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Architectural Specifications

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Limitedbrands

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DIVISION 00: PROCUREMENT AND CONTRACTING REQUIREMENTS

SECTION 007200 - GENERAL CONDITIONS

- A. General conditions: Owner's standard general conditions for construction are incorporated into the controlling contract for construction.
 - 1. A copy will be made available by owner upon request.

SECTION 007300 - SUPPLEMENTARY CONDITIONS

- A. Conditions and requirements: General Conditions, Supplementary Conditions and Division 1 - General Requirements contain information necessary for completion of every part of project.
- B. Division 1: Where provisions of General Conditions relate to project administration or

work-related requirements of the contract, those paragraphs are expanded in Division 1.

- C. Miscellaneous definitions:

- 1. Approved: Requires written action by owner's project manager as does terms such as directed, selected, required, ordered, designated, accepted, acceptable, and satisfactory.
- 2. Furnish: Supply and deliver to project, unless otherwise stated in greater detail.
- 3. Install: Operations at project, from inspecting and unloading, to completion in place, ready for intended use.
- 4. Provide: Furnish and install, complete and ready for intended use, unless otherwise stated in greater detail.

END OF DIVISION 00

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 011000 – SUMMARY

- A. Project consists of construction of the limited brands store as indicated in contract documents.
 - 1. Items noted "NIC" (not in contract) will be furnished and installed by owner or under separate contract
 - 2. Hazardous materials: not in contract; owner will provide for handling of hazardous materials under separate contract prior to this project. If hazardous materials are suspected, notify owner immediately.
- B. Work sequence: coordinate construction schedule, operations and use of premises with building management.
- C. Contractor use of premises: limit to areas indicated on drawings and as specified; limit access as directed by owner.
- D. Lines and levels engineering: establish lines and levels by use of recognized engineering practices. Locate and protect control and reference points.
- E. Regulatory requirements: project has been designed in accordance with applicable codes. Comply with code requirements for construction. Inform owner's project manager of discrepancies observed or noted by others.
- F. Standards: comply with standards referenced except where more rigid requirements are required by code. Date of standard is that in effect as of date documents are issued, except when specific date is specified.
- G. Owner furnished contractor installed items: owner will arrange and pay for product as indicated on dwgs to be delivered to project site for contractor installation.
 - 1. Contractor shall inspect, receive, unload, store, install and finish.

SECTION 013000 - ADMINISTRATIVE REQUIREMENTS

- A. Procedures: contractor shall review and approve submittals prior to submitting to owner's project manager. Inform owner's pm in writing at time of submission of any proposed deviation from contract documents.
 - 1. Review of submittals by owner's project manager shall be for design concept only and shall not be construed as approving departures from contract documents.
- B. Construction progress schedule: bar charts or contractor's standard computerized schedules, updated regularly, no less than monthly.
- C. Schedule of values: AIA form G703 or approved format.

- D. Shop drawings: submit one reproducible and two prints; provide for custom products and products not fully identified by product data.
- E. Product data: submit number required by contractor plus two for owner's project manager; indicate item to be used where data for more than one product or option is included; provide for each stock manufactured item.
- F. Samples: provide samples for each type of exposed finish, color, and texture; minimum size 6", maximum size 12" unless otherwise specified; submit one sample for owner's project manager to retain, one sample for field office, and number required by contractor.
- G. Manufacturer's certificates: provide two.
- H. Coordinate space requirements and installation of mechanical and electrical work; conceal pipes, ducts, and wiring in finished areas; coordinate locations of fixtures and outlets with finishes.
 - 1. Make provisions for owner installed items and for separate contracts.
 - 2. Verify characteristics of interrelated operating equipment are compatible;
 - 3. Coordinate work having interdependent responsibilities for installing, connection to, and placing of such equipment in service.
- I. Project meetings: schedule and administer meetings, make physical arrangement, prepare agenda, preside at meetings and record minutes.

SECTION 014000 - QUALITY REQUIREMENTS

- A. General quality control: Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Manufacturer's field services: When specified in respective specification sections, require manufacturer or supplier to have qualified personnel provide on-site observations and recommendations.
 - 1. Representative shall:
 - a. Observe field conditions, including conditions of surfaces. Observe quality of workmanship and methods of installation.
 - b. Provide recommendations for installation and workmanship.
 - c. Where required, start, test, and adjust equipment as applicable.
 - d. Submit written report to owner's pm of observations.
- C. Mock-ups: Construct field samples and mock-ups on site as required.
- D. Testing laboratory services: Testing shall be by an approved testing laboratory, as required by specifications and by applicable codes.

1. Testing required will be paid for by owner except retesting will be paid for by contractor where required by failure to meet original tests.
2. Contractor shall furnish materials and samples for tests and shall assist testing laboratory as requested.

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

- A. General: provide temporary construction facilities and temporary controls as required to complete project in accordance with contract documents and to conform to requirements of applicable authorities.
 1. Contract governing authorities to establish extent of temporary facilities and temporary controls required by authorities.
- B. Temporary power: provide power service and lighting required for operations, with branch wiring and distribution boxes located to allow service and lighting by means of construction-type power cords.
- C. Temporary water and sanitary services: provide and maintain required drinking water and sanitary facilities with enclosures.
- D. Noise, dust, and pollution control: provide materials and equipment necessary to comply with local requirements for noise, dust, and pollution control.
- E. Barriers: provide as required to protect adjacent properties from damage from operations; and as required by governing authorities.
 1. Solid wood construction fence; equip with gates with locks.
 2. Security: maintain site and materials secure during construction period.
- F. Cleaning: control accumulation of waste materials and rubbish; dispose of off-site at intervals approved by owner's project manager and acceptable to applicable authorities.
- G. Field office: provide weather-tight field office, with lighting, electrical outlets, heating, and ventilating equipment, and equipped with furniture.
 1. Telephone service: provide telephone service and fax service to site during on-site construction operations.
 2. Telephone service: provide cellular phone with on-site person in charge; provide phone number to owner's project manager.
- H. Storage: limit on-site storage to areas designated for construction operations and approved in writing in advance by owner; provide additional weather-tight, secured off-site storage as required.
- I. Removal and cleaning: remove construction facilities, clean and repair damage in excess of

contract requirements, caused by operations or use of temporary facilities.

SECTION 016000 - PRODUCT REQUIREMENTS

- A. Contract amount: Base on materials and products in contract documents; where listed in contract documents, materials and products by manufacturers not listed shall not be used without written approval.
- B. Products: Components supplied in quantity shall be interchangeable; provide new materials unless otherwise directed in contract documents.
- C. Installation: install items plumb, level and secure, and in correct relation to adjacent products; secure in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.
 1. Comply with manufacturer recommendations and installation instructions except where more stringent requirements are specified.
- D. Transportation: transport products to avoid product damage, deliver in undamaged condition in manufacturer's unopened containers or packaging.
- E. Handling: provide equipment and personnel to handle products by methods to prevent soiling and damage; promptly inspect to assure products are correct, complete, and undamaged, and quantities are correct.
- F. Storage: store material in accordance with manufacturer instructions, with seals and labels intact and legible.
- G. Protection: provide coverings to protect products from damage from traffic and construction operations, remove when no longer needed.
- H. Specified products: for products specified by naming one or more products or manufacturers, select products of any named manufacturer meeting specifications.

SECTION 016200 - PRODUCT OPTIONS

- A. Substitutions and product options: provide products indicated or approved; requests for substitutions of other products will be considered if submitted in writing.
 1. Contractor options: provide products and manufacturers named in specifications, submit request for substitution for products and manufacturers not specifically named where names are listed.
 2. Substitutions: contractor shall investigate proposed substitutions and determine if equivalent to products specified. Submittals

- shall include cost or time benefits for substitutions; failure to indicate cost or time benefit is justification for rejection.
3. Contractor's representation: requests constitute that contractor has investigated proposed products and determines it meets or exceeds specified products and waives claims for additional costs that subsequently become apparent.
 4. Approvals: owner's project manager shall be judge of acceptability and reserves right to reject proposed substitution based on insufficient information; use only substitutions approved in writing.

SECTION 017000 - EXECUTION AND CLOSEOUT REQUIREMENTS

- A. Installer qualifications: installers to have minimum five years successful experience installing items similar to those required for project, except for individuals in training under direct supervision of experienced installer.
- B. Examination: beginning installation of a product signifies installer has examined substrates, areas, and conditions for compliance with manufacturer requirements for tolerances and other conditions affecting performance.
- C. Manufacturer's instructions: when work is specified to comply with manufacturers' recommendations or instructions, distribute copies to persons involved, and maintain one set in field office.
- D. Installation: comply with manufacturer's written recommendations and installation instructions unless more restrictive requirements are specified.
- E. Protection: cover products subject to deterioration with impervious sheet, provide ventilation to avoid condensation and trapping water.
- F. Cutting and patching: cut and fit components as required; patch disturbed areas to match adjacent materials and finishes.
 1. Refinishing: refinish entire surfaces as necessary to provide even finish to match adjacent finishes; for continuous surfaces refinish to nearest intersection, for an assembly refinish entire unit.
- G. Final cleaning: clean interior and exterior surfaces exposed to view, remove temporary labels, stains, and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces; clean ducts; clean site.
- H. Substantial completion: provide documentation stating work has been substantially completed. Where owner requires use of space prior to final completion, provide list of items to be completed.
- I. Owner's project manager will review list of any items to be completed and supplement list with items considered to be incomplete or unacceptable.
- I. Final completion: provide written certification indicating work is in compliance with contract documents, systems have been tested and are operational, and work is ready for final inspection.
- J. Project record documents: maintain complete and up-to-date record documents; keep separate from field documents. Submit project record documents, material and finish data, operation and instruction manuals, warranties and bonds at completion.
 1. Submit bound in 8-1/2" x 11" three ring binders with durable plastic covers. Arrange in format similar to specifications.
- K. Warranties: provide warranties as indicated, signed by contractor and manufacturer; form as approved by owner prior to execution.
 1. Warranties shall be in addition to and not a limitation of other rights owner may have against contractor under contract documents and as prescribed by law, regardless of wording of warranty.

SECTION 017300 - EXECUTION

- A. Selective demolition: remove from site existing materials, construction and utilities as needed to complete project. Remove existing elements indicated and encountered during construction, as needed to complete work.
 1. Remove only those elements necessary for completion of project, replace or repair elements unnecessarily removed or damaged during construction.
 2. Carefully remove and store items indicated for reuse in project and coordinate with other trades for modifications and reinstallation.
 3. Protection: prevent movement and settlement of adjacent structure; provide bracing, shoring, and underpinning as needed and be responsible for safety and support of structures. Assume liability for such movement and settlement.
 4. Utilities: contact applicable utility companies prior to disconnecting utilities; discontinue work if unexpected utility lines are encountered. Determine line source and use prior to removal. Cap and identify existing utility lines removed.

**SECTION 017900 - DEMONSTRATION AND
TRAINING**

free of deficiencies, in most efficient and timely
manner achievable.

- A. Summary: project includes special facility start-up
process to bring facility to fully operational state,

END OF DIVISION 01

**DIVISION 02 - EXISTING CONDITIONS
(NOT USED)**

END OF DIVISION 02

DIVISION 03 - CONCRETE

SECTION 033000 - CAST-IN-PLACE CONCRETE

- A. Concrete shall have a minimum compressive strength of 3500 psi at 28 days, with a water cement ratio = .50 (maximum). Concrete exposed to weather shall be air-entrained at $6\% \pm 1.5\%$
- B. All reinforcing steel shall be new domestic deformed billet steel conforming to ASTM a-615 grade 60.
- C. Welded wire fabric shall conform to ASTM a-185 delivered in flat sheets.
- D. All concrete work shall be in accordance with "the building code requirements for reinforced concrete" ACI 318-05.
- E. All reinforcing details shall conform to "manual of standard practice for detailing reinforced concrete structures" ACI 315-94, unless detailed otherwise on the structural drawings.
- F. Contractor shall verify locations of all openings, sleeves, anchor bolts, inserts, etc., as required by other trades before concrete is placed.
- G. Contractor shall provide spacers, chairs, bolsters, etc., necessary to support reinforcing steel. chairs which bear on exposed concrete surfaces shall have ends which are plastic tipped or stainless steel. chairs which bear on exposed concrete surfaces to receive sandblast finish shall be stainless steel.
- H. The following minimum concrete cover shall be provided for reinforcement: (refer to the structural drawings specifications).

SECTION 034900 - GLASS FIBER REINFORCED CEMENT

- A. General: polymer glass fiber reinforced gray cement - Formglas EP (for exterior and high traffic application)
 - 1. Work included:
 - a. Supply of Formglas EP units.
 - b. Erection per architects' drawings, manufacturers' instructions and in compliance with local codes.
 - c. Supply of connection hardware.
 - 2. Related work excluded:
 - a. Pre-cast concrete.
 - b. Structural framing and back up.
 - c. Finishes - note: Formglas EP is available in natural (cement) grey color only and requires field finishing.
 - d. Caulking.

- 3. Design responsibility: Formglas EP is to be considered a decorative material only. Formglas cannot take responsibility for structural load (live or wind) or seismic considerations.
- 4. Manufacturer: Formglas Inc., 2 champagne drive, Toronto, Ontario Canada m3j 2c5 tel: (416) 635-8030 fax: (416) 635-6588 internet: www.formglas.com
- 5. Samples and submittals:
 - a. Submit a minimum of 3 - 8" x 8" Formglas EP flat samples to the finishing contractor for coating selection.
 - b. Submit shop drawings for approval showing plans, sections, details, joint-treatment, reinforcing, fastening devices and the relation of the Formglas EP to the surrounding construction.
- 6. Substitutions: no substitutions.
- B. Products:
 - 1. Materials:
 - a. Formglas EP units shall be prefabricated with polymer glassfibre reinforced cement (P.G.R.C.) suitably reinforced.
 - b. Formglas EP shall be ready to receive finish coatings as specified elsewhere. These coatings shall be applied after units are installed.
 - c. All fasteners or connectors shall be galvanized or plated.
 - d. Note: Formglas EP is supplied in natural (cement) grey color only and requires field finishing by others.
 - 2. Tolerances (Fabrication):
 - a. Dimensional all directions +/- 1/8"
 - b. Thickness skin +/- 1/8" - 1/16"
 - c. Thickness - total unit +/- 1/4" - 1/8"
 - d. Warpage or bowing +/- 1/16" per foot
 - 3. Physical properties:
 - a. Shell thickness 3/16" to 3/8"
 - b. Weight (depending on reinforcing) 2 1/2 to 6 lbs / sq.ft.
 - c. Density approx. 125 lbs/cu.ft.
 - d. Ultimate tensile strength 1300 P.S.I
 - e. Bending strength 2600 P.S.I
 - f. Compressive strength 8000 P.S.I
 - g. Shear strength (interlaminar) 650 P.S.I
 - h. Fuel contributed (A.S.T.M. e84-80) 5
 - i. Flame and smoke spread (A.S.T.M. e84-80) 0
- C. Execution:
 - 1. Delivery, storage and handling: transport and handle units in a manner that avoids excessive stresses or damage and store on a level and clean surface.
 - 2. Pre-installation responsibilities:
 - a. Prior to manufacturing, dimensions and conditions not shown on the drawings will be checked by the erector for inclusion by the manufacturer.

- b. Prior to installation, the erector shall check jobsite dimensions. Any discrepancies between design and field dimensions shall be brought to the attention of the general contractor. Work shall not proceed until these discrepancies are corrected.
- 3. Erection:
 - a. Units shall be lifted with suitable devices at points indicated by the manufacturer.
 - b. Installation of units shall be plumb and level.
 - c. The erector shall provide temporary supports to maintain position as units are being connected.
 - d. Fasten units with screws (through the face or from the back).
- 4. Tolerances - erected units:
 - a. Width of caulked joint +/- 3/16"
 - b. Out of plane (unit to unit) +/- 1/4"
 - c. Warpage or bowing +/- 1/16" per foot.
- 5. Joint treatment & patching:
 - a. Apply bondo at all joints. Note: in areas not subject to freeze/thaw conditions it is possible to tape column cover joints with auto body filler and fiberglass tape. Contact Formglas for further information.
 - b. To patch chips, breaks, countersunk fasteners, etc., use auto body filler or cement patching compound as recommended by Formglas.
- 6. Cleaning & finishing:
 - a. Clean soiled units with detergent and water. Formglas EP is available only in natural (cement) grey color and requires field finishing. Finishes used, shall be the same as for concrete tilt-up materials and are shown under the painting section of the specifications.
- D. Warranty: Formglas EP is warranted for one (1) year from the date of acceptance to remain free from cracks, chips, spills and marks caused by defective material or workmanship.

SECTION 039250 - CONCRETE RESURFACING AND REHABILITATION

- A. General: concrete surface shall be improved and/or repaired to provide a suitable surface for installation of all floor finish materials and to comply with all project and/or fixture requirements.
- B. Submittals:
 - 1. No submittals shall be required.
 - 2. No substitutions will be allowed.
- C. Installer: firm with minimum 5 years successful experience, regularly engaged in installation of

specified materials, properly equipped and acceptable to manufacturer.

- D. National accounts
 - 1. The Mapei or Laticrete products listed throughout this specification shall be purchased by the GC through the following national account, unless otherwise noted.
 - a. Mapei: pro tile, 914.665.0654. Place order as a Victoria's secret or PINK store. Material will be provided from the nearest Mapei distribution center.
 - b. Laticrete: Daltile, contact Dave Meyers, Laticrete national account representative 203.376.8113. Place order as a Victoria's Secret or PINK store. Material will be provided from the nearest Laticrete distribution center.
 - 2. Which manufacturer is used depends on which one is being specified for the flooring material going over this floor prep. The same manufacturer must be used throughout any given finish floor material to maintain product warranties.
 - 3. All other products listed which are the responsibility of the GC shall be purchased through local resources.
- E. Existing static substrate cracks:
 - 1. Crack isolation membrane complying with ANSI 118.12 (for treatment along cracks only; must be installed over any required self-leveling underlayment).
 - a. Mapei Mapelastic Aquadefence
 - b. Laticrete International Hydroban
- F. Patching, ramping, and small fill areas:
 - 1. Pre-blended polymer-modified cementitious fast setting high flow patching mortar, suitable from feather edge to 3 inch (76mm) application in confined areas and as a wear surf
 - a. Mapei Mapcem Quickpatch
 - b. Laticrete NXT patch
- G. Large fill areas and leveling:
 - 1. Pourable cementitious, high-strength, fast-setting, non-shrink, self-leveling underlayment achieving a minimum of 4000 psi compressive strength at 28 days, complying with ASTM c349 and suitable from 1/8 inch to 1 inch (3mm to 25mm).
 - a. Mapei Ultraplan 1 plus in conjunction with primer t (self-leveling primer)
 - b. Laticrete NXT level plus in conjunction with Laticrete NXT primer
 - 2. Substrate must be prepared by shot-blasting prior to installation of any self-leveling underlayment to achieve a surface profile between csp-3 and csp-6 as per ICRI standards.
- H. Installation: comply with all manufacturer recommendations and installation instructions.
 - 1. Include accessories and equipment as required for complete installation.

2. Do not install crack isolation membrane below any required self-leveling underlayment; cracks must be marked prior to installation of underlayment; otherwise, full coverage of crack isolation may be required.

DIVISION 04 - MASONRY

SECTION 042200 - CONCRETE UNIT MASONRY

- A. Masonry construction shall conform to the requirements of ASCE 5-05 "building code requirements for masonry structures" and ASCE 6-05 "specifications for masonry structures".
- B. Hollow load bearing units shall be normal weight, type n1, conforming to ASTM c90, with a minimum net compressive strength of 2500 psi (f'm = 1900 psi).
- C. Mortar shall be type M or S, conforming to ASTM c270.
- D. Course grout shall conform to ASTM c476 with a maximum aggregate size of 3/8" and a minimum compressive strength of 2500 psi.
- E. Vertical reinforcement shall be as noted on the structural drawings with cells filled with coarse grout.
- F. Vertical reinforcement shall be held in position at the top and bottom and at a maximum spacing of 8'-0". Reinforcement shall be placed in the center of the masonry cell, typical unless otherwise noted.
- G. Reinforcing steel shall be lapped minimum 48 bar diameters where spliced unless noted otherwise on drawings.
- H. When a foundation dowel does not line up with a vertical core, it shall not be sloped more than one horizontal in six verticals. Dowels shall be grouted into a core in vertical alignment, even though it is in the cell adjacent to the vertical wall reinforcement. Horizontal wall reinforcement shall be standard truss type Dur-O-Wal at 16" c/c., unless shown otherwise on the drawings.
- I. Spliced wire reinforcement shall be lapped at least 6" and contain at least one cross wire of each piece of reinforcement within the 6 inches. Lap with standard "t" and "l" shaped pieces at intersections and corners.
- J. Provide a minimum of 3 courses high by 2 courses wide grouted solid masonry at beam bearing points.
- K. Provide precast concrete lintels over all openings unless noted otherwise on drawings. Lintels shall be of sufficient size and reinforcement for the given spans and loading conditions. Submit shop drawings with rated load capacities to the architect for review.
- L. Provide a knock-out block or u-block reinforced with (1)-#5 continuous at the sill of all window

END OF DIVISION 03

- openings. Extend 16" beyond each side of the opening typically.
- M. Bond pilasters to adjoining masonry walls with interlocking units.
- N. Provide 2 courses by 16" wide solid or grouted solid masonry at joist and lintel bearing points.

SECTION 044000 - STONE ASSEMBLIES

- A. General: provide stone fabrications for cladding on curbs as indicated, including anchors, mortar, grout, and accessories as required for complete, finished installation.
- B. Design requirements: obtain each stone from single quarry source, with consistent color range and texture throughout work; do not change sources or kinds of materials during course of work.
- C. Quality control: observe stone during fabrication and ensure consistency of appearance; do not use pieces with defects and blemishes beyond normal characteristics anticipated for stone.
 1. Defects and blemishes: contrasting spots, foreign elements, irregular color variations, and irregularities in typical characteristics shall be considered defects and blemishes.
- D. As indicated on drawings; each type of stone shall come from a single quarry to ensure consistent color.
- E. Mortar and grout materials: ASTM c150, type 1 Portland cement, ASTM c207, type S hydrated lime, and ASTM c144 sand, clean, free of harmful substances; use white cement at colored mortar and grout, color to match stone unless otherwise indicated.
- F. Accessories: provide accessories as required for complete installation.
- G. Fabrication: fabricate as shown and as detailed on final shop drawings with exposed surfaces smooth, true, and flat.
 1. Cut accurately to shape and dimensions shown on final shop drawings; comply with fabrication tolerances of stone association for specified finishes. Zero tolerance where hairline joints are required.
- H. Installation: do not use material with chips, cracks, voids, discolorations or other defects that might be visible or cause staining in finished work.
 1. Stone application: install curbs with soft stainless steel wire anchors, minimum 1/8" diameter set with Portland cement with shrinkage reducer (exterior); grout joints.

2. Execute work with skilled mechanics and employ skilled fitters at site to do necessary field cutting as stone is set.
3. Tool joints slightly concave.

END OF DIVISION 04

DIVISION 05 - METALS

SECTION 057000 - DECORATIVE METAL

SECTION 055000 - METAL FABRICATIONS

- A. General: Provide miscellaneous metal shapes and fabrications as required and not included as part of other sections, with anchors and accessories as required for complete installation.
- B. Submittals: Furnish shop drawings for custom fabrications, product data for manufactured items; provide templates for anchor installation by others.
- C. Steel shapes: ASTM a36 steel.
- D. Provide non-shrink, non-metallic, pre-mixed, factory packaged, non-staining, non-corrosive, non-gaseous grout; type specifically recommended by manufacturer for applications indicated.
- E. Fasteners and rough hardware: Type required for specific usage; provide zinc-coated fasteners for exterior use or where built into exterior walls.
- F. Welding materials: AWS d1.1, type required for materials being welded.
- G. Provide primers as recommended by paint Manufacturers for substrates and paints specified in [Section 099000](#) - Painting and Coating.
 - 1. Galvanizing repair paint: high zinc-dust content paint for reglazing welds in galvanized steel.
- H. Fabrication: Fabricate items with joints neatly fitted and properly secured; grind exposed welds continuous, smooth and flush with adjacent finished surfaces and ease exposed edges to approximate 1/32" uniform radius.
 - 1. Make exposed joints flush butt type, hairline joints where mechanically fastened. Fit and shop assemble in largest practical sections for delivery.
- I. Finishes: Galvanize and prime paint exterior miscellaneous metal, prime paint interior miscellaneous metal; galvanize coating minimum g90 coating, galvanized after fabrication.
 - 1. Clean surfaces of rust, scale, grease and foreign matter prior to applying galvanized or painted finish.
- J. Installation: Install items square and level, accurately fitted and free from distortion or defects detrimental to appearance or performance; ensure alignment with adjacent construction; coordinate with related work to ensure no interruption in installation.
 - 1. Supply items to be cast into or embedded in other materials to appropriate trades.
 - 2. After installation, touch-up field welds and scratched and damaged surfaces; use primer consistent with shop coat or recommended for galvanized surfaces, as applicable.

- A. General: Provide custom ornamental metal items as indicated with accessories and attachment devices as required for complete, finished installation.
 - 1. Ornamental metal items: provide stainless steel base and break metal shapes as indicated on drawings.
- B. Submittals: Furnish product data, shop drawings, and samples of each exposed metal finish.
- C. Fabricator: Firm with minimum five years successful experience fabricating ornamental metal items similar to those required for project.
- D. Stainless steel: ASTM a666, type 302/304 corrosion resistant stainless steel with no. 4 satin directional finish.
- E. Brackets and anchors: Unexposed plates, angles and supports may be steel; exposed items to match ornamental metal type and finish.
- F. Fasteners: Type required for specific usage; provide concealed fasteners except where specifically approved; where exposed match type and finish of metal being fastened.
 - 1. Concealed steel fasteners: hot-dipped galvanized minimum g90 where built into exterior walls or subject to high humidity.
- G. Fabrication: Fabricate component connections to support specified design loads.
 - 1. Select materials for straightness, free of defects and irregularities
 - 2. Exposed-to-view surfaces exhibiting pitting, seam marks, roller marks, "oil canning", stains, discolorations, and imperfections on finished units are not acceptable.
 - 3. Make exposed joints flush butt type, hairline joints where mechanically fastened; provide concealed connection devices with hidden fasteners.
 - 4. Separate dissimilar materials with bituminous paint where concealed, with preformed separators, or similar method to prevent corrosion.
- H. Installation: Install ornamental metal items in accordance with manufacturer's recommendations, installation instructions and approved shop drawings.
 - 1. Install plumb, true and in correct relation to adjacent work, free from distortion or defects detrimental to appearance and performance.
 - 2. Prior to securing continuous items, adjust to ensure proper matching at butt joints and correct alignment throughout their length.
 - 3. Repair or replace items damaged or marred during construction.

END OF DIVISION 05

DIVISION 06 - WOOD, PLASTICS AND COMPOSITES

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

- A. General: Provide miscellaneous rough carpentry.
- B. Standards: Comply with requirements of American plywood association (APA) and applicable code requirements.
- C. Plywood: Provide minimum APA c-d plugged plywood; stress rated where spanning supporting members; fire retardant treated; minimum 3/4" thick unless otherwise indicated (at exterior locations provide minimum APA c-d exterior cdx plywood).
 - 1. Plywood standard: comply with ps1 (ANSI a199.1).
 - 2. Plywood panel boards: provide panel boards for electrical and communication panel boards; APA c-d plugged, interior type plywood with exterior glue, fire retardant treated; minimum 1/2" thick.
- D. Fasteners: Provide fasteners as required for complete, secure installation of miscellaneous rough carpentry; galvanized at exterior locations and pressure treated wood; size and type to suit application; provide washers for nuts and bolts.
- E. Installation: Comply with referenced standards and applicable code requirements.
 - 1. Plywood: comply with recommendations of American plywood association (APA) for fabrication and installation of plywood work.
 - 2. Place miscellaneous rough carpentry true to lines and levels.
 - 3. Correlate location so attached work will comply with design requirements and be properly located.
 - 4. Construct members of continuous pieces of longest possible lengths.
 - 5. Fit carpentry work to other work; scribe and cope as required for accurate fit.
 - 6. Securely attach carpentry work to substrates by anchoring and fastening as required by recognized standards.
 - 7. Provide washers under bolt heads and nuts in contact with wood.

SECTION 062000 - FINISH CARPENTRY

- A. General: Provide wood trim, wood shelving, and accessories as required for complete finished installation.
- B. Standards: Conform to architectural woodwork institute (AWI)/quality standards or woodwork institute (formerly woodwork institute of

- California) "manual of millwork" standards; not less than custom grade where grade is not otherwise indicated.
- C. Submittals: Furnish product data for manufactured items, shop drawings for custom items, samples of each exposed finish.
- D. Certification: Certification will not be required.
- E. Delivery, storage and handling: Comply with referenced standards and manufacturer recommendations.
- F. Wood trim: Premium grade wood trim as indicated; refer to finish schedule.
- G. Wood shelving: Custom grade 3/4" wood board, particleboard, or hardwood-edged plywood.
 - 1. Adjustable shelving brackets: provide heavy duty standards and brackets with slots 2" on center, supports maximum 24" apart, and minimum 12" shelf brackets unless otherwise indicated; color as selected by owner's project manager.
- H. Anchors, nails and screws: Select material, type, size and finish required by each substrate for secure anchorage; provide toothed steel or lead expansion bolt screws for drilled-in-place anchors.
- I. Wood filler: Color to match wood being filled.
- J. Fabrication: fabricate finish carpentry items in accordance with specified quality standard.
- K. Installation: install work consistent with specified quality grade, plumb, and level.
- L. Preparation for field finishing: sand work smooth and set exposed nails and screws; apply wood filler in exposed nail and screw indentations and leave ready to receive site-applied finishes unless otherwise noted.
 - 1. Seal concealed and semi-concealed surfaces; brush apply only, using primer consistent with finish coats specified under [Section 099000](#) - painting and coating.

SECTION 064000 - ARCHITECTURAL WOODWORK

- A. General: Install owner furnished casework and countertops; provide accessories as required for complete finished installation.
- B. Standards: Conform to architectural woodwork institute (AWI)/quality standards or woodwork institute (formerly woodwork institute of California) "manual of millwork" standards; not less than premium grade unless otherwise indicated.
- C. Submittals: Furnish product data for contractor furnished accessories including samples of exposed materials.
- D. Storage and handling: Comply with manufacturer recommendations.
- E. Architectural woodwork: Owner furnished casework and countertops.

- F. Accessories: Provide as indicated and as required to install architectural woodwork as indicated; coordinate accessories required for installation of owner furnished architectural woodwork not furnished with architectural woodwork.
- G. Installation: Comply with manufacturer recommendations and referenced standards. Take special care coordinating installation of owner furnished architectural woodwork with manufacturer recommendations and installation instructions.
 - 1. Install work consistent with specified quality grade, plumb, level, true and straight with no distortions.
 - 2. Scribe and cut for accurate fit to other finished work.
 - 3. Ensure mechanical and electrical items affecting architectural woodwork are properly placed, complete, and have been inspected by owner's project manager prior to commencement of installation.
 - 4. Secure work to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation.
 - 5. Scribe and cut for accurate fit to other finished work.
 - 6. Install architectural woodwork under supervision of factory-trained mechanics.
 - 7. Attach architectural woodwork securely in place with uniform joints providing for thermal and building movements.
 - 8. Acceptable tolerances:
 - a. Variation from true position: maximum 1/16" at any position and maximum 1/8" in any 10'-0" length
 - b. Adjoining surfaces of same material: no variation permitted.

SECTION 061600 - SHEATHING

PART 1 - PART 1 - GENERAL

1.01 Summaries

- A. Section includes wall sheathing and sheathing joint and penetration treatment.

PART 2 - PRODUCTS

2.01 Performance Requirements

- A. Fire-test-response characteristics: For assemblies with fire-resistance ratings, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM e 119 by a testing and inspecting agency acceptable to authorities having jurisdiction. Fire-resistance ratings are indicated by design designations from UL's "fire resistance directory."

2.02 Wood Panel Products

- A. Emissions: Products shall meet the testing and product requirements of the California department of health services' "standard practice for the testing of volatile organic emissions from various sources using small-scale environmental chambers."

2.03 Fire-retardant-treated plywood

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with firetest - response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-retardant-treated plywood by pressure process: products with a flame-spread index of 25 or less when tested according to ASTM e 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
 - 1. Exterior type: treated materials shall comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering according to ASTM d 2898. Use for exterior locations and where indicated.
 - 2. Interior type a: treated materials shall have a moisture content of 28 percent or less when tested according to ASTM d 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
 - 3. Design value adjustment factors: treated lumber plywood shall be tested according to ASTM d 5516 and design value adjustment factors shall be calculated according to ASTM d 6305. Span ratings after treatment shall be not less than span ratings specified. Where high-temperature fire-retardant treatment is indicated, span ratings for temperatures up to 170 deg F (76 deg C) shall be not less than span ratings specified.
- C. Kiln-dry material after treatment to a maximum moisture content of 15 percent.
- D. Identify fire-retardant-treated plywood with appropriate classification marking of qualified testing agency.
- E. Application: treat all plywood unless otherwise indicated on drawings.

2.04 Wall Sheathing

- A. Exterior plywood wall sheathing: Exterior, Structural I, Exposure 1. Thickness as indicated on drawings.
- B. Interior plywood wall sheathing: Interior Grade Plywood. Thickness as indicated on drawings; 1/2" minimum.
- C. Paper-surfaced gypsum wall sheathing: ASTM c 1396/c 1396m, gypsum sheathing; with water-

resistant-treated core and with water-repellent paper bonded to core's face, back, and long edges. Thickness as indicated on drawings.

- D. Glass-mat gypsum wall sheathing: ASTM c 1177/1177m. Thickness as indicated on drawings.
- E. Cellulose fiber-reinforced gypsum sheathing: ASTM c 1278/c 1278m, gypsum sheathing. Thickness as indicated on drawings.
- F. Cementitious backer units: ASTM c 1325, type a. thickness as indicated on drawings.

2.05 Cement Bonded Particle Board

- A. Materials: all cement board wall panels shall comply with en 634-2 for cement bonded particle boards; and shall be installed according to the manufacturer's most current published instructions. Wall panel thickness as indicated on drawings.
- B. Fire resistance properties: all cement board wall panels shall be rated for "0" flame spread and "0" smoke development per ASTM e84 and shall have passed a modified ASTM e136 test for a minimum duration of ten (10) minutes.
- C. Delivery and storage:
 - 1. Deliver, store and handle materials to prevent breakage, warping or damage by water.
 - 2. Acclimatize materials by storing on site not less than three (3) days before installation.
 - 3. Materials to be stored indoors on leveled dunnage not exceeding 32" on centers. If temporarily stored outdoors, boards must be elevated above ground, and protected from the weather with waterproof covering.
 - 4. Panels to be stored flat and not on edges.
- D. Surface treatments: Verify cement board will accept paint as indicated on drawings - refer to the paint manufacturer in all instances. for surface treatments that are not vapor or moisture permeable, the reverse and all edges of the panel should also be treated in the same way to avoid the panel being unbalanced and exhibiting warping under extreme conditions of humidity variance

2.06 Fasteners

- A. General: provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacturer. For wall sheathing, provide fasteners as indicated on drawings.

2.07 Sheathing Joint-And-Penetration Treatment Materials

- A. Sealant for paper-surfaced gypsum sheathing: elastomeric, medium-modulus, neutral-curing silicone joint sealant compatible with joint substrates formed by gypsum sheathing and other materials, recommended by sheathing manufacturer for application indicated and complying with requirements for elastomeric

sealants specified in Division 07 [Section 079200](#) "Joint Sealants."

- B. Sealant for glass-mat gypsum sheathing: silicone emulsion sealant complying with ASTM c 834, compatible with sheathing tape and sheathing and recommended by tape and sheathing manufacturers for use with glass-fiber sheathing tape and for covering exposed fasteners.
 - 1. Sheathing tape: self-adhering glass-fiber tape, minimum 2 inches (50 mm) wide, 10 by 10 or 10 by 20 threads/inch (390 by 390 or 390 by 780 threads/m), of type recommended by sheathing and tape manufacturers for use with silicone emulsion sealant in sealing joints in glass-mat gypsum sheathing and with a history of successful in-service use.
- C. Sealant for cement bonded particle board:
 - 1. Exterior applications: use premixed elastomeric joint caulking or sealant as approved by the synthetic coatings manufacturer's finish system. Use only fully elastomeric synthetic coatings.
 - 2. Interior applications: design for visible panel joints or use metal or plastic batten cover strips at panel joints.

2.08 Miscellaneous Materials

- A. Adhesives for field gluing panels to framing: formulation complying with ASTM d 3498 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

PART 3 - EXECUTION

3.01 Installation, General

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "fastening schedule," in ICC's "international building code."
- D. Coordinate wall sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

3.02 Wood Structural Panel Installation

- A. General: comply with applicable recommendations in APA form no. e30,

"engineered wood construction guide," for types of structural-use panels and applications indicated.

- B. Fasten panels as indicated below for wall sheathing:
 - 1. Nail or staple to wood framing. Apply a continuous bead of glue to framing members at edges of wall sheathing panels.
 - a. Exterior Grade plywood uses waterproof glue; Interior Grade plywood uses glue that is not waterproof.
 - 2. Screw to cold-formed metal framing.
 - 3. Space panels 1/8 inch (3 mm) apart at edges and ends

3.03 Gypsum Sheathing Installation

- A. Comply with GA-253 and with manufacturer's written instructions.
 - 1. Fasten gypsum sheathing to wood framing with nails or screws.
 - 2. Fasten gypsum sheathing to cold-formed metal framing with screws.
- B. Seal sheathing joints according to sheathing manufacturer's written instructions.

3.04 Cement Bonded Particle Board Installation

- A. A support framing member must always occur behind fastener location.
- B. Do not nail or screw any collateral building materials to panels without a secure backing surface behind the panel to receive the fastener. Toggle bolting is required where no secure backing surface is provided.
- C. Deflection of panels shall be limited to $l/240$.
- D. In exterior applications, control joints (where applicable) shall be designed to prevent transfer

of any movement or stress to exterior finish systems. Through-wall control joints shall be designed to isolate a maximum of 250 sq. ft. of wall area. Provide separate framing member at each side of control joint.

- E. Comply with applicable building codes for wind, seismic and other load requirements.
- F. Install panels with long dimensions vertical. All panel joints must occur over a framing member. All panel edges are to be supported by a framing member.
- G. Provide 1/8" vertical and horizontal joints between panels.
- H. Use panel thickness as indicated on drawings.
- I. Use 2" minimum flange width stud framing for single stud back-up at panel joints. If stud framing at panel joints uses less than 2" flange width, use double studs at panel joint locations. Opposite side of stud wall to be restrained against stud rotation.
- J. Never install panels while wet or damp.
- K. Install boards with a 3/8-inch gap where non-load-bearing construction abuts structural elements.
- L. Install boards with a 1/4-inch gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.

3.05 Cementitious Backer Unit Installation

- A. Install panels and treat joints according to ANSI a108.11 and manufacturer's written instructions for type of application indicated.

END OF DIVISION 06

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

SECTION 071416 - WATERPROOF MEMBRANE

- A. General: Integral waterproofing: liquid rubber integral tile setting waterproofing system with no bituminous extenders, designed for application under tile; extend 6" up wall.
- B. Submittals:
 - 1. No submittals shall be required.
 - 2. No substitutions will be allowed.
- C. Installer: Firm with minimum 5 years successful experience, regularly engaged in installation of specified materials, properly equipped and acceptable to manufacturer.
- D. Provide a waterproof membrane when required by the following:
 - 1. The building owner (landlord) or local building official
 - 2. Above grade toilet room installations
- E. Allowable products
 - 1. Mapei Corp: Mapelastic Aquadefense
 - 2. Laticrete International: Hydroban
- F. Installation:
 - 1. Follow all manufacturer instructions for installation.
 - 2. Provide all accessories and equipment necessary for a complete installation.
 - 3. When using fiber mesh lap at least 2 inches at joints.
 - 4. Carefully place tile and setting materials over waterproofing so protection materials are not displaced and waterproofing is not punctured or otherwise damaged. Replace protection materials that become displaced and arrange for repair of damaged waterproofing before covering with tile.
 - 5. Provide cork joint filler, where indicated, at waterproofing that is turned up on vertical surfaces or, if not indicated, provide temporary filler or protection until tile installation is complete.

SECTION 072100 - THERMAL INSULATION

- A. General: provide thermal insulation with accessories as required for complete installation.
 - 1. Insulation integral with roofing repairs is provided with roofing, and acoustical insulation is provided with gypsum board assemblies.
- B. Thermal batt insulation: Owens corning/FS-25 (1.800.438.7465), thermafiber FS25 (1.888.834.2371), or Johns Manville/FSK-25 (1.800.654.3103); foil faced vapor retarder faced, vapor retarder toward inside.

- 1. Thickness/R-value: R-13 (walls), others, as indicated on drawings.
- C. Accessories: Provide tape or penetration anchors where required to ensure permanent installation.
- D. Installation: Comply with manufacturer recommendations.

SECTION 072400 - EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)

PART 1 - GENERAL

1.01 Section Includes

- A. Materials and installation of EIFS

1.02 Related Sections

- A. [Section 061600](#): Sheathing
- B. [Section 072100](#): Thermal Insulation
- C. [Section 075900](#): Roof Repairs
- D. [Section 076000](#): Flashing and Sheet Metal
- E. [Section 079200](#): Joint Sealants
- F. [Section 084113](#): Aluminum-Framed Entrances and Storefronts
- G. [Section 088100](#): Glazing

1.03 Design Requirements

- A. Substrate systems should be designed to withstand applicable loads, including live, dead, positive and negative wind, seismic, etc. bond strength, fastener strength and connection strength shall be analyzed and engineered, and appropriate factors of safety shall be used. Maximum deflection of substrate systems shall not exceed $l/240$ th of the span.
- B. Dimensional tolerances:
 - 1. Structural steel framing used to support the EIFS system shall meet the requirements of the American institute of steel construction.
 - 2. Brick, masonry and concrete substrates and exterior grade sheathing shall be flat within $1/4$ " depth within any 4' radius.
- C. Light gauge steel framing:
 - 1. Thickness shall be determined by loads using accepted engineering practices with minimum thickness being 20 gage at maximum 16" stud spacing.
 - 2. Section properties of members shall meet the latest arise standards.
 - 3. All stud, track, bridging and bracing connections shall be electric fusion welded. Field erected framing shall be screw fastened.
 - 4. Framing will include stud, track, bridging and bracing and be galvanized or painted with rust-resistant primer.
 - 5. When light gauge steel framing is continued past the floorline, the stud cavity flue shall be continuously firestopped at the floorline. The space between the edge of the floor and the slab shall be sealed with safing material as per building code requirements.
- D. Acceptable substrates:
 - 1. As detailed and indicated on drawings.

2. Sheathing shall be protected at all times prior to installation of the EIFS system to ensure that damage to the sheathing does not occur and that the bond between the gypsum and its facing has not been compromised.
 - E. Min. slope of inclined surfaces shall be not less than 6" of rise in 12" of horizontal projection. Inclined areas defined as roof shall not use the precor system.
 - F. Wind load: Design for maximum allowable system deflection, normal to the plane of the wall, of 1/240. Design for wind load in conformance with code requirements.
 - G. Moisture control: Prevent the accumulation of water behind the EIFS system, either by condensation or leakage through the wall construction, in the design and detailing of the wall assembly.
 1. Provide flashing to direct water to the exterior where it is likely to penetrate components in the wall assembly, including, above window and door heads, beneath window and door sills, at roof/wall intersections, decks, abutments of lower walls with higher walls, above projecting features, and at the base of the wall.
 2. Vapor diffusion and condensation: perform a dew point analysis of the wall assembly to determine the potential for accumulation of moisture in the wall assembly as a result of water vapor diffusion and condensation. Adjust insulation thickness and/or other wall assembly components accordingly to minimize the risk of condensation. Avoid the use of vapor retarders on the interior side of the wall in warm, humid climates.
 - H. Impact resistance per 2.06 reinforcing meshes, provide ultra-high impact resistance to a min. height of 6'-0" (1.8 m) above finished grade at all areas accessible to pedestrian traffic and other areas exposed to abnormal stress or impact.
 - I. Joints:
 1. Design minimum 3/4" wide expansion joints in the EIFS where they exist in the substrate or supporting construction, where the EIFS adjoins dissimilar construction or materials, at changes in building height, and at floor lines in multi-level wood frame construction.
 2. Minimum 1/2" wide sealant joints at all penetrations through the EIFS (windows, doors, etc.)
 3. Install backer rod and sealant that has been evaluated in accordance with ASTM c 1382, "test method for determining tensile adhesion properties of sealants when used in exterior insulation and finish system (EIFS) joints", and that meets minimum 50% elongation after conditioning.
 4. Design joints with secondary moisture protection and drain joints to the exterior.
 - Refer to storefront details for locations if required.
 - J. Trim, projecting architectural features and reveals: all trim and projecting architectural features must have a minimum 1:2 [27°] slope along their top surface. All horizontal reveals must have a minimum 1:2 [27°] slope along their bottom surface.
 - K. Terminations
 1. Where window and door heads and jambs and other elements penetrate the substrate, a minimum 1/2" will be left between the EIFS and that element, in order to accommodate the installation of backer rod and sealant. The single exception is in a sill condition, where sill flashing is installed and turns down onto the vertical face of the Precor-SB system. Other exceptions shall be only as approved by Corev America.
 2. Windows must be designed with the proper sill pan, end dams, or other design elements to ensure that any water penetrating the window assembly is diverted to the exterior of the building.
 3. The EIFS shall terminate at least 8" above grade.
 4. At rooflines, balconies and other terminations, adequate flashing, including diverter flashing, shall be designed and installed to prevent water infiltration into the wall assembly.
 - L. Sealants: sealant shall be installed per the sealant manufacturer's specifications, using accessories and components approved by that manufacturer. Backer rods shall be closed cell.
 - M. Details: follow Corev America's latest published information for standard detail treatments, utilizing Precor-SB system.
- 1.04 Performance Requirements
- A. Shall comply with requirements as specified by manufacturer's published instructions
- 1.05 Submittals
- A. Samples:
 1. G.C. shall provide one 12" x 12" sample of the Precor-SB system, representative of the proper finish coating, texture and color, shall be prepared using the same tool and technique as required by the job.
 2. One sample shall remain at the jobsite for comparison of texture and color.
- 1.06 Quality Assurance
- A. Installation Company:
 1. Shall be a company specializing in the work of this section and approved by Corev America.
 2. Shall have a minimum five years experience in the installation of EIFS, with experience with projects of the scope and complexity of the specified project.

3. Shall employ installation personnel qualified in the trowel trades and experienced in EIFS installation.
 - B. Insulation board manufacturer:
 1. Shall be approved in writing by Corev America and be competent in the manufacture of expanded polystyrene insulation board.
 2. Shall manufacture the insulation board according to Corev America's specs.
 - C. Sealant contractor:
 1. The general contractor or owner shall ensure that the sealant contractor is qualified to perform the sealant work in accordance with the sealant manufacturer's specifications.
 2. The applicator shall be properly trained so that a competent installation of the specified sealant system is achieved.
- 1.07 Delivery, Storage and Handling
- A. Deliver materials to the jobsite in Corev America's original unopened packaging with labels intact.
 - B. Protect materials from damage by storing in a cool, dry space, protected from direct sun and freezing temps. Buckets shall not be stacked more than three high.
- 1.08 Job conditions / environmental requirements
- A. Materials shall not be applied to a substrate with a temperature lower than 40° f or higher than 100° f.
 - B. The ambient air temperature will be a minimum of 40° f and rising at the time of installation and remain so for twenty-four (24) hours thereafter.
 - C. For EIFS installation in ambient temperatures lower than 40° f, enclose the area and apply supplementary heat during installation and for a minimum of twenty-four (24) hours after the installation of materials is complete.
 - D. Do not install EIFS materials during rain or other inclement weather, and after such weather, wait until surfaces are completely dry before resuming work.
 - E. Adjacent areas and materials shall be protected to preclude damage during materials installation.
 - F. The EIFS assembly shall be protected from weather immediately after installation through use of flashing. Plastic should be used to cover areas that may be exposed to moisture prior to drying.
 - G. Proper scheduling of the installation will be coordinated with the general contractor and the job will be staffed to maintain the schedule established.
 - H. The general contractor shall provide access to electric power and clean water where the EIFS system is to be installed.

1.09 Warranty

- A. Corev America will provide a written 10-year limited warranty against defective materials.

Corev America shall make no other warranties, expressed or implied. Corev America does not warrant workmanship associated with installation of EIFS system.

PART 2 - PRODUCTS

2.01 Manufacturers

- A. Provide EIFS system and accessories from single source manufacturer or approved supplier. The following are acceptable manufacturers:
 1. Corev America - Precor-SB EIFS system (1.713.937.3437)
 2. Plastic Components, Inc.-accessories (1.800.327.7077)

2.02 Surface Preparation

- A. Corev America approved product for surface preparation, compatible with Precor-SB system components.

2.03 Waterproofing Membrane:

- A. Impercorev acrylic polymer elastomeric waterproofing membrane

2.04 Adhesive

- A. Unibase adhesive: acrylic polymer cement modifier mixed at jobsite with Portland cement, used to adhere the EPS to approved substrate.

2.05 Insulation Board

- A. Nominal 1.0lb./cubic foot expanded polystyrene (EPS) insulation board complying with ASTM c 578 type 1 requirements and EIMA guideline specification for expanded polystyrene insulation board. Such insulation board shall be produced for Corev America by manufacturers approved by Corev America. Minimum thickness of EPS for the precor system shall be 3/4" after all rasping is complete, including any point here it has been routed or grooved. Maximum thickness of EPS shall be 1" U.O.N.

2.06 Base Coat

- A. Unibase-WP: An acrylic polymer cement modifier with a high resistance to moisture. An element of the base coat mixture.
 1. Unibase-WP basecoat: a combination of unibase-wp acrylic polymer cement modifier and Portland cement. Mixed at the jobsite.

2.07 Reinforcing Meshes

- A. Corevnet-DTA reinforcing mesh (adhesive-backed detail): used with precor-sb system to tape sheathing joints, as an element of the secondary water-resistive barrier.
- B. Corevnet-DT reinforcing mesh (detail): a corev-supplied treated glass-fiber reinforcing mesh in the unibase lamina used in detailed work and for backwrap at all system terminations to strengthen the surface of the eps insulation board. 2.0 oz./sy
- C. Corevnet-ST reinforcing mesh (standard): a corev-supplied treated glass-fiber reinforcing

- mesh in the unibase lamina used to strengthen the surface of the eps insulation board. 4.4 oz./sy
- D. Corevnet-rf reinforcing mesh (reinforced): a corev-supplied treated glass-fiber reinforcing mesh in the unibase lamina used in high-traffic areas to strengthen the surface of the eps insulation board. 10.6 oz./sy
 - E. Corevnet-hd reinforcing mesh (heavy duty): a corev-supplied treated glass-fiber reinforcing mesh in the unibase lamina used in high-traffic areas to strengthen the surface of the eps insulation board. 14.0 oz./sy
 - F. Corevnet-shd reinforcing mesh (super heavy duty): a corev-supplied treated glass-fiber reinforcing mesh in the unibase lamina used in high-traffic areas to strengthen the surface of the eps insulation board. 20.0 oz./sy
 - G. Corev-corner: a corev-supplied treated glass-fiber reinforcing mesh to add increased impact resistance to corners. 7.0 oz./sy

2.08 Primer

- A. Pintuprime (vapor permeable, acrylic primer)

2.09 Finish Coat

- A. Quarry: factory-mixed, acrylic polymer based finish coating containing integral color. Color: qr7070f, texture: smooth.

2.10 Penetrating Sealer

- A. Vitrocorev (clear, acrylic sealer)

2.11 Job Mixed Ingredients

- A. Water: clean and clear, free of foreign matter, and potable.
- B. Portland cement: ASTM c 150 type I or ii Portland cement, gray color, with fine powder consistency and free of lumps.

2.12 Mixing

- A. Mix in compliance with manufacturer's published instructions.
- B. Mix only as much material as can readily be used.
- C. Do not use anti-freeze compounds or other additives.

PART 3 - EXECUTION

3.01 Acceptable Installers

- A. Prequalify under quality assurance requirements of this specification (section 1.05.b).

3.02 Examination

- A. Verify the substrate is appropriate for use with the Corev Precor system.
- B. Inspect substrate surfaces for:
 1. Contamination: algae, chalkiness, dirt, dust, efflorescence, form oil, fungus, grease, laitance, mildew or other foreign substances.
 2. Surface absorption and chalkiness.
 3. Cracks: measure crack width and record location of cracks.

4. Damage and deterioration.
 5. Moisture content and moisture damage: use a moisture meter to determine if the surface is dry enough to receive the EIFS and record any areas of moisture damage.
 6. Compliance with specification tolerances: record areas that are out of tolerance (greater than 1/4 inch in 8-0 feet deviation in plane).
- C. Report deviations from the requirements of project specifications or other conditions that might adversely affect the EIFS installation to the general contractor. Do not start work until deviations are corrected.

3.03 Surface Preparation

- A. Remove surface contaminants on concrete and concrete masonry surfaces (Refer to ASTM d 4258 and d 4261).
- B. Apply conditioner by to chalking or excessively absorptive surfaces.
- C. Replace weather-damaged sheathing and repair damaged or cracked surfaces.
- D. level surfaces to comply with required tolerances.

3.04 Installation

- A. Install in compliance with manufacturer's published instructions.

3.05 Protection

- A. Provide protection of installed materials from water infiltration into or behind them. Provide protection of installed materials from dust, dirt, precipitation, freezing and continuous high humidity until they are fully dry.

SECTION 072400 - EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) - STO THERM HURRICANE IMPACT SYSTEM

PART 1 - GENERAL

1.01 Section Includes

- A. Materials and installation of hurricane impact resistant EIF system with secondary moisture barrier and provisions for drainage.

1.02 Related Sections

- A. [Section 072100](#): Thermal Insulation
- B. [Section 075900](#): Roof Repairs
- C. [Section 076000](#): Flashing and Sheet Metal
- D. [Section 079200](#): Joint Sealants
- E. [Section 084113](#): Aluminum-Framed Entrances and Storefronts
- F. [Section 088100](#): Glazing
- G. [Section 092900](#): Gypsum Board

1.03 Design Requirements

- A. Wind load: Design for maximum allowable system deflection, normal to the plane of the wall, of 1/240. Design for wind load in conformance with code requirements.

- B. Moisture control: Prevent the accumulation of water behind the EIFS system, either by condensation or leakage through the wall construction, in the design and detailing of the wall assembly.
 - 1. Provide flashing to direct water to the exterior where it is likely to penetrate components in the wall assembly, including, above window and door heads, beneath window and door sills, at roof/wall intersections, decks, abutments of lower walls with higher walls, above projecting features, and at the base of the wall.
 - 2. Vapor diffusion and condensation-- perform a dew point analysis of the wall assembly to determine the potential for accumulation of moisture in the wall assembly as a result of water vapor diffusion and condensation. Adjust insulation thickness and/or other wall assembly components accordingly to minimize the risk of condensation. Avoid the use of vapor retarders on the interior side of the wall in warm, humid climates.
- C. Impact resistance per 2.06 reinforcing meshes, provide ultra-high impact resistance to a min. height of 6'-0" (1.8 m) above finished grade at all areas accessible to pedestrian traffic and other areas exposed to abnormal stress or impact.
- D. Joints
 - 1. Design minimum 3/4 inch wide expansion joints in the EIFS where they exist in the substrate or supporting construction, where the EIFS adjoins dissimilar construction or materials, at changes in building height, and at floor lines in multi-level wood frame construction.
 - 2. Minimum 1/2 inch wide sealant joints at all penetrations through the EIFS (windows, doors, etc.).
 - 3. Install backer rod and sealant that has been evaluated in accordance with ASTM c 1382, "test method for determining tensile adhesion properties of sealants when used in exterior insulation and finish system (EIFS) joints," and that meets minimum 50% elongation after conditioning.
 - 4. Design joints with secondary moisture protection and drain joints to the exterior. Refer to storefront details for locations if required.
- E. Trim, projecting architectural features and reveals
 - 1. All trim and projecting architectural features must have a minimum 1:2 [27°] slope along their top surface. All horizontal reveals must have a minimum 1:2 [27°] slope along their bottom surface.
- F. Fire protection do not use foam plastic in excess of 4 inches thick. Where a fire-resistance rating is required by code use EIFS over rated assembly.

1.04 Submittals

- A. Samples for approval as directed by LSD&C project manager.
- B. Prepare and submit project-specific details (when required by contract documents).
- C. Insulation board manufacturer requirements
 - 1. Recognized by STO as capable of producing insulation board to meet system requirements, and hold a valid licensing agreement with STO.
 - 2. Listed by an approved agency.
 - 3. Label insulation board with information required by STO, the approved listing agency and the applicable building code.

1.05 Quality Assurance

- A. Manufacturer requirements
 - 1. Member in good standing of the EIFS industry members association (EIMA).
 - 2. System manufacturer for a minimum of twenty (20) years. Manufacturing facilities 150 9002 certified.
 - 3. Manufacturer's wall assembly listed in gypsum association fire resistance design manual.
- B. Contractor requirements
 - 1. Engaged in application of EIFS for a minimum of three (3) years.
 - 2. Knowledgeable in the proper use and handling of STO materials and listed by STO as having attended STO EIFS continuing education.
 - 3. Employ skilled mechanics who are experienced and knowledgeable in EIFS application, and familiar with the requirements of the specified work.
 - 4. Successful completion of minimum of three (3) projects of similar size and complexity of the specified project.
 - 5. Provide the proper equipment, manpower and supervision on the job site to install the system in compliance with STO's published specifications and details and the project plans and specifications.
- C. Insulation board manufacturer requirements
 - 1. Recognized by STO as capable of producing insulation board to meet system requirements, and hold a valid licensing agreement with STO.
 - 2. Listed by an approved agency
 - 3. Label insulation board with information required by STO, the approved listed agency and the applicable building code.

1.06 Delivery, Storage And Handling

- A. Deliver all materials in their original sealed containers bearing manufacturer's name and identification of product.
- B. Protect coatings (pail products) from freezing and temperatures in excess of 90°F store away from direct sunlight.

- C. Protect Portland cement based materials (bag products) from moisture and humidity. Store under cover off the ground in a dry location.

terrace, Miami, Florida 33178
(1.800.327.7077).

1.07 Project/Site Conditions

- A. Maintain ambient and surface temperatures above 40°F during application and drying period, minimum 24 hours after application of EIFS.
- B. Provide supplementary heat for installation in temperatures less than 40°F (4°C).
- C. Provide protection of surrounding areas and adjacent surfaces from application of materials.

1.08 Coordination/Scheduling

- A. Provide site grading such that EIFS terminates above finished grade a minimum of 8 inches (203 mm) or as required by code.
- B. Coordinate installation of foundation waterproofing, roofing membrane, windows, doors and other wall penetrations to provide a leakproof building envelope.
- C. Provide protection of rough openings before installing windows, doors, and other penetrations through the wall and provide sill flashing.
- D. Install window and door head flashing immediately after windows and doors are installed.
- E. Install diverter flashings wherever water can enter the wall assembly to direct water to the exterior.
- F. Install copings and sealant immediately after installation of the EIFS system and when EIFS coatings are dry.
- G. Attach penetrations through EIFS to structural support and provide water tight seal at penetrations.

1.09 Warranty

- A. Provide manufacturer's 7 year standard labor and material warranty

PART 2 - PRODUCTS

2.01 Manufacturers

- A. Provide moisture barrier, EIF system and accessories from single source manufacturer or approved supplier.
- B. The following are acceptable manufacturers:
 - 1. STO Corp.--moisture barrier, EIF system (1.888.786.3437)
 - a. STO HI- at system- small missile: Miami- Dade county product approval: noa#03-0527.12
 - b. STO H- at system- large missile, Miami- Dade county product approval: noa#03-0422.01
 - 2. Plastic Components, Inc.--accessories (1.800.327.7077)
- C. Accessories
 - 1. Starter track rigid PVC (polyvinyl chloride) plastic track part no. stde as furnished by plastic components, Inc., 9051 NW 97th

2.02 Moisture Barrier

- A. STO guard air and moisture barrier system.
 - 1. STO gold fill and STO guard mesh joint treatment system for rough opening protection and joint treatment of wall sheathing.
 - 2. STO gold coat ready mixed acrylic based water proofing coating.

2.03 Adhesive

- A. Cementitious adhesive
 - 1. STO primer/adhesive-b--one component polymer modified cement based, factory blend, adhesive with less than 33 percent Portland cement content by weight (for use over exterior gypsum sheathing, dens-glass gold sheathing, exterior cementitious sheathing, concrete, masonry or plaster surfaces).

2.04 Insulation Board

- A. STO EPS insulation board
 - 1. Nominal 1.0 lb/ft³ (16 kg/m³) expanded polystyrene (EPS) insulation board in compliance with ASTM c 578 type I requirements, and EIMA guideline specification for expanded polystyrene (EPS) insulation board. (Note: minimum required thickness is 2 inches [25 mm] and maximum allowable thickness is typically 4 inches [100 mm] unless thicker dimensions are approved by the code official).

2.05 Base Coat

- A. Cementitious base coat
 - 1. STO primer/adhesive-b--one component polymer modified cement based factory blend, base coat with less than 33 percent Portland cement content by weight.
- B. Waterproof base coat
 - 1. STO flexyl--two component fiber reinforced acrylic based waterproof base coat mixed with Portland cement (for use as a waterproof base coat to waterproof foundations, parapets, splash areas, trim and other projecting architectural features).

2.06 Reinforcing Meshes

- A. high impact mesh
 - 1. STO intermediate mesh--nominal 11.2 oz./yd² (380 g/m²), high impact, interwoven, open weave glass fiber fabric with alkaline resistant coating for compatibility with STO materials (achieves high impact classification).
- B. Ultra-high impact mesh
 - 1. STO armor mat--nominal 15 oz./yd² (509 g/m²), ultra-high impact, double strand, interwoven, open-weave glass fiber fabric

- with alkaline resistant coating for compatibility with STO materials (recommended to a minimum height of 6'-0" [1.8m] above finished grade at all areas accessible to pedestrian traffic and other areas exposed to abnormal stress or impact. Achieves ultrahigh impact classification when applied beneath STO mesh or STO intermediate mesh).
- C. Specialty meshes
1. STO detail mesh--nominal 4.5 oz/yd² (153 g/m²), flexible, symmetrical, interlaced glass fiber fabric, with alkaline resistant coating for compatibility with STO materials (used for standard EIFS backwrapping, aesthetic detailing, splice joints in intermediate mesh, and protection of rough openings with moisture barrier).
 2. STO corner mat--nominal 7.8 oz/yd² (265 g/m²), pre-creased, heavy-duty, open-weave woven glass fiber fabric with alkaline resistant coating for compatibility with STO materials (used for maximum impact protection at inside and outside corners).
- 2.07 Primer
- A. STO primer acrylic based tinted primer.
- 2.08 Finish coat
- A. STO limestone finish (2-step process, using STO): 1.0 mm aggregate as 1st coat and STOLIT freeform as 2nd coat), custom finish as indicated on storefront drawings.
- 2.09 Penetrating Sealer
- A. STO penetrating sealer (clear, siloxane-based)
- 2.10 Job Mixed Ingredients
- A. Water--clean and potable.
 - B. Portland cement--type I in conformance with ASTM c 150.
- 2.11 Mixing
- A. STO Plex W: add water as directed on labeling.
 - B. STO leveler: mix ratio with water: 6-7 quarts (5.7-6.6 l) of clean water per 60 pound (27.3 kg) bag of STO leveler. Pour water into a clean mixing pail add STO leveler, mix to a uniform consistency and allow to set for approximately 5 minutes. Adjust mix if necessary with additional STO leveler or water and remix to a uniform trowel consistency. Avoid retempering. Keep mix ratio consistent. Do not exceed maximum water amount in mix ratio.
 - C. STO RFP--mix with a clean, rust-free high speed mixer to a uniform consistency.
 - D. STO flexyl--mix ratio with Portland cement: 1:1 ratio by weight. Pour STO flexyl into a clean mixing pail. Add Portland cement, mix to a uniform consistency and allow to set for approximately five minutes. Adjust mix if necessary with additional STO flexyl and remix to

- a uniform trowel consistency. Avoid retempering. Keep mix ratio consistent.
- E. STO primer--mix with a clean, rust-free high speed mixer to a uniform consistency.
 - F. STOLIT--mix with a clean, rust-free high speed mixer to a uniform consistency. A small amount of water may be added to adjust workability. Limit addition of water to amount needed to achieve the finish texture.
 - G. Mix only as much material as can readily be used.
 - H. Do not use anti-freeze compounds or other additives.

PART 3 - EXECUTION

3.01 Acceptable Installers

- A. Prequalify under quality assurance requirements of this specification (Section 1.07.b).

3.02 Examination

- A. Inspect surfaces for:
1. Contamination -- algae, chalkiness, dirt, dust, efflorescence, form, Oil, fungus, grease, laitance, mildew or other foreign substances.
 2. Surface absorption and chalkiness.
 3. Cracks -- measure crack width and record location of cracks.
 4. Damage and deterioration.
 5. Moisture content and moisture damage -- use a moisture meter to determine if the surface is dry enough to receive the EIFS and record any areas of moisture damage.
 6. Compliance with specification tolerances -- record areas that are out of tolerance (greater than 1/4 inch in 8-0 feet deviation in plane).
- B. Inspect sheathing application for compliance with applicable requirement:
1. Exterior gypsum sheathing--ga-253
 2. Exterior grade and exposure I wood based sheathing--APA engineered wood association e 30
 3. Glass mat faced gypsum sheathing--Georgia pacific publication 101514
 4. Cementitious sheathing--consult manufacturer's published recommendations
- C. Report deviations from the requirements of project specifications or other conditions that might adversely affect the EIFS installation to the general contractor. Do not start work until deviations are corrected.

3.03 Surface Preparation

- A. Remove surface contaminants on concrete and concrete masonry surfaces (Refer to ASTM d 4258 and d 4261).
- B. Apply conditioner by sprayer or roller to chalking or excessively absorptive surfaces.
- C. Replace weather-damaged sheathing and repair damaged or cracked surfaces.

- D. Level surfaces to comply with required tolerances.

3.04 Installation

- A. Install EIFS in compliance with manufacturer's published instructions (see addendum).

3.05 Protection

- A. Provide protection of installed materials from water infiltration into or behind them.
B. Provide protection of installed materials from dust, dirt, precipitation, freezing and continuous high humidity until they are fully dry.

SECTION 075900 - ROOF REPAIRS

- A. General: Repair existing roofing system as required for new construction, with components and accessories as required for complete weathertight installation.
B. Standards: Conform to National Roofing Contractors Association roofing and waterproofing manual, 4th or 5th edition.
C. Warranty: Provide for correcting failure of roof repairs to resist penetration of water and damage from wind; warranty period of two years.
D. Roofing system: Match existing roofing, no substitutions permitted; provide materials capable of maintaining existing warranties; conform to requirements of NRCA roofing manual. Provide complete system with accessories as required for repairs, including insulation where existing roofing is insulated.
E. Roof system repairs: Comply with manufacturer's recommendations and instructions and NRCA recommendations for roof type specified.
1. Remove existing roofing as required for project; remove only as much roofing as can be replaced in same day unless otherwise approved in advance by owner's project manager.
 2. Inspect substrates and roof deck to ensure substrates and deck are clean and smooth, free of depressions, waves or projections, and are properly sloped to drains, valley, or eaves.
 3. Insulation application: attach insulation in accordance with insulation manufacturer's instructions and NRCA recommendations for installation of insulation on deck involved.
 4. Comply with manufacturer's recommendations for installation of composition type base, wall and field flashings.
 5. Coordinate metal flashings and counterflashing.
 6. Coordinate installation of roof drains and counterflashing
 7. Mop in and seal flashings and flanges of items projecting through membrane.

SECTION 076000 - FLASHING AND SHEET METAL

- A. General: Provide flashing and sheet metal, reglets, and accessories as required for roof repairs as required for complete, weathertight installation.
B. Flashing/sheet metal at storefront is prefinished.
C. Standards: conform to SMACNA "architectural sheet metal manual" requirements for flashing and sheet metal.
D. Design requirements: Allow for movement of components without causing buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to 100 year seasonal temperature ranges.
E. Submittals: Furnish product data for manufactured products.
F. Warranty: Correct failure of metal flashing system to resist penetration of water and damage from wind; warranty period two years.
1. Flashing and sheet metal: match existing, but not less than following.
Galvanized metal flashing: ASTM a924 and a653 g90 galvanized steel; minimum 24 gage.
 2. Prefinished metal flashing: 24 gage galvanized steel with factory finished kynar 500 type fluoropolymer coating and strippable protective film; color as selected from manufacturer's full range of colors.
 3. Aluminum flashing: ASTM b209, alloy as required to match finish specified for other aluminum components; thickness minimum 0.050" at flashings.
 4. Stainless steel sheet metal: ASTM a666, 2d annealed finish, soft temper except where harder temper is required for forming or performance; 0.015" (28 gage) typical.
 5. Copper sheet metal: ASTM b370, cold rolled 16 oz. (0.0216") thick; soft temper where required for forming.
- G. Reglets: Fry/Springlok or MM systems/snap-tite reglets; fabricate of same metal as adjacent flashing and sheet metal.
H. Metal to metal sealant: Butyl type; non-staining, non-corrosive, non-shrinking, non-sagging, ultra-violet and ozone resistant.

SECTION 078100 - APPLIED FIREPROOFING

- A. General: Patch existing fireproofing as required by applicable codes for construction type; no asbestos permitted.
B. Conform to applicable code requirements for both f and t ratings.
C. Standards: Pass ASTM e814 through penetration fire stops, ASTM e119 fire tests and ASTM e84 flame spread/smoke contribution maximum 25/25.

1. Fire resistance ratings: comply with required ratings based on tests in accordance with ASTM e119.
2. Surface burning characteristics: maximum 25 flame spread and 25 smoke density when tested in accordance with ASTM e84.
- D. Certificate: Submit manufacturer certification indicating applicator acceptability and material compliance with applicable codes and contract documents.
 1. Certification shall indicate new materials used to patch existing fireproofed members at new and existing work are compatible with existing fireproofing materials and meet all performance requirements.
- E. Qualification of applicator: firm acceptable to manufacturer of fireproofing materials, with minimum five years successful experience on projects of similar scope.
- F. Manufacturers/products: Match existing but not less than w.r. grace/monokote or albi manufacturing division stanchem/duraspray.
- G. Installation: Install in accordance with manufacturer recommendations and fire test results as required to provide required fire ratings.
 1. Protect adjacent surfaces and equipment from damage by overspray, fallout, and dusting; mask adjacent work as required. Close off and seal duct work in areas where fireproofing is being applied.
 2. Clean substrate of dirt, dust, grease, oil, loose material, paints, primers, and other matter which affects bond of sprayed fireproofing.
 3. Apply fireproofing in sufficient thickness and density to achieve required fire ratings.
 4. Apply fireproofing over substrate, building to required thickness with as many passes or stages necessary to cover with monolithic blanket of uniform density and texture.

SECTION 078400 - FIRESTOPPING

- A. General: Provide exterior and interior firestopping not provided elsewhere; type suitable for application indicated with accessories as required for complete installation.
- B. Codes: Conform to applicable code requirements for both f and t ratings.
- C. Standards: Pass ASTM e814 through-penetration fire stops, ASTM e119 fire tests and ASTM e84 flame spread/smoke contribution maximum 25/25.
- D. Submittals: Furnish shop drawings, product data, and certificates of compliance with contract documents and applicable codes.
- E. Manufacturers: 3m/Fire Barrier, STI/Specseal or Pensil, or Hilti/Firestop systems.
- F. General: Choose products and methods meeting applicable codes and specification requirements

- for each firestopping application, subject to architect's acceptance.
- G. Firestopping materials: Furnish materials for penetrations in time-rated floor, wall, and partition assemblies capable of preventing passage of flame, smoke, and hot gases.
 1. Penetration test: furnish materials passing ASTM e814 for penetration fire stopping indicating maintenance of time-rated adjacent assemblies.
 2. Firestopping: maintain fire rating of assembly in which firestopping is installed, such as floor, partition, or wall, in accordance with ASTM e119 tests.
- H. Installation: Install in accordance with manufacturer recommendations and fire test results as required to provide required fire ratings.
 1. Field inspections: maintain copy of manufacturer's installation instructions and recommendations at each work area.

SECTION 079200 - JOINT SEALANT

- A. General: Provide exterior and interior joint sealers not provided elsewhere; type suitable for application indicated with accessories as required for complete installation.
- B. Installer qualifications: Firm with minimum five year's successful experience on projects of similar type and size, using specified products
- C. Submittals: Furnish product data and samples of exposed joint sealers in required colors.
- D. Warranty: Repair or replace joint sealers which fail to perform as intended, because of leaking, crumbling, hardening, shrinkage, bleeding, sagging, staining and loss of adhesion; warranty period two years.
- E. Exterior non-traffic joints: GE/Silpruf, Dow/790-795, Pecora/854, or Tremco/spectrum 3 low modulus silicone sealant.
- F. Traffic bearing joints: Tremco/Vulkem 245, Pecora/nr-200 Urexpan, or Sonneborn division Chemrex/sl 2 multi-component polyurethane, self-leveling joint sealer.
- G. Mildew-resistant sanitary sealants: GE/SCS 1702 sanitary sealant, Dow/786 bathtub caulk, Pecora/863 #345 white, or Tremco/Tremsil 200; provide at interior areas where sealant will be exposed to water.
- H. General interior joint sealer: Pecora/ac-20, Sonneborn/Sonolac, or Tremco/Ultrem 1500 acrylic or latex emulsion.
- I. Miscellaneous materials: Primers, sealers, joint cleaners, bond breaker tape, and sealant backer rods as recommended by sealant manufacturer for applications indicated.
 1. Oversize backer rod minimum 30% to 50% of joint opening. As indicated in the drawings herein.
- J. Preparation: Clean joint surfaces immediately before installation of joint sealer, and prime or

seal joint surfaces as recommended by manufacturer.

K. Installation: Comply with manufacturer's instructions and ASTM c1193.

1. Employ installation techniques which will ensure joint sealers are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of bond surfaces.

SECTION 079513 - EXPANSION JOINT COVER ASSEMBLIES

A. General:

1. Joint cover systems shall allow unrestrained movement of joint without disengagement of cover.
2. Joint sizes shall be as indicated on drawings.
3. Fire rating characteristics:
 - a. Prefabricated fire barrier assemblies shall have ratings not less than the rating of adjacent construction when tested in accordance with, UL 263, ANSI a2.1, NFPA 251, ASTM e119-95a and ASTM e1399-91
 - b. System shall be capable of anticipated movement while maintaining fire rating.
4. Provide manufacturers standard one year material and workmanship warranty.

B. Products:

1. MM Systems Corporation (50 MM way, P.O. Box 98, Pandergrass, Georgia 30567; 1.800.241.3460 or 1.706.824.7500). Or equal as approved by LSD&C project manager and architect; submit for review of equal product.

2. Products joint sizes as indicated in drawings. Refer to manufacturer for corresponding model number:

- a. Gypsum board ceiling condition = flexible wall & ceiling VSW series
- b. ACT ceiling condition = flexible wall & ceiling VSG series
- c. Floor to wall condition = Flushline FSE series
- d. Floor to floor condition = Flushline FS series
- e. Wall to wall condition = Flushline FSWP series
- f. Corner wall condition = Flushline FSWPL series
- g. Carpet to wall condition = Flushline FSSTE series
- h. Carpet to carpet condition = Flushline FSST series

3. Finish: mill finish aluminum frames with colors as indicated on drawings. Aluminum wall covers to be clear anodized aluminum

C. Execution:

1. Prepare surface to receive expansion joint system in accord with manufacture's product data and with shop drawings.
2. Install expansion joint assemblies in accordance with manufacturer's product data and approved shop drawings.
3. Cover and protect expansion joint cover assemblies from construction traffic.

END OF DIVISION 07

DIVISION 08 - OPENINGS

SECTION 081000 - METAL DOORS AND FRAMES

- A. General: Provide steel doors and frames and accessories as required for complete installation; coordinate with [Section 087100](#) - door hardware.
- B. Standards: Comply with steel door institute "standard steel doors and frames" or NAAMM hollow metal manufacturers association "hollow metal manual".
 - 1. Fire rated standards: Furnish materials tested, labeled and inspected per UL, Warnock Hersey, or testing agency acceptable to applicable authorities.
- C. Submittals: Submit product data.
- D. Manufacturers: Amweld (1.330.527.4385), Ceco (1.888.232.6366), or Pioneer (1.201.933.1900).
- E. Hollow metal doors: Flush hollow metal doors full flush type with flush edge; close top at exterior doors.
 - 1. Core: provide steel stiffened core; insulated at exterior doors.
 - 2. Gage: provide min 18 gage at interior doors, min 16 gage at exterior doors.
- F. Pressed steel (hollow metal) frames: Minimum 16 gage knock-down (field-assembled) frames.
- G. Fire rated units: Conform to NFPA 80; provide UL or Warnock Hersey labeled doors and frames as required.
- H. Accessories: Provide door silencers, anchors, and accessories.
- I. Fabrication: Conform to requirements of SDI or NAAMM.
 - 1. Door silencers: place minimum three single bumpers on single door frames; space equally along strike jambs; place two single bumpers on double door frame heads.
- J. Prime paint interior units, galvanize and prime paint exterior units; minimum a60 galvanizing; clean, degrease and factory prime paint.
- K. Installation: Comply with manufacturer recommendations and either SDI or NAAMM standards.
 - 1. Install fire rated units in conformance with fire label requirements and nfpa80.
 - 2. Install doors and frames plumb and square, and with maximum diagonal distortion of 1/16".

SECTION 081400 - WOOD DOORS

- A. General: Provide wood doors and wood door frames as required for complete installation; coordinate with hardware in [Section 087100](#) Door Hardware.

- B. Standards: Comply with window and door manufacturer's association (WDMA): guide specifications.
- C. Submittals: Submit manufacturer's literature and shop finished door samples.
- D. Project conditions: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized in accordance with referenced standards requirements applicable to project location
- E. Warranty: Provide for replacing, rehanging and refinishing wood doors exhibiting defects in materials or workmanship including warp and delamination; warranty period two years.
- F. Manufacturers: Algoma (1.800.678.8910), Eggers (1.920.722.6444), or Marshfield (1.800.869.3667).
- G. Flush solid core doors: Five ply hot press, 1-3/4" thick solid wood framed glued block construction or particleboard core.
 - 1. Conform with WDMA type ii bond, interior; bond stiles and rails to core and sand prior to assembly of face veneers; edges to match face veneer, minimum 1-1/8" thick.
 - 2. Face veneers: premium quality white birch veneers.
 - 3. Edges: stile edges to match face veneer, minimum 1-1/8" thick after trim.
- H. Wood door frames: Premium grade to match profiles indicated and compatible with wood doors; white birch or poplar for opaque paint finish.
- I. Fabrication: Fabricate doors in accordance with specified standards; prefit wood doors; shop prepare doors to receive hardware, refer to [Section 087100](#) for hardware requirements and templates; factory machine doors for mortise hardware.
- J. Bevel strike edge of single-acting doors, 1/8" in 2".
- K. Shop finish: Provide shop finish on wood doors and frames; premium grade semigloss acrylic finish; color as directed by architect.
- L. Installation: Install wood doors in accordance with manufacturer's recommendations, installation instructions, and reference standards, plumb and square, and with maximum diagonal distortion of 1/16".
- M. Protection: Protect doors as recommended by door manufacturer to ensure doors are without damage at time of substantial completion.
 - 1. Shop finished doors: refinish or replace doors damaged prior to substantial completion.

SECTION 081433 - STILE AND RAIL WOOD DOORS

- A. General: Provide wood doors and wood door frames as required for complete installation; coordinate with hardware in [Section 087100](#).

- B. Standards: Comply with window and door manufacturer's association (WDMA): guide specifications.
- C. Submittals: Submit manufacturer's literature and shop finished door samples.
- D. Project conditions: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized in accordance with referenced standards requirements applicable to project location.
- E. Warranty: Provide for replacing, rehanging and refinishing wood doors exhibiting defects in materials or workmanship including warp and delamination; warranty period one year.
- F. Products: Doors
 - 1. Grade: Select or better
 - 2. Finish: White latex primer (field painting by G.C.).
 - 3. Wood species: Exterior door leaves to be 1 15/16" white oak/interior door leaves to be 1 15/16" red oak.
 - 4. Raised panels for opaque finish: panel infill to be 1/2" exterior mdf.
- G. Glass for openings: Clear 1/4" tempered.
- H. Wood door frames: Premium grade to match profiles indicated and compatible with wood doors; interior door frames to be red oak/exterior door frames to be white oak for opaque paint finish.
 - 1. Finish: White latex primer (field painting by G.C.).
- I. Fabrication: Fabricate doors in accordance with specified standards; prefit wood doors; shop prepare doors to receive hardware, refer to [Section 087100](#) for hardware requirements and templates; factory machine doors for mortise hardware.
- J. Installation: Install wood doors in accordance with manufacturer's recommendations, installation instructions and reference standards, plumb and square, and with maximum diagonal distortion of 1/16".
- K. Protection: Protect doors as recommended by door manufacturer to ensure doors are without damage at time of substantial completion.

SECTION 083100 - ACCESS DOORS AND PANELS

- A. General: Provide access doors as required for access to valves and controls located behind finished walls and ceilings not otherwise accessible, with accessories for complete installation.
 - 1. Coordinate with various trades for controls and valves which may be concealed.
- B. Submittals: Furnish product data for each type of access door and panel.
- C. Manufacturers: Karp associates Inc., Maspeth, N.Y. (718-784-2105); Intex forms Inc., 8880 Elder

Creek Road, Sacramento, CA 95828 (916-388-9933)

- 1. Sales area (non-rated): Intex forms "lift & shift" access panel w/ radius door corners. See ceiling plan for sizes and locations.
- 2. Sales area (rated): Karp model #KATR prime coated steel with stainless steel cam latch on recessed door. See ceiling plan for sizes and locations.
- 3. Non-sales area (non-rated): Karp model #dsc-214m. Prime coated steel with stud latch. See ceiling plan for sizes and locations.
- 4. Non-sales area (rated): Karp model #krp-150fr prime coated steel with ring turn latch. See ceiling plan for sizes and locations.
- D. Installation: comply with manufacturer recommendations and applicable requirements for fire ratings.
 - 1. Set frames accurately in position and securely attach to supports with face panels plumb or level in relation to adjacent finish surfaces.
 - 2. Adjust hardware and doors after installation for proper operation.
 - 3. Remove and replace doors or frames which are warped, bowed or otherwise damaged.

SECTION 083326 - OVERHEAD COILING GRILLES

PART 1 - GENERAL

1.01 Section Includes

- A. Aluminum overhead coiling grilles.

1.02 Submittals: [See Section 013000](#)

1.03 Summary

- A. Rolling grille provided and installed by LSD&C. General Contractor to verify grille is true, plumb, and operating properly, before installer leaves premises.

PART 2 - PRODUCT

2.01 Manufacturer

- A. Provided grilles manufactured by metro door inc., 3500 sunrise highway, building 100, suite 210, great river, NY 11739, 800-669-3667

2.02 Models And Materials

- A. Models: Provided overhead coiling grille model as follows:
 - 1. Perforated metal
 - 2. Lexan glazed
- B. Materials:
 - 1. Aluminum: bars, rods and extrusions to be 6063 alloy, t5 tempered.
 - 2. Steel: bar, pipe and plate(s) to meet manufacturer's specifications.

2.03 Components

- A. Locking: Standard locking mechanism to consist of two-point lock to throw at both jambs, with a keyed cylinder on the outside and thumb-turn on the inside.

2.04 Fabrication

- A. Perforated model curtain:
 - 1. Horizontal rods to consist of extruded aluminum, 7/8"x1/2" horizontal hinge system spaced at 4" on center.
 - 2. Perforated panels to consist of 1/8" aluminum extrusion, with slotted holes at 45 angles, spaced 1/8" on center, to allow 60 percent transparency.
 - 3. Windows to consist of 3/32" clear polycarbonate panels every 32" to horizontal "l" for maximum strength. Windows to be enclosed in horizontal aluminum frame with PVC "h" for quite operation.
 - 4. Curtain size: see drawings
- B. Guides: Extruded aluminum with mohair strips to prevent metal to metal contact.
- C. Structural supports: 3x3 or 4x4 steel supports.
- D. Bottom bar: Heavy duty extruded aluminum with thumb-turn interior and keyed cylinder exterior.
- E. Counterbalance: Tempered helical torsion high cycle spring mounted on cast anchors and continuous solid torsion rods permanently lubricated and enclosed within a 8" steel pipe shaft.
- F. Bracket plates: Steel plates 1/4" thick bolted to structural support tubes.
- G. Operation: Manual up to 120 square feet. For rolling grilles 120 square feet and larger or wider than 12', provide a motor to operate. Coordinate power requirements with MEP drawings.

2.05 Finishes

- A. Aluminum bottom bar, guides and curtain to be clear bronze or black anodized.

PART 3 - EXECUTION

3.01 Preparation

- A. Prepare opening(s) to receive grille(s) as required by manufacturer.
- B. General contractor to supply grille installers with finish floor elevation for proper installation of grille lock as well as precise grille location on floor layout.

3.02 Installation

- A. Install as shown on drawings in strict accordance with manufacturer's instructions adjust for smooth and easy operation.
- B. Carefully coordinate installation and hook-up of rolling grille with all affected trades. Refer to door schedule.

SECTION 083516 - FOLDING GRILLES

PART 1 - GENERAL

1.01 Section Includes

- A. Manually- operated folding security grilles.
- B. Related sections
 - 1. [Section 055000](#)-Metal Fabrications - for miscellaneous steel support brackets and guides.

1.02 References

- A. American Architectural Manufacturers Association. (AAMA):
 - 1. AAMA 611, voluntary specification for anodized architectural aluminum.
- B. ASTM international:
 - 1. ASTM b 221, standard specification for aluminum and aluminum alloy extruded bars, rods, wire, profiles, and tubes.

1.03 Submittals

- A. Product data: Manufacturer's printed product information identifying all components, finishes, and options.
- B. Shop drawings: Show each installation including components not dimensioned or detailed in product data. Include elevations, plans, sections, details, and attachment to other work.
- C. Samples: For each type of exposed finish required.

1.04 Quality Assurance

- A. Source limitations: Obtain folding metal grilles specified in this section through one source from a single manufacturer.

1.05 Delivery, Storage, and Handling.

- A. Deliver folding metal grilles in manufacturer's original, undamaged, and unopened containers. Provide identification labels on each container.
- B. Store folding grilles in locations protected from weather and damage from construction operations.

1.06 Project Conditions

- A. Field measurements: Verify dimensions of openings where folding grilles are indicated to be installed. Indicate measurements on shop drawings.

1.07 Warranty

- A. Warranty: Manufacturer's standard warranty in which manufacturer agrees to replace hinged panel sections that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS

2.01 Manufacturers

- A. Metro door, Inc., 3500 Sunrise Highway, Building 100 Suite 210, Great River, NY 11739 (800) 669-3667. www.metrodoor.com

SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

- A. General: Provide extruded aluminum entrance system with doors, frames, hardware, and accessories as required for complete weathertight installation at exterior locations only.
- B. Standards: Comply with architectural aluminum manufacturers association (AAMA) "aluminum store front and entrance manual".
- C. Codes and regulations: comply with applicable codes and regulations.
- D. Submittals: Furnish manufacturer's literature, shop drawings, and samples.
- E. Structural certificates: provide certification by state registered engineer indicating system complies with contract documents and applicable codes.
- F. Special project warranty: Provide for correcting failures including wind damage and water penetration to interior surfaces, excessive deflections, and deterioration of finishes, weatherstripping and accessories. Special warranty period two years.
- G. Manufacturer: Old Castle Engineered Products, 101 Sage St., Suite A, Terrell, TX 75160, Contact: P (972)551-7714, F (972)551-7720
- H. Storefront: Extruded aluminum entrance system as indicated on drawings.
 - 1. Aluminum type: As recommended by manufacturer for application indicated, but not less than extruded aluminum, ASTM b221, 6061 or 6063 alloy and t5 or t6 temper.
 - 2. Provide factory formulated polyester TGIC powder coating materials intended for powder coating application custom color as directed by architect.
 - 3. Interior storefront finish: Manufacturer's standard clear anodized finish as indicated on drawings.
- I. Glazing: [See Section 088100](#).
- J. Glazing Accessories: [See Section 088100](#).
- K. Miscellaneous materials:
 - 1. Steel reinforcement and brackets: manufacturer's standard with minimum 2 oz. hot-dip zinc coating, ASTM a123, applied after fabrication.
 - 2. Bituminous paint: cold-applied mastic, sspc paint 12, compounded for 30 mil thickness per coat.
 - 3. Flashing: [See Section 076000](#).
 - 4. Anchoring devices: corrosion resistant type capable of supporting entrance system and superimposed design loads; design to allow adjustments of system prior to being permanently fastened in place.
 - 5. Joint sealants: [See Section 079200](#).
- L. Fabrication: Fabricate aluminum entrance and storefront system to allow for clearances and shim spacing around perimeter of assemblies to

enable installation; provide for thermal movement.

- 1. Accurately fit together joints and corners; match components ensuring continuity of line and design; ensure joints and connections are flush, hairline and weatherproof.
- 2. Separate dissimilar materials with bituminous paint or preformed separators which will prevent corrosion.
- M. Installation: Install aluminum framed storefront assemblies, including entrances, in accordance with manufacturer's recommendations and to meet design requirements indicated, for weathertight installation.
 - 1. Ensure assemblies are plumb, level and free of warp or twist; maintain dimensional tolerances and alignment with adjacent work.
 - 2. Use sufficient anchorage devices to securely and rigidly fasten assemblies to building.
 - 3. Install hardware in accordance with manufacturer's recommendations, using proper templates. Coordinate installation of cylinders with [Section 087100](#).
 - 4. Install sill members and thresholds in bed of compound, joint fillers or gaskets to provide weathertight construction.
 - 5. Glass installation: comply with GANA glazing manual and glazing manufacturer instructions. Do not allow glass to touch metal surfaces.

SECTION 084114 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS- HURRICANE RESISTANT

- A. General: Provide extruded aluminum entrance system with doors, frames, hardware, and accessories as required for complete weathertight installation at exterior locations only. Arch Aluminum & Glass Co., Inc. hurricane-resistant aluminum entrance door, glass & glazing, door hardware, and components
 - 1. Model types of Arch Aluminum entrances include:
 - a. Medium stile swing door and doorframe: 3 1/2" stile width x 1 3/4" depth
 - b. 7/16" laminated door glass
 - c. Miami-Dade County product approval is: Notice of acceptance: 12-0117.05
 - d. Florida state product approval # 16211.1
 - 2. Type of Arch aluminum-framed storefronts includes:
 - a. Resistor impact series impact wall 3100/13100 - large and small missile: 1 1/4"x 4 1/2" offset to front, interior glazed shear block system for 1-5/16" (nom.) and/or 9/16" (nom.) glazing
 - b. 1-5/16" laminated insulating impact wall glass

- c. Miami-Dade County, product approval notice of acceptance is: 05-0906.04 11-1117.02
 - Florida state product approval is # 16181.2
- 3. "This 'system' is designed to comply with the requirements of the high-velocity hurricane zone of the Florida Building Code (FBC). for locations where the pressure requirements do not exceed the design pressure rating values indicated in the approved drawings, refer to the above referenced NOA drawings and charts for accepted configurations, limits, anchor requirements, and allowable door hardware."
- B. Standards: comply with architectural aluminum manufacturers association (AAMA) "Aluminum store front and entrance manual."
- C. Codes and regulations: comply with applicable codes and regulations.
- D. Submittals: Furnish manufacturer's literature, shop drawings, and samples.
- E. Structural certificates: Provide certification by state registered engineer indicating system complies with contract documents and applicable codes.
- F. Special project warranty: Project warranty: refer to division 1 general requirements, work covered by contract documents" for project warranty conditions. Manufacturer's product warranty: submit, for owner's acceptance, manufacturer's product warranty for entrance & storefront systems as follows:
 - 1. Resistor impact door 3000 medium stile large missile, hurricane –resistant entrance door and glass systems shall be guaranteed against defects in materials and/or workmanship for a period of two (2) years from date of shipment.
 - 2. The resistor impact series, impact wall 3100/13100 - large and small missile aluminum storefront framing and glass system shall be guaranteed by limited warranty against defects in materials and/or workmanship as defined by manufacturer's published limited warranty for a period of two (2) years from date of shipment.
 - 3. The 1-5/16" laminated insulating impact wall glass shall be guaranteed by limited warranty against defects in materials and/or workmanship as defined by manufacturer's published limited warranty for a period of five (5) years.
- G. Manufacturer: Trulite Glass & Aluminum Solutions 8130 NW 74th Avenue, Medley, FL 33166 Contact: John Saud 888-574-0367 ext. 159
- H. Aluminum - framed entrances & storefronts
 - 1. Door and frame sections shall conform to the material standards of ASTM b 221; 6063 - t5 alloy & temper
- 2. The door stile and rail profile dimensions for the resistor impact series, impact door 3000 medium stile large missile shall be:
 - a. Vertical stiles: 3 1/2"
 - b. Top rail: 3 1/2"
 - c. Bottom rail: 10"
- 3. Major portions of the door stiles and rails are to be .125" in nominal thickness. Glazing moldings are to be 0.05" thick.
- 4. The frame profile dimensions will be: Vertical & horizontal mullions: 1 1/4" x 4 1/2" horizontal mullion for concealed overhead closer: 1 3/4" x 4 1/2".
- 5. Joint sealant: [See Section 079200](#)
- I. Glazing: [See Section 088100](#)
- J. Glazing accessories: [See Section 088100](#)
- K. Miscellaneous materials:
 - 1. Steel reinforcement and brackets: manufacturer's standard with minimum 2 oz. hot-dip zinc coating, ASTM a123, applied after fabrication.
 - 2. Bituminous paint: cold-applied mastic, SSPC paint 12, compounded for 30 mil thickness per coat
 - 3. Flashing: [See Section 076000](#)
 - 4. Anchoring devices: corrosion resistant type capable of supporting entrance system and superimposed design loads; design to allow adjustments of system prior to being permanently fastened in place.
- L. Fabrication: fabricate aluminum entrance and storefront system to allow for clearances and shim spacing around perimeter of assemblies to enable installation; provide for thermal movement.
 - 1. Accurately fit together joints and corners; match components ensuring continuity of line and design; ensure joints and connections are flush, hairline and weatherproof.
 - 2. Separate dissimilar materials with bituminous paint or preformed separators which will prevent corrosion.
- M. Installation: install aluminum framed storefront assemblies, including entrances, in accordance with manufacturer's recommendations and to meet design requirements indicated, for weathertight installation.
 - 1. Ensure assemblies are plumb, level and free of warp or twist; maintain dimensional tolerances and alignment with adjacent work.
 - 2. Use sufficient anchorage devices to securely and rigidly fasten assemblies to building.
 - 3. Install hardware in accordance with manufacturer's recommendations, using proper templates. Coordinate installation of cylinders with [Section 087100](#).
 - 4. Install sill members and thresholds in bed of compound, joint fillers or gaskets to provide weathertight construction.
 - 5. Glass installation: comply with GANA glazing manual and glazing manufacturer

instructions. Do not allow glass to touch metal surfaces.

SECTION 085200 - WOOD WINDOWS

- A. Summary: Provide primed wood framing window components as required for complete installation. Glazing to be installed at site.
- B. Performance requirements
 - 1. Engineering design of wood windows by contractor.
 - 2. Basic wind speed: per store location and local codes.
- C. Quality assurance
 - 1. Quality standard: [AAMA/WDMA 101/1.s.2/NAFS]
 - 2. Mockups for each form of construction.
- D. Warranty
 - 1. Windows: one year
 - 2. Glazing: [See Section 088100](#)
- E. Windows
 - 1. Type: wood fixed
 - a. Performance grade: premium
 - 2. Glazing: site glazed: [See Section 088100](#)
 - 3. Wood finishes: finish to be white latex primer (field painting by G.C.)

SECTION 087100 - DOOR HARDWARE

- A. General: Provide door hardware for hollow metal doors and for wood doors, and provide cylinders for doors provided with hardware, with accessories as required for complete operational door installations.
- B. Standards: Comply with Builders Hardware Manufacturers Association (BHMA) ANSI/BHMA 156 series standards.
- C. Codes and Regulations: Comply with state and federal requirements for ensuring access for persons with disabilities.
 - 1. Fire rated doors: Comply with requirements of NFPA 80 and applicable codes for fire rated door hardware; provide hardware bearing Underwriters Laboratory (UL) labels.
- D. Submittals: Furnish shop drawings, product data including keying schedule, and samples of each required style and finish.
 - 1. Supply templates to door and frame manufacturers for proper and accurate sizing and locations of cut-outs for hardware.
- E. General materials: Provide complete hardware with accessories as required for doors and applications indicated and not provided under other sections.
- F. Hinges: Hager (1.800.255.3590), Lawrence (1.800.435.9568), McKinney (1.800.346.7707), Stanley (1.800.337.4393) or Baldwin (1.800.566.1986); full mortised butt hinges; size and number as recommended by manufacturer; non-removable pins at exterior out

swinging doors, ball-bearing hinges at fire rated doors and doors with closers.

- G. Locksets/latchsets: Provide as indicated, as specified in hardware schedule (sheet a00.2), and as required for complete installation. Keying as directed by LSD&C. provide u-change cylinders for doors furnished with locks. U-change customer service: 1-800-253-5625.
- H. Accessories: Provide door stops, thresholds, weatherstripping, trim, coordinators, and accessories as required for complete operational door installation.
 - 1. Thresholds, stops, trim, and miscellaneous hardware: Provide as indicated, as specified, as included in hardware schedule, and as required for complete installation.
 - 2. Weatherstripping: Provide continuous weatherstripping at top and sides of exterior doors.
 - 3. Fire rated gaskets: Provide continuous fire rated gaskets at top and sides of fire rated doors
 - 4. Through bolts: Through bolts and grommet nuts shall be avoided on door faces in highly visible areas, unless no alternative is possible, as directed and approved, and shall not be used for solid wood core doors.
 - 5. Kick plates: Minimum 0.050" thick, 10" tall, width to be determined by subtracting 1" from door leaf width.
- I. Finish: BHMA 626 (us26d), satin finished chromium plated unless otherwise indicated.
- J. Installation: Comply with manufacturer recommendations, BHMA, and applicable for access and for fire ratings.
 - 1. Fit hardware prior to painting, then remove for painting of doors and frames before final installation of hardware.
 - 2. Heights to comply with applicable codes and BHMA recommendations.
 - 3. Hardware groups: refer to drawings A002.

SECTION 088100 - GLASS GLAZING

- A. General: Install glass and film on glass; provide glazing accessories as required for complete installation.
- B. Standards: Comply with glass association of North America (GANA) "glazing manual".
- C. Codes: Safety glazing shall comply with consumer product standard 16 cfr 1201, and shall have passed ANSI z97.1.
- D. Submittals: Furnish product data and samples of exposed glazing materials.
- E. Manufacturers: Pilkington (1.419.2473731), guardian (1.248.340.1800), or ppg (1.888.774.4332) or approved equal.
- F. Glazing: ASTM c1048, kind ft, fully tempered select glazing quality clear float glass; nominal 1/2" safety glass unless otherwise indicated.
 - 1. Interior: 1/2" or 5/8" or 3/4" thick tempered glazing, as indicated on drawings.

2. Exterior: 1" tempered insulated with dual seal (makeup: 1/4" clear tempered, 1/2" spacer, 1/4" clear tempered)
 3. Exposed and butt edges: eased polished edge
 4. Corner edges: lap-joint corners with exposed edges polished
- G. Glazing accessories: Of type recommended by manufacturer to suit security locations and applications for dry glazing installation.
1. Horizontal glass bolt assembly: m14 countersunk bolt assembly with polyacetal gasket and aluminum bushing by EPCO or equal.
 2. Mini mall clamp: 1-1/2" wide aluminum clamp installed in 1/4" glazing joints with extended threaded stud for a 1" thick glazing application.
- H. Windborne-debris-impact resistance: Provide exterior glazing that passes basic protection testing requirements in ASTM e 1996 for appropriate wind zone when tested according to ASTM e 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on the project and shall be installed in same manner as glazing indicated for use on the project.
1. Large-missile test: For glazing located within 30 feet (9.1m) of grade.
 2. Small-missile test: For glazing located more than 30 feet (9.1m) above grade.
 3. Large-missile test: For all glazing, regardless of height above grade.
- I. Windborne-debris-impact-resistant laminated glass: ASTM c 1172, and complying with testing requirements in 16 CFR 1201 for category II materials, with "windborne-debris-impact resistance" paragraph above, and with other requirements specified. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.
1. Construction: laminate glass with the following to comply with interlayer manufacturer's written recommendations:
 - a. Polyvinyl butyral interlayer.
 2. Interlayer thickness: provide thickness not less than that indicated and as needed to comply with requirements.
 3. Interlayer color: clear unless otherwise indicated.
- J. Glazing film: Provide translucent and/or opaque glazing films by 3m if indicated on drawings.
1. UV protection film: (for exterior locations only) provide mac6000 solar film by Madico, unless otherwise indicated on drawings. (1.800.225.1926)
- K. Glazing sealant: One component silicone glazing sealant by Dow, GE, or Tremco.
- L. Setting blocks and spacers: Neoprene or EPDM, silicone compatible where in contact with silicone sealant.

- M. Preparation: Clean glazing channels and framing members to receive glass immediately before glazing; remove coatings not firmly bonded to substrate.
- N. Installation: Comply with GANA glazing manual and sealant manual and glazing manufacturer instructions.
1. Do not allow glass to touch metal surfaces.
 2. Comply with NFPA 80 for glass in fire rated openings.
 3. Place setting blocks at quarter points in thin course of sealant.
 4. Install removable stops with glass centered in space with spacer shims at 2'-0" intervals on both sides of glass, 1/4" below sightline.
 5. Sealant glazing: fill gap between glass and stops with sealant to depth equal to bite of frame on glass but not more than 3/8" below sightline.

SECTION 088300 - MIRRORS

PART 1 - GENERAL

1.01 Summary

- A. This section includes new wall mounted glass mirrors.

1.02 Quality Assurance

- A. Installer qualifications: an experienced installer who has completed mirror glazing similar in material design and extent to that indicated; whose work has resulted in mirror installations with a record of not less than 5 years of successful in-service performance. Source limitations for mirrors: obtain mirrors from one supplier/manufacturer for each type of mirror indicated.
- B. Source limitations for glazing accessories: Obtain glazing accessories from one source for each type of accessory indicated.
- C. Glazing publications: Comply with the applicable recommendations of the following. Where recommendations conflict the more stringent shall apply:
1. Glass Association of North America (GANA): "glazing manual" and the mirror division's "mirrors, handle with extreme care: tips for the professional on the care and handling of mirrors."
 2. National Glass Association (NGA): "custom mirrors, fabrication and installation."

1.03 Delivery, Storage, and Handling

- A. Protect mirrors according to mirror manufacturer's written instructions and as needed to prevent damage to mirrors from condensation, temperature changes, direct exposure to sun, or other causes.
- B. Comply with mirror manufacturer's written instructions for shipping, storing, and handling mirrors as needed to prevent deterioration of silvering, damage to edges, and abrasion of

glass surfaces and applied coatings. Store indoors, protected from moisture including condensation.

1.04 Project Conditions

- A. Environmental limitations: Do not install mirrored glass until ambient temperature and humidity conditions are maintained at levels indicated for final occupancy.

PART 2 - PRODUCTS

2.01 Silvered Flat Glass Mirror Materials

- A. Clear glass mirrors: 6.0 mm thick and complying with ASTM C 1503, mirror select quality for use in visually demanding applications requiring minimal distortions and blemishes. Reflectivity is similar in appearance to the major surface of the glass.

2.02 Fabrication

- A. Cutouts: Fabricate cutouts for notches and holes in mirrors without marring visible surfaces. Locate and size cutouts so they fit closely around penetrations in mirrors.
- B. Mirror edge treatment:
 - 1. Cutting and polishing:
 - a. Typical mirrors: Flat edges where the clean cut "square" edge of the glass is flat and surface edges are slightly arched. After grinding the arches, edges shall be polished to a high gloss surface where the surface reflectivity is similar in appearance to the major surface of the glass.
 - b. Beveled edged mirrors: Provide beveled edged mirrors where the surface edge of the glass is beveled to width indicated on the owner furnished drawings. The angle formed by the intersection of the plane of the bevel with the major surface face of the glass shall be between 3 to 10 degrees. The beveled surface and the nose of the bevel shall be polished to a high gloss surface where the surface reflectivity is similar in appearance to the major surface of the glass.
 - 2. Edge sealing: Immediately after cutting to final sizes, and applying edge treatment, factory seal edges of mirrors with edge sealer to prevent chemical or atmospheric penetration of glass coating.

2.03 Miscellaneous Materials

- A. Mirror safety backing: CRL 24" category ii shatterproof safety tape #2mt24. C.R. Laurence CO., Inc., 2503 E. Vernon Ave., Los Angeles, CA 90058, (800-421-6144). Safety backing is required for all Mirror types in this specification.
- B. Setting blocks: Non-rubber or non-neoprene based elastomeric material manufactured for setting silvered flat glass mirrors, compatible with adhesive used for placement, with a type A shore

durometer hardness of 85, plus or minus 5. 1/8" wide x 1/4" high x 4" long.

- C. Edge sealer: Coating compatible with glass coating and approved by mirror manufacturer for use in protecting against silver deterioration at mirror edges.
- D. Mirror mastic: Palmer "Mirro-Mastic"; Palmer products Corp. (502) 893-3668, (800)431-6151 / fax (502) 895-9253.
- E. Drywall and plywood primer: Kilz original (oil based primer); Masterchem Industries, Inc. (866)774-6371. Or approved equal.
- F. Top and bottom aluminum J channels: Aluminum extrusions with a return deep enough to produce a glazing channel to accommodate 6 mm thick mirrors and heavy bodied mirror mastic specified and in lengths required to cover bottom and top edges of each mirror in a single piece. The ends of the back lips of all channels shall be factory snipped and filed so that they will not be seen after installation.
 - 1. Bottom trim: J-channels formed with front leg and back leg not less than 3/8" and 7/8" in height, respectively. CRL polished finish 1/4" standard "J" channel (part number d636p); C. R. Laurence CO., Inc. (800) 421-6144/ fax (800) 262-3299.
 - 2. Top trim: J-channels formed with front leg and back leg not less than 5/8" and 1-3/16" in height, respectively. CRL polished finish 1/4" deep nose "J" channel (part number d645p); C. R. Laurence CO., Inc. (800) 421-6144/ fax (800) 262-3299.
- G. Stud fasteners: Provide #6 gage diameter, 1-5/8" long, Phillips bugle head, self-drilling type, fine threaded steel screw fasteners in quantity as required for support and fastening of wood trims and mirror channels to drywall stud framing and sheet metal backer plates. Hilti Kwik-pro self-drill drywall screws, model number 6x 1-5/8 Pbh SD; Hilti, Corporation (800) 879-8000 voice.
- H. Plastic wood filler: Commercial quality wood filler specifically manufactured to advance the final build and smoothness of the installed wood trim surface by filling dents, scratches, miter joints, and voids above countersunk fastener the selected filler shall be either neutral or tinted to match the color of the wood trim.
- I. Plywood fasteners: Provide minimum #6 gage diameter, Phillips flat head, sharp pointed, coarse threaded, steel wood screw fasteners in quantity as required. Furnish plywood fasteners in length as required to span through wood mirror trim, and mirror channels, plus 3/4".
- J. Wood mirror trim (as detailed).

PART 3 - EXECUTION

3.01 Examination

- A. Examine substrates, over which mirrors are to be mounted, with installer present, for compliance with installation tolerances, substrate preparation, and other conditions affecting performance.

1. Verify compatibility with and suitability of substrates, including compatibility of mirror mastic with existing finishes or primers. Proceed with mirrored glass installation only after unsatisfactory conditions have been corrected and surfaces are dry.

3.02 Preparation

- A. Comply with mastic manufacturer's written installation instructions for preparation of substrates.
 1. Mirror, drywall and plywood substrates shall be free of dust, be clean, and dry prior to application of mirror mastic and drywall and plywood paint.
 2. If plywood or drywall surfaces have been painted prior to application of the specified drywall and plywood paint the existing paint shall be sanded through to the original surface and the substrate cleaned prior to the application of drywall and plywood paint.

3.03 Glazing

- A. General: Install mirrors with mirror glazing channels to comply with written instructions of mirror and mirror glazing channel manufacturers, with referenced GANA and NGA publications, owner furnished drawings, and as specified. Mount mirrors plumb, in line and in a manner that avoids distorting reflected images.
- B. Comply with mastic manufacturer's printed directions for preparation and sealing of mounting surfaces by sealing drywall and plywood, substrates with drywall and plywood paint. Allow paint to dry before applying mirror mastic.
- C. Mirror safety backing installation:
 1. Safety tape application: Tape should be applied with a pressure roller. Surface should be clean and free of oil and moisture. Apply at temperatures between 60 °f and 100 °f (16 °c and 38 °c).
 2. Mastic application: Per manufacturer's recommendations, use only regular palmer Mirro-Mastic. (Palmer "Qwikset Mirro-mastic" not to be used with plastic safety film.) Safety tape must be washed (two-cloth method) with a 70% isopropyl alcohol (IPA) solution prior to mastic application.
- D. Mirror channel installation:
 1. To plywood: Drill, do not dimple, back lip of channel to receive fasteners with holes properly sized and spaced to receive fasteners. Attach mirror channels by screw attaching mirror channel through the back lip of the channel to plywood substrate in accordance with the fastener manufacturers written instructions. Install the web of the top channel 1/4" higher than the height of the mirror to allow the raising of the mirror into the top channel and its subsequent lowering onto the bottom channel. After installing fasteners place masking tape over the entire

length of the back lip of the channel completely covering the fastener heads to protect the mirror from being chipped in setting. Adhere setting blocks at quarter points for bottom mirror channels using only 2 setting blocks per mirror panel.

2. To Drywall: Mark the locations for the stud fasteners on the back lip of each mirror channel at equal intervals not over 8" on center, and not more than 3" from ends prior to drilling the channel. Drill and countersink, do not dimple, back lip of channels to receive stud fasteners at marked locations with holes properly sized to receive stud fasteners. Attach mirror channels by screw attaching mirror channel through the back lip of the channel through drywall, stud framing, and sheet metal backer plate substrates in accordance with the fastener manufacturers written instructions.
 - a. Install the web of the top channel 1/4" higher than the height of the mirror to allow the raising of the mirror into the top channel and its subsequent lowering onto the web of the bottom channel. After installing fasteners place masking tape over the entire length of the back lip of the channel completely covering the fastener heads to protect the mirror from being chipped in setting. Adhere setting blocks to the web of the bottom mirror channels, located at quarter points, using 2 setting blocks per mirror panel.
- E. Wood trim installation:
 1. Before installing mirror wood trim, examine shop-fabricated work for completion and complete work as required. Prime all exposed surfaces of the mirror wood trim which will be in contact with the mirror backing to eliminate interactions between the resins in the wood and the mirror backing.
 2. Install mirror wood trim plumb, level, true, and straight with no distortions. Scribe and cut mirror wood trim to fit adjoining work, and refinish cut surfaces and repair damaged finish at cuts. Install with minimum number of joints possible, using full-length pieces (from maximum length of wood trim available) to greatest extent possible. Do not use pieces less than 96" long, except where shorter single-length pieces are necessary. Scarf running joints. Miters over 4" long shall be splined and glued.
 3. Fasten mirror wood trim through field drilled and counter sunken holes to plywood, stud framing, and sheet metal backer plates previously built into partition substrates. Secure with counter sunk concealed stud fasteners in accordance with the fastener manufacturers written instructions. Using plastic wood filler fill void above heads of

- counter sunk fasteners full and strike flush with face of the wood trim, sand smooth with 220 grit or finer sandpaper. Fill gaps, if any, at miters with plastic wood filler, sand smooth.
4. adhere setting blocks to mirror glass bearing surface of the mirror wood trim glazing channel (dado), located at quarter points, using 2 setting blocks per mirror panel.
- F. Mirror installation: Apply mastic in ping pong ball sized spots to the wall, not to the mirror back to avoid potential damage caused by mastic applicator tools in compliance with mastic manufacturer's written instructions for coverage of not less than one spot for every square foot of mirror and to allow air circulation between back of mirrors and face of mounting surface. Do not apply mastic within 6" of the mirror edges to prevent squeeze out. Place spots so space will be left between them when the mirror is installed. After mastic is applied, align mirrors and press into place while maintaining a minimum air space of 1/8" between back of mirrored glass and mounting surface. Mastic shall spread to a pat approximately 4-1/2" in diameter after pressing mirror into place.
- 3.04 Protection and Cleaning
- A. Protect mirrors from breakage and contaminating substances resulting from construction operations. Using clean warm water, clean mirrors by methods recommended in referenced glazing standards.
- END OF DIVISION 08**

DIVISION 09 - FINISHES

SECTION 092900 - GYPSUM BOARD

- A. General: Provide gypsum board systems including metal framing accessories, gypsum board, joint treatment, acoustical insulation, acoustical sealant and accessories as required for complete installation standards: comply with ASTM c754 and ASTM c840, and requirements for fire ratings.
- B. Standards: Comply with ASTM c754 and ASTM c840, and requirements for fire ratings.
 - 1. Deflections: Maximum 1/240 typical, 1/360 at locations indicated to receive tile.
- C. Fire-rated assemblies: Listed by Underwriter's Laboratory, Gypsum Association (GA) file no's in ga-600 fire resistance design manual, or other listing approved by applicable authorities and applicable code requirements.
- D. Systems responsibility: Provide products manufactured by or recommended by manufacturer of gypsum board to maintain single-source responsibility for system.
- E. Submittals: [See Section 013000](#)
- F. Manufacturers: USG (1.800.950.3839), Georgia Pacific (1.800.225.6119), National Gypsum (1.740.365.7300), or approved equal.
- G. Metal framing: Conform to ASTM c754; complete 16 gage and lighter steel framing and suspension system for gypsum board systems; provide accessories as required for complete installation.
 - 1. Install owner furnished recessed studs and standards; provide accessories as required for complete installation.
 - 2. Manufactured suspension system such as Chicago metallic/drywall system is acceptable.
- H. Gypsum board: Conform to c840; UL listed fire resistant gypsum board throughout.
 - 1. Standard: ASTM c36, 5/8" thick.
 - 2. Core board: ASTM c442, 1" thick.
- I. Fire rated construction: Comply with Underwriter's Laboratories certified fire tests and applicable code requirements.
 - 1. Provide protective coated steel corner beads and edge trim; type designed to be concealed in finished construction by tape and joint compound.
 - 2. Corner beads: manufacturer's standard metal beads.
 - 3. Reinforcing tape, joint compound, adhesive, water, fasteners: types recommended by system manufacturer and conforming to ASTM c475.
- J. Shaft wall system: Provide at shafts and where indicated.
- K. Acoustical accessories: [See Section 098100](#)
- L. Installation: Comply with manufacturer recommendations, referenced standards, and applicable requirements for fire ratings and acoustical ratings.
 - 1. Special metal stud and gypsum door: provide special configuration as indicated on drawings
- M. Metal framing erection: Erect metal framing in accordance with ASTM c754 and manufacturer's recommendations.
 - 1. Install members true to lines and levels to provide surface flatness with maximum variation of 1/8" in 10'-0" in any direction.
 - 2. Door opening framing: install double studs at door frame jambs; install runners on each side of opening at frame head height between jamb studs and adjacent studs.
 - 3. Install metal framing backing where required for support of fixtures, cabinets, accessories and hardware.
 - 4. Coordinate installation of bucks, anchors, blocking, electrical and mechanical work which is to be placed in or behind partition framing; allow items to be installed after framing is complete.
- N. Ceiling framing installation: Erect in accordance with ASTM c754 and manufacturer's recommendations. Reinforce openings in ceiling suspension system.
 - 1. Laterally brace entire suspension system.
- O. Gypsum board installation: Install in accordance with ASTM c840 and manufacturer's recommendations. Use screws when fastening gypsum board to furring and to framing.
 - 1. Steel drill screws: ASTM c 1002, unless otherwise indicated.
 - a. Use screws complying with ASTM c 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 - b. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
 - 2. For fire rated systems comply with requirements for fire ratings.
 - 3. Place corner beads at external corners; use longest practical lengths.
 - 4. Place edge trim where gypsum board abuts dissimilar materials.
 - 5. Tape, fill, and sand exposed joints, edges, corners and openings to produce surface ready to receive finishes; feather coats onto adjoining surfaces.
 - 6. Finishing: Comply with Gypsum Association (GA) "levels of gypsum board finish" GA level 4, three coat finishing and sanding is required for surfaces indicated to be painted; provide flush, smooth joints and surfaces ready for applied paint finishes.
 - 7. Remove and replace defective work.
- P. Recessed wall stud installation sequence
 - 1. Remove rubber filler from standard before recessed wall stud is put in place.
 - 2. Mask tape standard portion of recessed stud for all walls receiving paint or wall covering.

3. Set recessed studs in wall.
4. Use laser to set consistent height of standard portion of recessed studs. Screw clip in tops and bottoms. (Set insert 7'-0" A.F.F.)
5. Install a bracket on each standard and install rod or shelf to verify that slots are in alignment.
6. Install drywall on recessed wall studs - avoid drywall factory edge against standard (requires excessive mud build up).
7. Flat tape drywall against standard.
8. Sand mud down to standard to avoid excess build up.
9. Apply all finish materials to wall prior to cutting out standard slots. Use razor blades to cut out standard slots - tops and bottoms of all slots must align. Cuts to be made inside of standard slots.

SECTION 092950 - GYPSUM BOARD METAL SUSPENSION SYSTEMS

PART 1 - GENERAL

1.01 Summary

- A. Section includes:
 1. Suspension system framing and furring for plaster and gypsum board assemblies
 2. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings.
- B. Related sections:
 1. [Section 09200](#) - Gypsum board

1.02 References

- A. American society for testing and materials (ASTM):
 1. ASTM c 635 standard specification for metal suspension systems for acoustical tile and lay-in panel ceilings.
 2. ASTM c 636 recommended practice for installation of metal ceiling suspension systems for acoustical tile and lay-in panels.
 3. ASTM c 754 installation of steel framing members to receive screw-attached gypsum board

1.03 Submittals

- A. [See Section 013000](#)

1.04 Quality Assurance

- A. Single-source responsibility: To ensure proper interface, all drywall furring components shall be produced or supplied by a single manufacturer.
- B. All accessory components from other manufacturers shall conform to ASTM standards.
- C. Fire resistance ratings: As indicated by reference to design designations in UL fire resistance directory, for types of assemblies in which drywall ceilings function as a fire protective membrane and tested per ASTM e 119. Installation in accordance with the UL design being referenced.
- D. Coordination of work:

1. Coordinate drywall furring work with installers of related work including, but not limited to acoustical ceilings, building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.
2. All work above the ceiling line should be completed prior to installing the drywall sheet goods. There should be no materials resting against or wrapped around the suspension system, hanger wires or ties.

1.05 Delivery, Storage, and Handling

- A. [See Section 016000](#)

1.06 Warranty

- A. Suspensions system: Submit a written limited warranty executed by the manufacturer, agreeing to repair or replace grid components that are supplied with a hot-dipped galvanized coating or aluminum base material. Failures include, but are not limited to: the occurrence of 50% red rust as defined by ASTM d 610 test procedures as a result of defects in materials or factory workmanship.
- B. Warranty period: Grid: Ten years from date of installation.
- C. The warranty shall not deprive the owner of other rights the owner may have under other provisions of the contract documents and will be in addition to and run concurrent with other warranties made by the contractor under the requirements of the contract documents.

PART 2 - PRODUCTS

2.01 Manufacturers

- A. Suspension systems: Armstrong world industries, Inc.

2.02 Suspension Systems

- A. Components:
 1. Main beam: Shall be double-web construction (minimum 0.0179 inch prior to protective coating), hot dipped galvanized (per ASTM a653).
 - a. hd8901: 1-1/2 inch web height, prefinished 15/16 inch flange with minimum g40 hot dipped galvanization.
 2. Primary cross tees: Shall be double-web steel construction (minimum 0.0179 inch prior to protective coating), hot dipped galvanized (minimum g40 or g90 per ASTM a653), web height 1-1/2 inch with rectangular bulb and pre-finished 1-1/2 inch knurled flange (xl8945p, xl8965, xl8947p).
 3. Secondary framing cross tees : Shall be double web steel construction (minimum 0.0179 inch prior to protective coating), hot dipped galvanized (minimum g40, web height 1-1/2 inch rectangular bulb and 15/16 inch flange (xl8341).
 4. Wall molding:

- a. Lam-12, 12 foot locking angle molding, 1-1/4 inch x 1-1/4 inch with pre-engineered locking tabs punched 8 inches on center, knurled surface, screw stop hem, pre-punched holes in top flange.
- 5. Clips:
 - a. MBAC - main beam adapter clip
 - b. XTAC - cross tee adapter clip
- 6. Screws for wallboard application shall be bugle head screws in accordance with thickness of material used.
- B. Structural classification:
 - 1. Main beam shall be heavy duty per ASTM c 635.
 - 2. Classification can require wires to be closer together for additional loading when used to support double layer gypsum, verticals, slopes, domes, half barrels, circles, soffits, canopies, and step conditions which call for loading or unusual designs and shapes in drywall construction. Using cross tees in the construction of circles, barrels, etc. is common in order to hold the radius.
 - 3. Deflection of fastening suspension system supporting light fixtures, ceiling grilles, access doors, verticals and horizontal loads shall have a maximum deflection of 1/360 of the span.

PART 3 - EXECUTION

3.01 Installation - General

- A. Install suspension system and panels in accordance with the manufacturer's instructions, in compliance with ASTM installation standard, and with applicable codes as required by the authorities having jurisdiction.
- B. The Armstrong drywall grid system can be installed in interior or exterior applications.
- C. To secure to metal clips, concrete inserts, steel bar joist or steel deck, use power actuated fastener, or insert. Coordinate placement for hanger wire spaced as required for expected ceiling loads and layout.
- D. Install hanger wire as required with necessary on center spacing to support expected ceiling load requirements, following local practices, codes and regulations. Provide additional wires at light fixtures, grilles, and access doors where necessary. A pigtail knot shall be used with three tight wraps at top and bottom fastening locations.
- E. Add additional wire as needed when using compatible clips and accessories.
- F. Control joints: Roll formed zinc alloy, aluminum, or plastic as required for expansion and contraction as shown on drawings.
- G. Expansion joints: Roll formed zinc alloy, aluminum, or plastic as required for expansion and contraction as shown on drawings.
- H. Main beams shall be suspended from the overhead construction with hanger wire, spaced

- as required for expected ceiling loads, along the length of the main beams.
- I. Install cross tees at on center spacing as specified by the drywall manufacturer. Typical drywall cross tee spacing:
 - 1. 24 inches on center with 5/8 inch gypsum board
- J. Other items such as wood, sheet metal, or plastic panels should be screwed to comply with deflection limit equivalent to that of the ceiling installation.
- K. For light fixtures (type g, type f) use secondary framing cross tees as required to frame opening.

PART 4 -

4.01 Installation - Interior Applications

- A. Install main beams and cross tees at the on center spacing required for ceiling loading, and location of in-ceiling services.
- B. Additional bracing as required by code.

SECTION 093000 – TILING

PART 1 - GENERAL

1.01 Related Documents

- A. Drawings and general provisions of the contract, including general and supplementary conditions and division 01 specification sections, apply to this section.

1.02 Summary

- A. Section includes application of agglomerate tile, natural stone tile, and ceramic / porcelain tile in interior conditions for walls and floors

1.03 Submittals

- A. No submittals shall be required.
- B. No substitutions will be allowed.

1.04 Quality Assurance

- A. All installation and preparation materials including but not limited to; setting bed/adhesive, moisture mitigation, crack repair, filling, and leveling, shall be provided from a single manufacturer. To determine which manufacturer's products to use begin with section 2.4 of this specification.
- B. Installer qualifications: tile fabricator, specializing in installation of tile, mosaics, pavers, trim units and thresholds with five (5) years documented experience with installations of similar scope, materials and design.
 - 1. Installer to have completed a certified tile installation program similar to TCAA "Trowel of Excellence", TCNA "Five Star" or other equivalent recognized installation program.
- C. Installation system manufacturer: company specializing in adhesives, mortars, grouts and/or other installation materials with ten (10) years minimum experience and ISO 9001 certification.
 - 1. All setting materials shall be from a single source and comply with manufacturer warranty requirements.

2. Manufacturer of setting materials shall provide a 25-year systems (labor & materials) warranty. See specific warranty information as provided by manufacturer.

1.05 Delivery, Storage, and Handling: Refer to [Section 016000](#)

1.06 Sequencing and Scheduling

- A. Coordinate installation of tile work with related work.
- B. Proceed with tile work only after curbs, vents, drains, piping, and other projections through substrate have been installed and when substrate construction and framing of openings have been completed.

1.07 Project Conditions

- A. Temperature requirements for interior tile:
 1. Do not set when air, ambient, material, and/or substrate temperature is below 45 °f or above 90 °f (4 °c - 35 °c)
 2. Maintain temperature at 50 °f or above but less than 90 °f (4 °c - 35 °c) in installation areas during installation and for 7 days after completion unless higher temperatures are required by fabricator's or supplier's instructions.
 - a. Protect Portland cement based mortars and grouts from direct sunlight, radiant heat, forced ventilation (heat & cold) and drafts until cured to prevent premature evaporation of moisture.
 - b. Epoxy mortars and grouts require surface temperatures between 60 °f and 90 °f (16 °c and 32 °c) at time of installation.
 3. Prevent carbon dioxide damage to tile, mosaics, pavers, trim, and thresholds, as well as adhesives, mortars, grouts and other installation materials, by venting temporary heaters to the exterior.
 4. Provide ventilation and protection of environment as recommended by mfg.
- B. Moisture requirements for interior tile:
 1. Perform the following test to determine moisture level of substrate. The test results shall be provided to the LSD&C pm prior to sub floor preparation.
 - a. Test slab for relative humidity with a probe test complying with ASTM f-2170. If the value is above 75% then moisture mitigation is required.

PART 2 - PRODUCTS

2.01 National Accounts

- A. The Mapei or Laticrete products listed throughout this specification shall be purchased by the GC through the following national account, unless otherwise noted.
 1. Mapei: Pro-Tile, 914.665.0654 Place order as a Victoria's Secret or Pink Store. Material

will be provided from the nearest Mapei Distribution Center.

2. Laticrete: Daltile, contact Dave Meyers, aticrete national account representative 203.376.8113. Place order as a Victoria's secret or pink store. Material will be provided from the nearest Laticrete distribution center.

- B. All other products listed which are the responsibility of the GC shall be purchased through local resources.

2.02 Tile

- A. Tile supplied by LSD&C vendor as specified in the finish schedule and plans.

2.03 Surface Preparation

- A. Moisture mitigation
 1. A moisture mitigation barrier shall be provided when the substrate relative humidity exceeds the allowable limits per section 1.7.b of this specification.
 2. If moisture mitigation is required, the concrete substrate must be prepared by shot-blasting to achieve a surface profile between csp-3 and csp-6 as per icri standards prior to installation of moisture mitigation.
 3. Manufacturer: subject to compliance with requirements, provide following product:
 - a. Mapei Corp: Planiseal VS fast
 - b. Laticrete international: Laticrete 312 vapor reduction membrane
- B. Bonding agent
 1. A bonding agent shall be provided prior to installation of any self-leveling underlayment only when a moisture mitigation barrier is required.
 2. Manufacturer: subject to compliance with requirements, provide following product:
 - a. Mapei Corp: ECO Prim Grip (applied over Planiseal VS fast)
 - b. Laticrete international: Laticrete NXT primer (applied over 312 vapor reduction membrane - refer to Laticrete issued warranty)
- C. Large fill areas and leveling
 1. Refer to [Section 039250](#).
- D. Patching, ramping, and small fill areas
 1. Refer to [Section 039250](#).

2.04 Thin-Set Mortar Materials

- A. Agglomerate resin tile: supplier to supply data to the owner on the moisture sensitivity of the tile. The appropriate classification shall be determined and labeled within the finish schedule. This classification shall be used to determine the proper setting materials.
 1. Manufacturer: Subject to compliance with requirements, provide following product
 - a. For class "a", "b", or "c" material: two-part polymer modified rapid-setting

- flexible tile mortar complying with ANSI a118.4 and ISO 13007 c2fs2p2:
1. Mapei Grani Rapid System.
- B. Natural stone tile: Supplier shall provide data to the owner on the water sensitivity of the stone. The appropriate classification shall be determined and labeled within the finish schedule. This classification shall be used to determine the proper setting materials.
1. For class "A" stone: provide following product that meets or exceeds requirements of ANSI a118.4 and ISO 13007 c2tes1p1
 - a. Premium polymer modified thin set mortar for installation of large format tile:
 1. Mapei Corp, Ultra Flex LFT
 2. For class "B" and class "C" stone: provide following product that meets or exceeds requirements of ANSI a118.4 and ISO 13007 c2fs2p2
 - a. Two-part polymer modified rapid-setting flexible tile mortar:
 1. Mapei Corp: Grani Rapid System
- C. Ceramic / Porcelain Tile:
1. Tile up to 15" x 15" use professional grade polymer modified rapid setting thin set mortar complying with ANSI a118.4 and ISO 13007 c2ep1: Mapei corp. Ultraflex 2 RS or Laticrete 4-xt rapid
 2. Tile larger than 15" x 15" use premium polymer modified rapid setting thin set mortar for installation of large format tile complying with ANSI a118.4 and ISO 13007 c2tes1p1: Mapei corp. Ultraflex LFT RS or Laticrete 4-xt rapid

2.05 Grout

- A. High-hydrated cement grout that is fast setting, color consistent, non-shrinking, and efflorescence free conforming to ANSI a118.7 and ISO 13007 cg2wa, for joints of 1/16"-1" wide.
1. Interior horizontal and vertical locations: conform to ANSI a118.6 and ISO 13007 cg2wa. Refer to finish schedule for actual manufacturer and color required for each tile type.
 - a. Mapei Corp; ultra color plus, sanded.
 1. Custom grout colors will be supplied by owner.
 - b. Custom building products; prism, sanded.
 - c. Laticrete; Laticrete 1600, unsanded.
 - d. Bostik
 2. Install all grout in compliance with ANSI A108.6.
 3. All grout to be un-sanded unless otherwise noted.
 4. All grout joints to be 1/16" unless otherwise noted.

2.06 Accessories

- A. Expansion joint cover assemblies: refer to [Section 079513](#)

- B. Transition strips: aluminum or zinc strips as specified in drawings and details.
- C. Cleaner: tile cleaner specifically formulated for specified tile as recommended by the manufacturer. Do not use any cleaning compounds that are not recommended by the manufacturer.
- ## 2.07 Floor Sealer
- A. Provide floor tile and grout sealer as follows:
1. Floor sealer is required for all natural stone.
 2. Grout sealer: colorless, slip and stain resistant sealer that does not affect color or physical properties of tile surfaces, as recommended by grout manufacturer for application indicated. Use a water-based sealer, no solvents.
 3. Agglomerate tile: tile floor sealer is only required when specifically instructed within the supplier's documentation.
 4. Ceramic and porcelain tile shall not require a sealer.
- B. Colorless, slip and stain resistant sealer that does not alter color or physical properties of stone surfaces, as recommended by stone producer for application indicated.
- C. Acceptable products: miracle sealants 511 h20 plus water base penetrating sealer or equal.

PART 3 - EXECUTION

3.01 Examination

- A. Examine surfaces indicated to receive tile, with installer present, for compliance with requirements and other conditions affecting performance. Verify that surfaces to be covered are:
1. Sound, rigid and conform to good design/engineering practices.
 2. With maximum deflection under all live, dead and impact loads, including concentrated loads, of l/720.
 3. Clean and free of dust, dirt, oil, grease, sealers, curing compounds, laitance, efflorescence, form oil or loose plaster, paint and scale.
 4. Level and true to within 1/8" in 10' (6mm in 3m), and no more than 1/16" in 1' (1.5mm in 0.3m) variation from substrate high points.
 5. Not leveled with gypsum or asphalt based compounds.
 6. Dry as per ASTM d4263.
 7. Test slab for moisture limitations as per section 1.7.b. of this specification.
- B. Concrete surfaces shall be:
1. Cured min. of 28 days at 70°F (21 °C).
 2. Wood float finished, or better conforming to csp-3 as per ICRI standards.
 3. Advise LSD&C project manager of any surface or substrate conditions requiring correction before tile work commences. Beginning of work constitutes acceptance of substrate or surface conditions.

- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 Preparation

- A. Vacuum clean or sweep substrates to remove dirt, dust, debris, and loose particles.
- B. Remove substances from concrete substrates that could impair setting bond, including curing and sealing compounds, form oil, and laitance.
- C. Shot-blast substrate when required per section 2.3 of this specification; coordinate shot blast requirements with [Section 039250](#) concrete resurfacing when required as preparation for installation of self-leveling underlayments.
- D. Profile substrate per manufacturer's recommendation as notated in applicable datasheets and warranties.
- E. Clean any dirty or stained surfaces on the tile scheduled to be installed by removing soil, stains, and foreign materials before setting.
 - 1. Clean by thoroughly scrubbing w/ fiber brushes and drenching with clear water. Use only mild cleaning compounds containing no caustic or harsh materials or abrasives.

3.03 Installation

- A. Comply with tile council of North America (TCNA) handbook, ANSI a108 tile installation specifications, and manufacturer's instructions.
- B. Substrate requirements:
 - 1. Floor surfaces: concrete
 - 2. Platform surfaces: cement bonded particle board
 - 3. Wall surfaces: cement backer board
 - 4. Ceilings and soffits: glass mesh mortar units
- C. Place tile in accordance with patterns indicated on drawings; carefully plan layouts, ensure pattern is uninterrupted from one surface to the next and through doorways unless otherwise noted.
- D. All tile >15" dimension must be back buttered prior to setting tile in troweled mortar ribs. Note that natural stone thickness tolerance is 6/64" (2mm), and may require additional back buttering. Back buttering must be a consistent thickness layer between 1/16-1/8"; no dabs or spots of mortar allowed.

3.04 Movement Joints

- A. Minimum 1/4" gaps shall be maintained at all perimeter walls and at all column enclosures. This gap must be obscured completely by the wall base material.

3.05 Waterproof membrane: refer to [Section 071416](#)

3.06 Adjusting and cleaning

- A. Tile to be replaced if installed improperly and not in accordance with these specifications and manufacturers instructions.

- B. In-progress cleaning: clean tile as work progresses. Remove mortar fins and smears per manufacturer's recommendations.
- C. Clean tile after setting and grouting are complete per mfgs recommendations.

3.07 Protection

- A. Prohibit traffic from installed tile per the mfgs instructions for setting adhesive.

SECTION 095123 - ACOUSTICAL TILE CEILINGS

PART 1 - GENERAL

1.01 Summary

- A. This section includes acoustical tiles and concealed suspension systems for ceilings.

1.02 Submittals: [See Section 013000](#)

1.03 Quality Assurance

- A. Acoustical testing agency qualifications: an independent testing laboratory, or an NVLAP-accredited laboratory.
- B. Fire-test-response characteristics:
 - 1. Fire-resistance characteristics: where indicated, provide acoustical tile ceilings identical to those of assemblies tested for fire resistance per ASTM e 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - a. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 2. Surface-burning characteristics: acoustical tiles complying with ASTM e 1264 for class [a] materials, when tested per ASTM e 84.
 - a. Smoke-developed index: 450 or less.
- C. Seismic standard: comply with the following:
 - 1. Standard for ceiling suspension systems requiring seismic restraint: comply with ASTM e 580.
 - 2. CISCAs recommendations for acoustical ceilings: comply with CISCAs "recommendations for direct-hung acoustical tile and lay-in panel ceilings--seismic zones 0-2."
 - 3. CISCAs guidelines for systems requiring seismic restraint: comply with CISCAs "guidelines for seismic restraint of direct-hung suspended ceiling assemblies--seismic zones 3 & 4."
 - 4. UBC standard 25-2, "metal suspension systems for acoustical tile and for lay-in panel ceilings."
 - 5. ASCE 7, "minimum design loads for buildings and other structures": section 9, "earthquake loads."
- D. Mockups: [See Section 014000](#).

1. Approved mockups may become part of the completed work if undisturbed at time of substantial completion.
- E. Preinstallation conference: conduct conference at project site.

1.04 Extra materials

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Acoustical ceiling units: quantity of 10 full-size tiles.

PART 2 - PRODUCTS

2.01 Acoustical tile ceilings, general

- A. Acoustical tile standard: comply with ASTM e 1264.
- B. Metal suspension system standard: comply with ASTM c 635.
- C. Attachment devices: size for five times the design load indicated in ASTM c 635, table 1, "direct hung," unless otherwise indicated. Comply with seismic design requirements.
 1. Anchors in concrete: expansion anchors fabricated from corrosion-resistant materials, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing per ASTM e 488 or ASTM e 1512 as applicable, conducted by a qualified testing and inspecting agency.
 2. Power-actuated fasteners in concrete: fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM e 1190, conducted by a qualified testing and inspecting agency.
- D. Wire hangers, braces, and ties: zinc-coated carbon-steel wire; ASTM a 641/a 641m, class 1 zinc coating, soft temper.
 1. Size: select wire diameter so its stress at 3 times hanger design load (ASTM c 635, table 1, "direct hung") will be less than yield stress of wire, but provide not less than 0.106-inch- (2.69-mm-) diameter wire.
- E. Seismic struts and seismic clips.
- F. Metal edge moldings and trim: type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.

2.02 Acoustical tiles for acoustical tile ceiling

- A. Available products: subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to, the following:
- B. Provide the Product indicated within the Finish Schedule of the Construction Documents.
- C. Classification: provide tiles (or fire-resistance rated tiles as required) complying with ASTM e 1264 for type and form as indicated:
- D. Color: as indicated on drawings.
- E. Light reflectance: ASTM e 1477; white panel: light reflectance: 0.83
- F. Noise reduction coefficient: ASTM c 423; classified w/ UL label on product carton, 0.50
- G. Coiling attenuation class: ASTM c 1414; classified with UL label on product carton, 30
- H. Articulation class: ASTM e 1111; classified with UL label on product carton N/A
- I. Edge/joint detail: beveled tegular (only for sales area).
- J. Thickness: as indicated on drawings.
- K. Modular size: as indicated on drawings.

2.03 Metal suspension system for acoustical tile ceiling

- A. Available products: subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to, the following:
- B. Provide the Product indicated within the Finish Schedule of the Construction Documents.
- C. Direct-hung (or fire-rated as required) suspension system: intermediate or heavy-duty structural classification as required.
- D. Access: downward, with each access unit identified by manufacturer's standard unobtrusive markers.

PART 3 - EXECUTION

3.01 Installation

- A. Comply with ASTM c 636, UBC standard 25-2 and seismic design requirements indicated, per manufacturer's written instructions and cisca's "ceiling systems handbook."
- B. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders.
- C. Suspend ceiling hangers from building's structural members, plumb and free from contact with insulation or other objects within ceiling plenum. Splay hangers only where required and, if permitted with fire-resistance-rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers, use trapezes or equivalent devices. When steel framing does not permit installation of hanger wires at spacing required,

install carrying channels or other supplemental support for attachment of hanger wires.

1. Do not support ceilings directly from permanent metal forms or floor deck; anchor into concrete slabs.
 2. Do not attach hangers to steel deck tabs [or to steel roof deck.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical tile ceiling area and where necessary to conceal edges of acoustical tiles. screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely.
- E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension system flanges into kerfed edges so tile-to-tile joints are closed by double lap of material

3.02 Adjusting and Cleaning

- A. Replace damaged and broken panels.
- B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace mark that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

SECTION 095323 - STEEL SUSPENDED CEILING AND SOFFIT FRAMING

PART 1 - GENERAL

PART 2 - PRODUCTS

2.01 Components

- A. Comply with ASTM c 754 for conditions indicated.
- B. Tie wire: ASTM a 641/a 641m, class 1 zinc coating, soft temper, 0.0625 inch diameter wire, or double strand of 0.0475 inch diameter wire.
- C. Hanger attachments to concrete: as follows:
 1. Anchors: fabricated from corrosion-resistant materials with holes or loops for attaching hanger wires and capable of sustaining, without failure, a load equal to 5 times that imposed by construction as determined by testing according to astm e 488 by a qualified testing independent testing agency.
- D. Hangers: as follows:

1. Wire hangers: ASTM a 641/a 641m, class 1 zinc coating, soft temper, and 0.162 inch diameter.
2. Rod hangers: ASTM a 510, mild carbon steel.
 - a. Diameter: 1/4 inch.
 - b. Protective coating: ASTM a 153/a 153m, hot-dip galvanized.
3. Flat hangers: commercial-steel sheet, ASTM a 653/a 653m, g40, hot-dip galvanized.
 - a. Size: 1 by 3/16 inch by length indicated.
4. Angle hangers: ASTM a 653/a 653m, g60, hot-dip galvanized commercial-steel sheet.
- E. Carrying channels: cold-rolled, commercial-steel sheet with a base metal thickness of 0.0538 inch, a minimum 1/2 inch wide flange, with ASTM a653/a 653m, g40, hot-dip galvanized zinc coating.
- F. Furring channels (furring members): commercial-steel sheet with ASTM a 653/a 653m, g40, ho-dip galvanized zinc coating.
 1. Hat-shaped, rigid furring channels: ASTM a 645, 7/8 inch deep, with minimum base metal thickness of 0.0179 inch.

PART 3 - EXECUTION

3.01 Installation

- A. Suspend ceiling hangers from building structure as follows:
 1. Install hangers plumb and free from contact with insulation or other objects within the ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective methods.
 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards
 3. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eyescrews, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail.
 4. Secure rod or flat hangers to structure, including intermediate framing members, by attaching to inserts, eyescrews, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.

5. Do not support ceilings directly from permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 6. Do not attach hangers to steel deck tabs.
 7. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 8. Do not connect or suspend steel framing from ducts, pipes or conduit.
- B. Installation tolerances:
1. Install steel framing components for suspended ceilings so members for panel attachment are level to within 1/8" in 12 feet measured lengthwise on each member and transversely between parallel members.
- C. Sway-brace suspended steel framing with hangers used for support.
- D. Wire-tie furring channels to supports.
- E. Install suspended steel framing components in sizes and spaces indicated, but not less than that required by the referenced steel framing and installation standards.
1. Wire hangers: 48 inches o.c.
 2. Carrying channels (main runners): 48 inches O.C.
 3. Furring channels (furring members): 16 inches O.C.

SECTION 096429 - WOOD STRIP AND PLANK FLOORING

- A. General: Provide shop finished pre-engineered wood strip flooring system with accessories as required for complete finished installation. Engineered wood plank flooring, owner furnished, unless otherwise indicated.
- B. Submittals: [See Section 013000](#).
- C. Project conditions: Prior to installation of any flooring, GC must ensure that the jobsite and sub-floor meet the requirements of the manufacturer's warranty and the following instructions.
1. G.C. to perform moisture test on all concrete floors as directed by NWFA. Moisture content of wood sub-floor must not exceed 12% and concrete moisture content must not exceed 15 lbs. of Mver per 1000 SF per 24 hours (ASTM 1869).
- D. If moisture content is under the limits in C.1 above, and floor has little to moderate patching and leveling requirements, use Adhesive Installation program outlined in E., below:

When Moisture conditions exceed Item C.1 above and/or demolished slab conditions require substantial leveling, LSD&C Project Manager may authorize the alternate installation of wood strip flooring over 5/8" CDX plywood subflooring – See F. below:

E. ADHESIVE INSTALLATION:

1. Contact Mapei representative to schedule their onsite evaluation of conditions.
2. Adhesive: Mapei Ultrabond eco 995; apply with clip-on trowel attachment provided w/ adhesive (use a fresh attachment w/ each bucket - do not re-use). Key adhesive to floor surface and strike trowel ridges perpendicular to plank direction, maintaining trowel at 60 - 90 degrees to floor
3. G.C. to install vapor barrier only if required by Mapei rep after onsite evaluation. Mapei adhesive program does not generally require one. Base bid should not include vapor barrier - it will be an add, if required.
4. G.C. to provide moisture test report to LSD&C PM immediately after demolition and/or 1 week prior to floor installation. If the G.C. fails to provide report, any floor failure attributed to moisture, it will be the responsibility of the G.C. to replace (labor and material).
5. All work involving water or moisture should be completed before floor installation.
6. Room temperature and humidity of installation area should be consistent with normal, year-round conditions for at least a week before installation. Room temperature of 60 to 70 degrees f and humidity range of 40% to 60%.
7. G.C. to store flooring at installation site for a minimum of 72 hours before installation to allow flooring to adjust to room temperature and humidity. Do not store directly on concrete or near outside walls. GC to perform moisture test to ensure wood is acclimated.
8. Preparation: Broom clean substrate surface and ensure floor surface is smooth and flat to plus or minus 1/8" per 10'-0", free of oil, grease, dust and foreign substance. Use latex filler to patch cracks and small holes, and for minor leveling. Grind concrete where ridges and irregularities provide unsatisfactory substrate for wood strip flooring. Buff concrete with an 80 grit screen, then vacuum and wipe thoroughly with lacquer thinner.
9. Additional floor prep: See [Section 039250](#)
10. Commencement of work constitutes acceptance of conditions.

Follow all other spacing, alignment, and finishing instructions in section G., below.

F. ALTERNATE PLYWOOD SUBFLOOR INSTALLATION

1. Comply with wood strip flooring manufacturer's recommendations and

- instructions for applying over plywood subfloor.
2. 5/8" CDX Plywood to be installed with recommended Vapor barrier with PAFs at recommended spacing and slab penetration.
 3. Toe-nail strip flooring into plywood with recommended fasteners at required spacing.

Follow all other spacing, alignment, and finishing instructions in section G., below.

G. **INSTALLATION:** Comply with manufacturer and NWFA recommendations and installation instructions for direct application of wood strip flooring over concrete (Adhesive Method) or on plywood subfloor, as appropriate:

1. Inspect flooring material for correct type, quantity and damage.
2. Provide at least 1/2" expansion space between flooring and all walls and vertical objects.
3. Ensure joints of wood flooring are in line; ensure full adhesive contact for permanent bond to substrate.
4. Lay flooring symmetrical about room center line; fit neatly to vertical interruptions.
5. Stagger random length furring such that board ends are a min. 8" from ends of adjacent planks. Maximize long boards in center of sales area. Use short boards under cashwrap location. Take time to look at the flooring as it is being staggered to avoid repeating patterns in boards and h joints. Look for any cracks, ups and downs, boards that are not flat to the concrete and repair immediately.
6. All boards that are cut should be hand beveled or dragged, and colored to match other flooring boards using bleed kit supplied with the flooring.
7. Boards that meet perpendicular or at any other angle are to be tongue and grooved together.
8. Provide divider strips where flooring terminates with tile or other floor finishes. Divider strips manufacturer: Manhattan American terrazzo strip company, P.O box 72433 old 421 road, Staley, North Carolina, 27355, (336)622-4247; fax: (336) 622-4160, matsns@aol.com
9. Provide maximum 1:8 slope where finished floor surface changes level between wood flooring and adjacent flooring.
10. **FOR ADHESIVE SYSTEM ONLY:**
 - a. Clean all adhesive off the finished flooring with mineral spirits making sure not to rub too aggressively which could damage the finish and/or remove the color from the flooring.
 - b. Utilize Mapei provided open tack time charts.

- c. Roll and weight flooring installation per wood plank mfr recommendations, to ensure full contact. Avoid foot traffic after installation for at least 24 hours.
- d. Contact Mapei representative to comply with national account warranty program and insure that installation meets conditions of their warranty. Mapei will coordinate with GC when their rep will visit site to confirm conditions and preparations. Mapei Americas U.S.A., 1144 e. Newport center road, Deerfield Beach, FL 33442. Contact: Mike Granatowski (949) 212-2363, mgranatowski@mapei.com

SECTION 096516 - RESILIENT SHEET FLOORING

- A. General: Provide resilient sheet flooring with accessories as required for complete finished installation.
- B. Submittals: [See Section 013000](#).
- C. Project conditions: ensure floor surfaces are smooth and flat with maximum variation of 1/8" in 10'-0"; ensure concrete floors are dry and exhibit negative alkalinity, carbonizing and dusting.
- D. Vinyl sheet flooring: Nominal 0.080" thick vinyl sheet conforming to FS I-f-475, type ii, grade a.; color as indicated, as selected by architect from manufacturer's full range of colors where not otherwise indicated.
 1. Manufacturers: Armstrong (1.800.442.4212), Lonseal (1.800.832.7111), VPI floor products. (1.920.458.4664), or approved equal.
 2. Flammability: 0.45 watts/sq.cm. or higher, ASTM e648.
- E. Edge strips and accessories: Rubber or vinyl edge strips matching resilient flooring.
- F. Concrete preparation: Refer to [Section 039250](#)
- G. Waterproof membrane: Refer to [Section 071416](#)
- H. Primers and adhesives: Waterproof nontoxic types as recommended by flooring manufacturer for specified material and application.
- I. Sealer and wax: Type recommended by flooring manufacturer for material type and location.
- J. Preparation: Conform to ASTM f710 and manufacturer's recommendations for preparation; remove subfloor ridges and bumps; fill low spots, cracks, joints, holes and defects with subfloor filler.
- K. Installation: Comply with flooring and base manufacturer recommendations and installation instructions; set flooring in place, press with heavy roller for full adhesion; scribe to walls, columns, and other appurtenances to produce tight joints.
 1. Lay flooring with minimum seams with pattern parallel to building lines to produce symmetrical pattern; terminate resilient

- flooring at centerline of door openings where adjacent floor finish is dissimilar; install edge strips at unprotected or exposed edges.
- L. Integral cove base: Provide integral coved base including cove support strip or filler and metal top edge strip; install top edge strip level with floor line, with tightly butted joints, mitered corners; use longest top edge pieces available, minimum 48" between joints.
 - M. Cleaning: Remove excess adhesive from floor, base and wall surfaces.

SECTION 096519 - RESILIENT TILE FLOORING

- A. General: Provide resilient tile flooring system and resilient base, with accessories as required for complete finished installation.
- B. Submittals: [See Section 013000](#)
- C. Project conditions: Ensure floor surfaces are smooth and flat with maximum variation of 1/8" in 10'-0"; ensure concrete floors are dry and exhibit negative alkalinity, carbonizing and dusting.
- D. Resilient tile: 12" by 12" by 1/8" thick; vinyl composition tile conforming to ASTM f1066, composition 1; color and pattern as indicated, as selected by architect from manufacturer's full range of colors and patterns where not otherwise indicated.
 - 1. Manufacturers: Armstrong world industries (1.800.442.4212), Inc.; Azrock industries, Inc.; Tarkett Inc. (1.800.877.8453), or approved equal.
 - 2. Flammability: provide materials tested under ASTM e648, flooring radiant panel test, with results of 0.45 watts/cm² or higher
 - 3. Slip resistance: provide materials tested under ASTM d2047, James slip test with minimum 0.6 rating for floors.
- E. Resilient base: FS ss-w-40, 1/8" gage coved base at hard floor surfaces, straight (top set) base at carpet; provide molded end stops and external corners.
 - 1. Manufacturers: Armstrong (1.800.442.4212), Azrock, or Tarkett, vinyl base. (1.800.877.8453)
 - 2. Height: 4" unless otherwise indicated.
 - 3. Color: as indicated on finish schedule.
- F. Edge strips and accessories: Rubber or vinyl edge strips matching resilient flooring; latex-modified Portland cement based underlayment and patching compound; nontoxic water resistant type adhesives. Install where edge of tile would otherwise be exposed; butt to flooring without gaps; set in adhesive
- G. Concrete preparation: Refer to [Section 039250](#)
- H. Waterproof membrane: Refer to [Section 071416](#)
- I. Primers and adhesives: Waterproof nontoxic types as recommended by floor in install minimum 1/2 tile at room and area perimeter;

- terminate resilient flooring at centerline of door openings where adjacent floor finish is dissimilar; install edge strips at unprotected and exposed edges where flooring terminates.
- J. Sealer and wax: Type recommended by flooring manufacturer for material type and location.
- K. Preparation: Conform to manufacturer's recommendations for preparation and with ASTM f710; remove subfloor ridges and bumps; fill low spots, cracks, joints, holes and defects with subfloor filler.
- L. Flooring installation: Conform to manufacturer's recommendations and installation instructions; set flooring in place, press with heavy roller to ensure full adhesion; scribe flooring to walls, columns, and other appurtenances, to produce tight joints.
 - 1. Install minimum 1/2 tile at room and area perimeter; terminate resilient flooring at centerline of door openings where adjacent floor finish is dissimilar; install edge strips at unprotected and exposed edges where flooring terminates.
- M. Base installation: Comply with manufacturer's recommendations and installation instructions; apply to walls, columns, pilasters, casework, and other permanent fixtures in rooms and areas where base is required.
 - 1. Miter internal corners; use premolded sections for external corners and exposed ends; scribe and fit to door frames and other obstructions.
- N. Cleaning: Clean, seal and wax floor in accordance with manufacturer's recommendations.

SECTION 096800 - CARPETING

- A. General: Install owner furnished carpet; provide carpet accessories as required for complete finished installation.
- B. Standards: Comply with carpet and rug institute (cri) standards.
 - 1. Flammability: 0.45 watts/sq.cm. Or higher, ASTM e648.
- C. Submittals: [See Section 013000](#)
- D. Installer qualifications: Approved by carpet manufacturer; upon request, submit letter from carpet manufacturer stating installer is acceptable.
- E. Owner furnished unless otherwise indicated.
- F. Adhesive: Nontoxic type recommended by carpet and underlay manufacturers to suit application and expected service.
- G. Concrete preparation: Refer to [Section 039250](#)
- H. Edge strips: Vinyl or rubber; manufacturer's standard colors as selected. Install in accordance with manufacturer recommendations and installation instructions

- I. Preparation: Clean floors of dust, dirt, solvents, oil, grease, paint, plaster and other substances detrimental to proper performance of adhesive and carpet; allow floors to thoroughly dry.
 - 1. Use leveling and ramping material to patch cracks, small holes, leveling and for ramping to provide finished carpet within 1/2" of adjacent flooring materials.
- J. Carpet installation: Install carpet in accordance with carpet manufacturer recommendations and installation instructions.
 - 1. Prime substrate if required and as recommended by manufacturer; spread adhesive in quantity recommended by manufacturer to ensure proper adhesion over full area of installation.
 - 2. Apply only enough adhesive for proper adhesion of carpet before initial set.
- K. Carpet shields: G.C. to provide carpet shield to protect carpet immediately after carpet installation: Surface Shield Inc., (800) 913-5667
- b. Percent solids: Approximately 21 percent
- c. Viscosity: Approximately 29,000cps.
- d. VOC: Less than 25 g/l (grams per liter)
- e. Coverage: 280 square feet per gallon.
- f. Substrate compatibility: Suitable for installation over Pro-935 primer
- g. Covering compatibility: Suitable for covering by non-permeable wall coverings
- H. Provide primer which allows removal of wall covering from gypsum board without damaging paper facing of board, and without premature separation of wall covering from wall. Primer to be non-staining and non-toxic, as recommended by wall covering manufacturer. No primer needed when installing vinyl over vinyl (VOV).
- I. Examination: Ensure surfaces to receive wall covering are clean, true and free of irregularities, do not commence with work until surfaces are satisfactory. Ensure wall surface flatness tolerance does not vary more than 1/8" in 10'-0", nor vary at a rate greater than 1/16" per running foot.

SECTION 097216 - VINYL-COATED FABRIC WALL COVERINGS

- A. General: provide prefinished glass fiber reinforced polyester resin fabricated wall panels, with trim pieces and accessories as required for complete installation
- B. Submittals: [See Section 013000](#).
- C. Maintenance instructions: [See Section 017000](#).
- D. Manufacturers: As indicated on finish schedule.
- E. Types: as indicated on finish schedule.
- F. Adhesive for application over glossy surfaces: Vinyl over vinyl (VOV)
 - 1. Manufacturers: Roman Decorating Products, Pro-555 Adhesive (www.romandecoratingproducts.com, Tel: 708-891-0770) or approved equal.
 - 2. Adhesive shall meet or exceed the following criteria:
 - a. Adhesive type: Modified starch and synthetic based polymer
 - b. Percent solids: Approximately 59 percent
 - c. Viscosity: Approximately 17,000cps.
 - d. VOC: Less than 15 g/l (grams per liter); low VOC, LEED, CHPS compliant.
 - e. Coverage: 160 square feet per gallon.
 - f. Covering compatibility: Suitable for covering by non-permeable wall coverings
- G. Adhesive for regular application:
 - 1. Manufacturers: Roman Decorating Products, Heavy Duty Clear Pro-838 adhesive (www.romandecoratingproducts.com, Tel: 708-891-0770), or Zinsser, Sure Grip -128 Heavy Duty Clear Adhesive.
 - 2. Adhesive shall meet or exceed the following criteria:
 - a. Adhesive type: Modified starch
- K. Adhesive Application: Strictly comply with manufacturer's installation recommendations including the following:
 - 1. Apply when room temperature is above 50 degrees F.
 - 2. Dilution: Comply with manufacturer's recommendations.
 - 3. Apply one even, thin coat of adhesive with a brush or roller, free from ridges.
 - 4. Remove excess adhesive with clean water before adhesive is dry.
 - 5. If excess adhesive has been allowed to dry: use Romans Piranha concentrate removal liquid, applied per manufacturer's written instructions.
- L. Wallcovering Application: Handle and apply wall covering in accordance with manufacturer's recommendations and installation instructions; mix and apply adhesive in accordance with adhesive manufacturer's recommendations.
 - 1. Use panels in exact order as cut from rolls; use rolls in consecutive order as numbered by manufacturer.
 - 2. Horizontal seams and cutting at corners are not acceptable; cut no closer than 2" of an inside corner, and not closer than 6" of an outside corner.
 - 3. Fill spaces above & below windows, doors, and sim. areas in sequence from roll.
 - 4. Install in pattern as provided by manufacturer or as indicated in drawings.
- J. Preparation: Comply with manufacturer's recommendations; fill nicks, gouges and other minor imperfections of substrates with latex filler; sand smooth, flush with surface; apply prime coat in accordance with manufacturer's recommendations.

SECTION 097216.16 - RIGID-SHEET VINYL WALL COVERINGS (F.R.P. PANELS)

- A. General: Provide prefinished glass fiber reinforced polyester resin fabricated wall panels, with trim pieces and accessories as required for complete installation.
- B. Panels: Fiberglass reinforced plastic (FRP) panel system; nominal 0.090" thickness; white; embossed finish.
 - 1. Fire-rating: Class I (UL class A), maximum 25 flame spread, 450 smoke density based on ASTM e84 installation.
- C. Trim pieces: mfg's standard matching moldings and trim pieces as required for complete, finished installation, and as required for joints, corners and panel edges.
- D. Adhesive: manufacturer's recommended nontoxic, waterproof adhesive suitable for substrates indicated.
- E. Primer; provide non-staining release coat primer as recommended by wall panel manufacturer where panels are applied to gypsum board.
- F. Mechanical fasteners: concealed type only; types as recommended by system manufacturer.
- G. Installation: comply with manufacturer recommendations and applicable requirements for fire ratings. Cope and miter trim pieces. Install panels in maximum size increments available.
 - 1. Install wall paneling before installation of plumbing, bases, hardware, and similar accessories.
 - 2. Securely adhere panels to wall surfaces; use blind nailing methods as required to support panels until adhesive dries; exposed mechanical fasteners shall not be acceptable.
- H. Cleaning: remove excess adhesive from edges; wipe seam clean with dry cloth towel.

SECTION 098100 - ACOUSTICAL INSULATION

PART 1 - GENERAL

1.01 Summary

- A. Glass fiber acoustical insulation for interior walls, floors and ceilings.

1.02 References

- A. American Society for Testing and Material (ASTM)
 - 1. E84 test method for surface burning characteristics
 - 2. E90 laboratory measurement of airborne sound transmission loss of building partitions and elements
 - 3. E96 test method for water vapor transmission of materials

- 4. E136 test method for behavior of materials in a vertical tube furnace at 750 degrees f. (unfaced)
- 5. C423 test method for sound absorption and the sound absorption coefficient by the reverberation room method
- 6. C665 standard specification for mineral fiber blanket insulation for light frame construction and manufactured housing.

1.03 Submittals: [See Section 013000](#)

1.04 Delivery, storage and handling: [See Section 016000](#)

1.05 Limitations

- A. Do not use unfaced insulation in exposed applications where there is potential for skin contact and irritation.
- B. Kraft facings will burn and must not be left exposed. The facing must be in substantial contact with the unexposed surface of the ceiling, wall or floor finish.

PART 2 - PRODUCTS

2.01 Manufacturer

- A. Owens Corning

2.02 Quietzone acoustic batt insulation

- A. Type I: Unfaced glass fiber insulation complying with ASTM c 665 and ASTM e 136.
- B. Type II: Kraft faced glass fiber insulation complying with ASTM c 665.
- C. Surface burning characteristics
 - 1. Unfaced insulation
 - a. Maximum flame spread: 10
 - b. Maximum smoke developed: 10
 - 2. Kraft faced insulation
 - a. Maximum flame spread: not rated
 - b. Maximum smoke developed: not rated
- D. Combustion characteristics: Unfaced insulation passes ASTM e 136 test.
- E. Dimensional stability: Linear stability less than 0.1%.

PART 3 - EXECUTION

3.01 Inspection

- A. Examine the areas and conditions under which work of this section will be installed. Verify that adjacent materials are dry and ready. Verify that electrical and mechanical services within walls have been inspected and tested. Verify that project drawings comply with installation requirements.
- B. Provide written report listing conditions detrimental to the performance of work in this section. Do not proceed with installation until unsatisfactory conditions have been resolved.

3.02 Installation

- A. Comply with manufacturer's instructions for particular conditions of installation in each case.

- B. Between metal studs: Friction-fit unfaced insulation between studs after cover material has been installed on one side of the cavity. When faced insulation is used, attach flanges to face or side (preferred) of stud every 8 to 12 inches to hold in place.
 - 1. Place acoustical insulation tight within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- C. Acoustical accessories:
 - 1. Place acoustical sealant within partitions in accordance with manufacturer's recommendations; install acoustical sealant at gypsum board perimeter, at base layer and face layer of gypsum board, and penetrations of partitions.
 - 2. Tolerance: maximum 1/4" space between gypsum board at floor, ceiling and penetrations.
 - 3. Install electrical box pads with pads molded and pressed on back side of box, closing openings, in accordance with manufacturer's instructions, for complete acoustical barrier.

3.03 Installation- Vapor Retarder

- A. This insulation is for interior wall use only.
- B. The Kraft paper for this product is not a vapor retarder.
- C. Not recommended for exterior walls.

3.04 Material Storage and Protection

- A. Protect insulation from damage and getting wet before, during and after installation

SECTION 099000 - PAINTING AND COATING

- A. General: Provide painting of exposed items and surfaces not prefinished, as required for complete finished installation.
- B. Surfaces not to be painted: prefinished items; concealed and inaccessible areas, code-required labels.
- C. Standards: Provide materials approved for use by applicable air quality management district for limitations of volatile organic compounds for architectural coatings
- D. Submittals: [See Section 013000](#)
 - 1. Duplicate painted finishes of approved samples on actual wall surfaces and components for approval prior to commencing work.
- E. Delivery: [See Section 016000](#)
- F. Manufacturers: Benjamin Moore (330-353-3850), PPG (614-207-1105), or Sherwin-Williams (614-472-2520).
- G. Material quality: Provide top line quality commercial grade (professional painter) paints; materials not bearing manufacturer's identification as a best-grade product shall not be

acceptable. Manufacturer substitutions of any paint finish will not be permitted.

- 1. Primers: provide premium grade primers recommended by paint manufacturer for substrates indicated and for finish systems specified.
- 2. Undercoats and barrier coats: provide undercoat paints produced by same manufacturer as finish coats; use only thinners approved by paint manufacturer, and use only within recommended limits.
- 3. Finish coat coordination: provide finish coats which are compatible with prime paints, undercoats, and barrier coats used.
- 4. Volatile organic compounds: provide materials with minimal volatile organic compounds (voc); comply with applicable regulations.
- H. Colors and finishes: Pure, non-fading, applicable types to suit service indicated; no lead content permitted.
- I. Scheduling painting: Apply first coat to surfaces that have been cleaned, pretreated or prepared for painting as soon as practicable after preparation.
 - 1. Allow time between successive coatings to permit proper drying. Do not recoat until paint feels firm and does not deform or feel sticky under moderate thumb pressure.
- J. Preparation: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as specified for substrate condition.
 - 1. Examine areas and conditions under which painting work is to be applied. Start of painting work indicates acceptance of surfaces and conditions of surfaces and conditions within any particular area.
 - 2. Remove hardware, accessories, and items in place and not to be painted, or provide protection prior to surface preparation and painting; after painting reinstall removed items.
- K. Prime coats: Apply to items not previously primed; recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat.
- L. Application: Apply paint in accordance with manufacturer's directions; use applicators and techniques best suited for substrate and type of material being applied.
 - 1. Apply additional coats when stains or blemishes show through final coat, until paint is a uniform finish, color and appearance.
 - 2. Finish doors on tops, bottoms and side edges same as faces.
 - 3. Provide extra attention to assure dry film thickness at corners and crevices is equivalent to that of flat surfaces
 - 4. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces; paint surfaces behind permanently-

- fixed equipment and furniture with prime coat only.
5. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
 6. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 7. Sand lightly between each succeeding enamel and each varnish coat
- M. Minimum coating thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as recommended by coating manufacturer.
- N. Finish coats: Provide even texture; leave no laps, irregularity in texture, skid marks, or other surface imperfections.
- O. Paint systems: provide minimum two coat plus primer systems.
1. Material and sheen as indicated in finish schedule.
 2. Primer system at gypsum board and other seams receiving joint or finish compound and indicated to have a graphic stencil applied, to be: Rust-Oleum Zinsser GARDZ Problem Surface Sealer 02301. Prime surface before applying distressed finish (P.2 below)
- P. PINK wainscoting, trims, walls, & storefront.
1. General
 - a. Review owner supplied sample.
 - b. GC to provide a counter sample based on these specifications to owners pm by the end of week 3 of construction for approval prior to proceeding.
 - c. No substitutions of materials or deviation from the process will be accepted unless it is approved in writing by the owner's pm.
 - d. It is the GC's responsibility to maintain approved sample and the original owner's control sample on site through the opening of the store.
 2. Distressed finish on trims, millwork, gyp board and MDF (P-29):
 - a. If object (trim/fixture) is provided pre-primed from vendor then skip to step c. the element does not need re-primed.
 - b. Apply one coat of 1:1 mix of Benjamin Moore latex clear glaze #405 and Benjamin Moore aura #522 matte finish tinted to match 1145 creamy custard. Brush in direction of wood grain to resemble wood stain. Brush in the long direction of trims, and vertically for all gyp bd and panel faces. Allow to dry two hours.
 - c. Apply two coats of 2:1 mix of Benjamin Moore latex clear glaze #405 and aura #526 satin finish (for exterior applications use aura waterborne exterior #631 satin finish) tinted to match "not quite white" (formula below). Brush in direction of wood grain. Brush in long direction of trims, and vertically for all gyp bd and panel faces. Allow to dry two hours. Should match samples provided by owner. If it does not match provided sample consult owners pm.
 - (1) Benjamin Moore formula: not quite white; 526-1x (quart) w1 28.1250, y2 1, s2 3.25, o1 .1875, y3 .50
 - d. Sand edges only using 80 grit paper only to expose 30%-40% of the primer beneath. Sand edges of wood trims and millwork, not gyp bd. note: sanding to be done with limited brands pm on site.
- Q. Protection: Protect work of other trades, whether to be painted or not; correct damage by cleaning, repairing or replacing, and repainting, as acceptable to LSD&C project manager.
1. Provide "wet paint" signs to protect newly-painted finishes.
 2. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
- R. Clean-up: During progress of work, remove discarded paint materials, rubbish, cans and rags from site at end of each work day.
1. Clean glass and paint-spattered surfaces immediately by proper methods of washing and scraping, using care not to scratch or damage finished surfaces.
- S. At completion of work of other trades, touch-up and restore damaged surfaces or defaced painted surfaces.

END OF DIVISION 09

DIVISION 10 - SPECIALTIES

SECTION 102113 - TOILET COMPARTMENTS

- A. General: Provide floor mounted metal toilet compartments and wall mounted urinal screens with accessories as required for complete finished installation; coordinate with toilet accessories.
- B. Codes and regulations: Comply with state and federal requirements for ensuring access for persons with disabilities.
- C. Submittals: [See Section 013000](#)
- D. Manufacturers: Sanymetal, Global, or Flush Metal.
- E. Type: Floor mounted toilet partitions and wall mounted urinal screens.
 - 1. Finish: Standard baked enamel finish color as selected by architect from manufacturer's full line of colors.
- F. Pilaster shoes: 3" high; ASTM a666, type 302/304, no. 4 polished; stainless steel.
- G. Attachments, screws and bolts: Stainless steel; tamper proof type; heavy duty extruded aluminum brackets.
- H. Hardware: Manufacturer's standard chrome plated or similar finish.
 - 1. Non-ferrous cast pivot hinges, gravity type, adjustable for door positioning.
 - 2. Slide latch; door strike and keeper with rubber bumper.
 - 3. Coat hook/bumper: cast alloy chrome plated combination unit.
 - 4. Wall bumper: cast alloy wall mounted rubber bumper for outswinging doors.
 - 5. Pulls: comply with requirements for accessibility for persons with disabilities.
- I. Internal reinforcement: Provide internal reinforcement in areas of attached hardware and fittings; mark locations of reinforcement for partition mounted washroom accessories.
- J. Preparation: Examine site conditions to which work is to be applied; take site dimensions affecting this work.
 - 1. Ensure correct spacing and size of plumbing fixtures; take special note of fixtures in compartments indicated to be designed for persons with disabilities to assure clearances complying with access regulations.
- K. Installation: Install units in accordance with manufacturer recommendations and installation instructions, secure, plumb, level, and square; leave 1/2" space between wall, panels and end pilasters.
 - 1. Adjust hinges to locate doors in partial open position when unlatched, except adjust hinges to return doors to closed position at stalls designed for use by persons with disabilities.

- 2. Anchor urinal screen panels to walls with two panel brackets.
- L. Cleaning: Field touch-up of scratches and defaced finishes will not be permitted; replace damaged, scratched and marred defective materials with new, undamaged materials; remove protective maskings; clean surfaces free of oil and imperfections

SECTION 102613 - CORNER GUARDS

- A. General: Install stainless steel & clear corner guards with attachment devices and accessories as required for complete finished installation.
- B. Manufacturers:
 - 1. Stainless steel guard: see sheet a13.1.
 - 2. Clear corner guard: Outwater Plastic Industries Inc. #cg-17-8 (1.800.631.8375)
- C. Stainless steel units with satin finish, 1-1/2" x 1-1/2" x 48" high corner guards; minimum 18 gage. Paint grip finish at sales floor.
- D. Installation: Comply with manufacturer recommendations.

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

- A. General: Provide toilet accessories as required for complete finished installation.
- B. Codes and regulations: Comply with state and federal requirements for ensuring access for persons with disabilities.
- C. Manufacturers: As indicated on drawing A13.1
- D. Accessories as indicated on drawing A13.1; provide grab bars with concealed mounting, sizes and shapes as indicated and as required by applicable codes and regulations.
- E. Materials: Stainless steel, ASTM a666, commercial grade, type 302/304, number 4 satin finish, satin chrome acceptable where stainless steel is not available for accessory item scheduled; gages as standard with manufacturer of specified items
 - 1. Fasteners, screws, and bolts: Hot dip galvanized; as recommended by accessory manufacturer for component and substrate.
 - 2. Concealed surfaces: Pretreat and clean, spray apply one coat primer and baked enamel finish.
- F. Equipment: As indicated on drawing a13.1
 - 1. Grab bars: Stainless steel type 304 to meet requirements of ASTM #f446-85.
- G. Fabrication: Weld and grind smooth joints of fabricated components; form exposed surfaces from one sheet of stock, free of joints.
 - 1. Fabricate units with tight seams and joints, exposed edges rolled; hang doors and access panels with continuous piano hinges; provide concealed anchorage where possible.

2. Provide steel anchor plates and anchor components for installation.
 3. Form surfaces flat without distortion; maintain flat surfaces without scratches and without dents; finish exposed edges eased, free of sharp edges where potential exists for physical contact.
 4. Hot dip galvanize ferrous metal anchors and fastening devices.
 5. Shop assemble components; package complete with anchors and fittings.
- H. Installation: Comply with manufacturer recommendations and applicable codes and regulations.

SECTION 105100 - LOCKERS

- A. General: Install owner furnished metal lockers; provide accessories as required for complete finished installation
- B. Installation: Install lockers in accordance with manufacturer recommendations and installation instructions, secure, plumb, level, square, and in line.
1. Bolt adjoining locker units together and attach to the wall w/ 1/4" x 1" tek screws (top and bott.) at 24" o.c. to provide rigid installation.
 2. Install metal bases, end panels, and filler panels to close off openings and as required for complete installation.

SECTION 105626 - MOBILE / FIXED STORAGE SHELVEING

- A. General: Install owner furnished movable and fixed compact storage system; provide accessories as required for complete finished installation.
- B. Examination: Examine substrates and conditions under which compacted storage system is to be installed. Do not proceed with work until unsatisfactory conditions have been corrected.
- C. Manufacturer: Pipp Mobile Storage Systems, Inc. 2966 Wilson Drive NW, Walker, MI (1.800.234.pipp)
- D. Install units and accessories at locations shown in accordance with manufacturer's recommendations and instructions, level, plumb, secure and at proper height.
- E. Cleaning: Clean units and repair or replace damaged units as directed by LSD&C project manager. Touch-up marred finishes or replace component parts as necessary to eliminate evidence of damage or deterioration.
- F. Protection: Provide protection for installed system to ensure perfect operating condition without damage at completion of project.

SECTION 107313 - AWNINGS

- A. General: Provide awnings and frames with accessories as required for complete finished installation.
- B. Design requirements: Fabricate and install frame structure capable of withstanding minimum 20 psf wind load acting inward or outward upon fabric surface with frame members deflecting not greater than l/180.
- C. Submittals: Furnish shop drawings, manufacturer's literature, and samples of fabric and of frame finish.
- D. Fabric: Provide Glen Raven Mills/Sunbrella (1.336.227.6211) "Firesist" 9.15 oz./yd2 pigmented modacrylic fiber, mildew resistant, fire-retardant treated.
1. Graphics: Provide silkscreened graphics as indicated on drawings.
 2. Fabricate fabric cover to fit tightly to framing. Minimize number of seams on face of awnings; seams shall be symmetrically located relative to face of awnings. Provide lock-type seams. Hand-stitch top and side seams as required.
- E. Frame structure: G.C. to coordinate with awning manufacturer for frames to be built by the manufacturer or fabricated and delivered for field installation. Frame may be joined by internal sleeving and external fastening, provided fastener does not telegraph through fabric.
- F. Accessories: Provide as required for complete secure awning installation.
- G. Installation: Comply with manufacturer recommendations and instructions.
1. Install frame structure plumb, level, and securely anchored to construction.
 2. Install fabric cover over frame structure, and securely fasten to structure. Adjust fabric cover to ensure straightness of seam and tightness around frame; wrinkles and sag shall not be acceptable.
- H. Cleaning:
1. Brush off loose dirt and hose down.
 2. Prepare a cleaning mixture of water and mild natural soap (no detergents) and use a soft bristle brush to clean.
 3. Allow soap to soak in and rinse thoroughly.
 4. Air-dry
 5. If a more thorough cleaning is required use a diluted chlorine bleach/soap mixture for spot cleaning of mildew, roof run-off and other similar stains.
 6. 303 high tech fabric guard should be applied after each thorough cleaning to maintain fabrics water repellency.

END OF DIVISION 10

**DIVISION 11 - EQUIPMENT (NOT
USED)**

END OF DIVISION 11

DIVISION 12 - FURNISHINGS

SECTION 124813 - WALK OFF MATS AND FRAMES

- A. General: Provide entry carpet type floor walk off mats with accessories and subassemblies as required for complete finished installation. G.C. to provide transition strips for flush mounting of mat with adjacent floor finish.
- B. Codes and regulations: Comply with state and federal requirements for ensuring access for persons with disabilities.
- C. Manufacturers: The Matworks Company Llc, 11900 Old Baltimore Pike, Beltsville, MD 20705, (301-837-1272); or Grand Entrance (888-424-6287).
 - 1. VS entry: Matworks - refer to finish schedule.
 - 2. PINK entry: Grand Entrance - refer to finish schedule.
 - 3. Exterior accessible service doors: Matworks - refer to finish schedule
- D. Installation: Comply with all applicable codes and standards. GC. install per manufacturer's instructions, including installation of all slab anchors. Failure to follow manufacturer's instructions will result in re-installation at GC expense for parts and labor.
 - 1. For Matworks mats, substrate to be painted; once dry, clean surface prior to installing grid.

END OF DIVISION 12