

Outline Specifications

for

Houston Methodist Hospital/ Texas A&M University HMH-WP6 ENMED Renovation

Informational Document
Not for Bidding or Construction

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TABLE OF CONTENTS

Section	Title	Date
00 00 01	Cover	06.07.18
00 00 02	Title Page	06.07.18
00 00 03	Table of Contents	06.07.18
00 00 07	Seal Page	06.07.18
00 72 00	General Conditions of the Contract for Construction	06.07.18

DIVISION 01 GENERAL REQUIREMENTS

01 10 00	Summary	06.07.18
01 21 00	Allowances	06.07.18
01 23 00	Alternates	06.07.18
01 25 00	Substitution Procedures	06.07.18
01 26 00	Contract Modification Procedures	06.07.18
01 29 00	Payment Procedures	06.07.18
01 31 00	Project Coordination	06.07.18
01 31 00	Project Management and Coordination	06.07.18
01 32 00	Construction Progress Documentation	06.07.18
01 32 33	Photographic Documentation	06.07.18
01 33 23	Submittal Procedures	06.07.18
01 35 16	Alteration Project Procedures	06.07.18
01 40 00	Quality Requirements	06.07.18
01 45 29	Testing and Inspection Services	06.07.18
01 50 00	Temporary Facilities and Construction	06.07.18
01 60 00	Product Requirements	06.07.18
01 71 23	Field Engineering	06.07.18
01 73 00	Execution	06.07.18
01 73 29	Cutting and Patching	06.07.18
01 77 00	Closeout Procedures	06.07.18
01 78 39	Project Record Documents	06.07.18

DIVISION 02 EXISTING CONDITIONS

02 41 19	Selective Demolition	06.07.18
----------	----------------------	----------

DIVISION 03 CONCRETE

03 39 00	Concrete Sealer	06.07.18
03 54 16	Hydraulic Cementitious Underlayment	06.07.18

DIVISION 05 METALS

05 40 00	Cold Formed Metal Framing	06.07.18
05 50 00	Miscellaneous Metal Fabrications	06.07.18

DIVISION 06 WOOD, PLASTICS, AND COMPOSITES

06 10 53	Miscellaneous Rough Carpentry	06.07.18
06 42 00	Architectural Woodworking	06.07.18
06 64 10	Glass Fiber Reinforced Panel (FRP)	06.07.18
06 64 20	Decorative Acrylic Sheet Panel	06.07.18

DIVISION 7 THERMAL AND MOISTURE CONTROL

07 81 00	Applied Fireproofing	06.07.18
07 84 13	Penetration Firestopping	06.07.18
07 84 46	Fire Resistive Joint Systems	06.07.18
07 92 00	Sealants	06.07.18

DIVISION 08 OPENINGS

08 11 13	Steel Doors and Frames	06.07.18
08 14 23	Flush Wood Doors	06.07.18
08 31 13	Access Doors	06.07.18
08 71 00	Door Hardware	06.07.18
08 80 00	Glazing	06.07.18

DIVISION 09 FINISHES

09 29 00	Gypsum Board Assemblies	06.07.18
09 30 00	Tile	06.07.18
09 51 13	Acoustical Panel Ceilings	06.07.18
09 61 05	Moisture Vapor Emission and Alkalinity Control	06.07.18
09 65 00	Resilient Flooring and Accessories	06.07.18
09 68 00	Carpet Tile	06.07.18
09 69 00	Low Profile Access Floor	06.07.18
09 72 00	Wall Covering	06.07.18
09 84 33	Sound Absorbing Wall Units	06.07.18
09 91 23	Field Paint and Coatings	06.07.18

DIVISION 09 FINISHES

10 14 00	Room Identification Signage	06.07.18
10 21 13	Toilet Partitions	06.07.18
10 22 26	Vertically Folding Partition	06.07.18
10 26 00	Wall Protection	06.07.18
10 28 10	Toilet Accessories	06.07.18
10 44 00	Fire Protection Specialties	06.07.18
10 50 00	Lockers	06.07.18

DIVISION 11 EQUIPMENT

11 31 00	Breakroom Appliances and Equipment	06.07.18
----------	------------------------------------	----------

DIVISION 12 FURNISHINGS

12 24 13	Roller Window Shades	06.06.17
----------	----------------------	----------

DIVISION 21 FIRE PROTECTION

21 05 00	Common Work results for Fire Suppression	06.06.17
21 10 00	Water Based Fire Suppression Systems	06.07.18

DIVISION 22 PLUMBING

22 05 00	Common Work Results for Plumbing	06.07.18
22 05 19	Meters and Gages for Plumbing Piping	06.07.18
22 05 23	General Duty Valves for Plumbing Piping - Lead Free	06.07.18
22 05 29	Hangers and Supports for Plumbing Piping and Equipment	06.07.18
22 05 53	Identification for Plumbing Piping and Equipment	06.07.18
22 07 00	Plumbing Insulation	06.07.18
22 11 16	Domestic Water Piping	06.07.18
22 11 19	Domestic Water Piping Specialties	06.07.18
22 11 23	Domestic Water Pumps	06.07.18
22 13 16	Sanitary Waste and Vent Piping	06.07.18
22 13 19	Sanitary Waste Piping Specialties	06.07.18
22 33 00	Electric Domestic Water Heaters	06.07.18
22 40 00	Plumbing Fixtures	06.07.18
22 45 00	Emergency Plumbing Fixtures	06.07.18

DIVISION 23 HEATING, VENTILATING, AND AIR CONDITIONING

23 05 00	Common Work Results For Hvac	06.07.18
23 05 13	Common Motor Requirements For Hvac Equipment	06.07.18
23 05 19	Meters And Gages For Hvac Piping	06.07.18
23 05 23	General-Duty Valves For Hvac Piping	06.07.18
23 05 29	Hangers And Supports For Hvac Piping And Equipment	06.07.18
23 05 48	Vibration Control For Hvac Piping And Equipment	06.07.18
23 05 53	Identification For Hvac Piping And Equipment	06.07.18
23 05 93	Testing, Adjusting, And Balancing For Hvac	06.07.18
23 07 00	Hvac Insulation	06.07.18
23 09 00	Instrumentation And Control For Hvac	06.07.18
23 21 13	Hydronic Piping	06.07.18
23 21 16	Hydronic Piping Specialties	06.07.18
23 31 13	Metal Ducts	06.07.18
23 33 00	Air Duct Accessories	06.07.18
23 34 00	Hvac Fans	06.07.18
23 36 00	Air Terminal Units	06.07.18
23 37 13	Diffusers, Registers, And Grilles	06.07.18

DIVISION 26 ELECTRICAL

26 05 00	Common Work Results for Electrical	06.07.18
26 05 19	Low-Voltage Electrical Power Conductors and Cables	06.07.18
26 05 26	Grounding and Bonding for Electrical Systems	06.07.18
26 05 29	Hangers and Supports for Electrical Systems	06.07.18
26 05 33	Raceways and Boxes for Electrical Systems	06.07.18
26 05 48	Vibration Controls for Electrical Systems	06.07.18
26 05 53	Identification for Electrical Systems	06.07.18
26 05 73	Overcurrent Protective Device Coordination Study	06.07.18
26 09 23	Lighting Control Devices	06.07.18
26 24 16	Panelboards	06.07.18
26 27 16	Electrical Cabinets and Enclosures	06.07.18
26 27 26	Wiring Devices	06.07.18
26 28 13	Fuses	06.07.18
26 28 16	Enclosed Switches and Circuit Breakers	06.07.18
26 29 13	Enclosed Controllers	06.07.18
26 29 23	Variable Frequency Motor Controllers	06.07.18
26 43 13	Surge Protective Devices	06.07.18
26 51 00	Interior Lighting	06.07.18

DIVISION 28 SECURITY AND SURVEILLANCE

28 05 00	Common Work Results for Electronic Safety and Security	06.07.18
28 31 00	Fire Detection and Alarm	06.07.18

END OF DOCUMENT

CONDITIONS OF THE CONTRACT

DOCUMENT 00 70 00 CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

- I. General Conditions of the Contract for Construction: Texas A&M University.

- II. Supplementary Conditions:
 - A. Insurance Requirements: TBD; Builder's risk, property, general and contractual liability, and other insurance required by Owner for the work.
 - B. Worker's Compensation, Occupational Disease and Employer's Liability Insurance:
 1. State: Statutory limits.
 2. Applicable Federal: Statutory limits.

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 10 00 SUMMARY

- A. Project Description:
1. Project Name and Location: Houston Methodist Hospital/Texas A&M University, WP6 ENMED Renovation.
 2. Project Summary: Selective demolition and renovation of an existing student commons and classroom area.
 3. Building Code: Building codes and amendments adopted by the City of Houston, Texas, Building Codes; 2012 International Building Code.
- B. Work under Other Contracts:
1. Owner reserves the right to award separate contracts for work at site.
- C. Contractor Responsibilities: In accordance with the General Conditions of the Contract, provide:
1. Required skilled labor.
 2. Tools, construction equipment, and machinery.
 3. Temporary utilities and facilities.
 4. Payment of required sales taxes and permits.
 5. Required notifications.
 6. Compliance with codes, standards, regulations, and ordinances of authorities having jurisdiction.
- D. Contractor Use of Site: Limit use of site to extent required to perform work and to limits indicated on drawings.
1. Keep entrances clear and available to Owner.
 2. Do not block drives and entrances, emergency routes and fire lanes, or Service entrances.
 4. Deliveries: Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site in compliance with building management construction regulations.
 5. Access to Work: Arrange through Building Management.
 6. Do not use Owner's facilities without written permission.
 7. Coordinate use of freight elevator and loading dock facilities with Building Management. Waiting time for elevator is included in base bid.
 8. Comply with Owner's and Building Managements requirements for protection of plant, materials, equipment, and noise levels.
- E. Contractor Requirements:
1. Confine operations at site to those permitted by the Contract Documents.
 2. Assume responsibility for protection and maintenance of equipment and materials at site.
 3. Do not encumber site with materials and equipment no longer required.
 4. Do not endanger or overload structure.
 5. Noise Control: Minimize objectionable noise levels and arrange with Building Management in advance of noisy operations. Do not operate gasoline and diesel engine driven tools and pump equipment on project without specific prior written approval from Consultant and Owner.

- F. Building Occupancy: Adjacent retail storefronts and the concourse will be continually occupied.
- G. Coordination:
 - 1. Work: Examine Structural, Architectural, Mechanical, Plumbing, Electrical, and Fire Protection drawings and specifications. Coordinate interfering work.
 - 2. Materials: Coordinate delivery with construction progress to avoid delaying the work.
- H. Start Up and Adjusting of Equipment: Prepare equipment for start up operations.
 - 1. Demonstrate start up, operation, control, adjustment, trouble shooting, servicing, maintenance, and shutdown of each item of equipment.
 - 2. Testing, Adjusting, and Balancing: Appoint, employ, and pay for services of independent firm to perform testing, adjusting, and balancing.
 - a. Reports will be submitted by independent firm indicating observations and results of tests and indicating compliance with specified requirements and with requirements of Contract Documents.
- I. Miscellaneous Provisions:
 - 1. Service Connections: Refer to mechanical and electrical drawings and specifications for connections required. Provide accessory items necessary for a functional connection complying with applicable codes.
- J. Occupancy: Owner reserves the right to occupy and to place and install equipment in completed areas of the site, before Substantial Completion, provided occupancy does not interfere with completion of the work.

SECTION 01 23 00 ALTERNATES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Execute accepted alternates under the same conditions as other work of the Contract.
- C. Schedule of Alternates: To be determined.

SECTION 01 25 00 SUBSTITUTIONS

- A Product Substitutions: Requests for substitution will be considered within 5 days after commencement of work.
 - 1. Conditions: The requested substitution:
 - a. Offer Owner an advantage in cost, time, or other consideration, after deducting costs including for design services and additional time.
 - b. Does not require revisions to Contract Documents.
 - c. Is consistent with intent of Contract Documents and offers the same or improved results including but not limited to warranty, maintenance, and durability.
 - d. Is fully documented and properly submitted.
 - e. Will not adversely affect Contractor's Construction Schedule.

- f. Has received necessary approvals of authorities having jurisdiction.
 - g. Is compatible with the work and does not require redesign of the work.
 - h. Is coordinated with the work.
 - i. Provides specified or better warranty.
 - j. If more than one trade is affected, the substitution is coordinated with the work, is uniform and consistent, is compatible with other products, and is acceptable to each trade.
- B. Substitution Requests: Identify product or fabrication or installation method replaced including Specification Section number and title and Drawings.
- 1. Documentation: Show compliance with requirements for material, product, or equipment. Submit statement indicating reason that specified material or product cannot be provided.
 - a. Cost information, including a proposal of change, if any, in the Contract Sum.
 - b. Contractor's certification that proposed substitution complies with requirements in Contract Documents and is appropriate for applications indicated.
 - c. Contractor's waiver of rights for additional payment or time that may subsequently become necessary due to failure of proposed substitution to produce indicated results.
 - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week 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 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Acceptance: Change Order.
 - b. Use product specified if no decision is made within time allocated.
 - c. Architect's decision is final.

SECTION 01 26 00 CONTRACT MODIFICATION PROCEDURES

- A. Procedures for change orders, field orders, supplemental instructions, directives, and bulletins.
- 1. Owner Initiated Proposal Requests: Issued by Consultant with detailed description for information only.
 - a. Submit cost estimate, include list of quantities of products to be purchased and unit costs, along with total amount of purchases to be made; applicable taxes, delivery charges, equipment rental, and amounts of trade discounts; and proposed time change.
 - 2. Contractor Initiated Change Order Proposal Requests:
 - a. Submit statement outlining reasons for change and effect on work. Provide complete description and indicate effect on Contract Sum and Contract Time.
 - b. Include list of quantities of products and unit costs with total amount of purchases. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

SECTION 01 29 00 PAYMENT PROCEDURES

- A. Procedures and submittals required for payment application.
 - 1. Coordinate preparation of Schedule of Values with preparation of Contractor's Construction Schedule.
 - 2. Format and Content: Use specification sections to establish Schedule of Values format.
 - a. Breakdown of Contract Sum in detail.
 - b. Unit cost allowance.
 - c. Margins of cost.
 - d. Indirect costs.
 - 3. Schedule Updating: Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Sum.

- B. Final Payment Submittals:
 - 1. Completion of Project closeout requirements.
 - 2. Completion of items specified for completion after Substantial Completion.
 - 3. Assurance that unsettled claims will be settled.
 - 4. Assurance that uncompleted will be completed without undue delay.
 - 5. Transmittal of required construction records to Owner.
 - 6. Proof that taxes, fees, and similar obligations have been paid.
 - 7. Removal of temporary facilities and services.
 - 8. Removal of surplus materials, rubbish, debris, and similar elements.
 - 9. Change of door locks to Owner's access.

SECTION 01 31 00 PROJECT MEETINGS AND COORDINATION

- A. Conferences and Meetings: Preside at meetings, record minutes, and distribute typed copies within 2 days following each meeting.
 - 1. Schedule preconstruction conference after Notice of Award.
 - 2. Progress Meetings: Schedule and administer meeting at site throughout progress of work.

- B. Project Coordination:
 - 1. Coordinate scheduling, submittals, and work of various specification section to assure efficient and orderly sequence of installation of interdependence.
 - 2. Verify utility requirements characteristics of operating equipment are compatible with building utilities.
 - 3. Coordinate space requirements and installation of mechanical and electrical work indicated on drawings.
 - 4. Conceal pipes, ducts, and wiring within construction in finished areas.

SECTION 01 33 00 SUBMITTAL PROCEDURES

- A. Project Submittals:
 - 1. Electronic Submittals: Except for samples, submit submittals in electronic PDF format. Submit CAD files in or converted to Revit format. Submit physical samples.
- B. Submittal Procedures:
 - 1. Form: Identify project, Contractor, subcontractor or supplier, specification section, and pertinent references and data.
 - 2. Apply Contractor's stamp, sign, and certify review and verification of materials required, field dimensions, adjacent construction work, and coordination of information in accordance with requirements.
 - 3. Identify variations from Contract Documents and material or system limitation affecting performance of the completed work.
- C. Product Data: Printed information, installation instructions, catalog cuts, standard color charts, roughing in diagrams and templates, standard wiring diagrams and performance curves.
- D. Shop Drawings:
 - 1. Mechanical and Electrical Equipment: Submit complete lists, including technical data, descriptions, catalog cuts, and dimensioned shop drawings of equipment.
- E. Samples: Submit full size, fully fabricated samples cured and finished as specified and physically identical with material or product proposed, including partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
- F. Architect Reviews: Architect will review submittals twice. The cost to the Contractor for additional reviews is based on time, and includes overhead, and profit determined by Architect for additional services to the Owner.

SECTION 01 40 00 QUALITY REQUIREMENTS

- A. Control of Installation: Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of specified quality.
 - 1. Comply with manufacturer's instructions.
 - 2. Comply with specified standards for quality for work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

SECTION 01 50 00 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

- A. Regulatory Requirements:
 - 1. Building Code, including local requirements for permits, testing and inspection.
 - 2. Health and safety regulations.
 - 3. Utility company regulations and recommendations governing temporary utility services.
 - 4. Police, Fire Department, and Emergency or Rescue Squad rules and recommendations.

- B. Conditions of Use: Keep clean and neat; operate in safe and efficient manner. Do not overload facilities or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions or public nuisances to develop.
 - 1. Temporary Construction and Support Facilities: Take necessary fire prevention measures. Maintain facilities in sanitary condition.
 - 2. Security and Protection: Maintain site security and protect facilities in a safe, lawful, and publicly acceptable manner.
 - 3. Temporary Use of Permanent Facilities: Installer of each permanent utility is responsible for its operation, maintenance, and protection if used for construction services during the construction period.
 - 4. Do not overload temporary services or facilities.
 - a. Do not permit temporary services to interfere with progress of work.
 - b. Do not allow unsanitary conditions, public nuisances, or hazardous conditions to develop or persist on the site.
 - 5. Powder Actuated Tools: The use of powder actuated tools is prohibited except by written approval of the Owner.
- C. Construction Office: Provide temporary construction office located on within construction area. Restore area to finish conditions upon completion of work.
- D. Continuation of Services: Adjacent business will be in continuous operation during the work. Interruptions to services to other portion of the building is not permitted. Notify Owner in writing minimum 72 hours in advance if an outage can not be avoided and schedule outage to accommodate Building Management, Owner and adjacent occupants. Outages must be of limited duration, scheduled, and with written approval obtained from Owner and Building Management.
 - 1. Limit duration of shutdowns and schedule to accommodate Building Management. The shutdown must yield to Building Management's needs and is not justification for additional compensation.
- E. Elevators: Coordinate use of freight and service elevators with Building Management. Waiting time for elevator is included in base bid and is not considered cause for additional expense.
- F. Temporary Utilities: Tying into existing utilities and services is permitted to the extent permitted by Building Management. Assume full responsibility for systems including cleaning and restoration and practice energy conservation. Provide hook ups and extensions required. Provide accessories and related materials for each utility. If Building Management does not permit tying into existing services, provide temporary services.
 - 1. Temporary Ventilation: Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust of fumes, vapors, and gases.
 - 2. Telephone Service: Provide, maintain, and pay for telephone and facsimile machine service to field office. Cellular phones are permissible.
- G. Scaffolding, Hoists, Stays, Ladders: Comply with NFPA 241.
 - 1. Construct and maintain scaffolds, hoists, stays, ladders, supports, or other mechanical contrivances erected or constructed for the work and temporary coverings, shoring, forming, bracing and similar items in accordance with governing laws and regulations. The design, safety, and legal compliance is the sole responsibility of the Contractor.
 - 2. Construct from noncombustible materials. Use flame retardant liner.

3. Provide appropriate warning signs and barriers around scaffolding, hoists, stays, ladders, and similar equipment.
- H. Barriers: Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage in compliance with governing authorities. Coordinate barrier and enclosures with Building Management. Construction barriers, paint, and provide locking.
- I. Temporary Enclosures, Partitions, and Protections: Provide fire retardant treated lumber.
 1. Dustproof Barriers: Provide dustproof partitions and barriers as required or as indicated to prevent spreading dust and fumes to occupied portions of the building.
 - a. Construct from minimum 100mm studs, 16 mm fire rated drywall with taped joints on occupied side, 13 mm fire retardant plywood on demolition or construction side, and fill partition cavity with sound deadening materials.
 2. Exterior Enclosures: Provide temporary insulated weather tight closures to exterior openings to permit acceptable conditions and protection of work.
 3. Interior Enclosures: Provide temporary partitions and ceilings to prevent damage to new materials and equipment. Use rated materials for fire and smoke rated partitions.
- J. Protection of Installed Work: Protect installed work. Remove protections after Final Acceptance.
- K. Security: Provide security and protect work and equipment from unauthorized entry, vandalism, or theft.
- L. Cleaning: Maintain areas free of waste materials, debris, and rubbish. Clean site daily and leave in orderly condition.
 1. Arrange for daily trash and debris removal. Do not use Owner's dumpsters unless permitted in writing by Owner.
 2. Do not allow flammable or hazardous materials or refuse to accumulate. Arrange for legal removal and disposal of flammable or hazardous materials.
- M. Removal of Utilities, Facilities, and Controls: Remove temporary utilities, equipment, facilities, and materials prior to Substantial Completion Application. Clean and repair damage caused by installation or use of temporary work.

SECTION 01 60 00 PRODUCTS REQUIREMENTS

- A. Description: Selection of products.
- B. Definitions:
 1. Products: Items purchased for incorporating into the work, whether purchased for work or taken from previously purchased stock. The term *product* includes the terms *material*, *equipment*, *system*, and terms of similar intent.
 - a. 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.
 - b. New Products: Items that have not previously been incorporated into another project or facility except that products consisting of recycled content materials are permitted. Products salvaged or recycled from other projects are not considered new products.

- c. **Comparable Product:** Product demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in service performance, physical properties, appearance, and other characteristics equivalent to or exceeding those of specified product.
 - 2. **Substitutions:** Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. **Warranty:** Preprinted written warranty published by individual manufacturer for particular product and specifically endorsed by manufacturer to Owner.
- D. **Quality Assurance:**
 - 1. **Compatibility of Options:** Select product compatible with products previously selected.
 - 2. **Source Limitations:** To extent possible, provide products of same kind from single source.
- E. **Product Delivery, Storage, and Handling:** Deliver, store, and handle products using means and methods to prevent damage, deterioration, and loss, including theft. Comply with manufacturer written instructions.
- F. **Product Requirements:** Provide products undamaged and new at time of installation.
- G. **Product Selection Procedures:** Where specification name single product and manufacturer, provide the product named.
 - 1. **Manufacturer/Source:** Provide product by manufacturer or from source named that complies with requirements.
 - 2. **Product Options:** Where specification indicate size, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide either the specific product or system indicated or a comparable product or system by another manufacturer.
 - 3. **Visual Matching Specification:** Where specifications require matching an established sample, select product complying with requirements. Architect's decision is final.
 - 4. **Visual Selection Specification:** Where specifications state product is selected from manufacturer's colors, patterns, textures, select product complying with specified requirements.
 - a. **Full Range:** Where specifications require full range of colors, patterns, textures samples, Architect will select from manufacturer's product line.
- H. **Comparable Products:**
 - 1. **Proprietary (Closed) Specification Requirements:** Where only single product or manufacturer is named, provide product indicated. Substitutions are not permitted.
 - a. **Semiproprietary (Open) Specification Requirements:** Where two or more products or manufacturers are named, provide one of products indicated. No substitutions are permitted.
 - 1) Where products or manufacturers are specified by name, accompanied by term *or equal*, or *or similar approved*, comply with Section 01630 for substitution procedures to request approval for use of an unnamed product.
 - 2. **Descriptive Specification Requirements:** Where a product or assembly is described, listing exact characteristics required, with or without use of a brand or trade name,

- provide a product or assembly providing characteristics and complying with specified requirements.
3. Performance Specification Requirements: Where compliance with performance requirements are required, provide products complying with requirements and are recommended by manufacturer for application indicated. General overall performance of product is implied where product is specified for specific application.
 4. Referenced Standard Specification Requirements: Where compliance with code, standard, or regulation is required, select product complying with standards, codes, or regulations specified.

SECTION 01 73 00 EXECUTION REQUIREMENTS

- A. Existing Conditions: Verify location of mechanical and electrical systems, utility services, and connections, and construction affecting the work.
- B. Acceptance of Conditions: Examine substrates, areas, and conditions for compliance with requirements for installation tolerances and conditions affecting performance. Record observations.
- C. Field Measurements: Take field measurements necessary 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.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- E. Installation: Make vertical work plumb and make horizontal work level. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
 1. Products: Comply with manufacturer's written instructions and recommendations for installing products in applications indicated. Install products at time and under conditions to ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
 2. Anchors and Fasteners: Provide anchors and fasteners necessary to anchor each component securely in place, accurately located and aligned with other portions of the work. Allow for building movement, including thermal expansion and contraction.
 3. 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.
- F. Progress Cleaning: Clean work areas daily, including common areas. Dispose of materials lawfully.
- G. Starting and Adjusting: Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- H. Correction of Work: Repair or remove and replace defective construction. Restore damaged substrates and finishes. Repair includes replacing defective parts, refinishing

damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

1. Restore permanent facilities used during construction to their specified condition.
2. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
3. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
4. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

SECTION 01 73 20 CUTTING AND PATCHING

- A. Cutting and Patching: Perform cutting, patching, fitting, and excavation required. Provide shoring, bracing, and supports as required. Refinish continuous surfaces to the nearest intersection and entire surfaces of assemblies.
1. Requirements for Structural Work: Obtain written direction and approval prior to cutting structural members. Submit cutting and patching proposal. Cut and patch structural members and elements not to reduce load carrying capacity and load deflection ratio.
 2. Operational and Safety Limitations: Do not cut and patch operating elements and safety related components reducing capacity to perform, in increased maintenance, and in decreased operational life and safety.
 3. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces that reduces aesthetic qualities, or results in visual evidence of cutting and patching.
 4. Return construction to original fire rating or UL designation.

SECTION 01 77 00 CLOSEOUT PROCEDURES

- A. Closeout Procedures:
1. Contract Closeout Procedures: Submit written certification that Contract Documents have been reviewed, work inspected, and work completed in accordance with the Contract Documents, and ready for Consultants inspection.
 2. Submit final application for Payment identifying total adjusted Contract Sum, previous payments, and remaining amount due.
 3. Final Cleaning:
 - a. Clean interior and exterior surfaces exposed to view.
 - b. Clean debris from site, roofs, gutters, downspouts, and drainage systems.
 - c. Replace filters of operating equipment.
 - d. Legally remove and dispose waste and surplus materials, rubbish, and construction facilities from site. Whenever possible, recycle construction wastes and debris.
 4. Project Record Documents: Use as built drawing, shop drawings, and specifications to prepare record Document. Submit one hard copy set of Record Documents and an electronic copy using PDF format.
 - a. Record actual revisions to the work concurrent with construction progress.
 - b. Drawings and Specifications: Legibly mark and record at each section, a description of actual products installed.
 - c. Record Submittals (Shop Drawings, Product Data, and Samples): Legibly mark each item to actual construction.
 - d. Submit documents to Consultant with claim for final Application for Payment.

- e. Record Documents include but are not limited to drawings, specifications, change orders, supplemental instructions, RFIs, construction photographs, maintenance manuals.
5. Operation and Maintenance Data: Submit 2 sets prior to final inspection, bound in 8-1/2" x 11" text pages, three ring hard cover binder.
6. Warranties: Provide duplicate notarized copies. Execute and assemble document from subcontractors, suppliers, and manufacturers. Submit prior to final Application for Payment.
7. Spare Parts and Maintenance Materials: Provide products, spare parts, maintenance, and extra materials in quantities specified in individual sections.

SECTION 01 78 00 PROJECT RECORD DOCUMENTS

- A. Project Record Documents: Maintain on site, 1 set of Contract Documents, Shop Drawings, and Product Submittals to be utilized for record documents.
 1. Record actual revisions to the work concurrent with construction progress.
 2. Specifications: Legibly mark and record at each section, a description of actual products installed.
 3. Record Drawings: Use as built document to legibly mark up record documents to actual construction.
 4. Record Submittals: Submit documents to Consultant.
- B. Submit Record Documents with claim for final Application for Payment.

End of Division 1

DIVISION 2 EXISTING CONDITIONS

SECTION 02 41 00 SELECTIVE DEMOLITION

- A. Selective Demolition:
 - 1. Designated components and finishes to bare substrate in preparation for installation of new components and finish.
 - 2. Patching and repairs.
 - 3. Accessories required for a complete installation.

- B. Materials Ownership: Except for items or materials indicated to be reused, salvaged, or indicated to remain Owner's property, demolished materials are Contractor's property and shall be removed from site.

- C. Quality Assurance: Comply with federal, state, and local environmental codes and regulations.

- D. Execution: Demolish and remove existing construction to extent required by new work indicated. Use recommended methods:

End of Division 2

DIVISION 3 CONCRETE

SECTION 03 39 00 CONCRETE SEALER

- A. Description: Concrete sealing and hardening compound for concrete slabs.
- B. Materials:
 - 1. Hardener and Sealer: Clear, inorganic silicate or silicate materials or magnesium siliofluoride and proprietary components that chemically reacts with alkaline; odorless; that penetrates, hardens, and densifies concrete surfaces.
 - a. Subject to compliance with requirements, provide one of the following:
 - 1) BASF Construction Chemicals - Building Systems; MasterKure HD 300WB.
 - 2) Euclid Chemical Company (The), an RPM company; Surfhard.
 - 3) Laticrete International; L&M Lion Hard.
 - 4) Meadows, W.R., Inc.; Liqui-Hard.

SECTION 03 54 13 HYDRAULIC CEMENTITIOUS UNDERLAYMENT

- A. Description: Self leveling cementitious underlayment over existing substrates.
- B. Quality Assurance:
 - 1. Regulatory Requirements:
 - a. American Society for Testing and Materials: C191, C109, C348.
 - b. Flammability: Flame spread, fuel contribution, and smoke development zero in accordance with ASTM E 84.
- C. Materials:
 - 1. Cementitious Underlayment: Portland cement based, polymer modified, self leveling product applied in uniform thickness from 1/8 inch (3.2 mm) and capable of being feathered at edges to match adjacent floor elevations.
 - a. Cement Binder: ASTM C 150, portland cement defined by ASTM C 219.
 - b. Compressive Strength: Minimum 4100 psi (28 MPa) at 28 days when tested according to ASTM C 109/C 109M.
 - c. Underlayment Additive: Resilient emulsion product of underlayment manufacturer formulated for use with underlayment when applied to substrate and conditions indicated.
 - d. Aggregate: Well graded, washed gravel, 1/8 inch to 1/4 inch (3mm to 6 mm); or coarse sand as recommended by underlayment manufacturer. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.
 - 2. Primer: Recommended in writing by underlayment manufacturer for substrate, conditions, and application indicated.
 - 3. Water: Potable and at maximum temperature of 70 degrees F (21 degrees C).
 - 4. Reinforcement: Recommended in writing by manufacturer for substrate, thickness, and conditions indicated.
 - 5. Manufacturer: Subject to compliance, provide one of the following:
 - a. BASF Construction Chemicals; MBT Mastertop 110 Plus Underlayment or Thoro Underlayment, Self Leveling.
 - b. Dayton Superior Corporation; Levelayer I.
 - c. Mapei Corporation; Ultraplan 1.

- D. Mix Design:
1. Compressive Strength: Minimum 2600 psi after one day, 4000 psi in 28 days in accordance with ASTM C 109.
 2. Flexural Strength: 770 psi after one day, 1000 psi in 28 days in accordance with ASTM C 348.
 3. Tensile Strength: Minimum 750 psi after 28 days in accordance with ASTM C 190 or 950 psi after 28 days per ASTM C 348.
 4. Shrinkage: 0.025 after 7 days in accordance with ASTM C 596.
- E. Installation: Provide clean, dry, neutral-pH substrate. Treat substrate cracks to prevent cracks from telegraphing (reflecting) through underlayment. Fill substrate voids to prevent underlayment from leaking.
1. Concrete Substrates: Mechanically remove laitance, glaze, efflorescence, curing compounds, form release agents, dust, dirt, grease, oil, and contaminants that impair underlayment bond.
 2. Nonporous Substrates: Remove waxes, sealants, and contaminants impairing underlayment bond.

End of Division 3

DIVISION 5 METALS

SECTION 05 40 00 COLD FORMED METAL FRAMING

- A. Description: Cold formed steel framing system.
- B. Submittals
 - 1. Shop Drawings: Show assembly layout, channel sizes and thickness, and type of steel channel.
 - 2. Design Calculations: Design criteria and supporting calculations including stress and deflection analysis and framing members, fitting, and accessories.
- C. Quality Assurance: Code compliance certification of studs and tracks by the Certified Steel Stud Association, the Steel Framing Industry Association, or the Steel Stud Manufacturers Association.
- D. Performance Requirements: Delegated design for cold formed steel framing.
- E. Materials:
 - 1. Steel Sheet: ASTM A1003/A1003M, Structural Grade, with G60 (Z180) metallic coating.
 - 2. Load Bearing Wall Framing: Standard C shaped, punched steel studs, steel box or back to back headers, and U-shaped, unpunched track.
 - a. Minimum Steel Thickness: Necessary for design performance.
 - 3. Exterior Nonload Bearing Wall Framing: Standard C-shaped, punched steel studs and U-shaped, unpunched track.
 - a. Minimum Steel Thickness: Necessary for design performance.
 - b. Vertical deflection clips.
 - c. Single deflection track.
 - 4. Interior Nonload Bearing Wall Framing: Standard C-shaped, punched steel studs and U-shaped, unpunched track.
 - a. Minimum Steel Thickness: Necessary for design performance.
 - b. Vertical deflection clips.
 - c. Single deflection track.
 - 5. Framing Accessories:
 - a. Supplementary framing.
 - b. Bracing, bridging, and solid blocking.
 - c. Web stiffeners.
 - d. Anchor clips, end clips, foundation clips, gusset plates.
 - e. Stud kickers and knee braces.
 - f. Joist hangers and end closures.
 - g. Hole reinforcing plates and backer plates.

SECTION 05 45 00 SLOTTED STEEL CHANNEL FRAMING

- A. Description: Channel framing system.
- B. Submittals
 - 1. Shop Drawings: Show assembly layout, channel sizes and thickness, and type of steel channel.
 - 2. Design Calculations: Design criteria and supporting calculations including stress and deflection analysis and framing members, fitting, and accessories.

C. Quality Assurance

1. Building Code: Comply with applicable requirements of IBC for channel framing and support.
2. *AISI Specification for the Design of Cold Formed Steel Structural Members.*
3. Engineering Responsibility: Preparation of Shop Drawings, design calculations, and structural data by a qualified professional engineer.
 - a. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the State of Utah and experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of cold formed steel framing that are similar to those indicated in material, design, and extent.

D. Materials:

1. Manufacturer: Subject to compliance with requirements, provide framing system by Unistrut Corporation.
2. Steel Sheet: ASTM A 1011 SS Grade 33 and ASTM A 653 Grade 33; hot dipped galvanized after manufacturer complying with ASTM A 123 or ASTM A 153.
3. Channel Framing Components: Indicated on Structural Drawings.
 - a. Framing Accessories: Required by components for a structural sound channel framing system.
 - b. Anchors, Clips, and Fasteners:
 - c. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot dip process according to ASTM A 123/A 123M.
 - d. Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon steel hex headed bolts and carbon steel nuts; and flat, hardened steel washers; zinc coated by hot dip process according to ASTM A 153/A 153M, Class C.
 - e. Expansion Anchors: Fabricated from corrosion resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, determined by testing in accordance with ASTM E 488 conducted by a qualified independent testing agency.
 - f. Mechanical Fasteners: ASTM C 1513, corrosion resistant coated, self drilling, self tapping steel drill screws.
 - g. Head Type: Low profile head beneath sheathing, manufacturer's standard elsewhere.
4. Miscellaneous Materials:
 - a. Galvanizing Repair Paint: ASTM A 780, VOC compliant.
 - b. Grout: Premixed, nonmetallic, noncorrosive, nonstaining, nonmetallic, nonshrink low VOC grout containing selected silica sands, Portland cement, shrinkage compensating agents, and plasticizing and water reducing agents, complying with ASTM C 1107, with fluid consistency and 30 minute working time.
 3. Sealer Gaskets: Closed cell neoprene foam, 1/4 inch thick, selected from standard widths to match width of bottom track or rim track members.

E. Fabrication: Fabricate plumb, square, and true to line, and with connections securely fastened, according to referenced AISI specifications.

1. Fasten steel framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
2. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by minimum 3 exposed screw threads.

3. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.
 4. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to maximum allowable tolerance variation of 1/8 inch in 10 feet:
 5. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
 6. Squareness: Fabricate to a maximum out of square tolerance of 1/8 inch.
- F. Installation: Install steel framing according to manufacturer written instructions and to design calculations and criteria.
1. Install shop fabricated framing and securely anchor to supporting structure. Install steel framing and accessories plumb, square, and true to line, and with connections securely fastened.
 2. Cut framing members by sawing or shearing; do not torch cut. Install framing members in a single length unless splice connections are indicated for track or tension members.
 3. Do not bridge building expansion and control joints. Independently frame both sides of joints.
 4. Erection Tolerances: Install steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and space individual framing members no more than plus or minus 1/8 inch from plan location.
- G. Field Quality Control:
1. Field and shop welds will be subject to testing and inspecting.
 2. Remove and replace work where test results indicate that it does not comply with specified requirements.
 3. Additional testing and inspecting will be performed at Contractor's expense.

SECTION 05 50 00 MISCELLANEOUS METAL FABRICATIONS

- A. Description: Metal Fabrications:
1. Steel plates, shapes, and bars.
 2. Steel tubing and pipe.
 3. Miscellaneous framing and supports.
 4. Miscellaneous steel trim.
 5. Shelf and relieving angles.
 6. Rough hardware.
 7. Accessories necessary for a complete installation.
- B. Materials:
1. Ferrous Materials:
 - a. Steel Plates, Shapes, and Bars: ASTM A 36.
 - b. Steel Tubing: ASTM A 500 or A 501.
 - c. Uncoated Structural Steel Sheet: ASTM A 611 or A 570.
 - d. Uncoated Steel Sheet: ASTM A 366 or A 569.
 - e. Galvanized Steel Sheet, Structural Quality: ASTM A 446, Grade A, G90.
 - f. Galvanized Steel Sheet, Commercial Quality: ASTM A 526, G90.
 - g. Stainless Steel Sheet, Strip, Plate, and Flat Bar: ASTM A 666, Type 304, No. 4 satin finish.
 - h. Steel Pipe, Black Finish: ASTM A 53.

- i. Gray Iron Castings: ASTM A 48, Class 30.
 - j. Malleable Iron Castings: ASTM A 47, grade 32510.
 - k. Reinforcing Bars: ASTM A 615, Grade 60.
 - l. Brackets, Flanges, and Anchors: Cast or formed metal.
 - m. Zinc Coating: Hot dip galvanized coating for materials in exterior assemblies or exterior walls.
2. Fasteners:
- a. Bolts and Nuts: Hexagon head type, ASTM A 307, Grade A.
 - b. Lag Bolts: Square head, FS FF-B-561.
 - c. Machine Screws: Cadmium plated steel, FS FF-S-92.
 - d. Wood Screws: Flat head carbon steel, FS FF-S-111.
 - e. Plain Washers: Round carbon steel, FS FF-W-92.
 - f. Drilled In Expansion Anchors: FS FF-S-325.
 - g. Toggle Bolts: Tumble-wing type, FS FF-B-588.
 - h. Lock Washers: Spring type carbon steel, FS FF-W-84.
 - i. Zinc Coating: Fasteners in exterior assemblies or exterior walls.
3. Auxiliary Materials:
- a. Nonshrink Nonmetallic Grout: CE CRD-C621.
 - b. Paint:
 - 1) Shop Primer: Tnemec Series 10-99.
 - 2) Galvanizing Repair Paint: SSPC - Paint 20.
 - 3) Bituminous Paint: Asphalt mastic, SSPC - Paint 12.
 - 4) Zinc Chromate Primer: FS TT-P-645.
- C. Fabrications:
1. Framing and Supports: Steel framing and supports that are not a part of the structural framework. Fabricate units from structural steel shapes, plates, and bars of welded construction. Fabricate to sizes, shapes, and profiles indicated and necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items.
- a. Countertop Framing: Custom fabricate countertop and vanity framing, using steel shapes and plates, and cold finished mild steel bars at exposed conditions, for support framing and plywood, to the thicknesses, sizes and shapes shown, and as required to produce work of adequate strength and durability, without objectionable deflections. Use proven details of fabrication, as required, to achieve proper assembly and alignment of the various components of the work.
 - b. Framing for Ceiling Supported Components: Provide framing for ceiling supported components, coordinated with the partitions and including provisions for partition anchorage as required to sustain imposed loads and to limit deflections to L/360 between hangers, fabricated from the following:
 - 1) Modular Structural Framing System: ASTM A569; modular, structural quality steel preformed "U" channel framing system with continuous open slot prepared to receive attachment nuts, bolts, straps, threaded rods, beam clamps, hanger rods support brackets and other accessories. Provide manufacturers standard corrosion resistant finish.
 - 2) Provide steel rods, 1/2 inch diameter, spaced maximum 36 inches o.c. Thread rods to receive anchor and stop nuts. Fit hangers with wedge shape washers for full bearing on sloping flanges of support beam.
 - c. Galvanize miscellaneous framing and supports at exterior locations; prime paint miscellaneous framing and supports at interior locations

End of Division 5

DIVISION 6 WOOD, PLASTICS, AND COMPOSITES

SECTION 06 10 53 MISCELLANEOUS CARPENTRY

- A. Description:
1. Wood grounds, nailers, and blocking.
 2. Wood furring.
 3. Backing panels.
 4. Accessories necessary for a complete installation.
- B. Quality Assurance:
1. Regulatory Requirements:
 - a. Grading Rules:
 - 1) Voluntary Product Standard DOC PS 20.
 - 2) Southern Pine Inspection Bureau (SPIB).
 - 3) Western Wood Products Association (WWPA).
 - b. Plywood:
 - 1) Softwood Plywood - Construction and Industrial: Product Standard PS 1 (ANSI A 199.1).
 - 2) Hardwood Plywood: Product Standard PS 51.
 - c. Preservative Treatment: AWWPA U1 and M4 for species, products, and end use; waterborne pressure treatment.
 - d. Fire Retardant Treatment: ASTM E 84 modified to extend test to 30 minutes with flame spread index of 25 or less and show no evidence of significant progressive combustion when test continued for an additional 20 minutes in accordance with IBC Section 2303.2; noncorrosive type.
- C. Materials:
1. Boards:
 - a. Exposed Boards: 19 percent moisture content.
 - b. Concealed Boards: 19 percent moisture content.
 2. Miscellaneous Lumber:
 - a. Moisture Content: 19 percent.
 - b. Grade: Standard grade light framing.
 3. Construction Panels:
 - a. Plywood Backing Panels: APA C-D Plugged Exposure 1 with exterior glue, fire retardant treated.
 4. Rough Hardware.

SECTION 06 41 00 ARCHITECTURAL WOODWORK

- A. Description:
1. Plastic laminate Interior casework and countertops.
 2. Solid surface countertops.
 3. Standing and running trim and base.
 4. Utility shelving.
 5. Accessories necessary for a complete installation.

B. Quality Assurance:

1. Regulatory Requirements:
 - a. Quality Standard: *AWS Architectural Woodwork Quality Standards* for interior architectural woodwork indicated for construction, finishes, installation, and requirements.
 - b. Fire Test Response Characteristics: Where fire retardant materials are indicated, provide materials tested by and complying with UL. Identify with appropriate markings.
 - c. Accessibility Requirements:
 - 1) U.S. Architectural and Transportation Barriers Compliance Board Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG).
 - 2) *ICC/ANSI A117.1 Accessible and Useable Building and Facilities*.
2. Fabricator/Installer Qualifications: Shop having minimum 5 years documented experience, who employs skilled workers who custom fabricate products similar, member of AWI.
3. Preservative Treatment: AWPA U1 and M4 for species, products, and end use; waterborne pressure treatment.
4. Fire Retardant Treatment: ASTM E 84 modified to extend test to 30 minutes with flame spread index of 25 or less and show no evidence of significant progressive combustion when test continued for an additional 20 minutes in accordance with IBC Section 2303.2; noncorrosive type.

C. Materials:

1. Wood Products:
 - a. Hardboard: AHA A135.4.
 - b. Medium Density Fiberboard: ANSI A208.2, Grade MD, minimum 42 lb - 45 lb, binder containing no added urea formaldehyde.
 - c. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue, binder containing no added urea formaldehyde.
2. Wood Veneer: Refer to Finish Schedule for species.
3. Slat Wall: Refer to Finish Schedule for manufacturer.
4. High Pressure Decorative Laminate: NEMA LD 3, grade indicated. Finish and color indicated in Finish Schedule.
5. Thermoset Decorative Panels: Particleboard or medium density fiberboard finished with thermally fused, melamine impregnated decorative paper complying with LMA SAT-1.
6. Woodwork Hardware: Cabinet hardware and accessories associated with architectural cabinets, retail display cases, shelving including book and magazine shelving. Refer to drawings for components and Finish Schedule for hardware manufacturers.
7. Miscellaneous Materials: Furring, blocking, shims, and hanging strips of softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.
8. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement or Resorcinol.
 - a. Adhesive for Bonding Edges: Hot melt adhesive recommended by fabricator.

E. Fabrication:

1. Woodwork Grade: Premium grade interior woodwork complying with AWS Quality Standards.

2. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.
3. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius.

SECTION 06 80 00 GLASS FIBER REINFORCED PANEL

- A. Description: Interior FRP panel.
- B. Quality Assurance:
 1. Regulatory Requirements:
 - a. Comply with IBC for interior finishes and for plastics.
 - b. Fire Test Response Characteristics: Where fire retardant materials are indicated, provide materials tested by and complying with UL. Identify with appropriate markings.
- C. Materials:
 1. FRP: ASTM D 5919, gelcoat finished, glass fiber reinforced plastic panels.
 - a. Nominal Thickness: Minimum 0.09 inch.
 - b. Surface Finish: Smooth.
 - c. Color: White.

SECTION 06 64 20 DECORATIVE ACRYLIC SHEET PANEL

- A. Description: Interior tinted acrylic panel.
- B. Quality Assurance:
 1. Regulatory Requirements:
 - a. Comply with IBC for interior finishes and for plastics.
 - b. Fire Test Response Characteristics: Where fire retardant materials are indicated, provide materials tested by and complying with UL. Identify with appropriate markings.
- C. Materials:
 1. Plastic Panel: Acrylic sheet; ASTM D 4802, Category B-1 (continuously manufactured), Finish 1 (smooth or polished).
 - a. Nominal Thickness: Not less than 1 inch (25 mm).
 - b. Fire Rating Classification: Class B
 - c. Surface Finish: Smooth.
 - d. Color: Transparent, tinted; Color selected by Architect.

End of Division 6

DIVISION 7 THERMAL AND MOISTURE PROTECTION

SECTION 07 81 00 SPARYED APPLIED FIREPROOFING

- A. Description: Spray applied fire resistive fireproofing
- B. Performance Requirements:
1. Fire Resistance Design: Indicated on Drawings, tested according to ASTM E 119 or UL 263; testing by UL. Identify products with appropriate markings of applicable testing agency.
 - a. Steel members are to be considered unrestrained unless specifically noted otherwise.
- C. Materials:
1. Sprayed Fire Resistive Material: Factory mixed, lightweight, dry formulation, complying with indicated fire resistance design, and mixed with water at site to form a slurry or mortar before conveyance and application or conveyed in a dry state and mixed with atomized water at place of application.
 - a. Bond Strength: Minimum 150-lbf/sq. ft. (7.18-kPa) cohesive and adhesive strength based on field testing according to ASTM E 736.
 - b. Thickness: Necessary for fire resistance design indicated, measured according to requirements of fire resistance design or ASTM E 605, whichever is thicker, but not less than 0.375 inch (9 mm).
 - c. Combustion Characteristics: ASTM E 136.
 - d. Surface Burning Characteristics: Comply with ASTM E 84.
 1. Flame Spread Index: 10 or less.
 2. Smoke Developed Index: 10 or less.
 - e. Compressive Strength: Minimum 100 lbf/sq. in. (689 kPa) according to ASTM E 761.
 - f. Corrosion Resistance: No evidence of corrosion according to ASTM E 937.
 - g. Deflection: No cracking, spalling, or delamination according to ASTM E 759.
 - h. Effect of Impact on Bonding: No cracking, spalling, or delamination according to ASTM E 760. Air Erosion: Maximum weight loss of [0.025 g/sq. ft. (0.270 g/sq. m)] <Insert value> in 24 hours according to ASTM E 859.
 - i. Fungal Resistance: Treat products with manufacturer's standard antimicrobial formulation to result in no growth on specimens per ASTM G 21.
 2. Auxiliary Materials: Compatible with fireproofing and substrates and are approved by UL for use in fire resistance designs.

SECTION 07 84 14 PENETRATION FIRESTOPPING

- A. Description:
1. Penetrations through fire resistance rated floor and roof construction including both empty openings and openings containing cables, pipes, ducts, conduits, and other penetrating items.
 2. Penetrations through fire resistance rated walls and partitions including both empty openings and openings containing cables, pipes, ducts, conduits, and other penetrating items.
 3. Penetrations through smoke barriers and construction enclosing compartmentalized areas involving both empty openings and openings containing penetrating items.
 4. Voids around pipes, ducts, conduits, cable trays, cables and wires, structural members.
 5. Construction joints between, intersecting points between walls and floors, ceilings, or rated roof systems.

6. Construction joints at expansion/seismic joints.
7. Tops of walls.
8. Sealant joints in fire resistance rated construction.
9. Accessories necessary for a complete installation.

B. Quality Assurance:

1. F Rated Through Penetration Firestop Systems: ASTM E 814, but not less than that equaling or exceeding the fire resistance rating of the constructions penetrated.
2. T Rated Through Penetration Firestop Systems: ASTM E 814, where indicated and where systems protect penetrating items exposed to contact with adjacent materials in occupiable floor areas. Provide T rating for conditions required by authority having jurisdiction. T rated assemblies are required where the following conditions exist:
 - a. Where firestop systems protect penetrations located outside of wall cavities.
 - b. Where firestop systems protect penetrations located outside fire resistive shaft enclosures.
 - c. Where firestop systems protect penetrations located in construction containing doors required having temperature rise rating.
 - d. Where firestop systems protect penetrating items larger than a 4 inch diameter nominal pipe or 16 sq. inches in overall cross sectional area.
3. Single Source Responsibility.

C. Materials:

1. Through Penetration Systems for Plumbing, Duct, and Electrical Work:
2. Firestopping Sealants for Joints permitted by UL 900 series:

D. Installation: Comply with manufacturer's instructions and UL requirements.

SECTION 07 84 00 FIRE RESISTIVE JOINT SYSTEMS

A. Description: Sealant joints in fire resistance rated construction.

B. Quality Assurance:

1. F Rated Through Penetration Firestop Systems: ASTM E 814, but not less than that equaling or exceeding the fire resistance rating of the constructions penetrated.
2. T Rated Through Penetration Firestop Systems: ASTM E 814, where indicated and where systems protect penetrating items exposed to contact with adjacent materials in occupiable floor areas. Provide T rating for conditions required by authority having jurisdiction. T rated assemblies are required where the following conditions exist:
 - a. Where firestop systems protect penetrations located outside of wall cavities.
 - b. Where firestop systems protect penetrations located outside fire resistive shaft enclosures.
 - c. Where firestop systems protect penetrations located in construction containing doors required having temperature rise rating.
 - d. Where firestop systems protect penetrating items larger than a 4 inch diameter nominal pipe or 16 sq. inches in overall cross sectional area.
3. Single Source Responsibility.

C. Materials:

1. Through penetration systems for plumbing, duct, and electrical work.
2. Firestopping sealants for joints permitted by UL 900 series:

D. Installation: Comply with manufacturer's instructions and UL requirements.

SECTION 07 92 00 SEALANTS

A. Description:

1. Joints between dissimilar materials.
2. Joints around openings.
3. Accessories necessary for a complete installation.

B. Quality Assurance: Single source responsibility for joint sealant material.

C. Materials:

1. Classification of Sealants: ASTM C 920 designating sealants according to type, grade, class, and use.
 - a. Type: S (single component); M (multicomponent).
 - b. Grade: P (pourable for horizontal joints); NS (nonsag for vertical joints).
 - c. Class: 25 or 12-1/2 (adhesive capabilities).
 - d. Use: T (traffic exposure); NT (nontraffic exposure).
 - e. Use: Adhesive performance within given perimeters for M (mortar); G (glass); A (aluminum); O (other materials other than foregoing).
2. Two Part Polyurethane Sealants: ASTM C920, Type M, Grade NS, Class 25; use NT, M, A and O.
 - a. Use: Typical Wall Joints (Two Part Polyurethane Sealants).
 - b. Properties: Performance: Nonstain, nonbleed, nonstreaking to sealed and adjacent substrates. The minimum pli value after 7 day immersion shall not be less than 13 when tested in strict accordance with ASTM C794 Adhesion in Peel.
3. Mildew Resistant Silicone Sealant: Complying with ASTM C920, Type S (single component), Grade NS (nonsag), class 25, Use NT (nontraffic), Substrate uses G, A, and O; and containing fungicide for mildew resistance.
 - a. Use: Joints at toilet fixtures, toilet room countertops and vanities, and janitor closet mop receptor to wall transition
4. Joint Filler: Closed cell expanded polyethylene.
5. Joint Cleaner: Recommended by manufacturer of joint sealant for specific joint surface and condition.
6. Joint Primer and Sealer: Recommended by manufacturer for specific joint surface and conditions.
7. Bond Breaker: Polyethylene tape.

End of Division 7

DIVISION 8 OPENINGS

SECTION 08 11 13 STEEL DOORS AND FRAMES

- A. Description: Steel doors and frames.
- B. Quality Assurance:
1. Standards:
 - a. Hollow Metal Manufacturers Association (HMMA): NAAMM Standard HMMA No. 810 Hollow Metal Doors.
820 Hollow Metal Frames.
830 Hardware Preparation and Locations for Hollow Metal Doors and Frames.
840 Installation and Storage of Hollow Metal Doors and Frames.
850 Fire Rated Hollow Metal Doors and Frames.
 - b. Steel Door Institute *Recommended Specifications Standard Steel Doors and Frames*; ANSI/SDI-100.
 2. Fire Rated Door Assemblies: NFPA 80; fire resistance characteristics determined per ASTM E 152, labeled and listed by UL.
 3. Temperature Rise Rating: At stairwell enclosures, provide doors which have Temperature Rise Rating of 450 degrees F maximum in 30 minutes of fire exposure.
 4. Oversize Fire Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide manufacturer's certification that doors conform to all standard construction requirements of tested and labeled fire rated door assemblies except for size.
- C. Materials:
1. Cold Rolled Sheet Steel: ASTM A 366, commercial quality carbon steel.
 2. Hot Rolled Sheet Steel and Strip: ASTM A 569 and ASTM A 568, commercial quality carbon steel pickled and oiled.
 3. Galvanized Steel Sheets: Zinc coated steel sheets of commercial quality. Complying with ASTM A 526, with ASTM A 525 G60 zinc coating, mill phosphatized.
 4. Primer: Rust inhibitive type, gray.
 5. Reinforcing for Top and Bottom of Doors: Galvanize after fabrication, complying with ASTM A153, Class B.
 6. Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot dip galvanize items for exterior wall units, complying with ASTM A153, Class C or D as applicable.
 7. Supports and Anchors for Frames: Galvanize exterior units, complying with ASTM A153, Class B.
- D. Construction:
1. Commercial Exterior and Interior Frames: 1-3/4 inches (44.5 mm).
 - a. 0.067 inch (1.7 mm) for pairs of doors, exterior doors, and oversized doors.
Galvanized frames in exterior walls.
 - b. 0.053 inch (1.3 mm) thick for all other frames.
 2. Commercial Exterior and Interior Doors: 1-3/4 inches (44.5 mm).
 - a. 0.053 inch (1.3 mm) thick for pairs of doors, exterior doors, and oversized doors.
Galvanize doors in exterior walls.
 - b. 0.042 inch (1.0 mm) for all other doors.
 - c. Provide label doors and frames as required to comply with assembly rating and requirements.
 - d. Reinforce doors and frames for finish hardware.

3. Removable Stops and Moldings: 0.032 inch (0.8mm) thick steel sheets matching steel of frames, secured with countersunk flat or oval head machine screws spaced uniformly maximum 12 inches (300mm) o.c., butt corners, secured with cadmium or zinc coated countersunk screws. Form corners with butted hairline joints.
 - a. Coordinate width of rabbet between fixed and removable stops with glass or panel and installation indicated.
 - b. Provide stops and moldings around solid, glazed, and louvered panels where indicated.
 - c. Form fixed stops and moldings integral with frame, unless otherwise indicated.
 4. Labeled Doors: Provide units tested and labeled by UL for rating required, including S label (smoke rated). Cutting into labeled doors after inspection and labeling is not permitted. Labeling of doors by certified UL representative only.
- E. Execution:
1. Refinish and reinstall existing steel doors in new frames.
 2. Adjust hardware.

SECTION 08 14 13 FLUSH WOOD DOORS

- A. Description: Solid core wood doors with plastic laminate faces.
1. Section affected by alternates.
- B. Quality Assurance:
1. AWI Quality Standard: *Architectural Woodwork Quality Standards*; including Section 1300 Architectural Flush Doors, of Architectural Woodwork Institute (AWI) for grade of door, core construction, finish and other requirements exceeding those of NWWDA quality standard.
 2. NWWDA Quality Standard: I.S.1 *Industry Standard for Wood Flush Doors*, of National Wood Window and Door Association (NWWDA).
 3. Single Source Responsibility: Provide doors manufactured by a single manufacturer.
- C. Warranty: In effect during following period of time after date of Substantial Completion.
1. Solid Core Interior Doors with Plastic Laminate Faces: Life of installation.
- D. Interior Flush Wood Doors: 1-3/4 inch thick, flush, Premium Grade, AWI Quality Standards:
1. Solid Core Doors with Plastic Laminate Faces: NEMA LD-3.
 - a. Colors, Patterns, and Finishes: Selected by Architect from laminate manufacturers' standard products.
 - b. Faces: GP-50 (0.050 inch nominal thickness).
 - c. Construction: PC-HPDL (Particleboard core); SLC-HPDL (Glued block core), 5 ply.
 - d. Core: AWI Symbol SLC-HPDL and NWWDA VLSA20.
 - e. Crossbands: Hardwood, 1/16 inch thick, extending full width of door.
 - f. Door Edging: Factory installed full length rigid flush PVC door edging on door stiles in dark brown.
 2. Fire Rated Solid Core Doors:
 - a. Faces and AWI Grade: Provide faces and grade to match nonrated doors in same area of building.
 - b. Construction: Mineral core construction required to provide fire resistance rating indicated.

- c. Edge Construction: Laminated edge construction for improved screw holding capability and split resistance as compared to edges composed of single layer of treated lumber.
- d. Pairs: Furnished formed steel edges and astragals for pairs of fire rated doors, unless otherwise indicated.
 - 1) Provide fire rated pairs with fire retardant stiles labeled and listed for kinds of applications indicated without formed steel edges and astragals.
- e. Labeled Doors: Provide units tested and labeled by UL for rating required, including S label (smoke rated). Cutting into labeled doors after inspection and labeling is not permitted. Labeling of doors by certified UL representative only.

SECTION 08 31 13 ACCESS DOORS AND FRAMES

- A. Description: Access doors for items requiring periodic servicing.
- B. Quality Assurance:
 - 1. Fire Resistance Ratings: Wherever a fire resistance classification is required by construction, provide access doors with panel, frame, hinge, and latch complying with UL requirements for rating required.
 - 2. Single Source Responsibility: Provide access doors from a single manufacturer.
- C. Materials:
 - 1. Frames: 54 mil steel.
 - 2. Panels: 86 mil steel.
 - 3. Hinges: Concealed spring hinges allowing opening to 175 degrees with removable pins.
 - 4. Locks: Flush, screw driven operated with case hardened steel cam; provide cylinder locks for wall units.
 - 5. Finish: Chemically bonded prime coat of baked enamel.
- D. Fabrication:
 - 1. Flush panel access door with 1 inch wide galvanized steel drywall bead frame for gypsum board.
 - 2. Coordinate door operation and controls with security requirements.

SECTION 08 71 00 DOOR HARDWARE

- A. Description:
 - 1. Door hardware.
 - 2. Accessories necessary for a complete installation.
- B. Quality Assurance:
 - 1. Regulatory Requirements:
 - a. *Installation Guide for Doors and Hardware*, 1986, by the Door and Hardware Institute referred to as the Guide.
 - b. *Recommended Locations for Builders Hardware for Standard Steel Doors and Frames* by the Door Hardware Institute referred to as Recommended Locations.
 - 2. Finishes: BHMA/ANSI A156.18 - Materials and Finishes.
 - 3. Underwriter's Laboratories Requirements:
 - a. NFPA Standard No. 80 for openings scheduled to receive UL label.

- b. Arrange fire doors to remain in the normally closed position by furnishing each unit with an automatic closing device. Unless otherwise directed, furnish active latch bolts, of UL approved throw, that cannot be held in the retracted position.
- c. Wherever panic hardware is required on UL labeled doors, comply with UL 305 Panic Hardware, and UL 10b Fire Tests of Door Assemblies. Provide a supplementary label, Fire Exit Hardware on each exit device to certify that hardware has been panic load tested with door.

C. Hardware Manufacturer and Schedule: Refer to Door Schedule on Drawings.

SECTION 08 80 00 GLASS AND GLAZING

A. Description:

1. Insulated glazing.
2. Tempered glass.
3. Fire rated glass.

B. Quality Assurance:

1. Regulatory Requirements:
 - a. *Glazing Manual* and *Glazing Sealing Systems Manual* of the Flat Glass Marketing Association, latest edition.
 - b. Where safety glass is indicated or required by authorities having jurisdiction, comply with ANSI Z97.1 and testing requirements of 16 CFR, Part 1201 for category II materials.
 - c. Where fire resistance rated glass is indicated or required, provide products that are identical to those tested in accordance with ASTM E163 (UL 9), and are labeled and listed by UL or other testing and inspecting agency acceptable to the Architect.

C. Materials:

1. Float Glass: 1/4 inch thick; clear and tinted; conforming to ASTM C 1036; Quality q3; tempered in doors and adjacent lites.
2. Tempered Glass: 1/4 inch thick; clear, float; Quality q3; ASTM C 1048 and ANSI Z97-1, standard heat treatment process, to increase the flexural strength to no less than 4 (four) times the strength before treatment.
 - a. When used with exposed edges, tempered glass shall be without tong marks.
3. Decorative Film Overlay: Anticipate two types: Obscuring and light filtering.
4. Setting Blocks: Fabricated from 70 to 90 Shore A Durometer neoprene. Sizes and shapes as recommended by glass manufacturer for conditions of use.
5. Edge Cushions: Fabricated from 70 Shore A Durometer neoprene. Sizes and shapes as recommended by glass manufacturer for conditions of use.
6. Silicone Glazing Sealant: Single component sealant conforming to FS-TT-S-001543, Class A, Type II (nonsag).

End of Division 8

DIVISION 9 FINISHES

SECTION 09 29 50 GYPSUM BOARD ASSEMBLIES

- A. Description:
1. Nonload bearing steel framing members for gypsum board assemblies.
 2. Gypsum board assemblies attached to steel framing.
 3. Gypsum board ceilings and soffits assemblies.
 4. Cementitious backer units.
 5. Accessories necessary for a complete installation.
- B. Performance Requirements: Comply with manufacturer's load tables and design pressures and deflections:
1. Lobbies: 1/120 at 15 psf.
 2. Typical Partitions: 1/240 at 5 psf.
- C. Materials:
1. Gypsum Board: ASTM C 1396/C 1396M, wall panels and nonsag ceiling panels.
 - a. Edge: Tapered, beveled, or radial edge
 - b. Thickness: 5/8 inch.
 - c. Type X or Type C (fire rated).
 2. Steel Framing Components: ASTM C 754 for conditions indicated; hot dip galvanize complying with ASTM A 653/A 653M, G60 (Z180).
 - a. Steel Studs and Runners: ASTM C 645, 0.0179 inch (0.45 mm) minimum base metal thickness; Depth indicated on Drawings.
 - b. Dimpled Steel Studs and Runners: ASTM C 645, equivalent to minimum base metal thickness indicated on Drawings for depth indicated on Drawings.
 - c. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated. Minimum Base Metal Thickness: 0.0179 inch (0.45 mm).
 - d. Cold Rolled Channel Bridging: 0.0538 inch (1.37 mm) bare steel thickness, with minimum 1/2 inch (12.7 mm) wide flanges. Depth indicated on Drawings.
 - e. Clip Angle: Minimum 1-1/2 inches by 1-1/2 inches (38.1 mm by 38.1 mm), 0.068 inch (1.73 mm) thick, galvanized steel.
 - f. Hat Shaped, Rigid Furring Channels: ASTM C 645; 0.0179 inch (0.45 mm) minimum base metal thickness; Depth indicated on Drawings.
 - g. Resilient Furring Channels: 1/2 inch (12.7mm) deep, steel sheet members designed to reduce sound transmission. Configuration: Asymmetrical or hat shaped.
 - h. Cold Rolled Furring Channels: 0.0538 inch (1.37mm) bare steel thickness, with minimum 1/2 inch (12.7mm) wide flanges.
 - 1) Depth: Indicated on Drawings.
 - 2) Furring Brackets: Adjustable, corrugated edge type of steel sheet with minimum bare steel thickness of 0.0312 inch (0.79 mm).
 - 3) Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625 inch (1.59mm) diameter wire, or double strand of 0.0475 inch (1.21mm) diameter wire.
 - i. Z Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches (31.8 mm), wall attachment flange of 7/8 inch (22.2 mm), minimum bare metal thickness of 0.0179 inch (0.45 mm), and depth required to fit insulation thickness indicated.

- j. Auxiliary Framing Materials: Fasteners of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
 - k. Slip Type Head Joints: Where indicated, provide one of the following:
 - 1) Single Long Leg Runner System: ASTM C 645 top runner with 2 inch (50.8 mm) deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within 12 inches (305 mm) of the top of studs to provide lateral bracing.
 - 2) Double Runner System: ASTM C 645 top runners, inside runner with 2 inch (50.8 mm) deep flanges in thickness not less than indicated for studs 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 applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - l. Firestop Tracks: Top runner 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.
4. Accessories:
- a. Corner reinforcements, casing beads and metal trim, fabricated from 18 mil galvanized sheet steel with perforated flanges, designed to receive joint compound.
 - b. Control Joints: Roll formed zinc, or extruded vinyl as standard with the gypsum board manufacturer.
 - c. Clips: Hot dipped galvanized, USG Metal Furring Channel Clip.
 - d. Joint Treatment Materials: ASTM C475.
 - e. Sound Attenuation Insulation.
 - f. Acoustical Sealant: Water base type, nondrying, nonbleeding, nonstaining, permanently flexible compound as recommended by gypsum board manufacturer, USG Acoustical Sealant.
 - g. Trim Accessories: ASTM C 1047.
- D. Installation:
- 1. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.
 - 2. Gypsum Board Assemblies: Comply with requirements in ASTM C 840 applicable to framing installation.
 - 3. Framing Assembly: Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
 - 4. Gypsum Panels: Comply with ASTM C 840. Provide in maximum lengths and widths available that minimize joints in each area and that correspond with support system indicated. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged. Fastening Methods: Apply gypsum panels to supports with steel drill screws.
 - a. Levels of Gypsum Board Finish: GA-214.
 - 5. Installation Tolerances (Partitions): Install each steel framing and furring member to prevent fastening surfaces from varying more than 1/8 inch from the plane formed by the faces of adjacent framing.

SECTION 09 30 00 TILE

- A. Description: Porcelain and ceramic wall and floor tile.
- B. Materials:
1. Floor Tile: Anticipate standard and large format tile.
 2. Wall and Counter Tile: Anticipate minimum 4 types.
 3. Trim Units: Match characteristics of adjoining flat tile.
 4. Waterproofing Membrane.
 5. Crack Suppressant Membrane.
 6. Latex Portland Cement Mortar: ANSI A118.4.
 7. Latex Portland Cement Grout: ANSI A118.6.
 8. Tile and Grout sealer.
 6. Water: Potable.
 7. Sealants: Mildew resistant silicone, Type S; Grade NS; Class 25; Uses NT, G, A.
 8. Metal edge and transition strips.
- D. Installation:
1. ANSI Tile Installation Standard: Comply with applicable requirements of ANSI 108 series.
 2. TCNA Installation Guidelines: *TCNA Handbook for Ceramic Tile Installation* for installation methods.

SECTION 09 51 00 ACOUSTICAL PANEL CEILINGS

- A. Description:
1. Acoustical ceiling panels.
 2. Suspension grid.
- B. Performance Requirements:
1. Surface Burning Characteristics: ASTM E-84, Class A flame spread index of 25 or less in accordance with ASTM E1264 and smoke developed index of 450 or less.
- C. Materials:
1. Suspension Grid: ASTM C 635.1
 - a. Finishes and Colors: Standard factory applied finish for type of system indicated.
 - b. Nonrated System: Commercial quality cold rolled steel with galvanized coating with factory applied paint finish.
 - d. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung, seismic requirements, and ceiling system flatness requirement specified.
 - e. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper.
 - 1) Gauge: Size wire that when stressed at 3 times hanger design load (ASTM C 635, Table 1, Direct Hung), will be less than yield stress of wire, using minimum 10 gauge wire.
 - f. Rod or Flat Hangers: Mild steel, zinc coated, or protected with rust inhibitive paint.
 - g. Angle Hangers: Angles with legs of minimum 7/8 inch wide, formed with 0.0365 inch thick galvanized steel sheet complying with ASTM A 446 Coating Designation G90, with bolted connections and 5/16 inch diameter bolts.

- h. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles for standard moldings for edges and penetrations, including light fixtures, fitting edge detail and suspension system indicated.
 - i. Hold Down Clips for Nonfire Resistance Rated Ceilings: For interior ceilings composed of lay in panels weighing less than 1 lb per sq. ft., provide hold down clips spaced 2 feet (610 mm) o.c. on all cross tees.
 - j. Impact Clips: Impact clip system design to absorb impact forces against lay in panels.
- 2. Ceiling Panel Size: TBD.
 - 3. Accessories:
 - a. Concealed Acoustical Sealant: Nondrying, nonhardening, nonskinning, nonstaining, nonbleeding, gunnable sealant.
 - b. Touch Up Paint: Type and color to match acoustical and grid units.

SECTION 09 61 05 MOISTURE VAPOR EMISSION CONTROL

- A. Description: Fluid applied, resin based, membrane forming systems that control the moisture-vapor-emission rate of high moisture, interior concrete to prepare it for floor covering installation.
- B. Performance Requirements
 - 1. MVE Control System Capabilities: Capable of suppressing MVE without failure where installed on concrete that exhibits the following conditions:
 - a. MVER: Maximum 15 lb of water/1000 sq. ft. (6.80 kg of water/92.9 sq. m) when tested according to ASTM F1869.
 - b. Relative Humidity: Maximum 100 percent when tested according to ASTM F2170 using in situ probes.
 - 2. Water-Vapor Transmission: Through MVE-control system, maximum 0.06 perm (3.45 ng/Pa x s x sq. m) when tested according to ASTM E96/E96M.
 - 3. Tensile Bond Strength: For MVE-control system, greater than 200 psi (1.38 MPa) with failure in the concrete according to ASTM D7234.
- C. Materials:
 - 1. MVE Control System: ASTM F3010 qualified, fluid applied, two component, epoxy resin, membrane forming system; formulated for application on concrete substrates to reduce MVER to level required for installation of floor coverings indicated and acceptable to manufacturers of floor covering products indicated, including adhesives.
 - 2. Substrate Primer: Provide MVE-control system manufacturer's concrete-substrate primer if required for system indicated by substrate conditions.
 - 3. Cementitious Underlayment Primer: If required for subsequent installation of cementitious underlayment products, provide MVE control system manufacturer's primer to ensure adhesion of products to MVE control system.
 - 4. Patching and Leveling Material: Moisture, mildew, and alkali resistant product recommended in writing by MVE control system manufacturer and with minimum of 3000-psi (20.68-MPa) compressive strength after 28 days when tested according to ASTM C109/C109M.
 - 5. Crack Filling Material: Resin based material recommended in writing by MVE control system manufacturer for sealing concrete substrate crack repair.
 - 6. Cementitious Underlayment: If required to maintain manufacturer's warranty, provide MVE control system manufacturer's hydraulic cement based underlayment.

D. Installation:

1. Preinstallation Testing:
 - a. Testing Agency: Engage a qualified testing agency to perform tests.
 - b. Alkalinity Testing: Perform pH testing according to ASTM F710. Install MVE-control system in areas where pH readings are less than 7.0 and in areas where pH readings are greater than 8.5.
 - c. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m), and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
 - 1) Anhydrous Calcium Chloride Test: ASTM F1869. Install MVE-control system in locations where concrete substrate MVER exceeds 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
 - 2) Internal Relative Humidity Test: Using in situ probes, ASTM F2170. Install MVE-control system in locations where concrete substrates exhibit relative humidity level greater than 75 percent.
 - d. Tensile Bond Strength Testing: For typical locations indicated to receive installation of MVE-control system, install minimum 100-sq. ft. (9.29-sq. m) area of MVE-control system to prepared concrete substrate and test according to ASTM D7234.
2. Proceed with installation where tensile bond strength is greater than 200 psi (1.38 MPa) with failure in the concrete.
3. Concrete Substrates: Prepare and clean substrates according to MVE-control system manufacturer's written instructions to ensure adhesion of system to concrete.
4. Install MVE-control system according to ASTM F3010 and manufacturer's written instructions to produce a uniform, monolithic surface free of surface deficiencies such as pin holes, fish eyes, and voids.

SECTION 09 65 00 RESILIENT FLOOR AND ACCESSORIES

A. Description:

1. Luxury vinyl tile.
2. Rubber base.

B. Materials:

1. Luxury Vinyl Tile: ASTM F 1700, Class I, Monolithic Vinyl Tile.
 - a. Thickness: 0.125 inch (3.2 mm).
 - b. Size: Varies, minimum 12 inch by 24 inch (305 mm by 610 m).
 - c. Color or Pattern: Selected by Architect.
2. Rubber Wall Base:
 - a. Height: 4 inches and 6 inches.
 - b. Thickness: 0.080 inch.
 - c. Finish: Matte finish.
 - d. Corners: Job formed, inside and outside.
 - d. Colors: Minimum 5 colors, selected by Architect.
 - e. Cove: Standard top set cove at resilient floors and straight base without cove at carpeted floor.
3. Concrete Slab Primer: Nonstaining type recommended by flooring manufacturer.
4. Trowelable Underlayments and Patching Compounds: Latex modified, portland cement based formulation approved by flooring manufacturer for applications indicated.

5. Adhesives (Cements): Water resistant, recommended by flooring manufacturer to suit flooring and substrate conditions.
6. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edge of flooring, and in maximum available lengths to minimize running joints.

SECTION 09 68 13 CARPET TILE

- A. Description: Carpet tile.
- B. Regulatory Requirements:
 1. Flooring Radiant Panel: ASTM E 648; Class 1, 0.45 w/cm² or higher.
 2. Smoke Generation: ASTM E 662; Nonflaming average of 450 or lower.
 3. Steiner Tunnel: ASTM E 84; Class A.
 4. Methenamine Pill Test: ASTM D 2859 - DOC FF1-70, 7 out of 8 passing.
 5. Static Generation: AATCC 134-75; 3.5 kilovolts or lower (70 degrees - 20% R.H.).
- C. Materials:
 1. Carpet Tile: TBD.
 2. Concrete Slab Primer: Nonstaining type recommended by flooring manufacturer.
 3. Trowelable Underlayments and Patching Compounds: Latex modified, portland cement based formulation approved by flooring manufacturer for applications indicated.
 4. Adhesives (Cements): Water resistant, recommended by flooring manufacturer to suit flooring and substrate conditions.

SECTION 09 69 00 ACCESS FLOORING

- A. Description: Low profile access floor.
- B. Materials: TBD.

SECTION 09 72 00 WALLCOVERINGS

- A. Description:
 1. Vinyl wall covering.
 2. Dry Erase presentation wall covering.
- B. Quality Assurance:
 1. Regulatory Requirements:
 - a. Fire Performance Characteristics: Comply with ASTM E 84 by UL. Identify wall coverings with appropriate markings of applicable testing and inspecting organization.
 - 1) Flame Spread: 25 or less.
 - 2) Smoke Developed: 450 or less.
- C. Materials:
 1. Manufacturers: Refer to Finish Schedule.
 2. Vinyl Wallcoverings: Integrally pigmented, opaque virgin vinyl calendared film vinyl wall covering material treated with mildew resistant and antimicrobial additives and laminated to suitable backing, Class A complying with FS-CCC-W-408A for type required.

- a. Type II: Medium Duty, total weight 20 ounces per sq. yd. maximum.
 - b. Width: Nominal 54 inches.
 3. Adhesive: Mildew resistant, nonstaining adhesive, for use with specific wood veneer wall covering and substrate application, as recommended by wall covering manufacturer.
 4. Release Coat: Sealer or undercoat for new gypsum board substrates; type recommended by wall covering manufacturer.
 5. Metal Molding: Comply with ASTM B 221, aluminum alloy 6063-T5 for extrusions, finish AA-M31A31, with one piece cap and wall flange tapering to feather edge.
 6. Wall Liner: Nonwoven, synthetic underlayment and adhesive as recommended by wall covering manufacturer.
- D. Execution:
1. Prepare substrates to achieve a smooth, dry, clean surface free of flaking, unsound coatings, cracks, and defects.
 2. Check painted surfaces for pigment bleeding. Sand gloss, semigloss, and eggshell finishes with fine sandpaper.
 3. Install wall liner, with no gaps or overlaps, where required by wall covering manufacturer. Form smooth wrinkle free surface for finished installation. Do not begin wall covering installation until wall liner has dried.
 4. Acclimatize wall covering materials by removing them from packaging in the installation areas not less than 24 hours before installation.

SECTION 09 84 33 SOUND ABSORBING WALL UNITS

- A. Shop fabricated, acoustical panel units tested for acoustical performance.
- B. Materials:
1. Sound Absorbing Wall Panel: Panel construction consisting of facing material stretched over front face of edge framed core and bonded or attached to edges and back of frame.
 2. Mounting: Back mounted with metal clips or bar hangers, secured to substrate.
 3. Core: Mineral fiber board. Provide wood or plywood nailing strips in core where indicated.
 4. Core Face Layer: Tackable, impact resistant, high density board.
 5. Edge Construction: Chemically hardened core with no frame.
 6. Corner Detail in Elevation: Square with continuous edge profile indicated.
 7. Facing Material: To be determined.

SECTION 09 90 00 FIELD PAINT AND COATINGS

- A. Description:
1. Exterior latex paint.
 2. Interior latex paints.
 3. Elastomeric paint.
 4. Surface preparation, painting, and finishing of interior surfaces.
- B. Materials:
1. Paint: Commercial grade 100% acrylic paint products, VOC and component complaint.
 2. Material Compatibility: Paint products compatible with each other and with substrates indicated, under conditions of service and application indicated. 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. Surface Preparation:

1. Maximum Moisture Content of Substrates: Measured with an electronic moisture meter.
 - a. Concrete: 12 percent.
 - b. Masonry (Clay and CMU): 12 percent.
 - c. Wood: 15 percent.
 - d. Gypsum Board: 12 percent.
2. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Correct unsuitable conditions prior to commencing painting.
3. Remove hardware, covers, plates, and in place items not scheduled to receive paint. Provide surface applied protection for items that cannot be removed. After painting, reinstall items and remove protections.
4. Surface Preparation: Clean substrates of substances that impair bond. Remove incompatible primers and reprime substrate with compatible primers.
 - a. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity exceeds that permitted in manufacturer's written instructions.
 - b. Steel Substrates: Remove rust, loose mill scale, and shop primer. Clean using methods recommended in SSPC-SP 2 Hand Tool Cleaning.
 - c. Galvanized Metal Substrates: Remove grease and oil residue by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
 - d. Aluminum Substrates: Remove loose surface oxidation.
 - e. Wood Substrates: Scrape and clean knots, and apply coat of knot sealer before applying primer; sand surfaces exposed to view, and dust off. Prime edges, ends, faces, undersides, and backsides of wood. After priming, fill holes and imperfections with putty or plastic wood filler. Sand smooth when dried.

D. Application: Comply with paint manufacturer's written instructions for application and dry film thickness. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or surface imperfections. Cut in sharp lines and color breaks.

1. Clean work area. Clean spattered surfaces, remove spattered paints by washing, scraping, or methods. Do not scratch or damage adjacent finished surfaces. Remove rubbish, empty cans, rags, and discarded materials. Touch up and restore damaged or defaced painted surfaces.

E. Paint Schedule: TBD.

End of Division 9

DIVISION 10 SPECIALTIES

SECTION 10 14 00 SIGNAGE

- A. Description:
 - 1. Exterior identification and directional signage.
 - 2. Interior identification signage.
 - 3. Interior panel signage.
 - 4. Dimensional letter signage.

- B. Materials:
 - 1. Panel Signs: To be determined.

SECTION 10 21 13 TOILET PARTITIONS

- A. Description: Toilet partitions and screens, ceiling hung.

- B. Materials:
 - 1. Toilet Partition and Screen: Plastic laminate faced.
 - 2. Core Material: Sound deadening honey comb of impregnated Kraft paper.
 - 3. Stirrup Brackets: Manufacturer's standard design for attaching panels to walls and pilasters, either chromium plated nonferrous cast alloy or anodized aluminum.
 - 4. Hardware and Accessories: Standard design, heavy duty operating hardware and accessories of chromium plated nonferrous cast alloy.
 - 5. Anchorages and Fasteners:
 - a. Exposed Fasteners: Stainless steel, chromium plated steel, or brass finished to match hardware, with theft resistant type heads and nuts.
 - b. Concealed Anchors: Hot dip galvanized, cadmium plated.

SECTION 10 22 26 VERTICALLY FOLDING PARTITION

- A. Description: Automatic vertically retractable acoustical panel partitions with necessary hardware, seals, lifting machinery, electrical controls.

- B. System Description:
 - 1. Basis of Design: Skyfold by Railtec, LTD.
 - 2. Acoustical partitions that, when in the down position (closed) are hard, rigid, flat, plumb walls, made of a grid of rectangular acoustical panels, and when are lifted (opened), fold upward (vertically) similar to an accordion, into a pocket in the ceiling, between roof joists, or up between built in bulkheads.
 - a. In the down (closed) position, the wall shall be comprised of two vertical planes of acoustical panels, separated by an acoustical air space.
 - 2. Folding Operation: Wall panels fold and unfold at the same time and same rate. Walls relying on the sequential folding of acoustical panels, or acoustical panel sets are not acceptable.

SECTION 10 26 13 WALL PROTECTION

- A. Description: Corner guards.
- B. Quality Assurance:
1. Regulatory Requirements:
 - a. Fire Performance Characteristics: ASTM E 84 for the fire performance characteristics. Identify wall surface protection system components with appropriate markings from the testing and inspection organization.
 - 1) Flame Spread: 25 or less.
 - 2) Smoke Developed: 450 or less.
 - a. Impact Strength: Minimum impact resistance of 25.4 ft. lbs per sq. ft. when tested in accordance with ASTM D 256 (Izod impact, ft. lbs per inch notch).
 - b. Accessibility Regulations:
 - 1) U.S. Architectural and Transportation Barriers Compliance Board Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG).
 - 2) ICC/ANSI A117.1 *Accessible and Useable Building and Facilities*.
 - 3) Texas Accessibility Standards.
- C. Materials:
1. Rigid Plastic Material: Extruded, textured, chemical and stain resistant, high impact, polyvinyl chloride (PVC) or acrylic modified vinyl plastic, thickness indicated. Comply with specified requirements of ASTM D 256 for impact resistance and ASTM E 84 for flame spread and smoke developed characteristics.
 2. Aluminum Extrusions: Minimum strength and durability properties specified in ASTM B 221 for 6063-T5.
 3. Fasteners: Provide aluminum, nonmagnetic stainless steel, or other noncorrosive metal screws, bolts, and other fasteners.

SECTION 10 28 13 TOILET ACCESSORIES

- A. Description: Public use toilet accessories.
- B. Materials:
1. Stainless Steel: Type 302/304 stainless steel, satin finish; for recessed, semirecessed, and surface mounting.
 2. Accessory Items: Refer to Drawings.
 - a. Toilet tissue holder.
 - b. Grab bars.
 - c. Paper towel dispenser.
 - d. Soap dispenser.
 - e. Trash receptacle.
 - f. Seat cover dispenser.
 - g. Napkin disposal.
 - h. Mirror units.
 - i. Shelf.
 - j. Robe hook.

SECTION 10 44 13 FIRE PROTECTION SPECIALTIES

- A. Description: Portable fire extinguishers with mounting brackets.
- B. Materials:
 - 1. Cabinet: Stainless steel.
 - b. Door Style: Solid acrylic door and duo panel.
 - c. Finish: Baked enamel finish coat with vertical die cut lettering; and stain stainless steel.
 - d. Mounting: Recessed and semirecessed.
 - 2. Fire Extinguisher:
 - a. Type: Class A, B, C multipurpose, dry chemical.
 - 1) Minimum 10 lb. capacity.
 - 2) Enameled heavy duty steel cylinder with pressure indicating gauge.
 - 3) Additional types required by conditions or Fire Marshall.
 - b. Type: Clean Agent.
 - 1) Minimum 10 lb. capacity.
 - 2) Enameled heavy duty steel cylinder with pressure indicating gauge.
 - 3) Additional types required by conditions or Fire Marshall.
 - 3. Mounting bracket.

SECTION 10 51 00 LOCKERS

- A. Description: Lockers.
- B. Materials: Two types, steel and wood.
 - 1. Lockers:
 - a. Wardrobe Lockers: Two types:
 - 1) Sheet steel.
 - 2) Wood.
 - b. Tier: Three wide.
 - c. Face: Solid with punched louvers.
 - d. Locking: Padlock type.
 - e. Tops: Sloped.
 - f. Mounting: Elevated base.
 - 2. Accessories:
 - a. Number plates.
 - b. Filler strips.
 - c. Shelf.
 - d. Double coat hooks.

End of Division 10

DIVISION 11 EQUIPMENT

SECTION 11 31 00 BREAKROOM APPLIANCES AND EQUIPMENT

- A. Description: Breakroom Equipment
 - 1. Performance Characteristics:
 - a. Energy ratings and efficiency (Energy Star; FTC Appliance Labeling Rule or comparable; AHAM HRF-1)
 - b. Water conservation.
 - c. UL listed and labeled.
 - d. NEMA complaint
 - e. NFPA compliant.
 - f. Accessibility compliant
 - 2. Appliances: Type, capacity, features, options, and color to be determined.
 - a. Refrigerator/Freezer.
 - b. Dishwasher.
 - c. Icemaker.
 - d. Garbage disposal.

End of Division 11

DIVISION 12 FURNISHINGS

SECTION 12 24 13 ROLLER WINDOW SHADES

- A. Description:
1. Roller shades, electric and manual.
 2. Black out shades.
- B. Performance Requirements;
1. Fire Test Response Characteristics: Determined by testing identical products per test method indicated below by UL for flame resistance ratings passing NFPA 701.
 2. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 3. Product Standard: Provide roller shades complying with WCMA A 100.1.
- C. Materials:
1. Shade Band Material: PVC coated fiberglass or polyester.
 2. Black Out Material: Blackout shade band material with light tight joints among shade components.
 3. Rollers: Electrogalvanized or epoxy primed steel tube required to support and fit internal components of operating system and the weight and width of shade band material without sagging; designed to be easily removable from support brackets. Provide capacity for one or two roller shade band(s) per roller.
 4. Mounting brackets.
 5. Fascia: Sheet or extruded aluminum.
 6. Top/Back Cover: Match fascia.

End of Division 12