing Conventions.

B. Related Section: **Division 01 "Temporary Facilities and Controls"** for limitations and procedures governing temporary use of Owner's facilities.

1.2 PROJECT INFORMATION

A. Architect: **RENEE LYNN + GLOTTA**, its successors and assigns.

B. Engineer: **AOS Engineering**, its successors and assigns.

C. Design-Builder: **Dickerson Design Group**, its successors and assigns.

1. Design-Builder has been engaged for this Project to provide architectural and engineering services and to serve as Project's constructor. In Divisions 1 through 16 Sections, the terms "Design-Builder", "Engineer", and "Architect" are synonymous.

1.3 PROJECT DESCRIPTION

A. In general, the Project consists of a tenant finish out of a shell structure for **CareSpot Urgent Care** located at **8132 Lee Vista Boulevard, Suite 102, Orlando, Florida 32801** as described in the Drawings and these Specifications.

B. The Drawings are listed in the index of their first sheet. The Specifications are listed in their table of contents.

C. The Contract Documents are identified by the Architect's project number: **1821.**

1.4 CODES

A. Project has been designed to be in accordance with applicable published local codes / ordinances, and with requirements of other authorities having jurisdiction. Contractor to promptly notify in writing of any work not designed to local codes / ordinances, so as not to delay construction.

B. Construct project in accordance with the Occupancy Classification, Construction Type and Construction Codes as identified on the Drawings, including all local and state codes, ordinances, standards and amendments.

1.5 UNFORSEEN CONDITIONS

A. Costs which arise from concealed building conditions, hazardous materials abatement, or other unforeseen conditions, are not included in construction costs. Should these conditions be encountered, construction cost will be equitably adjusted within reasonable length of time after observation of those conditions.

1.6 WORK BY OWNER/OTHERS

A. In addition to the items identified as Furnished by Owner in the Drawings. The following Work is not part of this Contract. The Owner will award separate contracts for these items, unless noted otherwise. The Owner will provide rough-in dimensions for coordination of the Work.
   1. Items noted 'NIC' (Not In Contract), 'Future' or 'Existing'.
   2. Medical equipment.
   3. Impact fees and assessments.
   4. Hazardous material, abatement or remediation.
   5. Computers and business equipment.
   6. Moveable furniture.

B. Cooperate fully with separate contractors and others so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

1.7 OVERTIME

A. Design-Builder will not authorize compensation for work performed during other than regular working hours, unless prior written authorization is received from Owner.

1.8 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

B. Driveways, Walkways and Entrances: Keep driveways parking garage, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
   1. Schedule deliveries to minimize use of driveways and entrances by construction operations.
   2. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.9 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.

B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
   1. Notify Owner not less than 48 hours in advance of proposed utility interruptions.
   2. Obtain Owner's written permission before proceeding with utility interruptions.

C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
   1. Notify Owner not less than 48 hours in advance of proposed disruptive operations.
   2. Obtain Owner's written permission before proceeding with disruptive operations.

D. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor air intakes.

1.10 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
   1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
   2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on the Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:
   1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

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SECTION 01 25 00 – SUBSTITUTION PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Section:

1. **Division 01 Section "Product Requirements"** for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.3 SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.

b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

e. Samples, where applicable or requested.

f. Certificates and qualification data, where applicable or requested.

g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.

j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer,

on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.

k. Cost information, including a proposal of change, if any, in the Contract Sum.

l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.

m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.

b. Requested substitution will not adversely affect Contractor's construction schedule.

c. Requested substitution has received necessary approvals of authorities having jurisdiction.

d. Requested substitution is compatible with other portions of the Work.

e. Requested substitution has been coordinated with other portions of the Work.

f. Requested substitution provides specified warranty.

g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice of Award.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:

a. Requested substitution offers Owner a substantial advantage in cost, time, and energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

b. Requested substitution does not require extensive revisions to the Contract Documents.

c. Requested substitution is consistent with the Contract Documents and will produce indicated results.

d. Requested substitution will not adversely affect Contractor's construction schedule.

e. Requested substitution has received necessary approvals of authorities having jurisdiction.

f. Requested substitution is compatible with other portions of the Work.

g. Requested substitution has been coordinated with other portions of the Work.

h. Requested substitution provides specified warranty.

i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION

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SECTION 01 31 00 – PROJECT MANAGEMENT AND COORDINATION

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination drawings.
2. Project meetings.

B. Related Sections:

1. **Division 01 Section "Execution"** for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

9. Project closeout activities.

1.3 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.

b. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility.

1.4 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration

with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.

2. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

3. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.

4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: Conduct progress meetings at weekly intervals.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

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SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by the Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

   a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.

C. Identification and Information: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.

   a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-06100.01.A).
3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
4. Include the following information on an inserted cover sheet:
   a. Project name.
   b. Date.
   c. Name of firm or entity that prepared submittal.
   d. Name of subcontractor.
   e. Name of supplier.
   f. Name of manufacturer.
   g. Number and title of appropriate Specification Section.
   h. Drawing number and detail references, as appropriate.
   i. Location(s) where product is to be installed, as appropriate.
   j. Related physical samples submitted directly.
   k. Other necessary identification.

D. Options: Identify options requiring selection by the Architect.

E. Deviations: Identify deviations from the Contract Documents on submittals.

F. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
   1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.
   3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Use only final submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

1. Submit electronic submittals via email as PDF electronic files.

   a. Architect will return annotated file. Annotate and retain one copy of file as an electronic

      Project record document file.

2. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified In Division 01 Section "Closeout Procedures."

3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

   a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.

   b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

4. Test and Inspection Reports Submittals: Comply with requirements specified in Division 1

   Section "Quality Requirements."

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each submittal to show which products and options are applicable.

3. Include the following information, as applicable:

   a. Manufacturer's catalog cuts.

   b. Manufacturer's product specifications.

   c. Standard color charts.

   d. Statement of compliance with specified referenced standards.

   e. Testing by recognized testing agency.

   f. Application of testing agency labels and seals.

   g. Notation of coordination requirements.

4. For equipment, include the following in addition to the above, as applicable:

   a. Wiring diagrams showing factory-installed wiring.

   b. Printed performance curves.

   c. Operational range diagrams.

   d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.

6. Submit Product Data in the following format:

a. PDF electronic file.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
   a. Identification of products.
   b. Schedules.
   c. Compliance with specified standards.
   d. Notation of coordination requirements.
   e. Notation of dimensions established by field measurement.
   f. Relationship and attachment to adjoining construction clearly indicated.
   g. Seal and signature of professional engineer if specified.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 24 by 36 inches.
3. Submit Shop Drawings in the following format:
   a. PDF electronic file.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of applicable Specification Section.
3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited

to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project record sample.

1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

G. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

H. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

I. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on American Welding Society (AWS) forms. Include names of firms and personnel certified.

J. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

K. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

L. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

M. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

N. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

O. Product Test Reports: Submit written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

P. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

Q. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."

R. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests

performed before installation of product, for compliance with performance requirements in the Contract Documents.

S. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

T. Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

U. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally-signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - **EXECUTION**

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Division 1 Section "Closeout Procedures."

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each

submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:

1. No Exceptions Taken - Work may proceed.
2. Make Corrections Noted - Work may proceed, providing the work be in compliance with notations and construction documents.
3. Revise and Resubmit.
4. Rejected.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION

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SECTION 01 40 00 – QUALITY REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.

2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections:

1. Divisions 02 through 48 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Laboratory Mockups: Full-size, physical assemblies constructed at testing facility to verify performance characteristics.

D. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.

J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 INFORMATIONAL SUBMITTALS

A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems.

1. Seismic-force resisting system, designated seismic system, or component listed in the designated seismic system quality assurance plan prepared by the Architect.

2. Main wind-force resisting system or a wind-resisting component listed in the wind-force-resisting system quality assurance plan prepared by the Architect.

B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.5 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.

4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspections.

B. Manufacturer's Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
5. Other required items indicated in individual Specification Sections.

C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.

2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

G. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

H. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.

b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.

c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.

d. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

I. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.

2. Notify Architect seven days in advance of dates and times when mockups will be constructed.

3. Demonstrate the proposed range of aesthetic effects and workmanship.

4. Obtain Architect's approval of mockups before starting work,

fabrication, or construction. a. Allow seven days for initial review and each

re-review of each mockup.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

6. Demolish and remove mockups when directed, unless otherwise indicated.

J. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Specification Sections in Divisions 02 through 48.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.

2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.

3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.

6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.

2. Incidental labor and facilities necessary to facilitate tests and inspections.

3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.

4. Facilities for storage and field curing of test samples.

5. Delivery of samples to testing agencies.

6. Preliminary design mix proposed for use for material mixes that require control by testing agency.

7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.8 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Conducted by a qualified testing agency or special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.

2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.

3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.

4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.

5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.

6. Retesting and reinspecting

corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification

Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

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SECTION 01 42 00 – REFERENCES

PART 1 – GENERAL

1.1 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, legal requirements, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities

indicated in Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the United States."

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01 50 00 – TEMPORAY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Section:

1. Division 01 Section "Summary" for limitations on work restrictions and utility interruptions.

1.2 INFORMATIONAL SUBMITTALS

1.3 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.

1.4 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, Construction Manager, and construction personnel office activities and to accommodate project meetings specified in other Division 01 Sections. Keep office clean and orderly.

C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.2 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

I. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line(s) for each field office.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.

2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.

2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Provide temporary parking areas for construction personnel.

D. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.

2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touchup signs so they are legible at all times.

E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.

F. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Temporary Erosion and Sedimentation Control: Comply with requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and requirements specified in Division 31 Section "Site Clearing."

C. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.

D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

E. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

F. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

G. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and tenants from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.

2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.

3. Insulate partitions to control noise transmission to occupied areas.

4. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.

5. Protect air-handling equipment.

6. Provide walk-off mats at each entrance through temporary partition.

3.5 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect materials from water damage and keep porous and organic materials from coming into prolonged contact with concrete.

C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.

2. Keep interior spaces reasonably clean and protected from water damage.

3. Discard or replace water-damaged and wet material.

4. Discard, replace or clean stored or installed material that begins to grow mold.

5. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.

2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION

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SECTION 01 60 00 – PRODUCT REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Section:

1. Division 01 Section "Substitution Procedures" for requests for substitutions.

1.2 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.

2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics to those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."

b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.

2. Store materials in a manner that will not endanger Project structure.

3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

4. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.

5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

6. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.

2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.

3. Refer to Divisions 02 through 48. Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Architect will make selection.

5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

3. Products:

a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered, unless otherwise indicated.

4. Manufacturers:

a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered, unless otherwise indicated.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other

named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.

2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

3. Evidence that proposed product provides specified warranty.

4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.

5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 73 00 – EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the
Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

B. Related Sections:

1. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
2. Division 07 Section "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.2 INFORMATIONAL SUBMITTALS

A. Final Property Survey: Submit 10 copies showing the Work performed and record

survey data. 1.3 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of
construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from the Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic

qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.4 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged
during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will
provide a match acceptable to the Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction
indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities,mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Architect according to requirements in Division 1 Section "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

C. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

3.4 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1.Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Temporary Support: Provide temporary support of work to be cut.

C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

D. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

E. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and

with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

G. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

H. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: Comply with qualification requirements in Division 1 Section "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

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SECTION 01 77 00 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Warranties.
3. Final cleaning.

1.2 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete with request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in heat and other utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of

request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify
Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as
incomplete is completed or corrected.

2. Results of completed inspection will form the basis of requirements for final completion.

1.3 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that meet Green Seal GS-37, or if GS-37 is not applicable, use products
that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of
Substantial Completion for entire Project or for a portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign
substances.

b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.

d. Remove tools, construction equipment, machinery, and surplus material from Project site.

e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

g. Sweep concrete floors broom clean in unoccupied spaces.

h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.

i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

j. Remove labels that are not permanent.

k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over "UL" and other required labels and identification, including mechanical and electrical
nameplates.

l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

m. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

n. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

o. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

q. Leave Project clean and ready for occupancy.

END OF SECTION

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SECTION 02 41 19 – SELECTIVE DEMOLITION

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of

building or structure.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at

Project site.

1.4 FIELD CONDITIONS

A. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

B. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

C. Storage or sale of removed items or materials on-site is not permitted.

D. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

D. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

1. Comply with requirements for existing services/systems interruptions specified in Division 01 Section "Summary."

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Division 1 Section "Temporary Facilities and Controls."

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.

4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

5. Dispose of demolished items and materials promptly.

B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

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SECTION 06 10 00 – ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wood blocking and nailers.
2. Wood furring and grounds.
3. Wood sleepers.
4. Plywood backing panels.
5. Cabinet blocking.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For the following, from ICC-ES:

1. Power-driven fasteners.
2. Powder-actuated fasteners.
3. Expansion anchors.
4. Metal framing anchors.

PART 2 – PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Provide dressed lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Application: Treat items indicated on Drawings, and the following:

1. Wood sills, sleepers, blocking, furring, and similar concealed members in contact with masonry or concrete.

2.3 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.

2. Nailers.

3. Cants.

4. Furring.

5. Grounds.

B. For items of dimension lumber size, provide Standard, Stud, or No. 3 grade lumber of any species.

C. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:

1. Mixed southern pine; No. 3 grade; SPIB.

2. Eastern softwoods; No. 3 Common grade; NeLMA.

3. Northern species; No. 3 Common grade; NLGA.

4. Western woods; Standard or No. 3 Common grade; WCLIB or WWPA.

2.4 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, in thickness indicated or, if not indicated, not less than 1/2-inch nominal thickness.

2.5 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated,
or in area of high relative humidity, provide fasteners of Type 304 stainless steel.

B. Power-Driven Fasteners: NES NER-272.

C. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

2.6 METAL FRAMING ANCHORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Simpson Strong-Tie Co., Inc.

B. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

C. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.

1. Use for interior locations unless otherwise indicated.

D. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.

1. Use for wood-preservative-treated lumber and where indicated.

2.7 MISCELLANEOUS MATERIALS

A. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.

2.8 CABINET BLOCKING

A. Cabinet blocking shall consist of one or a combination of the following options:

1. Horizontal wood blocking.
2. 20-guage or heavier metal stud wall framing:

a. Where stud framing does not result in a stud located within 3-inches of the exposed end of cabinetry, add an additional stud or install wood blocking to allow the outer edge of cabinetry to be fastened tight to the wall.

3. 20-guage metal strapping:

a. Install 4-inch strapping horizontally over studs at cabinet locations.

b. Strapping must span a minimum of three studs.

c. Tape strapping to the studs and fasten with gypsum board screws through the gypsum board and strapping at each stud location. Do not fasten the strapping with screws under the gypsum board.

d. Install strapping vertically between horizontal strapping at stud closest to exposed end of cabinetry.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Install fire-retardant treated plywood backing panels with classification marking of testing agency exposed to view.

C. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

END OF SECTION

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SECTION 06 20 23 – INTERIOR FINISH CARPENTRY

PART 1 -GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior trim.

B. Related Requirements:

1. Division 06 Section "Interior Architectural Woodwork" for interior woodwork not specified in this Section.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

B. Samples: For each type of paneling.

PART 2 – PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20.

1. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.

a. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by inspection agency.

2.2 INTERIOR TRIM

A. Hardwood Lumber Trim:

1. Species and Grade: White maple; A Finish; NHLA.
2. Maximum Moisture Content: 9 percent.

B. Hardwood Moldings for Transparent Finish (Stain or Clear Finish): WMMPA HWM 2, N-grade wood moldings made to patterns included in WMMPA HWM 1.

1. Species: White maple.
2. Maximum Moisture Content: 9 percent.

2.3 MISCELLANEOUS MATERIALS

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

PART 3 – EXECUTION

3.1 PREPARATION

A. Before installing interior finish carpentry, condition materials to average prevailing humidity in

installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.2 INSTALLATION, GENERAL

A. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.

1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.

2. Countersink fasteners, fill surface flush, and sand unless otherwise indicated.

3. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.

3.3 STANDING AND RUNNING TRIM INSTALLATION

A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Cope at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints.

END OF SECTION

SECTION 06 40 23 – INTERIOR ARCHITECTURAL WOODWORK

PART 1 -GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Interior standing and running trim.
2. Flush wood paneling and wainscots.
3. Plastic-laminate cabinets.
4. Plastic-laminate countertops.
5. Solid-surfacing-material window sills.
6. Shop finishing of woodwork.

B. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips unless concealed within other construction before woodwork installation.

1.2 SUBMITTALS

A. Product Data: For cabinet hardware and accessories.

B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

C. Samples:

1. Lumber and panel products for transparent finish, for each species and cut, finished on one side and one edge.
2. Lumber and panel products with shop-applied opaque finish, for each finish system and color, with exposed surface finished.
3. Plastic-laminates, for each type, color, pattern, and surface finish.
4. Solid-surfacing materials.

D. Woodwork Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of woodwork.

B. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards."

1.4 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

PART 2 – PRODUCTS

2.1 WOODWORK FABRICATORS

A. Fabricators: Subject to compliance with requirements, provide interior architectural woodwork by one of the following:

2.2 MATERIALS

A. Wood Species and Cut for Transparent Finish: Red oak, plain sawn or sliced.

B. Wood Products:

1. Hardboard: AHA A135.4.
2. Medium-Density Fiberboard: ANSI A208.2, Grade MD.
3. Particleboard: ANSI A208.1, Grade M-2.
4. Softwood Plywood: DOC PS 1, Medium Density Overlay.
5. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1.

C. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.

D. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.

E. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Vendura.

2.3 CABINET HARDWARE AND ACCESSORIES

A. General: Provide cabinet hardware and accessory materials associated with architectural woodwork.

B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 120 degrees of opening, self-closing.

C. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter.

D. Drawer Slides: BHMA A156.9, B05091.

1. Standard Duty (Grade 1): Side mounted or extending under bottom edge of drawer partial-extension type with hold/close function; epoxy-coated steel with polymer rollers or zinc-plated steel ball-bearing slides.
2. Heavy Duty (Grade 1HD-100 and Grade 1HD-200): Side mounted or extending under bottom edge of drawer; partial-extension or full extension type with hold/close function; epoxy-coated steel with polymer rollers or zinc-plated steel ball-bearing slides.
3. Box Drawer Slides: Grade 1HD-100; for drawers not more than 6 inches high and 24 inches wide.
4. File Drawer Slides: Grade 1HD-200; for drawers more than 6 inches high or 24 inches wide.
5. Pencil Drawer Slides: Grade 1; for drawers not more than 3 inches high and 24 inches wide.

E. Door Locks: BHMA A156.11, E07121.

F. Drawer Locks: BHMA A156.11, E07041.

G. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

1. Bright Chromium Plated: BHMA 625 for brass or bronze base; BHMA 651 for steel base.

2.4 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.

2.5 FABRICATION

A. General: Complete fabrication to maximum extent possible before shipment to Project site. Where necessary for fitting at site, provide allowance for scribing, trimming, and fitting.

1. Interior Woodwork Grade: Custom.
2. Shop cut openings to maximum extent possible. Sand edges of cutouts to remove splinters and burrs. Seal edges of openings in countertops with a coat of varnish.

B. Interior Standing and Running Trim:

1. For transparent-finished trim items wider than available lumber, use veneered construction. Do not glue for width.
2. Backout or groove backs of flat trim members and kerf backs of other wide, flat members, except for members with ends exposed in finished work.
3. Assemble casings in plant except where limitations of access to place of installation require field assembly.

C. Flush Wood Paneling and Wainscots:

1. Lumber Trim and Edges: At fabricator's option, trim and edges indicated as solid wood (except moldings) may be either lumber or veneered construction compatible with grain and color of veneered panels.
2. Matching of Adjacent Veneer Leaves: Book match.
3. Veneer Matching within Panel Face: Center-balance match.
4. Panel-Matching Method: In each separate area, use sequence-matched, uniform-size sets.

D. Wood Cabinets for

Transparent Finish: 1. AWI

Type of Cabinet

Construction.

E. Wood Cabinets for Opaque Finish:

1. AWI Type of Cabinet Construction.

F. Plastic-Laminate Cabinets:

1. AWI Type of Cabinet Construction: Flush overlay.

2. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate as follows:

a. Horizontal Surfaces Other Than Tops: Grade VGS.
b. Postformed Surfaces: Grade VGS.
c. Vertical Surfaces: Grade VGS.
d. Edges: PVC edge banding, 0.5 mm thick at cabinet base box and 1.4 mm at doors and drawer fronts, matching laminate in color, pattern, and finish.

3. Materials for Semiexposed Surfaces Other Than Drawer Bodies: Thermoset decorative panels.

4. Drawer Sides and Backs: Thermoset decorative panels.

5. Drawer Bottoms: Thermoset decorative panels.

6. Colors, Patterns, and Finishes: Match sample.

7. Upper Cabinet Doors: Doors to extend below the cabinet case by 1 inch and doors will not utilize door pulls.

8. Ends: All ends of cabinets to be finished.

9. Wood Grain Laminate: For cabinets with wood grain laminate, doors shall have the grain running vertically and drawers shall have the grain running horizontally.

10. Cabinet Color for Finished Surfaces: Color of all finished surfaces to match, including inside of cabinets and ends. An Alternate will be considered for using a neutral color for unexposed cabinet interiors.

G. Plastic-Laminate Countertops:

1. High-Pressure Decorative Laminate Grade: HGS.
2. Colors, Patterns, and Finishes: Match sample.
3. Edge Treatment: PVC edge banding, 1.4 mm thick, matching laminate in color, pattern, and finish.
4. Core Material at Sinks: Particleboard made with exterior glue.

H. Solid-Surfacing-Material Window Sills:

1. Solid-Surfacing-Material Thickness: 1/2 inch.
2. Colors, Patterns, and Finishes: Match sample.
3. Comply with solid-surfacing-material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.

2.6 SHOP FINISHING

A. Finish architectural woodwork at fabrication shop. Defer only final touchup, cleaning, and polishing until after installation.

B. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling.

C. Transparent Finish:

1. Grade: Custom.
2. AWI Finish System: Conversion varnish.
3. Staining: Match approved sample for color.
4. Wash Coat for Stained Finish: Apply a wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
5. Open-Grain Woods: After staining (if any), apply paste wood filler to open-grain woods and wipe off excess. Tint filler to match stained wood.
6. Sheen: Satin, 31-45 gloss units measured on 60-degree gloss meter per ASTM D 523.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas. Examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

B. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.

C. Install woodwork level, plumb, true, and straight to a tolerance of 1/8 inch in 96 inches. Shim as required with concealed shims.

D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.

F. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Scarf running joints and stagger in adjacent and related members. Fill gaps, if any, between top of base and wall with plastic wood filler, sand smooth, and finish same as wood base if finished.

G. Paneling: Anchor paneling to supporting substrate with concealed panel-hanger clips. Do not use face fastening, unless covered by trim.

H. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.

1. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches
   o.c. with No. 10 wafer-head screws sized for 1-inch penetration into wood framing, blocking, or hanging strips or No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish.

I. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop. Scribe backsplash to wall for tight fit.

END OF SECTION

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SECTION 06 42 19 – PLASTIC-LAMINATE-FACED WOOD PANELING

PART 1 -GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Plastic-laminate-clad flush paneling.

B. Paneling includes wood furring, blocking, and shims for installing paneling, unless concealed within other construction before paneling installation.

1.2 SUBMITTALS

A. Product Data: For finishing materials and processes.

B. Shop Drawings: Show location of paneling, large-scale details, attachment devices, and other components. Include dimensioned plans and elevations.

1. For paneling produced from premanufactured sets, show set numbers, sequence numbers within sets, and panels cutting used to produce indicated sizes.

2. For paneling veneered in fabrication shop, show veneer leaves with dimensions, and identification numbers indicating the flitch and sequence within the flitch for each leaf.

C. Samples:

1. Plastic laminates, for each type, color, pattern, and surface finish.

D. Woodwork Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

B. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards."

1.4 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install paneling until building is enclosed, wet work is complete, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Wood Products:

1. Medium-Density Fiberboard: ANSI A208.2, Grade MD.

2. Particleboard: ANSI A208.1, Grade M-2.

3. Softwood Plywood: DOC PS 1, Medium Density Overlay.

B. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated, or if not indicated, as required by woodwork quality standard.

2.2 INSTALLATION MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.

2.3 FABRICATION

A. Paneling Grade: Provide Custom grade paneling complying with referenced quality standard.

B. Complete fabrication to maximum extent possible, before shipment to Project site. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

C. Plastic-Laminate-Clad Flush Paneling:

1. Plastic-Laminate Cladding: High-pressure decorative laminate, in the following grades:

a. Faces and edges: Grade HGS.

b. Backs: Grade BKH.

2. Colors, Patterns, and Finishes: Match sample.

3. Colors, Patterns, and Finishes: As selected by Architect from laminate manufacturer's full range of wood grains finish.

4. Provide paneling of 3/4-inch minimum thickness.

2.4 SHOP FINISHING

A. General: Finish paneling at fabrication shop. Defer only final touchup, cleaning, and polishing until after installation.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Before installation, condition paneling to average prevailing humidity conditions in installation areas. Examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

B. Grade: Install paneling to comply with requirements for same grade specified in Part 2 for fabrication of type of paneling involved.

C. Install paneling level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.

1. For flush paneling, install with variations in reveal width, alignment of top and bottom edges, and flushness between adjacent panels not exceeding 1/16 inch.

D. Scribe and cut paneling to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor paneling to supporting substrate with concealed panel-hanger clips. Do not use face fastening unless covered by trim.

END OF SECTION

SECTION 07 21 00 – THERMAL INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Glass-fiber board insulation.
2. Glass-fiber blanket insulation.
3. Spray polyurethane foam insulation.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product test reports.

C. Research/evaluation reports.

PART 2 – PRODUCTS

2.1 GLASS-FIBER BOARD INSULATION

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. CertainTeed Corporation.
2. Johns Manville.
3. Knauf Insulation.
4. Owens Corning.

B. Glass-Fiber Board Insulation: ASTM C 612, Type IA; unfaced, with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84.

1. Nominal density of 3 lb/cu. ft., thermal resistivity of 4.3 deg F x h x sq. ft./Btu x in. at 75 deg F.

2.2 GLASS-FIBER BLANKET INSULATION

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. CertainTeed Corporation.
2. Guardian Building Products, Inc.
3. Johns Manville.
4. Knauf Insulation.
5. Owens Corning.

B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

C. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide cross ventilation between insulated attic spaces and vented eaves.

2.3 SPRAY POLYURETHANE FOAM INSULATION

A. Closed-Cell Polyurethane Foam Insulation: ASTM C 1029, Type II, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. BASF Corporation.

b. Dow Chemical Company (The).

2. Minimum density of 1.5 lb/cu. ft., thermal resistivity of 6.2 deg F x h x sq. ft./Btu x in. at 75 deg F.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.2 INSTALLATION OF CAVITY-WALL INSULATION

A. Foam-Plastic Board Insulation: Install pads of adhesive spaced approximately 24 inches o.c. both ways on inside face, and as recommended by manufacturer. Fit courses of insulation between wall ties and other obstructions, with edges butted tightly in both directions. Press units firmly against inside substrates.

3.3 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Glass-Fiber: Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.

2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.

4. Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.

5. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.

C. Spray-Applied Insulation: Apply spray-applied insulation according to manufacturer's written instructions. Do not apply insulation until installation of pipes, ducts, conduits, wiring, and electrical outlets in walls is completed and windows, electrical boxes, and other items not indicated to receive insulation are masked. After insulation is applied, make flush with face of studs by using method recommended by insulation manufacturer.

D. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:

1. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.

END OF SECTION

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SECTION 07 92 00 – JOINT SEALANTS

PART 1 -GENERAL

1.1 SUMMARY

A. Section Includes:

1. Urethane joint sealants.
2. Latex joint sealants.
3. Acoustical joint sealants.

1.2 PRECONSTRUCTION TESTING

A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to
Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

1.3 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples: For each kind and color of joint sealant required.

C. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

D. Product test reports.

E. Warranties.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

B. Preinstallation Conference: Conduct conference at Project site. 1.5 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Manufacturer standard length of years from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MATERIALS, GENERAL

A. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24):

1. Architectural Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

C. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

2.2 SILICONE JOINT SEALANTS

A. (JS-1) Mildew-Resistant Silicone Joint Sealant: ASTM C 920.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Dow Corning Corporation.
   b. GE Advanced Materials - Silicones.
   c. Pecora Corporation.
   d. Tremco Incorporated.
2. Type: Single component (S).
3. Grade: nonsag (NS).
4. Class: 50.
5. Uses Related to Exposure: Nontraffic (NT).

2.3 URETHANE JOINT SEALANTS

A. (JS-3) Urethane Joint Sealant: ASTM C 920.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. BASF Building Systems; SL1/SL2.
   b. Pecora Corporation.
   c. Sika Corporation; Construction Products Division; Sikaflex-1c SL.
   d. Tremco Incorporated; THC 900/901.
2. Type: Single component (S) or multicomponent (M).
3. Grade: Pourable (P).
4. Class: 25.
5. Uses Related to Exposure: Traffic (T).

2.4 LATEX JOINT SEALANTS

A. (JS-4) Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. BASF Building Systems; Sonolac.

b. Pecora Corporation; AC-20.

c. Tremco Incorporated; Tremflex 834.

2.5 ACOUSTICAL JOINT SEALANTS

A. (JS-5) Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Pecora Corporation; AC-20 FTR.

b. USG Corporation; Sheetrock Acoustical Sealant.

2.6 JOINT SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, Type B (bicellular material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.7 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 – EXECUTION

3.1 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

1. Remove laitance and form-release agents from concrete.

2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as

indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION

A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint
sealants as applicable to materials, applications, and conditions indicated.

B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.

2. Do not stretch, twist, puncture, or tear sealant backings.

3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.

2. Completely fill recesses in each joint configuration.

3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.

2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

F. Acoustical Sealant Installation: Comply with ASTM C 919 and with manufacturer's written recommendations.

G. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.3 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Interior joints in horizontal traffic surfaces (JS-3).

1. Joint Locations:

a. Isolation joints in cast-in-place concrete slabs.

b. Control and expansion joints in tile flooring.

c. Other joints as indicated.

2. Joint Sealant: Urethane.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces (JS-4).

1. Joint Locations:

a. Control and expansion joints on exposed interior surfaces of exterior walls.

b. Perimeter joints of exterior openings where indicated.

c. Tile inside corners, control and expansion joints.

d. Vertical joints on exposed surfaces of interior unit masonry, concrete, walls, and partitions.

e. Joints on underside of plant-precast structural concrete beams and planks.

f. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.

g. Other joints as indicated.

2. Joint Sealant: Latex.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

C. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces (JS-1).

1. Joint Sealant Location:

a. Joints between plumbing fixtures and adjoining walls, floors, and counters.

b. Tile control and expansion joints where indicated.

c. Other joints as indicated.

2. Joint Sealant: Silicone.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

D. Joint-Sealant Application: Interior acoustical joints in vertical surfaces and horizontal nontraffic surfaces (JS-5).

1. Joint Location:

a. Acoustical joints where indicated.

b. Other joints as indicated.

2. Joint Sealant: Acoustical.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION

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SECTION 08 11 13 – HOLLOW METAL DOORS AND FRAMES

PART 1 -GENERAL

1.1 SUMMARY

A. Section Includes:

1. Standard hollow metal doors and frames.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

1.3 QUALITY ASSURANCE

A. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252.

1. Temperature-Rise Limit: , provide doors that have a maximum transmitted temperature end point of not more than 450 deg F above ambient after 30 minutes of standard fire-test exposure.

B. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9. Label each individual glazed lite.

C. Smoke-Control Door Assemblies: Comply with NFPA 105 or UL 1784.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products

that may be incorporated into the Work include, but are not limited to, the following: 1. Curries Company; an Assa Abloy Group company.

2.2 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, CS, Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, CS, Type B.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 or A60 metallic coating.

D. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

F. Mineral-Fiber Insulation: ASTM C 665, Type I.

G. Glazing: Division 08 Section "Glazing."

H. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat.

2.3 STANDARD HOLLOW METAL DOORS

A. General: Comply with ANSI/SDI A250.8.

1. Design: Flush panel.

2. Core Construction: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane,
polyisocyanurate, mineral-board, or vertical steel-stiffener core.

a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.

b. Thermal-Rated (Insulated) Doors: R-value of not less than 6.0 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.

3. Vertical Edges for Single-Acting Doors: Beveled edge, 1/8 inch in 2 inches..

4. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- thick, end closures or channels of same material as face sheets.

5. Tolerances: SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."

B. Exterior Doors: Face sheets fabricated from metallic-coated steel sheet. Comply with ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

1. Level 2 and Physical Performance Level B (Heavy Duty), Model 1 (Full Flush).

C. Hardware Reinforcement: ANSI/SDI A250.6.

2.4 STANDARD HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8.

B. Exterior Frames: Fabricated from metallic-coated steel sheet.

1. Fabricate frames with mitered or coped corners.

2. Fabricate frames as face welded (F) unless otherwise indicated.

3. Frames for Level 2 Steel Doors: 0.053-inch- thick steel sheet.

C. Interior Frames: Fabricated from cold-rolled steel sheet unless metallic-coated sheet is indicated.

1. Fabricate frames with mitered or coped corners.

2. Fabricate frames as knocked down (DW) or face welded (F) as indicated.

3. Fabricate knocked-down (DW), drywall slip-on frames for in-place gypsum board partitions.

4. Frames for Wood Doors: 0.053-inch-thick steel sheet.

D. Hardware Reinforcement: ANSI/SDI A250.6.

2.5 FRAME ANCHORS

A. Jamb Anchors:

1. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.

2. Compression Type for Drywall Slip-on Frames: Adjustable compression anchors.

B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch thick, and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.6 STOPS AND MOLDINGS

A. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch high unless otherwise indicated.

B. Terminated Stops: Where indicated, terminate stops 6 inches above finish floor with a 90-degree angle cut, and close open end of stop with steel sheet closure. Cover opening in extension of frame with welded-steel filler plate, with welds ground smooth and flush with frame.

2.7 ACCESSORIES

A. Ceiling Struts: Minimum 1/4-inch-thick by 1-inch- wide steel.

B. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

2.8 FABRICATION

A. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117.

B. Hollow Metal Doors:

1. Exterior Doors: Provide weep-hole openings in bottom of exterior doors. Seal joints in top edges of doors against water penetration.

C. Hollow Metal Frames: Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.

2. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.

3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.

4. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.

5. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.

6. Jamb Anchors: Provide number and spacing of anchors as follows:

a. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame.

Space anchors not more than 32 inches o.c. and as follows:

1) Three anchors per jamb up to 60 inches high.

2) Four anchors per jamb from 60 to 90 inches high.

3) Five anchors per jamb from 90 to 96 inches high.

4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.

5) Two anchors per head for frames more than 42 inches wide and mounted in metal-stud partitions.

b. Compression Type: Not less than two anchors in each jamb.

7. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers.

a. Single-Door Frames: Three door silencers.

b. Double-Door Frames: Two door silencers.

D. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware according to the Door Hardware Schedule.

1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.

2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.

3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.

4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 16 electrical Sections.

E. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.

1. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.

2.9 STEEL FINISHES

A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating. 1. Shop Primer: ANSI/SDI A250.10.

B. Factory-Applied Paint Finish: ANSI/SDI A250.3.

1. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Hollow Metal Frames: Comply with ANSI/SDI A250.11.

1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

a. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.

b. Install door silencers in frames before grouting.

c. Remove temporary braces necessary for installation only after frames have been properly set and secured.

d. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.

e. Field apply bituminous coating to backs of frames that are filled with grout containing antifreezing agents.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.

a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.

3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation behind frames.

4. In-Place Gypsum Board Partitions: Secure frames in place with postinstalled expansion anchors through floor anchors at each jamb. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.

5. Ceiling Struts: Extend struts vertically from top of frame at each jamb to overhead structural supports or substrates above frame unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction. Provide adjustable wedged or bolted anchorage to frame jamb members.

6. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.

b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.

c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.

d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

B. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Standard Steel Doors:

a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.

b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.

c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.

d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.

2. Smoke-Control Doors: Install doors according to NFPA 105.

3.2 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

C. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION

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SECTION 08 14 16 – FLUSH WOOD DOORS

PART 1 -GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid-core doors with plastic-laminate faces.
2. Factory finishing flush wood doors.
3. Factory fitting flush wood doors to frames and factory machining for hardware.

B. Related Sections:

1. Division 08 Section "Glazing" for glass view panels in flush wood doors.
2. Division 13 Section "Radiation Protection" for lead-lined flush wood doors.

1.2 SUBMITTALS

A. Product Data: For each type of door indicated.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.

1. Indicate doors to be factory finished and finish requirements.
2. Indicate fire-protection ratings for fire-rated doors.

1.3 QUALITY ASSURANCE

A. Quality Standard: In addition to requirements specified, comply with AWI's "Architectural Woodwork Quality Standards Illustrated." WDMA I.S.1-A, "Architectural Wood Flush Doors."

B. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure per NFPA 252.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. VT Industries Inc.

2.2 DOOR CONSTRUCTION, GENERAL

A. WDMA I.S.1-A Performance Grade:

1. Extra Heavy Duty unless otherwise indicated.

B. Particleboard-Core Doors:

1. Particleboard: ANSI A208.1, Grade LD-2.

C. Fire-Protection-Rated Doors: Provide core specified or mineral core as needed to provide fire-protection rating indicated.

1. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile.
Comply with specified requirements for exposed edges.

2. Pairs: Provide fire-retardant stiles that are listed and labeled for applications indicated without
formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.

D. Mineral-Core Doors:

1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.

2. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through-bolting hardware.

3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

2.3 PLASTIC-LAMINATE-FACED DOORS

A. Interior Solid-Core Doors:

1. Grade: Premium.

2. Plastic-Laminate Faces: High-pressure decorative laminates complying with NEMA LD 3, Grade HGS.

3. Colors, Patterns, and Finishes: As indicated.

4. Exposed Vertical Edges: Plastic laminate that matches faces.

5. Core: Particleboard.

6. Construction: Three plies. Stiles and rails are bonded to core, then entire unit abrasive planed before faces are applied.

2.4 LOUVERS AND LIGHT FRAMES

A. Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of 0.048-inch- thick, cold-rolled steel sheet; with baked-enamel- or powder-coated finish; and approved for use in doors of fire-protection rating indicated.

2.5 FABRICATION

A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of
referenced quality standard for fitting unless otherwise indicated.

1. Comply with requirements in NFPA 80 for fire-rated doors.

B. Factory machine doors for hardware that is not surface applied.

C. Openings: Cut and trim openings through doors in factory.

1. Light Openings: Trim openings with moldings of material and profile indicated.

2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Division 08 Section "Glazing."

2.6 FACTORY FINISHING

A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Installation Instructions: Install doors to comply with manufacturer's written instructions and the referenced quality standard, and as indicated.

1. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80.

B. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.

1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch
from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold unless otherwise indicated.

a. Comply with NFPA 80 for fire-rated doors.

C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

END OF SECTION

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SECTION 08 71 00 – DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes hardware for wood, steel and aluminum doors.

1. Provide door gaskets, including weather-stripping and seals, and thresholds

1.2 REFERENCES

A. National Fire Protection Association:

1. NFPA 80 – Standard for Fire Doors, Fire Windows.
2. NFPA 252 – Standard Methods of Fire Tests of Door Assemblies.

B. Underwriters Laboratories, Inc.:

1. UL 10B – Fire Tests of Door Assemblies.
2. UL 305 – Panic Hardware.
3. UL – Building Materials Directory.

C. Warnock Hersey:

1. WH – Certification Listings.

1.3 PERFORMANCE REQUIREMENTS

A. Fire Rated Openings: Provide door hardware listed by UL or Warnock Hersey, or other testing laboratory approved by applicable authorities.

1. Hardware: Tested in accordance with NFPA 252.

1.4 SUBMITTALS

A. Division 01 – General Requirements.

B. Shop Drawings:

1. Indicate locations and mounting heights of each type of hardware, schedules, catalog cuts, electrical characteristics and connection requirements.
2. Submit manufacturer's parts lists and templates.

C. Manufacturer's Installation Instructions: Submit special procedures and perimeter conditions requiring special attention.

1.5 CLOSEOUT SUBMITTALS

A. Division 01 – General Requirements.

B. Project Record Documents: Record actual locations of installed cylinders and their master key code.

C. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements and inspection procedures related to preventative maintenance.

D. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with the following requirements:

1. ANSI A156 series.
2. NFPA 80.
3. UL 305

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Hardware Supplier: Company specializing in supplying commercial door hardware with minimum three years documented experience.

C. Products Requiring Electrical Connection: Listed and classified by testing firm acceptable to authority having jurisdiction as suitable for purpose specified and indicated.

1.8 DELIVERY, STORAGE AND HANDLING

A. Division 01 – General Requirements.

B. Package hardware items individually with necessary fasteners, instructions and installation templates, when necessary; label and identify each package with door opening code to match hardware schedule.

1.9 COORDINATION

A. Division 01 – General Requirements.

B. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.

1. Provide templates or actual hardware as required to ensure proper preparation of doors and frames.

C. Sequence installation to accommodate required utility connections.

D. Coordinate Owner's keying requirements during course of Work.

1.10 WARRANTY

A. Division 01 – General Requirements.

B. Furnish manufacturer's standard warranty for door hardware.

1.11 MAINTENANCE MATERIALS

A. Division 01 – General Requirements.

PART 2 PRODUCTS

2.1 DOOR HARDWARE

A. Hardware:

1. Contractor shall inspect complete installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified herein.
2. Master keyed as designated by Owner. Supply 3 keys for each lock, 5 master keys. Deliver keys to Owner by security shipment direct from hardware supplier.
3. Conform to UL and accessibility (ADA) requirements for door operation.
4. Submit a complete schedule to Architect for approval prior to installation. List each hardware group and associated door, using same numbering systems as listed at end of this Division. List name of manufacturer, type, style, function, size and finish of each item; indicate size and type of each door and frame.
5. Provide five-year manufacturer's warranty in accordance with Division 01, for replacement of inoperative door closers due to manufacturing defects.
6. Explain keying system to Owner's personnel.

B. Requirements:

1. General Hardware Requirements: Where not specifically indicated, comply with applicable ANSI A156 standard for type of hardware required. Furnish each type of hardware with accessories as required for applications indicated and for complete, finished, operational; doors.
   a. Templates: Furnish templates or physical hardware items to door and frame manufacturers sufficiently in advance to avoid delay in Work.
   b. Reinforcing Units: Furnished by door and frame manufacturers; coordinated by hardware supplier or hardware manufacturer.
   c. Fasteners: Furnish as recommended by hardware manufacturer and as required to secure hardware.
      1) Finish: Match hardware item being fastened.
   d. Fire Ratings: Provide hardware with UL or Warnock Hersey listings for type of application involved.
   e. Electrical Devices: Make provisions and coordinate requirements for electrical devices and connections for hardware.

C. Schedule:

1. Hardware specified has been selected from the following manufacturers.
   a. Hager
   b. Sargent – Lockset/Latchsets – **No Substituions Allowed.**
   c. Schlage
   d. LCN
   e. Rockwood
   f. D.C.I.
   g. Von Duprin
   h. Rixson
   i. Simplex
   j. A.B.H.
   k. G. Johnson
   l. Grant H.
   m. N.G.
2. The finished hardware supplier shall furnish additional or revised hardware required to meet special conditions of the door schedule or plan details not necessarily specified in hardware groups and/or sets. Questions concerning a discrepancy should be directed to the Architect before bidding date.
3. All door closers with delayed action for labeled/rated doors should be set for maximum 10 second hold open by General Contractor.
4. Alternate Products: All hardware shall be furnished as specified, except for the following equal products. **No products** other than those products listed will be

considered equal unless architectural approval 10 days prior to bid date, **except Locksets/Latchsets – No Substitutions Allowed.**

a. Hinges: Stanley
McKinney
Bommer

b. Locks & Latchsets: Sargent 10-line HD cylindrical, J-model levers
Furnish as specified – No Substitutions Allowed.

c. Door Closers: LCN 4040xp closers

d. Exit Devices: Von Duprin 99 Series
Yale 7200 Series
Sargent 80 Series

e. Flush & Auto Flush Bolts, Dustproof Strikes & Coordinators:
G. Johnson
H.B. Ives
Hager

f. Floor/Wall Stops, Kick Plates, Push Plates & Door Pulls:
H.B Ives
Hager
(Kickplate Ives 8400532D-12-34-B4ECS w/ optional beveling four sides)

g. Thresholds, Weather-strip, Door Sweeps, Astragals & OH Rain Drips:
Pemko
Hager

5. Provide hollow metal/wood frames with the following silencers:
   a. Hollow Metal: 3 ea. GJ64, Frame for single doors.
      2 ea. GJ64, Frame for pair doors.
   b. Wood: 3 ea. GJ64, Frame for single doors.
      2 ea. GJ64, Frame for pair doors.
6. Floor/Wall Stops: Where floor or wall stops are specified the following types shall apply. Note that wall stops are to be installed wherever possible. All have fasteners to meet floor or wall conditions. Where such situations prohibit wall or floor stops, furnish surface overhead stops applicable to door width and degree of opening. Type 3320A Series as manufactured by Architectural Builders Hardware will be acceptable.
   a. Floor: Rockwood – 441, 443 or 449 as required.
   b. Wall: Rockwood – 409, 410 or 411 as required.

2.2 HARDWARE GROUPS

A. Refer to plans.

B. General Note: install door closers inside the smaller rooms (non-public side) so not to be exposed in corridors or lobby. Do not use through bolts.

PART 3 EXECUTION

3.1 EXAMINATION

A. Division 01 – General Requirements.

B. Verify doors and frames are ready to receive door hardware and dimensions are as indicated on shop drawings and instructed by manufacturer.

3.2 INSTALLATION

A. Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer.

3.3 FIELD QUALITY CONTROL

A. Division 01 – General Requirements.

3.4 ADJUSTING

A. Division 01 – General Requirements.

B. Adjust hardware for smooth operation.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

A. Division 01 – General Requirements.

B. Do not permit adjacent work to damage hardware or hardware finish.

END OF SECTION

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SECTION 08 80 00 – GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:

1. Windows.
2. Doors.
3. Storefront framing.
4. Glazed entrances.

1.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design and install glass as required to meet building code. Include comprehensive engineering analysis by a qualified professional engineer as required.

1.3 PRECONSTRUCTION TESTING

A. Preconstruction Adhesion and Compatibility Testing: Test each glazing material type, tape sealant, gasket, glazing accessory, and glass-framing member for adhesion to and compatibility with elastomeric glazing sealants.

1. Testing will not be required if data are submitted based on previous testing of current sealant products and glazing materials matching those submitted.

1.4 ACTION SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

B. Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches square.

1.5 QUALITY ASSURANCE

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: GANA's "Laminated Glazing Reference Manual" and GANA's "Glazing Manual."

2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

B. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction or the manufacturer. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

1.6 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer's standard form in which

coated-glass manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

1. Warranty Period: 10 years from date of Substantial Completion.

B. Manufacturer's Special Warranty on Laminated Glass: Manufacturer's standard form in which laminated-glass manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1. Warranty Period: Five years from date of Substantial Completion.

C. Manufacturer's Special Warranty on Insulating Glass: Manufacturer's standard form in which insulating-glass manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass. Insulating glass must be fabricated by a manufacturer approved and certified fabricator.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 GLASS PRODUCTS, GENERAL

A. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass lites in thicknesses as needed to comply with requirements indicated.

B. Strength: Where float glass is indicated, provide annealed float glass, Kind HS heat-treated float glass, or Kind FT heat-treated float glass as needed to comply with "Performance Requirements" Article. Where heat-strengthened glass is indicated, provide Kind HS heat-treated float glass or Kind FT heat-treated float glass as needed to comply with "Performance Requirements" Article. Where fully tempered glass is indicated, provide Kind FT heat-treated float glass.

C. Windborne-Debris-Impact Resistance: Provide exterior glazing that passes basic - protection testing requirements in ASTM E 1996 for Wind Zone as indicated when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on the Project and shall be installed in same manner as glazing indicated for use on the Project.

1. Large-Missile Test: For glazing located within 30 feet of grade.

D. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:

1. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F.

2. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.

3. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.2 GLASS PRODUCTS

A. Heat-Treated Float Glass: ASTM C 1048; Type I; Quality-Q3; Class I (clear) unless otherwise indicated; of kind and condition indicated.

B. Uncoated Tinted Float Glass: Class 2, complying with other requirements specified.

C. Mirror Glass: ASTM C 1036, Type I, Class I, Quality-Q3 up to 24-square feet and Quality-Q2 over 25-square feet, and complying with other requirements specified.

2.3 LAMINATED GLASS

A. Laminated Glass: ASTM C 1172, and complying with testing requirements in 16 CFR 1201 for Category II materials, and with other requirements specified. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

1. Construction: Laminate glass with polyvinyl butyral interlayer or cast-in-place and cured-transparent-resin interlayer to comply with interlayer manufacturer's written recommendations.

2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.

3. Interlayer Color: Clear unless otherwise indicated.

B. Windborne-Debris-Impact-Resistant Laminated Glass: ASTM C 1172, and complying with testing requirements in 16 CFR 1201 for Category II materials, with "Windborne-Debris-Impact Resistance" Paragraph in "Glass Products, General" Article, and with other requirements specified. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.

1. Construction: Laminate glass with one of the following to comply with interlayer manufacturer's written recommendations:

a. Polyvinyl butyral interlayer.

b. Polyvinyl butyral interlayers reinforced with polyethylene terephthalate film.

c. Ionoplast interlayer.

d. Cast-in-place and cured-transparent-resin interlayer.

e. Cast-in-place and cured-transparent-resin interlayer reinforced with polyethylene terephthalate film.

2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.

3. Interlayer Color: Clear unless otherwise indicated.

2.4 INSULATING GLASS

A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a
dehydrated interspace, qualified according to ASTM E 2190, and complying with other requirements specified.

1. Sealing System: Dual seal with black polyisobutylene primary seal and black silicone secondary seal.

2. Spacer: Aluminum with black, color anodic finish.

3. Overall Unit Thickness: 1 inch.

4. Outdoor Lite: Tinted and heat treated by heat strengthening or tempering.

5. Interspace Content: Air.

6. Indoor Lite: Clear.

7. Low-E Coating: Sputter coating on third surface.

8. Provide safety glazing labeling as required.

2.5 GLAZING GASKETS

A. Dense Compression Gaskets: Molded or extruded gaskets of profile and hardness required to maintain watertight seal, made from one of the following:

1. Neoprene complying with ASTM C 864.

2. EPDM complying with ASTM C 864.

3. Silicone complying with ASTM C 1115.

4. Thermoplastic polyolefin rubber complying with ASTM C 1115.

B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned neoprene EPDM silicone or thermoplastic polyolefin rubber gaskets complying with ASTM C 509, Type II, black; of profile and hardness required to maintain watertight seal.

1. Application: Use where soft compression gaskets will be compressed by inserting dense compression gaskets on opposite side of glazing or pressure applied by means of
pressure-glazing stops on opposite side of glazing.

2.6 GLAZING SEALANTS

A. General:

1. Compatibility: Provide glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.

3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 50, Use NT.

2.7 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces;

with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:

1. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.

2. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; and complying with AAMA 800 for the following types:

1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.

2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.8 MISCELLANEOUS GLAZING MATERIALS

A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

B. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.

C. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

D. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

E. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

PART 3 – EXECUTION

3.1 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass lites where length plus width is larger than 50 inches.

H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

3.2 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Apply heel bead of elastomeric sealant.

F. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

G. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.3 GASKET GLAZING (DRY)

A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

E. Install gaskets so they protrude past face of glazing stops.

3.4 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.5 CLEANING AND PROTECTION

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

END OF SECTION

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SECTION 09 22 16 – NON-LOAD BEARING STEEL FRAMING

PART 1 -GENERAL

1.1 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior gypsum board assemblies.
2. Suspension systems for interior and exterior gypsum ceilings and soffits.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 – PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: Provide materials and construction identical to those tested according to ASTM E 119.

2.2 FRAMING SYSTEMS

A. Steel Studs and Runners: ASTM C 645. Use either steel studs and runners or dimpled steel studs and runners of equivalent minimum base-metal thickness.

1. Minimum Base-Metal Thickness: As indicated on Drawings.
2. Depth: As indicated on Drawings.

B. Slip-Type Head Joints: Where indicated, provide one of the following in thickness not less than indicated for studs and in width to accommodate depth of studs:

1. Single Long-Leg Runner System: ASTM C 645 top runner with 2-inch- deep flanges, installed with studs friction fit into top runner and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.
2. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch- deep flanges and fastened to studs, and outer runner sized to friction fit inside runner.
3. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes due to deflection of structure above.

a. Products: Subject to compliance with requirements, available products that may be
incorporated into the Work include, but are not limited to, the following:

1) Dietrich Metal Framing; SLP-TRK Slotted Deflection Track.
2) MBA Building Supplies; Slotted Deflecto Track.
3) Steel Network Inc. (The); VertiClip SLD, VertiTrack VTD Series.
4) Superior Metal Trim; Superior Flex Track System (SFT).

C. Firestop Tracks: Manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.

1. Products: Subject to compliance with requirements, available products that may be

incorporated into the Work include, but are not limited to, the following:

a. Fire Trak Corp.; Shadowline Fire Trak System.
b. Metal-Lite, Inc.; The System.
c. Steel Network Inc. (The); VertiClip SLD, VertiTrack VTD Series.
d. Blazframe.

D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated. 1. Minimum Base-Metal Thickness: 0.033 inch.

E. Cold-Rolled Channel Bridging: Steel, 0.053-inch minimum base-metal thickness, with minimum 1/2-inch- wide flanges.

1. Depth: As indicated on Drawings.
2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch- thick, galvanized steel.

F. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

1. Minimum Base-Metal Thickness: As indicated on Drawings.
2. Depth: As indicated on Drawings.

G. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch- wide flanges.

1. Depth: As indicated on Drawings.
2. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum uncoated-steel thickness of 0.033 inch.
3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.

H. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum uncoated-metal thickness of 0.018 inch, and depth required to fit insulation thickness indicated.

2.3 SUSPENSION SYSTEMS

A. Products: Subject to compliance with requirements, provide one of the following:

1. Armstrong World Industries, Inc.
2. United States Gypsum Company.

B. Framing Components: ASTM C635 heavy-duty classification, double web construction.

1. Exterior Applications: G90 hot dipped galvanized coating per ASTM C645.
2. Interior Applications: G40 hot dipped galvanized coating per ASTM C645.

C. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.

D. Hanger Attachments to Concrete:

1. Powder-Actuated Fasteners: Capable of sustaining, a load equal to 10 times that imposed as determined by ASTM E 1190.

E. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.

F. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.053 inch and minimum 1/2-inch- wide flanges.

1. Depth: As indicated on Drawings.

G. Furring Channels (Furring Members):

1. Cold-Rolled Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges, 3/4 inch deep.

2. Steel Studs and Runners: ASTM C 645. Use either steel studs and runners or dimpled steel studs and runners of equivalent minimum base-metal thickness.

a. Minimum Base-Metal Thickness: As indicated on Drawings.

b. Depth: As indicated on Drawings.

3. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep. a. Minimum Base-Metal Thickness: As indicated on Drawings.

2.4 AUXILIARY MATERIALS

A. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754.

1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

C. Install bracing at terminations in assemblies.

D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.2 INSTALLING FRAMED ASSEMBLIES

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Install studs so flanges within framing system point in same direction.

C. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.

2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

a. Install two studs at each jamb unless otherwise indicated.

b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.

c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.

3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.

4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.

a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.

5. Curved Partitions:

a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.

b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches o.c.

D. Direct Furring:

1. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

E. Z-Furring Members:

1. Erect insulation vertically and hold in place with Z-furring members spaced 24 inches o.c.

2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches from corner and cut insulation to fit.

F. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.3 INSTALLING SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.

a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces

by bracing, countersplaying, or other equally effective means.

2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.

3. Do not attach hangers to steel roof deck.

4. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.

5. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.

6. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet (3 mm in 3.6 m) measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION

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SECTION 09 29 00 – GYPSUM BOARD

PART 1 -GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 – PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

A. Regional Materials: Gypsum panel products shall be manufactured in North America with raw materials from North America and may not be imported from outside North America. Gypsum panel products and raw materials from China, also known as "Chinese Drywall" are not allowed.

2.3 INTERIOR GYPSUM BOARD

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. CertainTeed Corp.
2. Georgia-Pacific Gypsum LLC.
3. Lafarge North America Inc.
4. National Gypsum Company.
5. USG Corporation.

B. Gypsum Board, Type X: ASTM C 1396/C 1396M.

1. Thickness: 5/8 inch.
2. Long Edges: Tapered.

C. Gypsum Board, Moisture and Mold Resistant (green board) Type X: ASTM C 1396/C 1396M. With moisture and mold resistant core and paper surfaces.

1. Thickness: 5/8 inch.
2. Long Edges: Tapered.

2.4 SPECIALTY GYPSUM BOARD

A. Gypsum Board, Type C: ASTM C 1396/C 1396M. Manufactured to have increased fire-resistive

capability.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. CertainTeed Corp.; ProRoc Type C.
   b. Georgia-Pacific Gypsum LLC; Fireguard C.
   c. Lafarge North America Inc.; Firecheck Type C.
   d. National Gypsum Company; Gold Bond Fire-Shield C.
   e. USG Corporation; Firecode C Core.
2. Thickness: As required by fire-resistance-rated assembly indicated on Drawings.
3. Long Edges: Tapered.

2.5 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced
galvanized steel sheet .

B. Aluminum Trim: ASTM B 221, Alloy 6063-T5.

2.6 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

2.7 AUXILIARY MATERIALS

A. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum
panels to continuous substrate.

B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

C. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing).

D. Acoustical Joint Sealant: ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings as demonstrated by testing according to ASTM E 90.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Pecora Corporation; AC-20 FTR.
   b. Specified Technologies, Inc.; Smoke N Sound Acoustical Sealant.
   c. USG Corporation; SHEETROCK Acoustical Sealant.

E. Thermal Insulation: As specified in Division 07 Section "Thermal Insulation."

F. Vapor Retarder: As specified in Division 07 Section "Thermal Insulation."

PART 3 – EXECUTION

3.1 APPLYING AND FINISHING PANELS

A. Comply with ASTM C 840.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

D. Install trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

1. Aluminum Trim: Install in locations indicated on Drawings.

2. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.

E. Prefill open joints, rounded or beveled edges, and damaged surface areas.

F. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

G. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.

2. Level 2: Panels that are substrate for tile.

3. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.

a. Primer and its application to surfaces are specified in other Division 9 Sections.

H. Protect adjacent surfaces from drywall compound and texture finishes and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

I. Remove and replace panels that are wet, moisture damaged, and mold damaged.

3.2 RATED WALL IDENTIFICATION LABELING

A. Identify rated walls indicated on the Drawings as having a required fire or smoke rating.

1. Rated wall identification names shall be the same as indicated on the Drawings legend.

2. Locate identifications above the ceiling line, 15-feet on center, both sides of the wall.

3. Lettering shall be a minimum 3-inches high, red color, painted with the aid of stencils.

END OF SECTION

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SECTION 09 30 13 – CERAMIC TILING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Ceramic tile.
   2. Waterproof membrane.
   3. Crack isolation membrane.
   4. Metal edge strips.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

1.3 EXTRA MATERIALS

A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering and identified with labels describing contents.
   1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.

PART 2 PRODUCTS

2.1 TILE PRODUCTS

A. ANSI Ceramic Tile Standard: Provide Standard grade tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.

2.2 THRESHOLDS

A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
   1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch or less above adjacent floor surface.

2.3 WATERPROOF MEMBRANE

A. General: Manufacturer's standard product, selected from the following, that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated.
B. Chlorinated-Polyethylene-Sheet: Nonplasticized, chlorinated polyethylene faced on both sides with nonwoven polyester fabric; 0.030-inch nominal thickness.
   1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      a. Noble Company (The); Nobleseal TS.
C. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and continuous fabric reinforcement.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    a. Bostik, Inc.; Hydroment Blacktop 90210.
    b. Custom Building Products; 9240 Waterproofing and Anti-Fracture Membrane.
    c. Laticrete International, Inc.; Laticrete 9235 Waterproof Membrane.
    d. MAPEI Corporation; Mapelastic L (PRP M19). D. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer.
2. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    a. Bostik, Inc.; Hydroment Gold.
    b. Custom Building Products; Redgard Waterproofing and Crack Prevention Membrane.
    c. Laticrete International, Inc.; Laticrete Watertight Floor N' Wall Waterproofing.
    d. MAPEI Corporation; Mapelastic HPG.
    e. TEC, a subsidiary of H. B. Fuller Company; HydraFlex - Waterproofing Crack Isolation Membrane.

2.4 CRACK ISOLATION MEMBRANE

A. General: Manufacturer's standard product, selected from the following, that complies with ANSI A118.12 for standard performance and is recommended by the manufacturer for the application indicated.

B. Chlorinated-Polyethylene Sheet: Nonplasticized, chlorinated polyethylene faced on both sides with nonwoven polyester fabric; 0.030-inch nominal thickness.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    a. Noble Company (The); Nobleseal CIS.

C. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and fabric reinforcement.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    a. Bostik, Inc.; Hydroment Blacktop 90210.
    b. Custom Building Products; 9240 Waterproofing and Anti-Fracture Membrane.
    c. Laticrete International, Inc.; Laticrete Blue 92 Anti-Fracture Membrane.
    d. MAPEI Corporation; Mapelastic HPG with MAPEI Fiberglass Mesh.

D. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    a. Bostik, Inc.; Hydroment Gold.
    b. Custom Building Products; Semco Crack Prevention Membrane.
    c. TEC, a subsidiary of H. B. Fuller Company; HydraFlex - Waterproofing Crack Isolation Membrane.

2.5 SETTING MATERIALS

A. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. Bostik, Inc.
    b. Custom Building Products.
    c. Laticrete International, Inc.
    d. MAPEI Corporation.
    e. TEC; a subsidiary of H. B. Fuller Company.
2. Prepackaged, dry-mortar mix to which only water must be added.
3. For wall applications, provide nonsagging mortar.

B. Water-Cleanable, Tile-Setting Epoxy: ANSI A118.3, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. Bostik, Inc.
    b. Custom Building Products.
    c. Laticrete International, Inc.
    d. MAPEI Corporation.
    e. TEC; a subsidiary of H. B. Fuller Company.

C. Organic Adhesive: ANSI A136.1, Type I.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. Bostik, Inc.
    b. Custom Building Products.
    c. Laticrete International, Inc.
    d. MAPEI Corporation.
    e. TEC; a subsidiary of H. B. Fuller Company.

2.6 GROUT MATERIALS

A. Polymer-Modified Tile Grout: ANSI A118.7.
1. Manufacturers: Subject to compliance with requirements, provide products from **Custom Building Products, Inc**.
2. Product: Custom Fusion Pro Single Component Grout.
3. Color: **386-Oyster Gray** (unless indicated otherwise on Finish Schedule)

B. Water-Cleanable Epoxy Grout: ANSI A118.3.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. Bostik, Inc.
    b. Custom Building Products.
    c. Laticrete International, Inc.
    d. MAPEI Corporation.
    e. TEC; a subsidiary of H. B. Fuller Company.

2.7 MISCELLANEOUS MATERIALS

A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

B. Metal Edge Strips: Angle or L-shape, aluminum, clear anodized finish, with exposed-edge material.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
   1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.

3.2 PREPARATION

A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives or thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.

B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.

C. Blending: For tile exhibiting color variations, use factory blended tile or blend tiles at Project site before installing.

D. Field-Applied Temporary Protective Coating: If indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 INSTALLATION

A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
   1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:
      a. Tile floors in wet areas.
      b. Tile floors composed of tiles 8 by 8 inches or larger.

B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

D. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.

E. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
   1. Ceramic Mosaic Tile: 1/16 inch.
   2. Quarry Tile: 1/4 inch (6.35 mm).
   3. Paver Tile: 1/4 inch (6.35 mm).
   4. Glazed Wall Tile: 1/16 inch.

F. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.

G. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
   1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
   2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."

H. Metal Edge Strips: Install at locations indicated.

I. Install waterproofing to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness and bonded securely to substrate.
   1. Install waterproof membrane over substrate as indicated on Drawings.

J. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness and bonded securely to substrate.
   1. Install crack isolation membrane over control joints and cracks in substrate.

3.4 INTERIOR TILE INSTALLATION SCHEDULE

A. As indicated on Drawings.

END OF SECTION

SECTION 09 51 13 – ACOUSTICAL PANEL CEILINGS

PART 1 GENERAL

1.1 SUMMARY

Section includes acoustical panels and exposed suspension systems for ceilings.

1.2 PREINSTALLATION MEETINGS

Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified.

1.4 CLOSEOUT SUBMITTALS

Maintenance data.

1.5 EXTRA MATERIALS

Furnish extra materials that match and are from same production run as products installed and that are packaged with protective covering and identified with labels describing contents.

1. Tile Units: Furnish quantity of full-size units equal to 3 cartons for each type, composition, color, pattern, and size indicated.

PART 2 PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

1. Seismic Design Category B.

B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
2. Smoke-Developed Index: 50 or less.

2.2 ACOUSTICAL PANEL CEILINGS, GENERAL

A. Acoustical Panel Standard: Comply with ASTM E 1264.

B. Metal Suspension System Standard: Comply with ASTM C 635.

C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

2.3 ACOUSTICAL PANELS

A. Manufacturers: Subject to compliance with requirements, provide products by Armstrong World Industries, Inc.
   1. Product: Dune 1774
   2. Edge/Joint Detail: 15/16" Angled Tegular Edge
   3. Modular Size: 24" x 24"
   4. Thickness: 5/8"
   5. Color: White

2.4 METAL SUSPENSION SYSTEM

A. Manufacturers: Subject to compliance with requirements, provide products by Armstrong World Industries, Inc.
   1. Product: 15/16" Prelude XL
      a. Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 coating designation; with prefinished 15/16-inch- wide metal caps on flanges.
         1) Structural Classification: Intermediate and Heavy (for fire-rated systems) and (Seismic Design Category D systems)-duty system.
         2) End Condition of Cross Runners: Override (stepped) type.
         3) Face Design: Flat, flush.
         4) Cap Material: Steel or aluminum cold-rolled sheet.
         5) Cap Finish: Painted white.
      b. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

B. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders and comply with layout shown on reflected ceiling plans.
   1. Arrange directionally patterned acoustical panels as indicated on reflected ceiling plans.

END OF SECTION

SECTION 09 69 00 – FLOORING MOISTURE CONTROL SYSTEM

PART 1 -GENERAL

1.1 SUMMARY

A. This Section includes hydraulic-cement-based underlayment and moisture control system for use below interior floor coverings.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Qualification data.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Installer who is approved by manufacturer for application of underlayment and moisture control system products required for this Project.

1. Installer shall have no less than 5 years experience installing systems.

B. Source Limitations: Provide underlayment and moisture control system materials from same manufacturer.

1.4 WARRANTY

A. Manufacturer shall provide Owner with standard 10 year system warranty including underlayment and moisture control system.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products by one of the following:

1. Ardex.
2. Koester American Corporation.

2.2 HYDRAULIC-CEMENT-BASED UNDERLAYMENTS

A. Underlayment: Hydraulic-cement-based, polymer-modified, self-leveling product that can be applied in minimum uniform thicknesses of 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. Ardex; K-15 Self-Leveling Underlayment Concrete.
   b. Koester American Corporation; VAP-1 Level Pro Self-Leveling Underlayment.
2. Cement Binder: ASTM C 150, portland cement, or hydraulic or blended hydraulic cement as defined by ASTM C 219.
3. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109/C 109M.

B. Water: Potable and at a temperature of not more than 70 deg F.

C. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.

2.3 MOISTURE CONTROL SYSTEM

A. Epoxy based coating system capable of reducing water vapor and moisture levels to acceptable levels for coatings, adhesives and floor covering systems.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Ardex; MC Moisture Control System.

b. Koester American Corporation; VAP-1 ph.

B. Primer: Product of moisture control system manufacturer recommended in writing for

substrate, conditions, and application indicated

PART 3 – EXECUTION

3.1 UNDERLAYMENT APPLICATION

A. Prepare and clean substrate according to manufacturer's written instructions.

1. Treat nonmoving substrate cracks according to manufacturer's written instructions to prevent cracks from telegraphing (reflecting) through underlayment.

2. Fill substrate voids to prevent underlayment from leaking.

B. Concrete Substrates: Mechanically remove, according to manufacturer's written instructions, laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.

C. Adhesion Tests: After substrate preparation, test substrate for adhesion with underlayment according to manufacturer's written instructions.

D. Close areas to traffic during underlayment application and for time period after application recommended in writing by manufacturer.

E. Coordinate application of components to provide optimum underlayment-to-substrate and intercoat adhesion.

F. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.

G. Apply primer over prepared substrate at manufacturer's recommended spreading rate.

H. Apply underlayment to produce uniform, level surface.

1. Feather edges to match adjacent floor elevations.

I. Cure underlayment according to manufacturer's written instructions. Prevent contamination during application and curing processes.

J. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.

K. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

L. Protect underlayment from concentrated and rolling loads for remainder of construction period.

3.2 MOISTURE CONTROL SYSTEM APPLICATION

A. Install moisture control system according to manufacturer's written instructions.

B. Concrete Substrates: Mechanically remove, according to manufacturer's written instructions, laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair bond.

1. Sand or shot blast to a minimum surface profile of ICRI CSP 3-4 finish.

2. Moisture Testing: Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates do not exceed maximum moisture-vapor-emission rate as required by the moisture control system manufacturer in 24 hours.

C. Apply primer and coating system over prepared substrate at manufacturer's recommended spreading rates.

D. Cure moisture control system according to manufacturer's written instructions. Prevent contamination during application and curing processes.

E. Do not install floor coverings over moisture control system until after time period recommended in writing by manufacturer.

3.3 PROTECTION

A. Protect each coat during specified cure period from traffic, topical water and contaminants.

END OF SECTION

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SECTION 09 91 23 – INTERIOR PAINTING

PART 1 -GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on the following interior substrates:

1. Steel.
2. Aluminum (not anodized or otherwise coated).
3. Gypsum board.

1.2 DEFINITIONS

A. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

B. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples: For each type of paint system and in each color and gloss of topcoat.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 1 percent, but not less than 1 gal. of each material and color applied.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in other Part 2 articles for the paint category indicated.

1. Sherwin Williams.
2. Benjamin Moore.

2.2 PAINT, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

B. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Dry-Fog Coatings: 400 g/L.
4. Primers, Sealers, and Undercoaters: 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: 340 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Floor Coatings: 100 g/L.
9. Shellacs, Clear: 730 g/L.
10. Shellacs, Pigmented: 550 g/L.

D. Colors: As selected by Architect from manufacturer's full range.

2.3 PRIMERS/SEALERS

A. Primer Sealer, Interior, Institutional Low Odor/VOC:

2.4 METAL PRIMERS

A. Primer, Rust-Inhibitive, Water Based:

B. Primer, Quick Dry, for Aluminum:

2.5 WATER-BASED PAINTS

A. Latex, Interior, Institutional Low Odor/VOC, Flat (Gloss Level 1):

B. Latex, Interior, Institutional Low Odor/VOC, (Gloss Level 3):

C. Latex, Interior, Institutional Low Odor/VOC, Semi-Gloss (Gloss Level 5):

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Gypsum Board: 12 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces

and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION

A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

A. Steel Substrates:

1. Institutional Low-Odor/VOC Latex System:

a. Prime Coat: Primer, rust-inhibitive, water based.

1) Pro Industrial ProCryl Universal Metal Primer-B66-310 Series.

b. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (Gloss Level 5).

1) Pro Industrial Acrylic Semi-Gloss-B66-650 Series.

B. Aluminum (Not Anodized or Otherwise Coated) Substrates:

1. Institutional Low-Odor/VOC Latex System:

a. Prime Coat: Primer, quick dry, for aluminum.

1) Pro Industrial ProCryl Universal Metal Primer-B66-310 Series.

b. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (Gloss Level 5).

1) Pro Industrial Acrylic Semi-Gloss-B66-650 Series.

C. Gypsum Board Substrates:

1. Institutional Low-Odor/VOC Latex System:

a. Prime Coat: Primer sealer, interior, institutional low odor/VOC. Back roll to create textured finish.

1) High Build Interior Latex Primer/Surfacer-B28W8601.

b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.

1) Harmony Interior Latex Eg-Shel-B09-1000 Series (Walls).

2) Harmony Interior Latex Flat-B05-1000 Series (Ceilings).

c. Topcoat: Latex, interior, institutional low odor/VOC, flat (Gloss Level 1).

1) Harmony Interior Latex Flat-B05-1000 Series (Ceilings).

d. Topcoat: Latex, interior, institutional low odor/VOC, (Gloss Level 3).

1) Harmony Interior Latex Eg-Shel-B09-1000 Series (Walls).

2. Vinyl Wall Covering

Primer/Sealer: a.

Primer/Sealer:

Pigmented type.

1) Gardner-Gibson Dynamite Professional Wallcovering; #7222 Wallcovering Primer.

2) Roman Adhesives; Ultra-Prime Pro-977.

3. Epoxy Paint:

a. Prime Coat: Interior latex primer/sealer.

1) ProMar 200 Zero VOC Interior Latex Primer-B28W2600.

b. Intermediate Coat: Water-based catalyzed epoxy.

1) Water-Based Catalyzed Epoxy Semi-Gloss-B70/B60V25 Series.

c. Topcoat: Water-based catalyzed epoxy, semi-gloss (Gloss Level 5).

1) Water-Based Catalyzed Epoxy Semi-Gloss-B70/B60V25 Series.

END OF SECTION

SECTION 10 14 00 – SIGNAGE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes interior unframed signs.

B. Related Documents: Provisions established within the Geeral and Supplementary Conditions of the Contract, Division 1 – General Requirements and the Drawings are collectively applicable to this Section.

1.2 QUALITY ASSURANCE

A. Supplier: Obtain all products in this section from a single supplier.

B. Regulatory Requirements: Products shall meet requirements of the American with Disabilities Act Accessibility Guidelines (ADAAG) and local amendments and modifications.

C. Installer: Installation shall be performed by installer specialized and experienced in work similar to that required for this project.

1.3 SUBMITTALS

A. Submit in accordance with requirements of Division 1.

B. Product Data: Submit product data for specified products. Include material details for each sign specified.

C. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including dimensions, anchorage, and accessories.

D. Samples: Two (2) 2"x3" color samples of background and lettering.

E. Installation: Submit supplier's installation instructions.

F. Closeout Submittals:

1. Submit operation and maintenance data for installed products, including precautions against harmful cleaning materials and methods.
2. Submit warranty documents specified herein.

1.4 DELIVERY, STORAGE AND HANDLING

A. Division 01 – General Requirements.

B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Store products protected from weather, temperature, and other harmful conditions as recommended by supplier.

E. Handle products in accordance with manufacturer's instructions.

1.5 WARRANTY

A. Division 01 – General Requirements.

B. Manufacturer's Warranty: Submit manufacturer's standard warranty document executed by authorized company official.

C. Warranty Period: One (1) year from product ship date.

PART 2 PRODUCTS

2.1 SIGNAGE SYSTEMS

A. Acceptable Manufacturers:

1. ASI, 3860 W. Northwest Highway, Suite 350, Dallas, TX 75220; (214) 352-9140 telephone; (214) 352-9741 facsimile; (800) ASI-SPEC [274-7732]
2. Substitutions: Submit in accordance with Division 01 – General Requirements.

B. Acceptable Product: InForm Plaque Signs with requirements indicated for materials, thickness, finish colors, designs, shapes, sizes and details.

2.2 SIGN MATERIALS

A. Sign Face: Extruded Engineered PVC/Acrylic alloy with Integral background colors and high impact resistance.

B. Extruded Engineered PVC/Acrylic alloy with Integral background colors and high impact resistance with Class 1A Fire Rating with qualifying order size

C. Tactile Graphics and Text: Provide tactile copy [and grade 2 Braille] raised 1/32 inch minimum from plaque surface using manufacturer's co-molding process.

1. Provide lettering and graphics precisely formed, uniformly opaque to comply with relevant ADA regulations and requirements indicated for size, style, spacing, content, position, and colors.
2. Text Color[s]: White.

D. Background Colors: High contrast semi-matte integral colors for graphics. All integral colors are U.V. stabilized resins utilizing industrial grade pigments.

1. Standard Material Colors: Canyon (blue).

2.3 FABRICATION OPTIONS FOR SOLID INTEGRAL COLOR PLAQUE

A. Panel depth: [0.25 inch] thickness.

B. Construction: One-piece; added on or engraved characters not acceptable

C. Panel appearance: Specify from manufacturer's standard, high contrast, semi-matte color chart

D. Surface Texture: Matte Non-Glare.

E. Lettering Style: Typeface as selected from the manufacturer's standard sans serf typefaces, upper case letters, minimum height 5/8", maximum height 2"

F. Color of Text and Raised Characters: White.

G. Text schedule: Refer to Drawings.

H. Braille: Grade 2 Braille, placed directly below last line of characters or numbers

I. Sign Size: Refer to Drawings.

J. Sign Shape: Rectangular with Radiused Corners.

2.4 FABRICATION - GENERAL

A. General: Comply with requirements indicated for materials, thicknesses, finishes, colors, designs, shapes, sizes, and details of construction.

B. Preassemble signs in the shop to the greatest extent possible to minimize field assembly. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in a location not exposed to view after final assembly.

C. Conceal fasteners if possible; otherwise, locate fasteners to appear inconspicuous.

D. Form panels to required size and shape. Comply with requirements indicated for design, dimensions, finish, color, and details of construction.

E. Coordinate dimensions and attachment methods to produce message panels with closely fitting joints. Align edges and surfaces with one another in the relationship indicated.

F. Installation Method: [VT] vinyl tape.

PART 3 EXECUTION

3.1 EXAMINATION

A. Division 01 – General Requirements.

B. Site Verification of Conditions: Verify installation conditions previously established under other sections are acceptable for product installation in accordance with manufacturer's instructions. Proceeding with installation implies installer's acceptance of substrate and conditions.

3.2 INSTALLATION

A. Install product in accordance with supplier's instructions.

B. Install product in locations indicated using mounting methods recommended by sign manufacturer and free from distortion, warp, or defect adversely affecting appearance.

C. Install product level, plumb, and at heights indicated.

D. Install product at heights to conform to Americans with Disabilities Act Accessibility Guidelines (ADAAG) and applicable local amendments and regulations.

3.3 CLEANING, PROTECTION, AND REPAIR

A. Repair scratches and other damage which might have occurred during installation. Replace components where repairs were made but are still visible to the unaided eye.

B. Remove temporary coverings and protection to adjacent work areas. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project in accordance with provisions in Division 1.

END OF SECTION

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SECTION 10 26 23 – IMPACT-RESISTANT WALL PROTECTION

PART 1 -GENERAL

1.1 SUMMARY

A. Section Includes:

1. Wall guards.

2. Wall sheet protection.

1.2 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide handrails capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Uniform load of 50 lbf/ft. applied in any direction.
2. Concentrated load of 200 lbf applied in any direction.
3. Uniform and concentrated loads need not be assumed to act concurrently.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For each impact-resistant wall protection unit. Include sections, details, and attachments to other work.

1.For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Samples: For each exposed product and for each color and texture specified, 12 inches long.

D. Material certificates.

E. Material test reports.

F. Maintenance data.

G. Warranty: Sample of special warranty.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

B. Surface-Burning Characteristics: As determined by testing identical products per ASTM E 84, NFPA 255, or UL 723 by UL or another qualified testing agency.

C. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines .

D. Preinstallation Conference: Conduct conference at Project site .

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace

components of impact-resistant wall protection units that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

   a. Structural failures.
   b. Deterioration of plastic and other materials beyond normal use.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MATERIALS

A. PVC Plastic: ASTM D 1784, Class 1, textured, chemical- and stain-resistant, high-impact-resistant
PVC or acrylic-modified vinyl plastic with integral color throughout.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Construction Specialties, Inc., or comparable product by one of the following:
   a. IPC Door and Wall Protection Systems; Division of InPro Corporation.
   b. Korogard Wall Protection Systems; a division of RJF International Corporation.
   c. Pawling Corporation.

2. Impact Resistance: Minimum 25.4 ft-lbf/in. of notch when tested according to ASTM D 256, Test Method A.
3. Chemical and Stain Resistance: Tested according to ASTM D 543.
4. Self-extinguishing when tested according to ASTM D 635.
5. Flame-Spread Index: 25 or less.
6. Smoke-Developed Index: 450 or less.

B. Surface-Mounted, Plastic Corner Guards, as indicated on Drawings. Fabricated from PVC plastic, acrylic-modified vinyl sheet or opaque polycarbonate sheet; with formed edges; fabricated with 90-degree or 135-degree turn to match wall condition; in dimensions and profiles indicated on Drawings.

C. Fasteners: Aluminum, nonmagnetic stainless-steel, or other noncorrosive metal screws, bolts, and other fasteners compatible with items being fastened. Use security-type fasteners where exposed to view.

D. Adhesive: As recommended by impact-resistant plastic wall protection manufacturer and with a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 – EXECUTION

3.1 INSTALLATION

A. General: Install impact-resistant wall protection units level, plumb, and true to line without distortions.
Do not use materials with chips, cracks, voids, stains, or other defects that might be visible in the finished Work.

1. Install impact-resistant wall protection units in locations and at mounting heights indicated on Drawings.
2. Provide splices, mounting hardware, anchors, and other accessories required for a complete installation.

   a. Provide anchoring devices to withstand imposed loads.

b. Where splices occur in horizontal runs of more than 20 feet, splice aluminum retainers and plastic covers at different locations along the run, but no closer than 12 inches.

c. Adjust end and top caps as required to ensure tight seams.

B. Immediately after completion of installation, clean plastic covers and accessories using a standard, ammonia-based, household cleaning agent.

C. Remove excess adhesive using methods and materials recommended in writing by manufacturer.

END OF SECTION

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SECTION 10 28 13 – TOILET ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY
- A. Section Includes toilet accessories.

1.2 SUBMITTALS
- A. Division 01 – General Requirements.
- B. Product Data: Submit data on accessories describing size, finish, details of function and attachment methods.
- C. Manufacturer's Installation Instructions: Submit special procedures, conditions requiring special attention, etc.

1.3 COORDINATION
- A. Division 01 – General Requirements.
- B. Coordinate the Work with placement of internal wall reinforcement to receive anchor attachments.

PART 2 PRODUCTS

2.1 TOILET ACCESSORIES
- A. Manufacturers:
  1. American Specialties, Inc.
  2. Bobrick Washroom Accessories.
  3. Bradley Corporation.
  4. Substitutions: **Not Permitted.**

2.2 COMPONENTS
- A. Accessories – General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters and anchor components for installation.
  1. Grind welded joints smooth.
  2. Fabricate units of seamless sheets with flat surfaces.

2.3 TOILET ROOM ACCESSORIES
- A. Schedule:
  1. Soap Dispenser: Furnished by Owner.
  2. Paper Towel Dispenser: Furnished by Owner.
  3. Toilet Tissue Dispenser: Furnished by Owner.
  4. 36" Grab Bars (concealed mounting, peened grip):
     a. American Specialties – Model 3800-P x 36
     b. Bobrick – Model B-6806.99 x 36
     c. Bradley – Model 812-2 x 36
  5. 42" Grab Bars (concealed mounting, peened grip):
     a. American Specialties – Model 3800-P x 42
     b. Bobrick – Model B-6806.99 x 42
     c. Bradley – Model 812-2 x 42
  6. 18" Grab Bars (concealed mounting, peened grip; mounted vertically):
     a. American Specialties – Model 3800-P x 18
     b. Bobrick – Model B-6806.99 x 18
     c. Bradley – Model 812-2 x 18

7. Sanitary Napkin Disposal (surface mounted):
    a. American Specialties – Model 0852.
    b. Bobrick – Model B-270, Contura Series.
    c. Bradley – Model 4781-15.
8. Robe Hook:
    a. Bobrick – Model B-76727
    b. Bradley – Model 9124
9. Mirror (channel framed):
    a. American Specialties – Model 0620 – 18 x 36
    b. Bobrick – Model 165-1836
    c. Bradley – Model 781-18 x 36
10. Baby Changing Station:
    a. American Specialties – Model 9012, horizontal baby changing station
    b. Bobrick – Koala Kare Products, Model KB200-01 Grey
    c. Bradley – Model 9611 Solid Light Grey

PART 3 EXECUTION

3.1 EXAMINATION
- A. Division 01 – General Requirements.
- B. Verify exact location of accessories for installation.
- C. Verify field measurements are as indicated on product data and instructed by manufacturer.

3.2 PREPARATION
- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.3 EXISTING WORK
- A. Clean and repair existing toilet accessories which remain or are to be reinstalled.

3.4 INSTALLATION
- A. Install plumb and level, securely and rigidly anchored to substrate according to manufacturers' written instructions.
- B. Mounting Heights and Locations: As required by accessibility regulations and as indicated on Drawings.
- C. Grab Bars: Install to withstand a downward load of at least 250 lb, when tested according to ASTM F 446.
- D. Diaper-Changing Station: engineered to support a minimum of 250-lb static load when opened.

END OF SECTION

SECTION 10 44 13 – FIRE EXTINGUISHER CABINETS

PART 1 -GENERAL

1.1 SUMMARY

A. Section includes fire protection cabinets for fire extinguishers.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

1.3 QUALITY ASSURANCE

A. Fire-Rated, Fire Protection Cabinets: Listed and labeled to comply with requirements in ASTM E 814 for fire-resistance rating of walls where they are installed.

B. Coordinate size of fire protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

C. Coordinate sizes and locations of fire protection cabinets with wall depths.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.

B. Aluminum: Alloy and temper recommended by aluminum producer and manufacturer for type of use and finish indicated, and as follows:

1. Sheet: ASTM B 209.

C. Transparent Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), 1.5 mm thick, with Finish 1 (smooth or polished).

D. Acrylic Bubble: One piece.

2.2 FIRE PROTECTION CABINET

A. Cabinet Type: Suitable for fire extinguisher.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Larsen's Manufacturing Company.

1) Non Fire-Rated Recessed; Cameo Series AL-C2409-R.

2) Fire-Rated Semi-Recessed; Cameo Series AL-FS-C2409-5R.

3) Non Fire-Rated Recessed; Architectural Series AL-2409-R1.

4) Fire-Rated Recessed; Architectural Series AL-FS-2409-R1.

B. Cabinet Construction: As required for rating.

1. Fire-Rated Cabinets: Construct fire-rated cabinets with double walls fabricated from 0.0428-inch- thick, cold-rolled steel sheet lined with minimum 5/8-inch- thick, fire-barrier material. Provide factory-drilled mounting holes.

C. Cabinet Material: Steel sheet.

D. Recessed Cabinet: Cabinet box recessed in walls of sufficient depth to suit style of trim indicated.

1. Trimless with Concealed Flange: Surface of surrounding wall finishes flush with exterior
finished surface of cabinet frame and door, without overlapping trim attached to cabinet. Provide recessed flange, of same material as box, attached to box to act as drywall bead.

E. Semirecessed Cabinet: Cabinet box partially recessed in walls of sufficient depth to suit style of trim
indicated; with one-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend). Provide where walls are of insufficient depth for recessed cabinets but are of sufficient depth to accommodate semirecessed cabinet installation.

1. Square-Edge Trim: 1-1/4- to 1-1/2-inch backbend depth.

F. Cabinet Trim Material: Aluminum sheet.

G. Door Material: Aluminum sheet.

H. Door Glazing: Acrylic sheet Molded acrylic bubble.

1. Acrylic Sheet Color: Clear transparent acrylic sheet.
2. Acrylic Bubble Color: Clear, transparent.

I. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type,
trim style, and door material and style indicated.

J. Accessories:

1. Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire
protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.

K. Finishes:

1. Manufacturer's standard baked-enamel paint for the following:
a. Exterior of cabinet , door, and trim, except for those surfaces indicated to receive another finish.
b. Interior of cabinet and door.
2. Aluminum: Baked enamel or powder coat.
a. Color: As indicated by manufacturer's designations.
3. Steel: Baked enamel or powder coat.
a. Color and Gloss: As indicated by manufacturer's designations .

2.3 FABRICATION

A. Fire Protection Cabinets: Provide manufacturer's standard box (tub), with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated. Miter and weld joints and grind smooth.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Examine walls and partitions for suitable framing depth and blocking where recessed and semirecessed cabinets will be installed and prepare recesses as required by type and size of cabinet and trim style.

B. Install fire protection cabinets in locations and at mounting heights indicated or, if not indicated, at heights acceptable to authorities having jurisdiction.

C. Fire Protection Cabinets: Fasten cabinets to structure, square and plumb.

D. Identification: Apply decals at locations indicated.

E. Adjust fire protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

F. Replace fire protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

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SECTION 10 44 16 – FIRE EXTINGUISHERS

PART 1 -GENERAL

1.1 SUMMARY

A. Section includes portable, hand-carried fire extinguishers and mounting brackets for fire extinguishers.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Operation and maintenance data.

C. Warranty: Sample of special warranty.

1.3 QUALITY ASSURANCE

A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."

B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

C. Coordinate type and capacity of fire extinguishers with fire protection cabinets to ensure fit and function.

1.4 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
   a. Failure of hydrostatic test according to NFPA 10.
   b. Faulty operation of valves or release levers.
2. Warranty Period: Six years from date of Substantial Completion.

PART 2 – PRODUCTS

2.1 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

A. Fire Extinguishers: Type, size, and capacity for each fire protection cabinet and mounting bracket indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Ansul Incorporated; Tyco International Ltd.
   b. Larsen's Manufacturing Company; MP5.
2. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B and bar coding for documenting fire extinguisher location, inspections, maintenance, and recharging.

B. Multipurpose Dry-Chemical Type: UL-rated 5 pounds nominal capacity, with monoammonium phosphate-based dry chemical in manufacturer's standard enameled container.

2.2 MOUNTING BRACKETS

A. Mounting Brackets: Manufacturer's standard galvanized steel, designed to secure fire extinguisher to wall or structure, of sizes required for types and capacities of fire extinguishers indicated, with plated or red baked-enamel finish.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Ansul Incorporated; Tyco International Ltd.

b. Larsen's Manufacturing Company; 821.

B. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.

1. Identify bracket-mounted fire extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to mounting surface.

a. Orientation: Horizontal.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Examine fire extinguishers for proper charging and tagging.

1. Remove and replace damaged, defective, or undercharged fire extinguishers.

B. Install fire extinguishers and mounting brackets in locations indicated and in compliance with requirements of authorities having jurisdiction.

1. Mounting Brackets: 48 inches above finished floor to top of fire extinguisher.

C. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

END OF SECTION

SECTION 11 70 00 – HEALTHCARE EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES
- A. Medical equipment by Owner.

PART 2 PRODUCTS

2.1 MEDICAL EQUIPMENT
- A. See separate "Medical Equipment Package", drawings and specifications by Owner.

PART 3 EXECUTION

3.1 INSTALLATION
- A. Installation by Owner.

END OF SECTION

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SECTION 12 24 00 – ROLLER SHADES

PART 1 -GENERAL

1.1 SUMMARY
- Section includes manually operated roller shades.

1.2 ACTION SUBMITTALS
- Product Data: For each type of product.
  1. Include styles, material descriptions, construction details, dimensions of individual components and profiles, features, finishes, and operating instructions for roller shades.
- Shop Drawings: Show fabrication and installation details for roller shades, including shadeband materials, their orientation to rollers, and their seam and batten locations.
- Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

1.4 CLOSEOUT SUBMITTALS
- Maintenance data.

1.5 QUALITY ASSURANCE
- Installer Qualifications: Fabricator of products.

PART 2 – PRODUCTS

2.1 MANUFACTURERS
- Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  1. Diamond Drapery
  2. Draper Inc.
  3. MechoShade Systems, Inc.
  4. SWF-Springs Window Fashions
  5. Roll-A-Shade

2.2 ROLLER SHADES
- Chain-and-Clutch Operating Mechanisms: With continuous-loop bead chain and clutch that stops shade movement when bead chain is released; permanently adjusted and lubricated.
  1. Bead Chains: Nickel-plated metal.
     a. Loop Length: Full length of roller shade.
     b. Limit Stops: Provide upper and lower ball stops.
     c. Chain-Retainer Type: Clip, jamb mount.
- Rollers: Corrosion-resistant steel or extruded-aluminum tubes of diameters and wall thicknesses required to accommodate operating mechanisms and weights and widths of shadebands indicated without deflection. Provide with permanently

lubricated drive-end assemblies and idle-end assemblies designed to facilitate removal of shadebands for service.

1. Roller Mounting Configuration: Single roller.
2. Roller Drive-End Location: As indicated on Drawings.
3. Direction of Shadeband Roll: Regular, from back of roller.
4. Shadeband-to-Roller Attachment: Manufacturer's standard method.

- Mounting Hardware: Brackets or endcaps, corrosion resistant and compatible with roller assembly, operating mechanism, installation accessories, and mounting location and conditions indicated.

- Shadebands:

1. Shadeband Material: Light-filtering fabric, unless noted otherwise.
2. Shadeband Bottom (Hem) Bar: Steel or extruded aluminum.
    a. Type: Enclosed in sealed pocket of shadeband material.
    b. Color and Finish: As selected by Architect from manufacturer's full range.

- Installation Accessories:

1. Front Fascia: Aluminum extrusion that conceals front and underside of roller and operating mechanism and attaches to roller endcaps without exposed fasteners.
    a. Shape: L-shaped.
    b. Height: Manufacturer's standard height required to conceal roller and shadeband when shade is fully open, but not less than 3 inches.
2. Endcap Covers: To cover exposed endcaps.
3. Installation Accessories Color and Finish: As selected from manufacturer's full range.

2.3 SHADEBAND MATERIALS

- Shadeband Material Flame-Resistance Rating: Comply with NFPA 701. Testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

- Light-Filtering Fabric: Woven fabric, stain and fade resistant.

1. Source: Roller-shade manufacturer.
2. Type: Style 2410, or approved equal.
3. Weave: Basketweave, or as indicated on Drawings.
4. Roll Width: Full width of window opening.
5. Orientation on Shadeband: As selected by Architect.
6. Openness Factor: 3 percent or as indicated on Drawings.
7. Color: As selected by Architect from manufacturer's full range.

2.4 ROLLER-SHADE FABRICATION

- Product Safety Standard: Fabricate roller shades to comply with WCMA A 100.1, including requirements for flexible, chain-loop devices; lead content of components; and warning labels.

- Unit Sizes: Fabricate units in sizes to fill window and other openings as follows, measured at 74 deg F:

    1. Inside of Jamb Installation: Width and length of full window opening, with terminations between shades of end-to-end installations at centerlines of mullion or other defined vertical separations between openings.

- Shadeband Fabrication: Fabricate shadebands without battens or seams to extent possible except as follows:

    1. Vertical Shades: Where width-to-length ratio of shadeband is equal to or greater than 1:4, provide battens and seams at uniform spacings along shadeband length to ensure shadeband tracking and alignment through its full range of movement without distortion of the material.

PART 3 – EXECUTION

3.1 ROLLER-SHADE INSTALLATION

- Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, operational clearances, and other conditions affecting performance of the Work.

- Proceed with installation only after unsatisfactory conditions have been corrected.

- Install roller shades level, plumb, and aligned with adjacent units, according to manufacturer's written instructions.

    1. Opaque Shadebands: Located so shadeband is not closer than 2 inches to interior face of glass. Allow clearances for window operation hardware.

- Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.

- Clean roller-shade surfaces after installation, according to manufacturer’s written instructions.

END OF SECTION

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SECTION 12 50 01 – MOVEABLE FURNITURE

PART 1 GENERAL

1.1 SECTION INCLUDES
A. Furniture by Owner.

PART 2 PRODUCTS

2.1 FURNITURE
A. See separate "Furniture Package", drawings and specifications by Owner.

PART 3 EXECUTION

3.1 INSTALLATION
A. Installation by Owner.

END OF SECTION

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SECTION 13 49 00 – RADIATION PROTECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Lead sheet, strip, and plate.
2. Lead glass.
3. Lead-lined building materials and products including the following:
   a. Gypsum board.
   b. Steel hollow-metal door frames.
   c. Wood doors.
   d. Observation-window frames.

1.2 DEFINITIONS

A. Lead Equivalence: The thickness of lead that provides the same attenuation (reduction of radiation passing through) as the material in question under the specified conditions.

1. Lead equivalence specified for materials used in diagnostic x-ray rooms is as measured at 100kV unless otherwise indicated.

1.3 PERFORMANCE REQUIREMENTS

A. Provide materials and workmanship, including joints and fasteners, that maintain continuity of radiation protection at all points and in all directions equivalent to materials specified in thicknesses and locations indicated.

1. Materials, thicknesses, and configurations indicated are based on radiation protection design prepared by Owner's radiation health physicist. This design is available to Contractor on request.

B. Lead-Lined Assemblies: Unless otherwise indicated, provide lead thickness in doors, door frames, window frames, penetration shielding, joint strips, film transfer cabinets, and other items located in lead-lined assemblies not less than that indicated for assemblies in which they are installed.

C. Lead Glazing: Unless otherwise indicated, provide lead equivalence not less than that indicated for assembly in which glazing is installed.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show layout of radiation-protected areas. Indicate lead thickness or lead equivalence of components. Show components and installation conditions not fully dimensioned or detailed in product data.

1. Show ducts, pipes, conduit, and other objects that penetrate radiation protection; include details of penetrations.

1.5 QUALITY ASSURANCE

A. Fire-Rated and Smoke-Control Door and Frame Assemblies: Comply with Division 08 Section "Hollow Metal Doors and Frames" and Division 08 Section "Flush Wood Doors".

B. Glazing: Comply with requirements in Division 08 Section "Glazing."

C. Preinstallation Conference: Conduct conference at Project site.

PART 2 PRODUCTS

2.1 MATERIALS

A. Lead Sheet, Strip, and Plate: ASTM B 749, alloy UNS No. L51121 (chemical-copper lead).

B. Lead Glass: Lead-barium, polished float glass containing not less than 60 percent heavy metal oxides, including not less than 48 percent lead oxide by weight.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Amerope Enterprises, Inc.

b. McGrory Glass, Inc.

c. Schott North America, Inc.

C. Grout: ASTM C 476, with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

D. Lead-Lined Gypsum Board: 5/8-inch- thick gypsum board complying with Division 9 Section "Gypsum Board," of width and length required for support spacing and to prevent cracking during handling, and with a single sheet of lead laminated to the back of the board.

1. Provide lead sheet lining the full width of board and length necessary to extend from floor to 84 inches above floor.

2. Provide 2-inch- wide lead strips for backing joints.

3. Provide 5/16-inch lead disks for covering screw heads.

E. Accessories and Fasteners: Provide manufacturer's standard fasteners and accessories as required for installation, maintaining same lead equivalence as rest of system.

F. Asphalt Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

G. Asphalt Felt: ASTM D 226.

2.2 LEAD-LINED STEEL HOLLOW-METAL DOOR FRAMES

A. General: Steel door frames complying with ANSI/NAAMM-HMMA 861, except 0.0667 inch thick, and lined with lead sheet of thickness not less than that required for doors and walls where frames are used.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. NELCO, Inc.

b. Radiation Protection Products, Inc.

2. Provide additional reinforcements and internal supports to adequately carry the weight of lead-lined doors. Install reinforcements and supports before installing lead lining.

3. Form lead sheet to match frame contour, continuous in each jamb and across the head, lapping the stops. Form lead shields around areas prepared to receive hardware.

Fabricate lead lining wide enough to maintain an effective lap with lead of adjacent shielding.

4. Hardware Preparation: Factory prepare doors and frames to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."

2.3 LEAD-LINED WOOD DOORS

A. General: Flush solid-core wood doors with lead lining, thickness not less than that required for partition in which door is installed.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. V-T Industries Inc.

2. Door Construction: Plastic-laminate face, three ply, bonded particleboard core.

3. Lead Lining: One or more continuous sheets of lead extending from top to bottom and edge to edge, constructed either in the core or between the core and faces, at manufacturer's option.

4. Comply with Division 8 Section "Flush Wood Doors" for grade, faces, veneer matching, fabrication, finishing, and other requirements unless otherwise indicated.

5. Faces: Plastic laminate complying with NEMA LD 3, Grade HGS.

a. Color, Patterns, and Finishes: As selected by Architect from manufacturer's full range.

6. Shield cutouts for locksets with lead sheet of same thickness used in door. Lap lining of cutouts with door lining.

7. Prepare doors to receive observation windows; cut and trim openings through doors in factory. Provide removable wood stops for glazed openings.

8. Provide lead-lined astragals for pairs of doors.

9. Factory fit doors to suit frame openings indicated with 1/16-inch clearance at heads and jambs and minimum clearance at bottom. Factory machine doors for hardware not surface applied.

2.4 LEAD-LINED OBSERVATION-WINDOW FRAMES

A. General: Fabricate from 0.043-inch- thick, formed-steel sheet or 0.064-inch-thick aluminum extrusions with mitered corners, welded or bolted with concealed fasteners.

1. Line with lead sheet formed to match frame contour, continuous in each jamb and across head and sill, lapping the stops, and fabricated wide enough to maintain an effective lap with lead of adjoining assemblies.

2. Construct so lead lining overlaps glazing material perimeter by at least 3/8 inch and provide removable stops.

3. Form sill with an opening for sound transmission. Offset sound passage to make opening lightproof and to maintain required lead equivalence at all points and in all directions.

PART 3 EXECUTION

3.1 INSTALLATION OF LEAD-LINED GYPSUM BOARD

A. Install with long edge parallel to supports and lead lining facing supports. Provide blocking at end joints.

B. Fastening to Metal Supports: Use steel drill screws spaced as recommended in writing by gypsum board manufacturer. Apply lead disks over screw heads and recess flush with surface of board.

1. Install lead strips, 1-1/2 inches wide minimum and same thickness as lead lining, to face of supports and blocking where joints occur. Secure lead strips with construction adhesive. Provide shims at intermediate supports.

2. Apply lead disks recessed flush with surface of board over heads of screws securing trim.

C. Openings: Extend lead-lined gypsum board into frames of openings, lapping lead lining with lead frames or frame linings at least 1 inch. Arrange board around openings so neither horizontal nor vertical joints occur at corners of openings.

D. Install control and expansion joints where indicated, with appropriate trim accessories. Install lead strip on face of framing, extending across joint, and lap with lead lining of gypsum board.

3.2 INSTALLATION OF LEAD-LINED DOORS AND DOOR FRAMES

A. Install lead-lined steel door frames according to Division 08 Section "Hollow Metal Doors and Frames."

1. Apply a coat of asphalt mastic or paint to lead lining in door frames where lead will come in contact with masonry or grout.

B. Install lead-lined wood doors according to Division 8 Section "Flush Wood Doors."

C. Glazing: Comply with installation requirements in Division 8 Section "Glazing" and with door manufacturer's written instructions.

D. Lap lead lining of frames over lining in walls at least 1 inch.

E. Line astragals with lead sheet.

F. Hardware: Line covers, escutcheons, and plates to provide effective shielding at cutouts and penetrations of frames and doors. See Division 08 Section "Door Hardware" for other installation requirements.

3.3 INSTALLATION OF LEAD-LINED OBSERVATION WINDOWS

A. Install observation windows according to manufacturer's written installation instructions.

1. Apply a coat of asphalt mastic or paint to lead lining in frames where lead will come in contact with masonry or grout.

B. Install windows level, plumb, square, true to line, and anchored securely in place to structural support.

C. Install leaded side of frame on radiation side of wall. Lap lead lining of frames over lining in walls at least 1 inch.

D. Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with manufacturer's written instructions.

3.4 INSTALLATION OF PENETRATING ITEMS

A. At penetrations of lead linings, provide lead shields to maintain continuity of protection.

B. Provide lead linings, sleeves, shields, and other protection in thickness not less than that required in assembly being penetrated.

C. Secure shields at penetrations using adhesive or wire ties but not penetrating fasteners unless indicated on Drawings.

D. Outlet Boxes and Conduit: Cover or line with lead sheet lapped over adjacent lead lining at least 1 inch. Wrap conduit with lead sheet for a distance of not less than 10 inches from box.

END OF SECTION

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SECTION 27 00 00 – COMMUNICATIONS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Section includes horizontal network data cabling to be provided by the Contractor, field coordinated with the Owner.
2. Unless noted otherwise, assume two (2) cable drops at each location on the plans.

1.2 QUALITY ASSURANCE

A. Contractor Qualifications: The successful contractor must be a current authorized partner in Tyco Electronics NETCONNECT Design and Installation (ND&I) program, and is required to be a member of the ND&I program prior to submitting the bid.

B. The contractor shall have a BICSI Registered Communications Distribution Designer (RCDD) on their full-time staff who will be responsible for the general oversight of all work related to the project's cabling infrastructure system throughout the duration of the project.

C. Project Management: Maintain the same person in charge of work throughout installation.

D. Standards: the following standards are reference in this Division and all relative work shall be completed within their requirements. In the event of a conflict between standards, the more stringent requirement shall govern. Always defer to local codes and regulations where applicable.

1. TIA-568-C.1 Commercial Building Telecommunication Cabling Standards
2. TIA-568-C.2 Balanced Twisted Pair Telecommunications Cabling and Components Standard
3. TIA-568-C.3 Optical Fiber Cabling Components Standard
4. TIA-607 Commercial Building Grounding and Bonding Requirements for Telecommunications
5. TIA-606 Administration Standards for the Telecommunications Infrastructure
6. ANSI FDDI Standard Fiber Distribution Data Interface

1.3 SUBMITTALS

A. A copy of the contractor's Tyco Electronics ND&I certification shall be included with the Bid.

B. A copy of the contractor's RCDD certifications shall be included with the Bid.

C. Product Submittals: Submittal shall be inclusive of all products needed to complete the required work within the structured cabling system on this project.

D. Closeout Submittals.

1. Test and Evaluation Results: documents shall include all applicable copper certification channel test results and fiber OTDR trace results fo all work completed on the cabling infrastructure system. Test results shall show a satisfactory (passing) result in compliance with the TIA-568-C.2 (Category 6 / 6A) and TIA-568-C.3 (optical fiber) standards. All category 6 or better test results must be submitted through the use of a Fluke DTX-1800 Cable Analyzer.
2. As-Built Drawings: the contractor shall provide a set of as-built drawings at the completion of the project. As-built drawings shall provide final documentation of any alterations made to the cabling infrastructure, including in the equipment rooms, data racks, cable pathways, workstation outlets, etc.

1.4 WARRANTY

A. The Structured Cabling Infrastructure contractor shall provide a manufacturer's 25-year NetConnect warranty by Tyco Electronics. The warranty will be a 25-year assurance of the performance standards, and will cover the cost of all components and labor in the event that the system should fail at the fault of the contractor's installation or as a result of a defective manufacturer's component.

B. Warrant all equipment from damage due to contamination by construction dust and debris for a minimum period of five years from date of final acceptance.

C. The minimum warranty provisions specified above shall not diminish the terms of individual equipment manufacturer's warranties.

PART 2 PRODUCTS

2.1 The contractor shall be responsible for providing all material in Division 27, including horizontal station cable, optical fiber cable, termination hardware (outlets, faceplates, wiring blocks, frames, etc.), all fiber termination hardware, supporting devices, and other items not identified here but generally required for a typical structured cabling installation.

2.2 Actual components and functions shall be as specified or approved by the Owner, in compliance with applicable codes and standards.

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 27 10 10 – COMMUNICATIONS INFRASTRUCTURE CABLING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. The Communications Infrastructure Cabling System shall include the installation of all 4-pair telecommunications cabling and/or fiber optic cabling located within the equipment rooms, cable pathways and work areas.
2. Includes peripheral racking, cable management, pathways, termination hardware and all associated commonly used items that are typical in a cabling infrastructure installation similar to this install.
3. A complete system must include satisfactory test documentation.

1.2 QUALITY ASSURANCE

A. The contractor shall have a BICSI Registered Communications Distribution Designer (RCDD) on their full-time staff who will be responsible for the general oversight of all work related to the project's cabling infrastructure system throughout the duration of the project.

B. Structured Copper Cabling:

1. The horizontal copper cabling system, including all materials and components, shall comply with the performance requirements of the Category 6 standard as defined in TIA-568-C.2.
2. 25-Year warranty must be written by the Manufacturer and provided by the Contractor to the Owner at the completion of the Project.

PART 2 PRODUCTS

2.1 Copper Cabling Infrastructure Systems:

A. Approved Manufacturers:

1. Amp NetConnect – Cat 6 Solution. Certified with a 25-year warranty.

B. Copper 4-Pair UTP Cabling

1. Category 6 – Horizontal UTP 4-pair cable
2. Approved Part Number: 219567-x (Blue for Data connections; Yellow for Voice)

C. Information Outlets

1. Category 6 Jacks shall be used.
2. Approved Part Number: 1375055-x (White for Data connections; Yellow for Voice)

D. Wall Plates

1. Wall plates installed in work areas spaces shall be a 4-port faceplate and shall have integrated labeling windows. Any unused posts require a dust cover (matching color to wall plate). Wall plates shall be Office White in color.
2. Approved Part Number: 2111011-x

E. Patch Panels

1. Category 6 patch panels shall be 19" rack-mountable in either 24 or 48 port configurations. Patch panels shall be modular and will accept the approved Amp NetConnect Information Outlets. Patch panels shall be fully populated and have zero non-terminated ports. The number of patch panel ports shall include all required ports to fulfill the project requirements, plus an additional 15% to allow for growth. Patch panels must allow for cable management as needed to assure a neat and orderly installation of incoming and outgoing horizontal cabling.

2. Approved Part Number: 1375014-1, 1375015-1

F. Copper Patch Cables
   1. Contractor will provide the appropriate number of patch cables required to complete all installed data channels. Provide 50% 3' lengths and 50% 5' lengths in the equipment room, and the comparable number in 7' length for the work area outlets. Each terminated port in the data room and in the workstation areas must be accompanied by a patch cable.
   2. Approved Part Number: x-219891-x (Blue for Data connections; Yellow for Voice).

PART 3 EXECUTION – NOT USED

3.1 All equipment and components shall be installed in accordance with manufacturer's guidelines.

3.2 Patch panels shall be installed in a Chatsworth #55053-703 rack (supplied by Contractor)

3.3 Communications outlets shall be terminated at the work area and at the patch panel in accordance with BICSI guidelines.

3.4 Horizontal distribution cable shall be installed in a continuous pathway from the equipment room to the work area.

A. Cable shall be supported by the use of J-Hooks with retaining clips, appropriately sized per the manufacturer recommendations and shall be supported at increments no greater than 48" apart. At no time will horizontal cabling be allowed to rest on top of ceiling tiles, gridwork, ductwork, etc. do not run telecom cable parallel to high-voltage cable and power conductors.

B. All locations shall be labeled on the wall plate and the patch panel in accordance to the requirements defined by the Owner. All labels to be machine printed; handwritten labels are not permitted.

END OF SECTION

SECTION 27 51 19 – SOUND MASKING SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Speech Privacy System furnished and installed by the Contractor.
2. The Work of this Section consists of the provision of all materials, labor and equipment, and the like necessary and/or required, for the complete execution of all Speech Privacy System equipment and relate work for a fully functioning system; including, but not limited to, the following:
   a. Supply only new equipment, parts and material, and protect all equipment from construction dust and debris until final acceptance. Operate only as required for testing as part of installation procedure. Provision of all manufactured components, installation, wiring and testing is the responsibility of a single contractor.
   b. Layout of equipment, accessories and conduit systems shall be determined by the installing contractor and indicate every item required for a complete installation. Provide any incidental equipment needed in order to result in a complete and operable system even if not specified or shown on drawings, without claim to additional payment.
   c. Verify correctness of parts lists and equipment model numbers and conformance of each component with manufacturer's specifications.
   d. Obtain all permits necessary for the execution of the work. Comply with all applicable local codes and regulations.

B. Functional Requirements of Systems:

1. The Speech Privacy System shall distribute unobtrusive background sound throughout the areas of coverage.
2. The sound shall have the character of a pleasant diffuse sound similar to that from a well designed heating and ventilation system.

C. Related Work Specified Elsewhere: Electrical Work including all power and grounding systems.

1.2 QUALITY ASSURANCE

A. Project Management: Maintain the same person in charge of work throughout installation.

B. Contract Documents: Maintain a complete set of system drawings and specifications at the site at all times during installation.

C. Fabrication and Installation: Continuously supervise the installation and connections of cable, emitters 9loudspeakers) and generation and control equipment.

D. Contractor Qualifications: To be considered qualified for this work, the contracting firm must be experienced in the provision of electronic sound systems similar in complexity to those required for this project, and meet the following requirements:

1. The Contractor is regularly engaged in the business of installing speech privacy, paging, or other low voltage electronic systems.
2. The Contractor has been regularly engaged in the installation and service of such systems for a period of at least three years.
3. The Contractor is an authorized dealer for the major products furnished.
4. At the request of the Architect, demonstrate the following capabilities:
   a. Adequate plant and equipment to complete the Work.
   b. Sufficient staff with appropriate technical experience to oversee and execute the Work.

1.3 SUBMITTALS

A. Product Data: For each type of product or equipment used in the Speech Privacy System.

B. Reports: Upon completion of ***System Performance Tests and Adjustments*** specified in **PART 3 – EXECUTION**, submit written certification that the installation conforms to specifications, is complete and operable, and is ready for ***Final Adjustments and Acceptance*** *Tests* specified in **PART 3 – EXECUTION**. Provide three (3) copies.

C. Operation and Maintenance Data

1. As-Built Diagrams: The intent of the diagrams is to provide sufficiently clear and complete information that a technician of average skill may efficiently troubleshoot and service the system, even if unfamiliar with the installation.
   a. Provide drawings showing all terminal blocks, connectors, relays, switches, transformers, attenuators, equipment components and wires. Label all devices with manufacturer, model number, and reference number (e.g. "SW 15", "TB 6"); reference numbers shall be consistent across all drawings with no repetitions. Proved layout drawings of panels and other custom assemblies containing switches, relays, terminal blocks, receptacles, etc.
   b. Building Plan: Reflected Ceiling Plan drawing of the building indicating the areas covered by the various zones of coverage.
2. Control Setting Schedule: Fully document the settings of all adjustable controls. This includes all equalizer settings, level controls, etc.
3. Complete Instruction and Maintenance Manual: Prepare in the form of an instructional manual for use by Owner's personnel.

1.4 WARRANTY

A. Warrant all equipment to be free of faulty workmanship and defects; and from damage due to contamination by construction dust and debris for a minimum period of five years from date of final acceptance.

B. The minimum warranty provisions specified above shall not diminish the terms of individual equipment manufacturer's warranties.

1.5 TRAINING

A. The Owner may assign personnel to participate with the contractor during installation. Without delaying the work, familiarize the Owner's personnel with the installation, equipment and maintenance.

B. During tests and adjustments, permit the Owner's personnel to observe.

C. Provide sufficient training to personnel selected by the Owner on operation and basic maintenance of all systems and equipment. Explain operation of control systems, set-up and operation of individual pieces of equipment and functions of overall systems.

PART 2 PRODUCTS

2.1 Random NOISE GENERATOR AND CONTROLLER: 4 Channel Generator / Controller with Remote Control.

A. Wall mountable Random Noise Generator with 4 uncorrelated outputs.

B. Built-in infrared receiver for controlling output level. Output level adjustable in 3Db steps over a minimum range of 9 decibels and off. All outputs controlled simultaneously with provided remote control.

C. Two available fixed output spectra specifically matched to provided loudspeakers for distributing acoustical background sound spectrum appropriate for spaces with or without partial height partitions. Spectrum selection not accessible to user control.

D. Minimum Performance Requirements:
   1. Supply Voltage: 110 VAC using provided UL listed 12 volt modular power supply.
   2. Maximum Power Consumption: 6 Watts.
   3. Output Voltage: 10 volts RMS, each channel.
   4. (Optional) Paging Input: 600 ohm line bridging, differential.
   5. Minimum Output Power: Sufficient to drive the emitters (loudspeakers) to specified background sound pressure level.
   6. Maximum Dimensions: 8"x8"x1.5"
   7. Acceptable Product: VoiceArrest Model VA-30 (max. 30 emitters)

2.2 DISTRIBUTED EMITTERS
   A. Miniature self-contained ceiling mounted loudspeaker/enclosure/baffle system. Designed specifically for distributing sound in background sound systems and combined background sound/paging systems. Wide dispersion to maximize spatial uniformity of sound in the coverage area.
   B. Convenient twist and lock retaining ring construction to minimize installation time and provide a secure attachment to ceiling tiles or other mounting surface.
   C. Built in signal logic to automatically select correct channel of distribution.
   D. All connections via RJ45 data-style connectors for quick installation.
   E. Eye loop for securing unit with safety wire.
   F. Dimensions: 3 5/16" baffle diameter, 2 ½" height.
   G. Weight: 5.6 oz. maximum.
   H. Acceptable Product: VoiceArrest Model VA-SE Emitter.

2.3 LOUDSPEAKER CABLING
   A. CAT6 patch cables terminated with RJ45 data-style connector at each end.
   B. Minimum Performance Requirements:
      1. Unshielded stranded twisted pair construction.
      2. Meet EIA/TIA Standard 568B
      3. AWG #24 stranded conductors with overall plenum-rated jacket.
   C. Acceptable Product: VoiceArrest Model VA-Cxxx (xxx=length) Plenum-Rated Emitter Cable Assembly or equivalent.
   D. Long runs may require field fabricated cable assembly.

PART 3 EXECUTION

3.1 SYSTEM PERFORMANCE TESTS AND ADJUSTMENTS
   A. Test and adjust the system while personnel are not present and before initial occupancy. Thereafter, leave system off until completion of final adjustments and acceptance tests.
   B. Perform the following Initial Tests and Adjustments:
      1. Loudspeaker Operation: Listen directly below each installed emitter to confirm it is operating.
      2. Buzzes, Rattles and Distortion: With system operating at maximum level, listen for any buzzes, rattles and objectionable distortion in all areas covered.
   C. Correct all causes of defects; replace any defective emitters or cabling; and retest system.
   D. Control Settings: Adjust all spectrum and level controls for normal operation. Using the remote control adjust average initial levels n open plan areas to approximately 45 dBA at normal occupant's locations and in closed offices or rooms to approximately 42 dBA.

E. Reports: Submit certification that the installation is complete and ready for checkout as specified under **SUBMITTALS** in **PART 1 – GENERAL.**

3.2 FINAL ADJUSTMENTS AND ACCEPTANCE TESTS

A. Demonstrate to the Architect and Owner that the system is fully operable and installed in compliance with the terms of the specifications in all contract documents.

3.3 NOISE GENERATOR AND CONTOLLER

A. Locate Generator/Controller as shown on drawings, in a location easily accessible and near an available 110VAC receptacle. Infrared receive port shall be in line of site to a convenient location for operation by remote control from floor level.
B. Mount Generator/Controller securely to wall or other vertical surface with screws or provided mounting brackets.
C. Attach line level cables, emitter (loudspeaker) cables and power cables connecting to controllers securely with strain-relief clamps and/or cable ties.
D. Identify all loudspeaker home run wires at the controller(s) connection points with cable markers. Label each cable with cable marker keyed to a wiring schedule indicating the corresponding area of building served. Designate whether area served is open plan or enclosed office/rooms.

3.4 EMITTERS (LOUDSPEAKERS)

A. Locate and cut hole in each ceiling tile according to specifications using hole saw provided or similar.
    1. Emitters (loudspeakers) to be centered in ceiling tiles.
    2. Adjust installation as needed to ensure trim is secured flush to ceiling tile with no gaps.
B. Attach line cables securely with strain-relief clamps and/or cable ties.

3.5 LOUDSPEAKER CABLING

A. Cabling route within plenum shall be plenum-rated.
B. Cabling shall not contact ceiling tiles or inhibit their removal for access to the plenum.
C. Connect no more than 62 emitters/home run.
D. Install no more than 1,000’ of cable between Generator/Controller unit and last emitter on each home run.

END OF SECTION