

PROJECT MANUAL

FOR:

MIXED USE BUILDING
924 SOUTH MAIN STREET
ROYAL OAK, MI 48067

CLIENT:

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PROJECT NO.:

18.09.08

7-27-2020

PERMIT

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Royal Oak, MI

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GENERAL CONDITIONS

- A. General Conditions: AIA A201, General Conditions of the Contract for Construction.
- B. General Conditions Forms: General Conditions are available from the American Institute of Architects, Washington, D.C., 202-626-7300. General Conditions will be prepared and approved for use on the project by the Owner in consultation with an attorney.

END OF DOCUMENT

SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.1 SUMMARY

Project Identification: 924 South Main Street Royal Oak Michigan.

Project Summary: Construction of a 3 story mixed use building providing ground floor office space and covered parking and 2 floors of 1 bedroom apartments.

The work will include but not be limited to the following;

- Site work and landscaping
- Masonry
- Structural and miscellaneous steel installation
- Wood frame structure and partitions
- Construction of commercial space
- Construction of 12 apartments
- Construction and installation of 3 story elevator and shaft
- Construction of common area amenities
- Installation of new mechanical systems
- Installation of new plumbing systems
- Installation of new electrical systems
- Installation of fire safety systems

A. Particular Project Requirements:

1. Coordinate separate disposal and storage facilities for materials and items to be recycled.

B. Permits and Fees: Apply for, obtain, and pay for permits, fees, and utility company back charges required to perform the work. Submit copies to Architect.

C. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices and similar communications to Architect.

D. Dimensions: Verify dimensions indicated on drawings with field dimensions before fabrication or ordering of materials. Do not scale drawings.

E. Existing Conditions: Notify Architect of existing conditions differing from those indicated on the drawings. Do not remove or alter structural components without prior written approval.

F. Coordination:

1. Coordinate the work of all trades.

2. Prepare coordination drawings for areas above ceilings where close tolerances are required between building elements and mechanical and electrical work.

3. Verify location of utilities and existing conditions.

G. Installation Requirements, General:

1. Inspect substrates and report unsatisfactory conditions in writing.

2. Do not proceed until unsatisfactory conditions have been corrected.

3. Take field measurements prior to fabrication where practical. Form to required shapes and

- sizes with true edges, lines and angles. Provide inserts and templates as needed for work of other trades.
4. Install materials in exact accordance with manufacturer's instructions and approved submittals.
 5. Install materials in proper relation with adjacent construction and with proper appearance.
 6. Restore units damaged during installation. Replace units which cannot be restored at no additional expense to the Owner.
 7. Refer to additional installation requirements and tolerances specified under individual specification sections.
- H. Limit of Use: Limit use of work as indicated. Keep driveways and entrances clear.
1. Provide: Furnish and install, complete with all necessary accessories, ready for intended use. Pay for all related costs.
 2. Approved: Acceptance of item submitted for approval. Not a limitation or release for compliance with the Contract Documents or regulatory requirements. Refer to limitations of 'Approved' in General and Supplementary Conditions.
 3. Match Existing: Match existing as acceptable to the Owner.
- I. Intent: Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner. Anything not expressly set forth but which is reasonable implied or necessary for proper performance of the project shall be included.
- J. Writing Style: Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Contractor. For example, 'Provide tile' means 'Contractor shall provide tile.'

END OF SECTION

SECTION 00 03 00

REFERENCED STANDARDS

PART 1-GENERAL

1.01 MATERIAL STANDARDS:

The chemical and physical properties of all materials shall be in accordance with the requirements of the Standard Specifications, latest edition, as they may apply as listed below:

American Institute of Architects

American Society of Heating and Ventilation Engineer's Code: (Testing and Rating of Steam Heating and Ventilation Units, and Unit Heaters – Multi-Blade Type).

American Society of Mechanical Engineer's Code: (Unfired Pressure Vessels, Pressure Piping and Boiler Code).

National Association of Fan Manufacturer's Code: (Standard Test Code for Centrifugal and Axial Fans).

National Board of Fire Underwriter's Pamphlets: (NO. 70, Standards of the National Board of Fire Underwriters for Electrical Wiring and Apparatus. NO. 12, Standards of the National Board of Fire Underwriters for Sprinkler Systems.)

A.S.T.M. (American Society of Testing Materials): (Pipe, Fittings, Valves, etc.)

A.S.A. (American Standards Association): (Pipe, Fittings, Valves, etc.)

American Institute of Steel Construction

American Concrete Institute

National Concrete Masonry Association

American National Standards Institute

American Welding Society

American Plywood Association

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Administration of Contract: Provide administrative requirements for the proper coordination and completion of work including the following:
 - 1. Supervisory personnel.
 - 2. Preconstruction conference.
 - 3. Project meetings, minimum of two per month; prepare and distribute minutes.
- B. Reports: Submit daily and special reports.
- C. Work Schedule: Submit progress schedule, updated monthly.
- D. Submittal Schedule: Prepare submittal schedule; coordinate with progress schedule.
- E. Schedule of Values: Submit schedule of values.
- F. Schedule of Tests: Submit schedule of required tests including payment and responsibility.
- G. Perform Surveys: Lay out the work and verifying locations during construction. Perform final site survey.
- H. Emergency Contacts: Submit and post a list of emergency telephone numbers and address for individuals to be contacted in case of emergency.
- I. Record Documents: Submit record drawings and specifications; to be maintained and annotated by Contractor as work progresses.

1.2 SUBMITTALS

- A. Types of Submittals: Provide types of submittals listed in individual sections and number of copies required below.
 - 1. Shop drawings, reviewed and annotated by the Contractor - 4 copies.
 - 2. Product data - 4 copies.
 - 3. Samples - 2, plus extra samples to indicate range of color, finish, and texture to be expected.
 - 4. Inspection and test reports - 4 copies.
 - 5. Warranties - 4 copies.
 - 6. Survey data - 4 copies.
 - 7. Closeout submittals - 4 copies.
 - 8. Project photographs - 12 digital images each month submitted on CD. Submit cumulative CD at each subsequent submittal. Label each image with date.
 - 9. Record copy of construction documents recording field changes
- B. Submittal Procedures: Comply with project format for submittals. Comply with submittal procedures established by Owner. Provide required resubmittals if original submittals are not approved. Provide distribution of approved copies including modifications after submittals have been approved.
- C. Samples and Shop Drawings: Samples and shop drawings shall be prepared specifically for this

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project. Shop drawings shall include dimensions and details, including adjacent construction and related work. Note special coordination required. Note any deviations from requirements of the Contract Documents.

- D. Warranties: Provide warranties as specified; warranties shall not limit length of time for remedy of damages Owner may have by legal statute. Contractor, supplier or installer responsible for performance of warranty shall sign warranties.

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Quality Monitoring: Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality. Perform quality control procedures and inspections during installation.
- B. Standards: Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- C. Tolerances: Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate. Comply with manufacturers' tolerances.
- D. Reference Standards: For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- E. Manufacturer's Field Services: When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to perform the following as applicable, and to initiate instructions when necessary.
 - 1. Observe site conditions.
 - 2. Conditions of surfaces and installation.
 - 3. Quality of workmanship.
 - 4. Start-up of equipment.
 - 5. Test, adjust and balance of equipment.
- F. Mock-Ups: Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes. Accepted mock-ups shall be a comparison standard for the remaining Work.
- G. Removal of Mock-Ups: Where mock-up has been accepted by Architect and no longer needed, remove mock-up and clear area when directed to do so.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

- A. Temporary Services: Provide temporary services and utilities, including payment of utility costs including the following.
 - 1. Water (potable and non-potable).
 - 2. Lighting and power.
 - 3. Metering.
 - 4. Telephone.
 - 5. Toilet facilities.
 - 6. Materials storage.

- B. Construction Facilities: Provide construction facilities, including payment of utility costs including the following.
 - 1. Construction equipment.
 - 2. Enclosures.
 - 3. Lighting.

- C. Security and Protection: Provide security and protection requirements including the following.
 - 1. Fire extinguishers.
 - 2. Site enclosure fence, barricades, warning signs, and lights.
 - 3. Building enclosure and lock-up.
 - 4. Environmental protection.
 - 5. Snow and ice removal if applicable.

- D. Personnel Support: Provide personnel support facilities including the following.
 - 1. Contractor's field office.
 - 2. Sanitary facilities.
 - 3. Drinking water.
 - 4. Project identification sign.
 - 5. Cleaning.

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Manufacturers: Provide products from one manufacturer for each type or kind as applicable. Provide secondary materials as acceptable to manufacturers of primary materials.
- B. Product Selection: Provide products selected or equal approved by Architect. Products submitted for substitution shall be submitted with complete documentation, and include construction costs of substitution including related work.
- C. Substitutions: Request for substitution must be in writing. Conditions for substitution include:
 - 1. An "or equal" phrase in the specifications.
 - 2. Specified material cannot be coordinated with other work.
 - 3. Specified material is not acceptable to authorities having jurisdiction.
 - 4. Substantial advantage is offered to the Owner in terms of cost, time, or other valuable consideration.
- D. Substitution Requests: Substitutions shall be submitted prior to award of contract, unless otherwise acceptable. Approval of shop drawings, product data, or samples containing substitutions is not an approval of a substitution unless an item is clearly presented as a substitution at the time of submittal.

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Substantial Completion: The following are prerequisites to substantial completion. Provide the following:
 - 1. Punch list prepared by Contractor and subcontractors as applicable.
 - 2. Supporting documentation.
 - 3. Warranties.
 - 4. Certifications.
 - 5. Occupancy permit.
 - 6. Start-up and testing of building systems.
 - 7. Change over of locks.
 - 8. Meter readings.
 - 9. Commissioning documentation.

- B. Final Acceptance: Provide the following prerequisites to final acceptance:
 - 1. Final payment request with supporting affidavits.
 - 2. Completed punch list.

- C. As-Built Drawings: Provide a marked-up set of drawings including changes, which occurred during construction. Provide hard copy and electronic copy.

- D. Project Closeout: Provide the following during project closeout:
 - 1. Submission of record documents *in electronic format*.
 - 2. Submission of maintenance manuals.
 - 3. Training and turnover to Owner's personnel.
 - 4. Final cleaning and touch-up.
 - 5. Removal of temporary facilities.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE-CONCRETE

PART 1 GENERAL

1.1 SUMMARY

- A. Provide cast-in-place concrete, reinforcing and accessories

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
 - 1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.
- C. Mix Design: Submit for approval mix design proposed for use.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Testing: Employ an independent testing agency acceptable to Owner to design concrete mixes and to perform material evaluation tests. Provide 7- and 28-day cylinder tests. Comply with ASTM C 143, C 173, C 31 and C 39.
- C. Standards:
 - 1. ACI 301, Specifications for structural Concrete for Buildings.
 - 2. ACI 318, Building Code Requirements for Reinforced Concrete, and CRSI Manual of Standard Practice.
- D. Mock-Ups: Provide mock-up to demonstrate quality of workmanship.
- E. Floor Flatness and Levelness Tolerances:
 - 1. Subfloors Under Materials Such as Concrete Toppings, Ceramic Tile, and Sand Bed Terrazzo: ACI 302.1R and ASTM E 1155, floor flatness (Ff) of 15, floor levelness (Fl) of 13.
 - 2. Subfloors Under Materials Such As Vinyl Tile, Epoxy Toppings, Paint, and Carpet: ACI 302.1R and ASTM E 1155, floor flatness (Ff) of 20, floor levelness (Fl) of 17.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Cast-In-Place Concrete:
 - 1. Manufacturers, Concrete Forming and Accessories: Ceme-Tube LLC; Newark Paperboard Products; Scott System, Inc.; Symons; Universal Building Products, Inc.; Manufacturers, Concrete Anchoring: Powers Fasteners.;
 - 2. Manufacturers, Concrete Curing, Sealing and Hardening: Armormon, Division of Reef

- Industries, Inc.; Ashford Formula, By Curecrete.;
3. Manufacturers, Cement Grouts, Adhesives and Sealants: Five Star Products, Inc.;
 4. Manufacturers, Concrete Resurfacing and Rehabilitation: MAPEI Corp.; ProSpec (formerly Bonsal branded products);
 5. Application: Slabs on grade.
 6. Application: Exterior site concrete and pads.
 7. Finish for Surfaces to be Exposed to View, Peastone aggregate mix, for ground and polished finish.
 8. Finish for Exterior Concrete Platforms, Steps, Ramps and Sloped Walls: Non-slip broom finish.
 9. Cast-In-Place Concrete Reinforcing and Accessories:
 - a. Concrete Design Mixes: ASTM C 94, 28-day compressive strength suitable for project requirements and site conditions.
 - b. Reinforcing Bars: ASTM A 767, Class II, galvanized.
 - c. Steel Wire: ASTM A 82.
 - d. Steel Wire Fabric: ASTM A 497, welded, deformed.
 - e. Concrete Materials: ASTM C 150, Type I, Portland cement; potable water.
 - f. Concrete Admixtures: Containing less than 0.1 percent chloride ions.
 - g. Waterstops: Rubber, PVC or self expanding butyl/bentonite waterstops.
 - h. Underlayment Compound: Free-flowing, self-leveling cement-based compound.
 - i. Bonding Compound: Polyvinyl acetate or acrylic base.
 - j. Epoxy Adhesive: ASTM C 881, two-component material.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with ASTM C 94. Do not change mix design without approval. Calcium chloride admixtures are not permitted.
- B. Chamfer exposed edges/corners to provide straight lines.
- C. Tolerance: Plus 1/8 inch in 10 inches for grade, alignment, and straightness.
- D. Construction Joints: Use keyways, continue reinforcement through joint.
- E. Expansion Joints: For exterior work locate 30 feet o.c. at approved locations. Provide smooth dowels across joint which permit 1 inch horizontal movement and no vertical shear movement.
- F. Isolation Joints: Provide between slabs and vertical elements such as columns and structural walls.
- G. Control Joints: Provide sawn or tooled joints or removable insert strips; depth equal to 1/4 slab thickness.
- H. Wall Finishes: As-cast and patched for concealed work; rubbed smooth, filled and cement paste coated for exposed work.
- I. Slab Finishes: Lobby floor, Pea Stone Mix, strike floor level once and let cure with aggregate near the top. Finish by grinding and polishing floor exposing the aggregate. Obtain sample approval before beginning work.
 1. Scratch: For surfaces to receive mortar setting beds or cementitious flooring materials.
 2. Trowel: Hard, smooth, uniform surface for areas to receive resilient flooring, carpet, or other thin finish material.
 3. Broom: After trowel finishing, roughen surface by fine brooming perpendicular to traffic direction for exposed exterior walks, steps and ramps.

4. Non-Slip Aggregate: After trowel finishing, uniformly trowel 25-lbs./100 square feet of damp non-slip aggregate into surface. Cure, then rub lightly to expose aggregate. Use for interior exposed concrete stairs and ramps.
 5. Exposed Aggregate: Use chemical retarder or tamp aggregate into wet concrete and expose by brushing with water. Use where indicated.
 6. Hardener Finish: For exposed interior concrete floors. Follow manufacturer's directions.
- J. Cure and protect work. Report defective work in writing.

END OF SECTION

SECTION 04 20 00

UNIT MASONRY

PART 1 GENERAL

1.1 SUMMARY

- A. Provide unit masonry construction.
- B. Provide brick veneer construction.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
 - 1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.3 QUALITY ASSURANCE

- A. Fire Performance for Fire-Rated Brick and Concrete Block Assemblies: ASTM E 119.
- B. Testing: Independent Testing Laboratory.
- C. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.
- D. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Concrete Masonry Units:
 - 1. Manufacturers: Theut Products; Michigan Certified Concrete Products; Consumers Concrete Products, Block; or approved equal.
 - 2. Application: Concrete masonry bearing walls.
 - 3. Application: Concrete masonry non-bearing partitions.
 - 4. Concrete Masonry Units: ASTM C 90, 1500 # compressive strength:
 - a. Normal weight.
 - 5. Size: Face dimension as indicated on drawings for each location.
 - 6. Special Finish: Standard aggregate, standard finish.
 - 7. Bond Pattern: Running Bond.
 - 8. Integral Water Repellent: Liquid polymeric admixture.
- B. Structural Clay Facing Brick:
 - 1. Manufacturers: As indicated on drawings or approved equal.

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2. Solid Brick Grade and Type: ASTM C 126, Grade SW, Type FBX.
3. Hollow Brick Grade and Type: ASTM C 652, Grade SW, Type HBX.
4. Size: 4S series face dimensions 2-3/8 inches high by 7-3/4 inches long by 3-3/4 inches thick.

C. Mortar and Grout for Brick and Concrete Masonry Unit Assemblies:

1. Mortar Mix: ASTM C 270, Type S, for reinforced masonry, masonry below grade and masonry in contact with earth and ASTM C 270, Type N, for above-grade loadbearing and nonloadbearing walls and parapet walls and for interior loadbearing and nonloadbearing partitions.
2. Mortar Materials: Portland cement, ASTM C 150, Type I or II.
3. Mortar Materials: Masonry cement, ASTM C 91.
4. Mortar Materials: Ready mixed, ASTM C 207, Type S.
5. Mortar Aggregate: Natural color, ASTM C 144.
6. Grout Aggregate: ASTM C 404.
7. Hydrated Lime: ASTM C 207, Type S.
8. Color: As noted on drawings

D. Reinforcing Steel:

1. Reinforcing Bars: ASTM A 615, Grade 60.
2. Reinforcing Bars: ASTM A 615, and ASTM A 775, Grade 60 epoxy-coated.
3. Deformed Reinforcing Wire: ASTM A 496.
4. Welded Wire Fabric: ASTM A 185, plain.
5. Welded Wire Fabric: ASTM A 497, deformed.

E. Reinforcing: Welded wire with deformed side rods.

1. Steel Wire: 9 gauge (.1875 inch) galvanized steel.
2. Steel Wire: 9 gauge (.1875 inch) stainless steel.
3. Type: Ladder type.
4. Type: Ladder or truss type.

F. Ties and Anchors:

1. Bent Wire Ties: Galvanized steel.
2. Rigid Anchors: Galvanized steel straps.
3. Masonry to Concrete Frame: Two-piece galvanized steel anchor.
4. Masonry to Steel Frame: Anchor with crimped wire anchor section for welding to steel.
5. Adjustable Masonry Veneer Anchors: Screw-attached two-piece galvanized triangular or rectangular wire tie and metal anchor.
6. Screws for Steel Studs: ASTM C 954 organic polymer coated steel drill screws.
7. Screws for Steel Studs: ASTM C 954 stainless steel.
8. Unit Type Masonry Inserts in Concrete: Malleable iron.
9. Dovetail Slots: Galvanized sheet metal.
10. Anchor Bolts: ASTM A 307, Grade A, galvanized.
11. Post-installed Anchors: Chemical or expansion anchors.

G. Masonry Accessories:

1. Cavity Drainage Material.
2. Flashing: Rubberized-Asphalt or EPDM Flashing with stainless steel drip edge.
3. Flashing: Stainless steel or copper-laminated flashing.
4. Loose-Granular Fill Insulation.
5. Nonmetallic expansion joint strips.
6. Preformed control joint gaskets.

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7. Bond breaker strips.

PART 3 EXECUTION

3.1 INSTALLATION

A. Installation of Masonry Assemblies:

1. Comply with PCA Recommended Practices for Laying Concrete Block, Brick Institute of America BIA Tech Notes, and NCMA TEK Bulletins.
2. Comply with cold weather and warm weather protection procedures as recommended in BIA Tech Notes.
3. Provide fire-rated assemblies complying with ASTM E 119.
4. Saw cut units when required. Maintain uniform joint width. Provide full bed, head and collar joints except at weepholes.
5. Install lintels and accessories in masonry construction.
6. Coordinate installation of flashings.
7. Comply with applicable codes and regulations for spacing of ties and horizontal reinforcing.
8. Provide expansion and control joints in accordance with BIA and NCMA recommendations.
9. Remove and replace damaged units.
10. Clean brick using bucket and brush method, BIA Tech Note 20.
11. Clean concrete masonry by dry brushing, NCMA TEK No. 28.

END OF SECTION

SECTION 05 12 00
STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide structural steel assemblies and accessories.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
 - 1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.
- C. Submit for approval test reports.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Standards: AISC, Code of Standard Practice for Steel Buildings and Bridges, and applicable regulations.
- C. Architecturally Exposed Structural Steel: Comply with fabrication requirements, including tolerance limits, and installation tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel identified as architecturally exposed structural steel.
- D. Testing: Independent testing laboratory.
- E. Erection Tolerances: AISC standards.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Structural Steel:
 - 1. Application: Building structure.
 - 2. Structural Steel Shapes, Plates, and Bars: ASTM A 572.
 - 3. Cold-Formed Steel Tubing: ASTM A 500, Grade B.
 - 4. Hot-Formed Steel Tubing: ASTM A 501.
 - 5. Steel Pipe: ASTM A 53, Type E or S, Grade B; or ASTM A 501.
 - 6. Steel Castings: ASTM A 27, Grade 65-35.
 - 7. Anchor Bolts: ASTM A 307, nonheaded type.
 - 8. Unfinished Threaded Fasteners: ASTM A 307, Grade A.
 - 9. High-Strength Threaded Fasteners: ASTM A 325 or ASTM A 490, as applicable.
 - 10. Auxiliary Materials:
 - a. Direct Tension Indicators: ASTM A 959.

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- b. Electrodes for Welding: AWS Code.
- 11. Structural Steel Primer Paint: SSPC - Paint 13, compatible with topcoats.
- 12. Cement Grout: Portland cement, sand.
- 13. Metallic Shrinkage-Resistant Grout: Premixed ferrous aggregate grouting compound ASTM C 1107.
- 14. Nonmetallic Shrinkage-Resistant Grout: Premixed nonmetallic grouting compound, ASTM C 1107.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with AISC codes and specifications, and with AWS "Structural Welding Code."
- B. Employ a registered engineer to check elevations and plumb and level tolerances; certify that installed work is within AISC Standards. Owner may engage testing/inspection agency to inspect welded and bolted connections.
- C. Architecturally exposed steel: Fabricate with special care using materials carefully selected for best appearance. Store materials off ground and keep clean. Cut, fit and assemble work with surfaces smooth, square and with complete contact at joints. Set all cambers up. Weld all work continuously; grind smooth and flush to make seams not visible after priming. Prepare surfaces to comply with SSPC-SP6; apply prime coat within 24 hours after cleaning.
- D. Touch up field welds and abraded areas with shop primer.

END OF SECTION

SECTION 05 52 00

METAL RAILINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide pipe and tube handrails and guard railing systems as indicated on drawings.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Handrail and Railing Structural Performance: In accordance with applicable Building Code.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Metal Railings:
 - 1. Manufacturers, Interior Handrails and Railings: Custom or approved equal.
 - 2. Manufacturers, Balcony Guard Rails: Custom or approved equal.
 - 3. Application: Exterior metal railings.
 - 4. Application: Interior metal railings.
 - 5. Steel Pipe and Tube Railing Systems:
 - a. Steel Pipe, Black Finish: ASTM A 53.
 - b. Steel Pipe, Galvanized Finish: ASTM A 53.
 - c. Steel Tubing: ASTM A 500 or A 501.
 - d. Steel Plates, Shapes and Bars: ASTM A 36.
 - e. Gray Iron Castings: ASTM A 48, Class 30.
 - f. Malleable Iron Castings: ASTM A 47, Grade 32510.
 - 6. Steel Finish: Primed. Interior Rails
 - 7. Steel Finish: Galvanized and Powder Coated. Exterior Rails
 - 8. Auxiliary Materials:
 - a. Nonshrink Nonmetallic Grout: CE CRD-C621.
 - b. Interior Anchoring Cement: Hydraulic expansion cement.
 - c. Exterior/Interior Anchoring Cement: Erosion-resistant hydraulic expansion cement.
 - d. Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79, compatible with topcoats.
 - e. Zinc-Rich Primer: Complying with SSPC-Paint 20 or SSPC-Paint 29 and compatible with topcoat.
 - f. Galvanizing Repair Paint: SSPC - Paint 20.

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PART 3 EXECUTION

3.1 INSTALLATION

- A. Take field measurements prior to fabrication, where possible. Form to required shapes and sizes with true, straight edges, lines and angles. Provide light-tight, hairline joints.
- B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.
- C. Coordinate with work of other sections; provide inserts and templates as needed. Install work plumb and level with uniform appearance.
- D. Restore damaged finishes and protect work.

END OF SECTION

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Provide rough carpentry for floors, walls and roof as required. Coordinate this section with specifications provided by Structural Engineer on Structural Engineering drawings. Where different standards and materials occur, the specifications provided by the Structural Engineer shall dictate.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Lumber Standards and Grade Stamps: DOC PS 20, American Softwood Lumber Standard and inspection agency grade stamps.
- C. Construction Panel Standards: DOC PS 1, U.S. Product Standard for Construction and Industrial Plywood; APA PRP-108.
- D. Wood Framing Standards: NFPA House Framing Manual.
 - 1. Interior Wall Framing: 2 inch by 4-inch studs, 16 inches on center.
- E. Preservative Treatment: AWPA C2 for lumber and AWPA C9 for plywood; waterborne pressure treatment. Provide for wood in contact with soil, concrete, masonry, roofing, flashing, dampproofing and waterproofing.
- F. Fire-Retardant Treatment: AWPA C20 for lumber and AWPA C27 for plywood; noncorrosive type. Provide at building interior where required by code.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Rough Carpentry Applications:
 - 1. Manufacturers, Dimensional Lumber: CertainTeed Corp., Boardwalk Composite Decking & Railing; or approved equal.
 - 2. Manufacturers, Structural Panels: Temple-Inland Forest Products Corp. - Engineered Wood Products; or approved equal.
 - 3. Manufacturers, Sheathing: Certain Teed Corp; or approved equal.
 - 4. Application: Framing with dimension lumber.
 - 5. Application: Framing with engineered wood products.
 - 6. Application: Framing with timbers.
 - 7. Application: Rooftop equipment bases and support curbs.
 - 8. Application: Wood grounds, nailers, and blocking.

9. Application: Wood furring.
10. Application: Backing panels.
11. Application: Sheathing.
12. Application: Subflooring.
13. Application: Underlayment.
14. Dimension Lumber:
 - a. Light Framing: Stud, No. 3 or Standard grade.
 - b. Structural Framing: No. 1 grade.
 - c. Species: Any species of grade indicated.
 - d. Exposed Framing: Appearance grade.
15. Timbers:
 - a. Species and Grade: WCLIB/WWPA select structural Douglas fir.
 - b. Type: Free of heart center.
16. Boards:
 - a. Exposed Boards: 15 percent moisture content.
 - b. Concealed Boards: 19 percent moisture content.
17. Miscellaneous Lumber:
 - a. Moisture Content: 19 percent.
 - b. Grade: Standard grade light framing.
18. Engineered Wood Products:
 - a. Laminated-Veneer Lumber: A composite of wood veneers with grain primarily parallel to member lengths, manufactured with an exterior-type adhesive complying with ASTM D 2559.
 - b. Parallel-Strand Lumber: A composite of wood strand elements with grain primarily parallel to member lengths, manufactured with an exterior-type adhesive complying with ASTM D 2559.
19. Construction Panels:
 - a. Combination Subfloor-Underlayment: Exposure 1, Structural I, Underlayment.
 - b. Oriented-Strand-Board, Combination Subfloor-Underlayment: Exposure 1.
 - c. Plywood Subflooring: Exposure 1, Structural I.
 - d. Plywood Wall Sheathing: Exposure 1, Structural I sheathing.
 - e. Oriented-Strand-Board Wall Sheathing: Exposure 1, Structural sheathing.
 - f. Plywood Roof Sheathing: Exposure 1, Structural I. Sheathing.
 - g. Oriented-Strand-Board Roof Sheathing: Exposure 1, Structural I sheathing.
 - h. Telephone and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated.
 - i. Plywood Underlayment for Resilient Flooring: DOC PS 1, Exterior A-C with fully sanded face.
 - j. Plywood Underlayment for Ceramic Tile: DOC PS 1, Exterior, C-C Plugged.
 - k. Plywood Underlayment for Carpet: DOC PS 1, Interior Underlayment.
20. Particleboard:
 - a. Underlayment: ANSI A 208.1, Grade PBU, grade marked.
21. Framing Anchors and Fasteners:
 - a. Material: Non-corrosive, suitable for load and exposure. Drywall screws are not acceptable.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated.
- B. Plywood: Comply with applicable recommendations contained in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial."
- C. Provide nailers, blocking and grounds where required. Set work plumb, level and accurately cut.

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- D. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with other work.
- E. Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials.
- F. Restore damaged components. Protect work from damage.

END OF SECTION

SECTION 06 17 53

SHOP-FABRICATED WOOD TRUSSES

PART 1 GENERAL

1.1 SUMMARY

- A. Provide prefabricated and pre-engineered wood trusses. Coordinate this section with specifications provided by Structural Engineer on Structural Engineering drawings. Where different standards and materials occur, the specifications provided by the Structural Engineer shall dictate.
- B.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
 - 1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Standards: TPI 1, "National Design Standard for Metal Plate Connected Wood Truss Construction," and fabricate wood trusses within manufacturing tolerances in TPI 1.
- C. Design Engineering: Registered engineer.
- D. Fire-Retardant Treatment: AWPA C20 for lumber; noncorrosive type.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Wood Trusses:
 - 1. Manufacturers, metal connector plates: Alpine Engineered Products, Inc.; Cherokee Metal Products, Inc.; CompuTrus, Inc.; or approved equal.
 - 2. Manufacturers, metal framing anchors: Cleveland Steel Specialty Co.; Harlen Metal Products, Inc.; KC Metals Products, Inc.; Simpson Strong-Tie Co., Inc., or approved equal.
 - 3. Lumber Standard: PS 20 American Softwood Lumber Standard.
 - 4. Sustainable Design: FSC Certified Lumber.
 - 5. Dressing: Dressed four sides.
 - 6. Species: Softwood species of specified grade.
 - 7. Species: Manufacturer's option.
 - 8. Design Values: Modulus of elasticity at least 1,800,000 psi; extreme fiber stress in bending of at least 1800 psi.
 - 9. Moisture Content: Seasoned, 15 percent maximum.

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10. Moisture Content: Seasoned, 19 percent maximum.
11. Grade for Chord members: Select structural.
12. Grade for Chord Members: No. 1.
13. Grade for Chord members: No. 2.
14. Grade for Web Members: No. 3 or Stud Grade.
15. Grade for Web Members: Same as chord grade.
16. Connectors, Fasteners, and Metal Framing Anchors:
 - a. Nails, Wire, Brads, and Staples: FS FF-N-105.
 - b. Power Driven Fasteners: CABO NER-272.
 - c. Wood Screws: ASME B18.6.1.
 - d. Lag Bolts: ASME B18.2.1.
 - e. Bolts: ASTM A 307, Grade A; ASTM A 563 for hex nuts and, where indicated, flat washers.
 - f. Metal Framing Anchors: Hot-dip galvanized steel sheet, ASTM A 653, G60.
 - g. Truss Tie-Downs: Bent strap tie for fastening roof trusses to wall studs below; Stainless-Steel Sheet, ASTM A 666, Type 304.
 - h. Connectors: Hot-dip galvanized steel sheet, ASTM A 653, G60.
 - i. Connectors: Electrolytic zinc-coated steel sheet, ASTM A 653; ASTM A 591, Coating Class C.
 - j. Connectors: Aluminum-zinc, alloy-coated steel sheet, ASTM A 653; ASTM A 792, Coating Designation AZ 50.
 - k. Connectors: Stainless steel sheet, ASTM A 653; ASTM A 666, Type 304.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install and brace trusses according to TPI recommendations and within installation tolerances in TPI 1.
- B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.
- C. Install trusses plumb, square, and true to line and securely fasten to supporting construction.
- D. Restore damaged components. Clean and protect work from damage.

END OF SECTION

SECTION 06 18 00

GLUED-LAMINATED CONSTRUCTION

PART 1 GENERAL

1.1 SUMMARY

- A. Provide pre-engineered glued-laminated construction for structural framing. Coordinate this section with specifications provided by Structural Engineer on Structural Engineering drawings. Where different standards and materials occur, the specifications provided by the Structural Engineer shall dictate.
- B.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
 - 1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Standards: ANSI/AITC A 190.1, Structural Glued Laminated Timber; AITC 117, Design, Standard Specifications for Structural Glued Laminated Timber of Softwood Species.
- C. Provide factory-glued structural units produced by an AITC- or APA-licensed firm.
- D. Preservative Treatment, Structural Glued Laminated Units: Prior to gluing, AWPA C28, Type B or C; or after gluing, AWPA C 28, Type A, C, or D.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Structural Glued Laminated Timber:
 - 1. Manufacturers: Weyerhaeuser, Georgia-Pacific Wood Products LLC,; or approved equal.
 - 2. Application: Straight beams, including girders and purlins, and cambered members.
 - 3. Application: Columns, including posts and standards.
 - 4. Lumber: AITC 117, manufacturing and from a single species.
 - 5. Sustainable Design: FSC Certified Lumber.
 - 6. Sustainable Design: Low-emitting materials, adhesives.
 - 7. Sustainable Design: Low-emitting materials, no added urea-formaldehyde.
 - 8. Stress Value: Suitable for use intended.
 - 9. Adhesive: Wet-use ASTM D 2559 containing no urea-formaldehyde resins.
 - 10. Connectors, Anchors, and Accessories: Structural steel, ASTM A 36, and ASTM A 307

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steel bolts.

11. Grade: Architectural Grade, AITC 110.
12. Lumber Species: Southern Pine, Hem-Fir, Douglas Fir-Larch.
13. Lumber Species: Manufacturer's option.
14. Factory Finish: Clear conversion varnish.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with recommendations of AITC A190.1 Structural Glued Laminated Timber.
- B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- C. Restore damaged components and finishes. Clean and protect work from damage.

END OF SECTION

SECTION 06 40 23

INTERIOR ARCHITECTURAL WOODWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Provide interior finish carpentry.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Standards: Architectural Woodwork Institute (AWI) "Architectural Woodwork Quality Standards."
- C. Standards: Woodwork Institute (WI) "Manual of Millwork."
- D. Preservative Treatment: Nonpressure method, exterior type, AWPA N1.
- E. Fire-Retardant Treatment:
 - 1. Lumber: AWPA C20, non-corrosive type.
 - 2. Plywood: AWPA C27, non-corrosive type.
 - 3. Particleboard: ASTM E 84, flame spread 20 or less.
- F. Wood Products: Comply with the following:
 - 1. Hardboard: AHA A135.4.
 - 2. Medium-Density Fiberboard: ANSI A208.2, Grade MD-Exterior Glue.
 - 3. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.
 - 4. Softwood Plywood: DOC PS 1, Medium Density Overlay.
 - 5. Hardwood Plywood and Face Veneers: HPVA HP-1.
- G. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship of each type of finish carpentry.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Interior Standing and Running Trim and Rails:
 - 1. Species for Opaque Finish: White pine or sugar pine.

2. Grade: Economy.
 3. Site Finish: Opaque finish.
- B. Interior Wall Panel:
1. Manufacturers: Manufacturers: States Industries, Apple Ply, or equal.
 2. Birch Veneer.
 3. Grade: A
 4. Core: Plywood.
 5. Edge: Banded
 6. Adhesives: VOC contact adhesive (less than 80 g/L) meeting California 93120 Phase 2.
- C. Interior Shelving and Closet Specialties:
1. Shelving: Particleboard core with Laminate Finish.
 2. Shelving: PVC coated wire shelving system.
 3. Closet Rods: PVC coated wire closet rod system.
- D. Interior Auxiliary Materials:
1. Screws: FS FF-S-111.
 2. Nails: FS FF-N-105.
 3. Anchors: Type required for secure anchorage.
 4. Adhesives: Low VOC types, meeting California 93120 Phase 2.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Provide work to sizes, shapes, and profiles indicated. Install work to comply with quality standards referenced. Back prime work and install plumb, level and straight with tight joints; scribe work to fit.
- B. Quality Standard: Install woodwork to comply with [AWI Section 1700] [WI Manual of Millwork] for the same grade specified for type of woodwork involved.
- C. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Use non-corrosive fasteners for exterior work. Coordinate with work of other sections.
- D. Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials.
- E. Repair minor damage, clean and protect.

END OF SECTION

SECTION 07 13 00
SHEET WATERPROOFING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide sheet membrane waterproofing.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
 - 1. Warranty Period: 5 years.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Testing: Flood testing of horizontal applications.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Foundation Wall Waterproofing, Intersection between walls and roofs, Architectural details covered in metal, Continuous waterproofing under occupied deck areas, flashing at window and sliding door mounting flanges:
 - 1. Manufacturers: Carlisle Corporation; W. R. Grace; W. R. Meadows; T. C. Miradri; Monsey Bakor; Pecora; or approved equal.
 - 2. Type: Self-adhering rubberized asphalt and polyethylene sheet membrane, 60 mils thick, and tensile strength 250 psi.
 - 3. Type: Butyl sheet, ASTM D 6134, Type II, 60-mil- thick flexible sheet, unreinforced.
 - 4. Type: EPDM Rubber Sheet: ASTM D 6134, Type I, 60-mil-thick flexible sheet, unreinforced.
 - 5. Accessories: Primers, surface conditioners, termination bars, and protection board.
 - 6. VOC 25 g/l or less.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with other work.
- B. Restore damaged components and test waterproofing for leaks. Clean and protect work from damage.

END OF SECTION

SECTION 07 14 00

FLUID-APPLIED WATERPROOFING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide fluid-applied membrane waterproofing.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
 - 1. Warranty Period: 5 years for polyurethane waterproofing.
 - 2. Warranty Period: 10 years for hot rubberized waterproofing.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Testing: Flood testing of horizontal applications.

PART 2 PRODUCTS

2.1 MATERIALS

- A. 2-Part Modified Polyurethane Membrane Waterproofing: Polyurethane-based liquid membrane waterproofing, 90 percent solids, ASTM C 836, 60-mil thick coating, VOC 250 g/l or less.
 - 1. Manufacturers: Futura Coatings, Gaco Western, Inc.; Mameco International, Inc.; Multicoat Corp.; or approved equal.
- B. 1-Part Modified Polyurethane Membrane Waterproofing: Polyurethane-based liquid membrane waterproofing, 90 percent solids, ASTM C 836, 60-mil thick coating, VOC 250 g/l or less.
 - 1. Manufacturers: Carlisle Corp., Epro Waterproofing Systems; Pecora Corp.; Sonneborne; Tremco, or approved equal.
- C. Non Reinforced Hot Rubberized-Asphalt Waterproofing: Single-component rubberized-asphalt membrane waterproofing, 100 percent solids, 180-mil thick coating, VOC 250 g/l or less.
 - 1. Manufacturers: American Hydrotech; Carlisle Corp.; Monsey Bakor; Tremco, or approved equal.
- D. Reinforced Hot Rubberized-Asphalt Waterproofing: Single-component reinforced rubberized-asphalt membrane waterproofing, 100 percent solids, 215 mil thick coating, VOC 250 g/l or less.
 - 1. Manufacturers: American Hydrotech, Carlisle Corp., Monsey Bakor; Tremco or approved equal.

- E. Flashing Materials and Protection Board: Compatible with fluid-applied waterproofing.
- F. Protection Course: Semirigid sheets of fiberglass or mineral-reinforced-asphaltic core.
- G. Protection Course: Fan folded, with a core of extruded-polystyrene board insulation.
- H. Geotextile-Faced, Molded-Sheet Drainage Panel: Drainage panels of geotextile facing laminated to 3-dimensional, nonbiodegradable, molded-plastic-sheet drainage core.
- I. Insulation Drainage Panels: Extruded-polystyrene board ASTM C 578; Type IV, 1.6-lb/cu. ft. 25-psi compressive strength; shiplap or tongue-and-groove edges and with drainage channels one side, faced with geotextile fabric.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Modified Polyurethane Waterproofing: Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.
- B. Hot-Rubberized Asphalt Waterproofing: Install materials and systems according to CAN/CGSB-37.51 and in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.
- C. Restore damaged components and test waterproofing. Clean and protect work from damage.

END OF SECTION

SECTION 07185

WATERPROOF PEDESTRIAN TRAFFIC COATING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Traffic membrane, consisting of welded seam PVC roofing membrane, over the following surfaces as indicated on the Drawings:
 - 1. roof decks.

1.2 RELATED SECTIONS

- A. Section 07620 - Sheet Metal Flashing and Trim.
- B. Section 07500 - Membrane Roofing.
- C. Section 07710 - Manufactured Roof Specialties.
- D. Section 15160 - Roof Drains.

1.3 REFERENCES

- A. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
- B. CAN/ULC-S107 - Standard Methods of Fire Tests of Roof Coverings.
- C. CCMC - Technical Guide for PVC Sheet Waterproofing (Exposed to Light Pedestrian Traffic).
- D. CGSB 37.54-95 - Roofing and Waterproofing Membrane, Sheet Applied, Flexible, Polyvinyl Chloride.
- E. CGSB 37-GP-55M - Application of Sheet Applied Flexible Polyvinyl Chloride Roofing Membrane.
- F. ICC - Acceptance Criteria (AC39) for Walking Decks
- G. ICC - Acceptance Criteria (AC75) for Membrane Roof Covering Systems

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Installation and seaming plan, showing joints, termination details, and interface with other materials.
- D. Verification Samples: Two 8-1/2 by 11 inch (210 by 250 mm) pieces showing finish, pattern, color, and backing with label.

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- E. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in providing products of the type specified in this section, with minimum of 25 years documented experience with products in use.
- B. Installer Qualifications: Company specializing in installing products of the type specified with trained installer and currently authorized by manufacturer.
- C. Pre-installation Meeting: Meeting to discuss waterproofing practices and precautions applicable to this project.
 - 1. Convene minimum of 7 days prior to start of installation.
 - 2. Require the attendance of:
 - a. Manufacturer's representative.
 - b. Contractor's field superintendent.
 - c. Installation foreman.
 - d. Other trades affected by this work.
 - e. Owner's representative.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's original containers, dry and undamaged, with seals and labels intact until ready for installation.
 - 1. Label uncured materials, both sheets and canned goods, with date of manufacturer and shelf life.
 - 2. Do not use creased or damaged sheets.
 - 3. Do not use products after end of shelf life.
- B. Store and handle materials to prevent damage.
 - 1. Place materials on pallets.
 - 2. Prevent creasing of rolled materials.
 - 3. Do not use polyethylene to cover stored materials (canvas tarpaulins are acceptable).
 - 4. Keep containers closed, except when removing materials from them.
- C. Keep materials at temperature between 40 degrees F (4.4 degrees C) and 80 degrees F (26.6 degrees C); if adhesives are exposed to lower temperature, verify useability with manufacturer before using.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.8 WARRANTY

- A. Provide manufacturer's 10 year warranty for membrane leaks due to a manufacturing defect, covering materials, and/or repair and replacement labor.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Lonseal 928 East 238th Street Carson, California 90745 USA
Phone: 1 (800) 832-7111 (USA only)

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- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 MATERIALS

- A. Traffic Membrane: Londeck SIERRA; polyester reinforced PVC membrane with ultra-violet resistance, for fully-adhered installation with heat-welded seams and perimeter attachment.
 - 1. Sheet Width: 72 inches (1828.8mm).
 - 2. Overall Sheet Thickness: 0.080 inch (2.032 mm).
 - 3. Wear Layer Thickness: 0.032 inch (.8128 mm).
 - 4. Weight: 0.6 lbs./sq. ft. (2.8 kg/m²) oz/sq yd (1864 g/sq m).
 - 5. Color:
 - a. D727 Platinum
 - 6. Slip Resistance: Tested to meet ADA requirements.
 - 7. Flammability (ASTM E 108 and UBC Std 15-2): Class C, when installed over combustible plywood substrate.
- B. Miscellaneous Accessories:
 - 1. Provide PVC Coated Metal, Scuppers, Overflow Drains, Roof Drains, and Trims as required for proper installation.
 - 2. Provide Surface Conditioners, Adhesives, Sealants, Fillers, and Cleaners as required for proper installation.
 - 3. Provide mechanical fastening devices color coordinated to membrane color.
- C. Adjacent Flashings: Coordinate with flashing specified in Section 07620.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that deck is:
 - 1. Secure, well supported, solid, and in accordance with local code structural requirements.
 - 2. Properly sloped to drains, valleys, or eaves.
 - 3. Clean and smooth, free of depressions, waves, and projections.
 - 4. Dry and free of ice and snow.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Coordinate timing of installation to avoid construction traffic over completed traffic membrane surfaces.
- C. Wood Deck: Fill joints, knot holes, voids, and low areas with filler and sand smooth.
- D. Coordinate installation with installation of drains and similar accessories.
- E. Install flashings and accessories. Seal around all penetrations, drains, and edges.
- F. Membrane shall not come in contact with bituminous materials or polystyrene insulations. Contact manufacturer for additional information.

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- G. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions and applicable codes.
- B. Install in accordance with CGSB-37-GP-55M.
- C. Do not install when temperature is below 25 degrees F (minus 3.8 degrees C) or above 98 degrees F (36.6 degrees C). Do not install when winds are gusting over 30 mph (48.3 kph).
- D. Do not dilute primers, adhesives, coatings, or sealants.
- E. Install membrane with minimum number of seams possible. Overlap seams 3/4 inch (19 mm), to shed water; heat-weld all seams.
- F. Adhere membrane to substrate.
- G. Mechanically fasten all perimeter edges and penetrations.

3.4 CLEANING

- A. Clean soiled areas in accordance with manufacturer's recommendations.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Avoid construction traffic over completed traffic membrane surfaces.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 19 00
WATER REPELLENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide water repellent coating for masonry, concrete surfaces.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- C. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
 - 1. Warranty Period: 5 years.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Use water-based products at occupied buildings, where volatile organic solvents are not permitted, and in areas where adequate ventilation is limited.
- C. Chloride-Ion Intrusion in Concrete for Horizontal Traffic Bearing Surfaces: NCHRP Report 244, Series II tests.
 - 1. Reduction of Water Absorption: 80 percent.
 - 2. Reduction in Chloride Content: 80 percent.
- D. Mock-Ups: Provide mock-up to demonstrate quality of workmanship.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Water Repellents:
 - 1. Manufacturers: Advanced Chemical Technologies, Inc.; Chemprobe Coating Systems, L.P.; Diedrich Technologies, Inc.; Foster Products; Hydrozo; Nawkaw Corporation; Pecora Corporation.; ProSoCo, Inc.; Professional Products of Kansas, Inc.; Seal-Krete, Inc.; Sonneborn Building Products;.
 - 2. Application: Horizontal concrete surfaces.
 - 3. Type: Film-forming silicone or acrylic.
 - 4. Appearance: Clear, non-gloss, non-yellowing.
 - 5. Vapor Transmission: Vapor permeable.
 - 6. Application Rate: Suitable for substrate and project conditions.

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PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials with uniform appearance. Coordinate with work of other sections.

END OF SECTION

SECTION 07 21 00
THERMAL INSULATION

PART 1 GENERAL

1.1 SUMMARY

- A. Provide thermal insulation and vapor retarders.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Submit for approval test reports.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

A. Board Insulation:

1. Manufacturers: Dow Corning, Certainteed; ICA/Insulation Corporation of America; Knauf Insulation; or approved equal.
2. Application: Foundation walls.
3. Application: Under slabs-on-grade.
4. Type: Extruded polystyrene, rigid.
 - a. Standard: ASTM C 578.
5. Type: Unfaced, slag-wool/rock-wool-fiber.
 - a. Standard: ASTM C 612, semi-rigid or rigid, ASTM C 612.
 - b. Accessories: Mechanical anchors.

B. Blanket/Batt Insulation:

1. Manufacturers: Owens Corning; Johns Manville Building Insulations; Knauf Insulation; or approved equal.
2. Application: Sound insulation at interior walls and floors.
3. Type: Unfaced fiberglass.
 - a. Standard: ASTM C 665, Type I (unfaced).

C. Loose Fill Insulation:

1. Manufacturers: Blow-In-Blanket LLC; Icynene, Inc.; Knauf Insulation; or approved equal.
2. Application: Attic Thermal insulation.
3. Type: Cellulosic-fiber.
4. R Value, min R38
 - a. Standard: ASTM C 739.
5. Type: Loose glass fiber insulation.
 - a. Standard: ASTM C 764.

D. Spray-Applied Polyurethane Insulation:

1. Manufacturer: Permax 2.0; BASF Polyurethane Foam Enterprises LLC; Icynene, Inc.; or approved equal.
2. Application: Exterior walls.
3. Standard: ASTM C 1029.
4. Type: 2-component polyurethane closed cell
5. Density: 2# per SF
6. R-Value- 6.9 per inch

E. Roof and Deck Insulation:

1. Manufacturers: Dow, Owens Corning; or approved equal.
2. Manufactures: Owens Corning® FOAMULAR® 400
3. Application: Exterior roof and roof decks.
4. Type: Polyisocyanurate.
5. Type: Polystyrene
6. R-Value: min 5 per inch

F. Radiant Barriers:

1. Manufacturer: Innovative Energy Inc.; LP Corporation; or approved equal.
2. Application: Exterior walls.
3. Interior Radiation Control Coating: Surface emittance value of 0.1 or less per ASTM C 1371.
4. Sheet Radiant Barriers: ASTM C 1313.

G. Roof Insulation Adhesive:

1. Manufacturer: Polyfoam Products, Inc.; or approved equal.
2. Application: Roof insulation adhesive.
3. Type: Two-component polyurethane froth adhesive.

H. Vapor Retarder (Not Integral with Insulation):

1. Manufacturer: Thermal Design; or approved equal.
2. Application: Exterior walls.
3. Type: Reinforced 2-ply polyethylene, 6 to 10 mils.
 - a. Accessories: Seam tapes.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections. Provide full thickness in one layer over entire area, tightly fitting around penetrations.
- B. Pour loose insulation into cavities indicated; provide uniform coverage at correct density and thickness.
- C. Install unfaced insulation batts at all bathroom walls, tenant separation walls, and toilet room walls, Floor cavities, Under second deck roof cavity.
- D. Provide 2 ½" closed cell spray foam insulation and select exterior walls providing and R value of 17.25

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- E. Install board insulation on flat roofs. Install min R-38 insulation at upper flat roof , install tapered increasing thickness at saddles as shown on roof plan.
- F. Install minimum 40psi compressive strength tapered insulation to roof sump locations at second floor occupied roof decks, determine thickness in field.
- G. Protect installed insulation and vapor retarder.

END OF SECTION

SECTION 07 42 00

WALL PANELS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide manufactured wall panels.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- D. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
 - 1. Warranty Period: 10 years.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Metal Wall Panels:
 - 1. Manufacturers: Metal Sales Mfg. Corp.; or approved equal.
 - 2. Type: Field-assembled wall panels with exposed fasteners.
 - 3. Type: Field-assembled wall panels with concealed fasteners.
 - 4. Manufacturers: McNichols or approved equal.
 - 5. Type: Perforated Aluminum panels with Edge
 - 6. Sheet Materials: Galvanized steel sheet.
 - a. Standard: ASTM A 653, G90 coating, 24 gauge (.0239 inch).
 - 7. Sheet Materials: Aluminum sheet.
 - a. Standard: ASTM B 209, Alclad Alloy 3003, 0.040 inch.
 - 8. Panel Core: None; single panel.
 - a. Standard: ASTM D 3841, Type CC1, limited flammability type.
 - 9. Panel Supports and Anchorage:
 - a. Wall Girts: C or Z shaped sections, 16 gauge (.0598 inch) steel, shop painted.
 - b. Flange and Sag Bracing: 16 gauge (.0598 inch) steel, shop-painted.
 - c. Base and Sill Angles: 14 gauge (.0747 inch) galvanized steel.

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PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Restore damaged components and finishes. Clean and protect work from damage.

END OF SECTION

SECTION 07 46 00

SIDING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide exterior clapboard siding.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

A. Fiber-Cement Siding:

1. Manufacturers: Cement Board Fabricators; Cemplank, Inc.; CertainTeed Corp.; GAF Materials Corporation; James Hardie, Inc.; Nichiha Fiber Cement; WeatherBoards FiberCement Siding; or approved equal.
2. Type: Plain boards.
3. Type: Vertical bead board pattern
4. Standard: ASTM C 1186, Type A, Grade II, factory primed.
5. Surface Texture: Smooth.
6. Finish: Field-applied paint.
7. Siding Accessories: Non-corrosive fasteners.
8. Siding Accessories: Painted "J" trim at corner reveals

B. Vinyl Siding:

1. Manufacturers: Alcoa Home Exteriors, Inc.; Alside / Siding; CertainTeed Corp.; Gentek Building Products, Inc.; Heartland Building Products; Louisiana-Pacific Corporation; Napco, Inc.; Norandex Building Materials Distribution; Novik, Inc.; Owens Corning; Revere Building Products; The Tapco Group; Variform, Inc.; or approved equal.
2. Type: Formed vinyl siding, with plain texture.
3. Standard: ASTM D 3679.
4. Finish: Integral color.
5. Siding Accessories: Non-corrosive fasteners.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved

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submittals. Allow for expansion and contraction. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

- B. Restore damaged components. Clean and protect work from damage.

END OF SECTION

SECTION 07 53 00

ELASTOMERIC MEMBRANE ROOFING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide elastomeric membrane roofing over existing roof structure. Remove and replace any damaged roof deck identified during demolition of existing roof membrane. Install new deck to match at existing openings being abandoned. Provide positive drainage to new and existing roof drains with no ponding.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- C. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.

- 1. Warranty Period: 15 years.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Listing: UL Class A external fire exposure.
- C. Listing: FM Class I construction.

PART 2 PRODUCTS

2.1 MATERIALS

- A. EPDM Membrane Roofing:
 - 1. Manufacturers: Carlisle; Firestone Building Products Company; GAF Materials Corporation; Johns Manville International, Inc.; Roofing Systems; or approved equal.
 - 2. Type: Fully adhered.
 - 3. Membrane: EPDM, 60 mils non-reinforced.
 - a. Standard: ASTM D 4637, Type I.
 - 4. Insulation: Polyisocyanurate board.
 - 5. Insulation: Extruded-polystyrene board insulation.
 - 6. Insulation Profile: Tapered.
 - 7. Insulation Profile: Flat.
 - 8. Insulation Substrate Board: Glass-mat, water-resistant gypsum.
 - a. Standard: ASTM C 1177.
 - 9. Vapor Retarder: Reinforced polyethylene.
 - 10. Vapor Retarder: Polyethylene.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Inspect substrate and report unsatisfactory conditions in writing. Beginning work means acceptance of substrate.
- B. Comply with roof system manufacturer's instructions and recommendations; clean, prime and prepare substrate.
- C. Install insulation with tightly butted joints and neatly fitted around penetrations.
- D. Begin roof installation only in presence of manufacturer's representative. Minimize seams and shingle overlaps to shed water.
- E. Install walkway protection or pavers over an additional layer of membrane at locations indicated and where required to provide access to roof mounted equipment.
- F. Restore or replace damaged components. Protect work from damage.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SUMMARY

- A. Provide flashing and sheet metal for flashing, gutters, down spouts, ridge caps, and miscellaneous trim.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Flashing and Sheet Metal:
 - 1. Manufacturers: Metal Sales Inc. National Sheet Metal Systems, Inc.; Nervastral Inc.; Petersen Aluminum Corp.; Quickflash Weatherproofing Products, Inc.; Sandell Construction Solutions; SBC Industries Flashings; or approved equal.
 - 2. Application: Metal counterflashing and base flashing.
 - 3. Application: Exterior wall flashing and expansion joints.
 - 4. Application: Built-in metal valleys, gutters, and scuppers.
 - 5. Application: Gutters and downspouts.
 - 6. Application: Exposed metal trim and fascia units.
 - 7. Application: Elastic flashing.
 - 8. Application: Elastic roof and wall expansion joint systems.
 - 9. Application: Laminated composition flashing.
 - 10. Application: Ridge trim and soffit vents.
 - 11. Metal: Zinc-coated steel.
 - a. Standard: ASTM A 653, G90 hot-dip galvanized, 2-Coat 70 percent Fluoropolymer, 20-gauge (.0359 inch).
 - 12. Metal: Copper.
 - a. Standard: ASTM B 370, 16 ounces per square foot.
 - b. square foot lead coating both sides.
 - 13. Metal: Sheet aluminum.
 - a. Standard: ASTM B 209, alloy 3003, prefinished 2-coat 70 percent fluoropolymer, 20 gauge (.0359 inch).

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14. Flexible Sheet Membrane Flashing: Nonreinforced flexible black elastic sheet, 50 to 65 mils thick, synthetic rubber.
15. Laminated Composition Sheet Flashing: 5 ounce copper sheet laminated between 2 layers of bituminous impregnated Kraft paper or saturated fabric.
16. Elastic Expansion Joints: Factory-fabricated metal-flanged edges to fit curbs and curb substrate.
17. Soffit Vents: Continuous aluminum strip soffit vents

B. Auxiliary Materials:

1. Solder compatible with metal.
2. Bituminous isolation coating.
3. Mastic and elastomeric sealants.
4. Epoxy seam sealer.
5. Rosin-sized building paper slip sheet.
6. Polyethylene underlayment.
7. Reglets and metal accessories.
8. Gutter and conductor head guards.
9. Asphaltic roofing cement.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Follow recommendations of SMACNA Sheet Metal Manual. Allow for expansion. Isolate dissimilar materials.
- B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- C. Restore damaged components and finishes. Clean and protect work from damage.

END OF SECTION

SECTION 07 71 00
ROOF SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

Provide manufactured roof specialties.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Insurance Requirements: FM approval or acceptance.

PART 2 PRODUCTS

2.1 MATERIALS

A. Gravity Air Vents:

- 1. Manufacturers: Air Vent Inc.; or approved equal.
- 2. Material: Aluminum.
- 3. Material: Copper.

B. Roof Drains:

- 1. Manufacturers: Smith, Zurn, Oatey; or approved equal.
- 2. Material: Aluminum.
- 3. Material: Cast Iron.

C. Vent Stack Flashing:

- 1. Manufacturers: Thaler Metal Industries Ltd., or approved equal.
- 2. Material: Aluminum.
- 3. Material: Copper.

D. Gutter and Downspout Systems:

- 1. Manufacturers: Gutter Supply, Amerimax, ABC supply, or equal.
- 2. Material: Copper.
- 3. Material: Galvanized steel, painted.

E. Rain Diverters:

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1. Manufacturers: RainHandler; or approved equal.
2. Material: Copper.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with accessory manufacturers' instructions and recommendations. Coordinate installation with roofing system to ensure weathertight performance. Anchor securely to structure to withstand inward and outward loads.
- B. Isolate dissimilar metals to prevent galvanic corrosion.
- C. Test and operate units; clean, lubricate and adjust moving parts.

END OF SECTION

SECTION 07 72 00
ROOF ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Provide roof accessories.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Heat and Smoke Vent Insurance Requirements: UL and FM approval or acceptance.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Portable Rooftop Pipe, Duct and Equipment Supports:
 - 1. Manufacturers: Advanced Support Products, Inc.; MAPA Products; MIRO Industries, Inc.; PHP Systems and Design; Universal Support Systems, LLC;.
 - 2. Material: Galvanized steel.
- B. Insulated Roof Hatches with Metal Lid:
 - 1. Manufacturers: Nystrom Building Products, Inc.; Bilco Inc..
 - 2. Material: Zinc coated steel.
- C. Safety Railing System for Roof Hatches:
 - 1. Manufacturers: Alaco Ladder Co.; Bilco Inc.
 - 2. Material: Zinc coated steel.
- D. Prefabricated Curb and Equipment Support Units:
 - 1. Manufacturers: ThyCurb; Div of Thybar Corporation;.
 - 2. Material: Steel, 14 gauge (.0747 inch), hot dip galvanized.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with accessory manufacturers' instructions and recommendations. Coordinate installation with roofing system to ensure weathertight performance. Anchor securely to structure to withstand inward and outward loads.

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- B. Isolate dissimilar metals to prevent galvanic corrosion.
- C. Test and operate units; clean, lubricate and adjust moving parts. Leave units ready for field painting.

END OF SECTION

SECTION 07 84 00
FIRESTOPPING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide firestopping.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Submit for approval test reports.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Fire Performance: UL 2079, ASTM E 814, and local regulations.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Firestopping Systems:
 - 1. Manufacturers: 3M; A/D Fire Protection; e.z. Barrier; WR Grace & Co.; Hilti, Inc.; Nelson Firestop Products; Specified Technologies, Inc.; Tremco;
 - 2. Applications as Applicable to Assembly: Through-penetrations, fire-resistive joints, perimeter fire containment, smoke seals.
 - 3. Types as Applicable to Assembly: Endothermic and intumescent sealants, pillows, putty and wrap strips.
 - 4. VOC Content: 250 g/l or less.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Review extent of work with authorities having jurisdiction and obtain approval of installation thicknesses and methods.
- B. Sequence work to avoid need for removal of firestopping by work of other trades.
- C. Comply with manufacturer's instructions and recommendations. Securely anchor insulation with safing clips. Install firestopping without gaps or voids.
- D. Protect, inspect and repair work until final acceptance.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide joint sealers and fillers.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
 - 1. Include manufacturer's full range of color and finish options if additional selection is required.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Field-Constructed Mock-Ups: Each joint type.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Exterior Joints in Vertical Surfaces, Silicone:
 - 1. Manufacturers: Dow Corning; GE Silicones; Tremco;.
 - 2. Materials: Joints less than $\frac{3}{4}$ ", One component.
 - 3. Materials: Joints $\frac{3}{4}$ " and greater, Two component silicone sealant.
 - 4. VOC content: 250 g/l or less.
- B. Exterior Joints in Vertical Surfaces, Urethane:
 - 1. Manufacturers: Pecora Corp.; Sika Corp.; Sonneborn; Tremco;.
 - 2. Materials: Joints less than $\frac{3}{4}$ ", One component.
 - 3. Materials: Joints $\frac{3}{4}$ " and greater, Two component silicone sealant.
 - 1. VOC content: 250 g/l or less.
- C. Exterior Joints in Vertical Surfaces, Preformed Compression Seals:
 - 1. Manufacturers: Watson-Bowman Acme Corp.; or approved equal.
 - 2. Materials: Preformed precompressed foam sealant.
 - 3. VOC content: 250 g/l or less.
- D. Exterior Joints in Horizontal Surfaces, Urethane:
 - 1. Manufacturers: Pecora Corp.; Sandell Construction Solutions; Sika Corp.; Sonneborn; Tremco;.
 - 2. Materials: Self-leveling urethane sealant, ASTM C 920.
 - 3. VOC content: 250 g/l or less.

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- E. Exterior Joints Immersed in Water, Polysulfide:
 - 1. Manufacturers: W. R. Meadows; Pecora Corp.; Sonneborn Building Products;.
 - 2. Materials: Two-part polysulfide, for water immersion, ASTM C 920.
 - 3. VOC content: 250 g/l or less.
- F. Exterior Paving Joint Fillers, Bituminous:
 - 1. Manufacturers:
 - 2. Materials: Bituminous fiber.
 - 3. VOC content: 250 g/l or less.
- G. Interior Joints, Limited Movement, Acrylic:
 - 1. Manufacturers: Bostik; Pecora Corporation; Polymeric Systems, Inc.; Sonneborn Building Products; Tremco;.
 - 2. Materials: Acrylic-emulsion, ASTM C 834.
 - 3. VOC Content: Less than 50 g/L.
- H. Interior Joints, Sanitary Silicone:
 - 1. Manufacturers: Dow Corning; GE Advanced Materials; Tremco;.
 - 2. Materials: One-part mildew-resistant silicone sealant, ASTM C 920.
 - 3. VOC Content: Less than 50 g/L.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Examine substrate; report unsatisfactory conditions in writing. Beginning work means acceptance of substrates.
- B. Provide sealants in colors as selected from manufacturer's standards.
- C. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections. Clean and prime joints, and install bond breakers, backer rods and sealant as recommended by manufacturers.
- D. Depth shall equal width up to 1/2 inch wide; depth shall equal 1/2 width for joints more than 1/2 inch wide.
- E. Cure and protect sealants as directed by manufacturers. Replace or restore damaged sealants. Clean adjacent surfaces to remove spillage.

END OF SECTION

SECTION 08 11 13

HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 SUMMARY

- A. Replacement of selected existing steel doors and frames.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Standards: ANSI/SDI-100, Recommended Specifications for Standard Steel Doors and Frames.
- C. Performance Standards:
 - 1. Fire-Rated Assemblies: NFPA 80, and acceptable testing agency listing.
 - 2. Thermal-Rated Assemblies at Exterior: ASTM C 236 or ASTM C 976.
 - 3. Sound-Rated Assemblies at Mechanical Rooms: ASTM E 1408, and ASTM E 413.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Interior Steel Doors:
 - 1. Manufacturers: Amweld Building Products; Ceco Door Products; Curries Co.; Mesker Door; Steelcraft Manufacturing;.
 - 2. Material: Minimum 18-gauge steel sheet.
 - 3. Thickness: 1-3/4 inches.
 - 4. Finish: Factory primed and field painted.
 - 5. Finish: Factory finished.
 - 6. Accessories:
 - a. Glazing stops.
 - b. Silencers.
- B. Interior Steel Frames:
 - 1. Manufacturers: Amweld Building Products; Ceco Door Products; Curries Co.; Mesker Door; Steelcraft Manufacturing, Timeley;.
 - 2. Material: Minimum 16-gauge steel sheet.
 - 3. Corners: Mitered or coped.
 - 4. Type: Welded.
 - 5. Type: Knockdown.
 - 6. Type: Drywall slip-on.

7. Finish: Factory primed and field painted.
8. Finish: Factory finished.

C. Exterior Steel Doors:

1. Manufacturers: Amweld Building Products; Steelcraft Manufacturing; Windsor Republic Doors;. Curries Co.
2. Material: Minimum 16-gauge galvanized steel sheet.
3. Door Thickness: 1-3/4 inches, thermally insulated.
4. Finish: Factory primed and field painted.
5. Finish: Factory finished.
6. Accessories:
 - a. Glazing stops.
 - b. Silencers.

D. Exterior Steel Frames:

1. Manufacturers: Amweld Building Products; Curries Co., Steelcraft,
2. Material: Minimum 14-gauge galvanized steel sheet.
3. Corners: Mitered or coped.
4. Type: Welded.
5. Type: Knockdown.
6. Finish: Factory primed and field painted.
7. Finish: Factory finished.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Fabricate work to be rigid, neat and free from seams, defects, dents, warp, buckle, and exposed fasteners. Install doors and frames in compliance with SDI-100, NFPA 80, and requirements of authorities having jurisdiction.
- B. Provide thermally improved doors with maximum U-value of 0.24 BTU/hr./square foot degree F (ASTM C 236) for all exterior doors and elsewhere as noted.
- C. Provide acoustically improved doors with minimum STC of 33 (ASTM E 90 and ASTM E 413) where indicated.
- D. Review each existing door installation to determine requirements for removal and installation of new doors and frame. Field measure openings to verify size requirements for replacement doors and frames.
- E. Hardware: Prepare doors and frames to receive hardware on final schedule. Provide for 3 silencers on single doorframes; 2 on double doorframes.
- F. Shop Finish: Clean, treat and prime paint all work with rust-inhibiting primer comparable with finish paint specified in Division 9 section. Provide asphalt emulsion sound deadening coating on concealed frame interiors.
- G. Touch up damaged coatings ready to receive finish painting.

END OF SECTION

SECTION 08 14 00

WOOD DOORS

PART 1 GENERAL

1.1 SUMMARY

- A. Apartment entry doors, Apartment interior doors, select common area doors.
- B. Provide wood doors and metal frames.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- C. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
 - 1. Solid-Core Apartment entry door: Life of installation.
 - 2. Solid-Core common doors: Life of installation.
 - 3. Solid-Core Interior Doors: Life of installation.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Quality Standards for Stile and Rail Doors: NWWDA I.S. 6.
- C. Quality Standards: [NWWDA I.S.1-A, "Architectural Wood Flush Doors."] [AWI's "Architectural Woodwork Quality Standards Illustrated."].
- D. Quality Standards: [NWWDA I.S.1-A, "Architectural Wood Flush Doors."] [WI's "Manual of Millwork."]
- E. Fire Rated Wood Doors: Meet NFPA 80 requirements.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Interior Panel Wood Doors:
 - 1. Manufacturers: Masonite;
 - 2. Type: Unit Interior Door, Solid core, 1 3/8 inches thick.
 - 3. Grade: Premium.
 - 4. Frames: Metal, .
 - 5. Face: Birch Veneer.
- B. Unit Entry Panel Wood Doors:
 - 1. Manufacturers: Masonite

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2. Type: Solid core.
3. Thickness: 1-3/4 inches thick.
4. Grade: Premium.
5. Frames: Metal.
6. Face: Prefinished.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with NWMA I.S. 1A and specified quality standard.
- B. Review each existing door installation to determine requirements for removal and installation of new doors and frame. Field measure openings to verify size requirements for replacement doors and frames.
- C. Prefit doors to frames. Premachine doors for hardware listed on final schedules. Factory bevel doors.
- D. Install doors with not more than 1/8 inch clearance at top and sides, 1/4 inch at bottom except at bedrooms requiring return air. Allow 1" bottom clearance for return air conditions. Comply with NFPA 80 for rated assemblies.
- E. Adjust, clean, and protect.

END OF SECTION

SECTION 08 41 13
ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide entrances and storefront.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
 - 1. Warranty Period: 5 years.
- D. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Aluminum Entrances and Storefront:
 - 1. Manufacturers: Kawneer Company; Tubelite; Vistawall Architectural Products; or approved equal.
 - 2. Aluminum Members: ASTM B 209, ASTM B 221, ASTM B 429.
 - 3. Steel Reinforcement: ASTM A 36, ASTM A 1008, and ASTM A 1011.
 - 4. Door Style: Medium stile and rail doors.
 - 5. Storefront Style: Aluminum framed.
 - 6. Glass and Glazing: Single glazing, tempered.
 - 7. Glazing Color: Clear glass.
 - 8. Door Hanging Devices: Offset pivot sets.
 - 9. Closers: Surface mounted.
 - 10. Closer Operation: Single acting closers.
 - 11. Aluminum Finish: By Architect
 - 12. Auxiliary Materials:
 - a. Push/pulls, doorstops, overhead holders, and deadlocks.
 - b. Exit devices.

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PART 3 EXECUTION

3.1 INSTALLATION

- A. Take field measurements before fabrication where possible; do not delay job progress.
- B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- C. Anchor securely in place; install plumb, level and in true alignment. Isolate dissimilar materials to prevent corrosion.
- D. Coordinate with glass and glazing work; install hardware and adjust for smooth, proper operation.
- E. Clean and protect completed system; repair damage.

END OF SECTION

SECTION 08 53 13

VINYL WINDOWS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide vinyl windows.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- D. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
 - 1. Warranty Period: 5 years.
- E. Maintenance Data: Submit manufacturer's maintenance data, including maintenance schedule.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.
- C. Performance: Comply with AAMA/NWWDA 101/I.S.2 for performance class and grade of window specified.
- D. Operable windows to have grab able handle for operating and meet UFAS rules for proper operating force.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Vinyl Windows:
 - 1. Manufacturers: Jeld Wen Builder Series
 - 2. Grade: Residential.
 - a. Standard: AAMA/NWWDA 101/I.S. 2, Grade 20.
 - 3. Plastic: ASTM D 1784.
 - 4. Anchors, Clips, and Window Accessories: Aluminum, nonmagnetic stainless steel, or galvanized steel.
 - 5. Window Operation: Horizontal sliding windows.
 - 6. Window Operation: Fixed windows.
 - 7. Glazing: Insulating glass with low-e coating.

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8. Glazing Color: Clear glass.
9. Frame Color: Black
10. Auxiliary Materials:
 - a. Ventilator opening limit device.
 - b. Operating hardware.
 - c. Insect screening.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Restore damaged finishes and test for proper operation. Clean and protect work from damage.

END OF SECTION

SECTION 08 71 00
DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

- A. Provide door hardware at new doors, Provide door hardware at select existing doors. Inspect and service hardware at existing common doors to remain.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- C. Submit for approval hardware schedule proposed for use based on Owner's requirements.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Hardware for Fire-Rated Openings: NFPA 80, and local requirements.
- C. Materials and Application: ANSI A156 series standards.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Door Hardware:
 - 1. Manufacturers: Rockwood, Schlage, Kwikset
 - 2. Application: Common area doors.
 - 3. Application: Maintenance Area doors.
 - 4. Application: Unit Entry doors.
 - 5. Application: Unit Interior doors.
 - 6. Quality Level: Light Commercial.
 - 7. Locksets and Latch sets: Bored cylindrical type.
 - 8. Lock Cylinders: Integral.
 - 9. Lock Cylinders: Interchangeable.
 - 10. Keying: Owner's requirements.
 - 11. Hinges and Butts: Full-mortise type at interior, with non-removable pins at exterior doors.
 - 12. Manufacturers: Power Access Corporation.
 - 13. Manufacture: Adams Rite, Schlage.
 - 14. Hardware Finishes: Bright chrome finish on exposed surfaces.
 - 15. Auxiliary Materials:
 - a. Door Trim Units: Kickplates, edge trim, viewers, knockers, and related trim.
 - b. Stops and overhead door holders.
 - c. Soundstripping.
 - d. Weatherstripping and thresholds.
 - e. Card-operated opening devices, coordinate with owners.

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PART 3 EXECUTION

3.1 INSTALLATION

- A. Follow guidelines of DHI "Recommended Locations for Builder's Hardware" and hardware manufacturers' instructions.
- B. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- C. Adjust operation, clean and protect.
- D. Service hardware on existing common area doors to remain.
 - 1. Adjust and lubricate closers and hinges.
 - 2. Adjust and lubricate locks.

3.2 SCHEDULE

- A. Hardware Schedule: See Architectural drawings.

END OF SECTION

SECTION 08 80 00

GLAZING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide glass and glazing for:
 - 1. Unit Mirrors
 - 2. Common Toilet Room Mirrors

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- D. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
 - 1. Laminated Glass: Manufacturer's 5-year warranty.
 - 2. Coated Glass: Manufacturer's 10-year warranty.
 - 3. Insulating Glass: Manufacturer's 10-year warranty.
 - 4. Mirror Glass: Manufacturer's 5-year warranty.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Glazing for Fire-Rated Assemblies: Glazing for assemblies that comply with NFPA 80.
- C. Safety Glazing Products: Comply with testing requirements in 16 CFR 1201 and, for wired glass, ANSI Z97.1.
- D. Glazing Publications:
 - 1. GANA Publications: GANA's "Glazing Manual." and "Laminated Glass Design Guide."
 - 2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR-A7, "Sloped Glazing Guidelines."
 - 3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Sloped Glazing Guidelines."
 - 4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "Glazing Guidelines for Sealed Insulating Glass Units."
- E. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.
 - 1. Each type of glazing.

PART 2 PRODUCTS

2.1 MATERIALS

A. Glass and Glazing:

1. Manufacturers: Guardian Industries; Libby Owens Ford; Pilkington; PPG.
2. Type: Single pane plate glass for existing steel sash.
3. Type: Single pane, tempered at locations as required by Code.
4. Type: Mirror glass units.
5. Auxiliary Materials:
 - a. Compression gaskets.
 - b. Elastomeric glazing sealants.
 - c. Preformed glazing tapes.
 - d. Glazing gaskets.
 - e. Setting blocks, spacers, and compressible filler rods.
 - f. Mirror adhesive, top and bottom angles and clips.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Inspect framing and report unsatisfactory conditions in writing.
- B. Comply with GANA "Glazing Manual" and manufacturer's instructions and recommendations. Use manufacturer's recommended spacers, blocks, primers, sealers, gaskets and accessories.
- C. Install glass with uniformity of pattern, draw, bow and roller marks.
- D. Install sealants to provide complete wetting and bond and to create a substantial wash away from glass.
- E. Set mirrors on stainless steel clips and adhere to wall with mirror adhesive.
- F. Remove and replace damaged glass and glazing. Wash, polish and protect all glass supplied under this section.

END OF SECTION

SECTION 09 21 16
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

- A. Provide gypsum board assemblies.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Tolerances: Not more than 1/16-inch difference in true plane at joints between adjacent boards before finishing. After finishing, joints shall be not be visible. Not more than 1/8 inch in 10 feet deviation from true plane, plumb, level and proper relation to adjacent surfaces in finished work.
- C. Fire Resistance for Fire-Rated Assemblies: ASTM E 119.
- D. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship and level of finish.
- E. Performance: Fire, structural, and seismic performance meeting requirements of building code and local authorities.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Gypsum Board:
 - 1. Manufacturers: Georgia Pacific; National Gypsum Co.; Lafarge North America; United States Gypsum Company, CertainTeed, or approved equal.
 - 2. Distance: Gypsum Board to be manufactured within a 500 mile radius of the project.
 - 3. Application: Interior walls, partitions, and ceilings with tape and joint compound finish.
 - 4. Application: Steel framing systems to receive gypsum board.
 - 5. Application: Insulation and vapor barrier systems in gypsum board assemblies.
 - 6. Material Standard: ASTM C1396.
 - 7. Type: Board for tape and joint compound finish.
 - a. Type: Regular, moisture-resistant and fire-rated types as required.
 - b. Typical Thickness: 1/2 inch.
 - c. Typical Thickness: 5/8 inch.
 - 8. Type: Abuse-resistant board.
 - a. Typical Thickness: 1/2 inch.
 - b. Typical Thickness: 5/8 inch.
 - 9. Joint Treatment: ASTM C474 and ASTM C840, 3-coat system, paper or fiberglass tape.
 - 10. Auxiliary Materials:
 - a. Corner bead, edge trim and control joints.

- b. Gypsum board screws, ASTM C 1002.
- c. Fastening adhesive.
- d. Fastening adhesive, low VOC type.
- e. Concealed acoustical sealant, low VOC type.

B. Steel Framing for Walls and Partitions:

- 1. Manufacturers: CLARKWESTERN Building Systems; Dietrich Metal Framing, Inc.; MARINO; or approved equal.
- 2. Material Standard: ASTM C645.
- 3. Stud Thickness: 25 gauge (.0179 inch).
- 4. Stud Depth, Typical: 3-5/8 inches.
- 5. Furring Channel Thickness: 25 gauge (.0179 inch).
- 6. Auxiliary Framing Components: Furring brackets, resilient furring channels, Z-furring members, and non-corrosive fasteners.

C. Steel Framing for Suspended and Furred Ceilings:

- 1. Manufacturers: CLARKWESTERN Building Systems; Dietrich Metal Framing, Inc.; MARINO; or approved equal.
- 2. Material Standard: ASTM C645.
- 3. Attachment: Standard.
- 4. Attachment: Resilient.
- 5. Stud Thickness: 20 gauge (.0329 inch).
- 6. Stud Thickness: 22 gauge (.0276 inch).
- 7. Stud Thickness: 25 gauge (.0179 inch).
- 8. Accessories: Furring channels, hangers and inserts.

D.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Steel Framing: Install steel framing in compliance with ASTM C 754. Install with tolerances necessary to produce substrate for gypsum board assemblies with tolerances specified. Include blocking for items such as railings, grab bars, casework, toilet accessories, window treatment and similar items.
- B. Provide solid wood blocking at locations requiring wall hung millwork and hardware, including but not limited to Corridor Handrails, Ramp Handrails, Kitchen Cabinets, Bathroom Cabinets and hardware, Laundry Room Counters.
- C. Wood Framing: Install wood framing in compliance with Section 06100 - Rough Carpentry. Install with tolerances necessary to produce substrate for gypsum board assemblies with tolerances specified. Include blocking for items such as railings, grab bars, casework, toilet accessories, window treatment and similar items.
- D. Tape and Joint Compound: Install gypsum board for tape and 3-coat joint compound finish in compliance with ASTM C 840 and GA 216, Level 4 finish. Install gypsum board assemblies true, plumb, level and in proper relation to adjacent surfaces.
- E. Provide continuous vapor retarder at exterior walls.

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- F. Provide fire-rated systems where indicated and where required by authorities having jurisdiction.
- G. Install boards vertically. Do not allow butt-to-butt joints and joints that do not fall over framing members.
- H. Provide insulation full height and thickness in partitions at corridor walls, toilet rooms, unit bathrooms, unit separation walls, and where required.
- I. Provide acoustical sealant at both faces at top and bottom runner tracks, wall perimeters, openings, expansion and control joints.
- J. Install trim in strict compliance with manufacturer's instructions and recommendations.
- K. Repair surface defects. Leave ready for finish painting or wall treatment.

END OF SECTION

SECTION 09 51 00
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide acoustical ceilings and suspension systems at locations indicated on drawings.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- C. Extra Stock: Submit extra stock equal to 2 percent of amount installed.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Performance: Fire, structural, and seismic performance meeting requirements of building code and local authorities. Acoustical performance based on project requirements.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Mineral Fiber Acoustical Ceilings:
 - 1. Manufacturers: Armstrong World Industries; Celotex; Hunter Douglas Contract / Techstyle Ceilings; Tectum, Inc.; USG; or approved equal.
 - 2. Panel Size: 24 by 48 inches
 - 3. Panel Size: 24 by 24 inches
 - 4. Style; Reveal
 - 5. Panel Edge: Reveal
 - 6. Panel Edge: Square.
 - 7. Panel Recycled Content: Not less than 40 percent.
 - 8. Grid: Exposed flush grid.
 - 9. Suspension System: Intermediate duty.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and suspension systems in accordance with manufacturer's instructions and recommendations, and ASTM C 636. Coordinate installation with location of mechanical and electrical work to ensure proper locations and anchorage.
- B. Level ceiling to within 1/8 inch in 10 feet in both directions. Scribe and cut panels to fit accurately. Measure and lay out to avoid less than half panel units.
- C. Adjust, clean, and touch up all system components.

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END OF SECTION

SECTION 09 65 00
RESILIENT FLOORING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide resilient flooring and floor preparation at locations indicated on the drawings.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- C. Extra Stock: Submit extra stock equal to 2 percent of total used.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Performance: Fire performance meeting requirements of building code and local authorities.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Vinyl Composition Tile Flooring:
 - 1. Manufacturers: Armstrong World Industries; Shaw; Type: Vinyl Composition Tile: ASTM F 1066, Class 2 through-pattern.
 - 2. Size: 12 inches by 12 inches.
 - 3. Thickness: 1/8 inch.
 - 4. Thickness: 3/32 inch.
 - 5. Application: Common Utility Areas
 - 6. Auxiliary Materials:
 - a. Edge strips and terminations.
 - b. Leveling compound.
 - c. Low VOC adhesives (less than 60 g/L).
- B. Vinyl Plank Tile Flooring:
 - 1. Manufacturers: Shaw Industries, Property Solutions Modernity Plank
 - 2. Type: Vinyl Tile: ASTM F 2199, Class 3 High Performance LVP .
 - 3. Thickness: 2.5mm thick.
 - 4. Size: 6inches by 36 inches.
 - 5. Wear Layer 20mil
 - 6. Color: By Architect
 - 7. Application: Common Areas
 - 8. Warranty: 10 year commercial use
 - 9. Auxiliary Materials:

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- a. Edge strips and terminations.
- b. Leveling compound.
- c. Low VOC adhesives (less than 60 g/L).

C. Vinyl Sheet Flooring:

1. Manufacturers: Shaw Property Solutions Pro 12 Style VG062. Type: Sheet Vinyl with Fiberglass Backing: ASTM F 1303, Type I, binder content 90 percent.
2. Wearing Surface: 12 mil
3. Color: By Architect
4. Repeat: 36" x 36"
5. Warranty: 10 year
6. Seams: Standard.
7. Application: Apartment Unit Interiors
8. Auxiliary Materials:
 - a. Edge strips and terminations.
 - b. Leveling compound.
 - c. Low VOC adhesives (less than 60 g/L).

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's instructions and recommendations. Install in proper relation to adjacent work.
- B. Prepare surfaces by cleaning, leveling and priming. Test adhesive for bond before general installation. Level to 1/8 inch in 10 foot tolerance.
- C. Tile Flooring: Install tile with tight joints and with one-way pattern. Layout to prevent less than 1/2 tile units.
- D. Sheet Flooring: Install sheets with tight joints and pattern in adjoining areas running in the same direction. Layout to minimize seams as approved.
- E. Clean, polish, and protect.

END OF SECTION

SECTION 09 65 13

RESILIENT BASE AND ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Provide resilient wall base and accessories.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- C. Submit extra stock equal to 2 percent of total used.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Performance: Fire performance meeting requirements of building code and local authorities.

PART 2 PRODUCTS

2.1 MATERIALS

A. Resilient Wall Base:

- 1. Manufacturers: AFCO Rubber Corp., Johnsonite, Roppe, VPI Floor Products,.
- 2. Standard: ASTM F 1861.
- 3. Type: TV (vinyl).
- 4. Style: Cove.
- 5. Thickness: 0.080 inch
- 6. Height: 4 ½ inches
- 7. Auxiliary Materials:
 - a. Low VOC adhesives (less than 50 g/L).

B. Resilient Stair Accessories:

- 1. Manufacturers: AFCO Rubber Corp., Johnsonite, Roppe, VPI Floor Products,.
- 2. Stair Treads and Risers: Vinyl.
 - a. Standard: FS RR-T-650, Composition B.
- 3. Surface Design: Type 2 design (square pattern)
- 4. Nosing Style: Square
- 5. Thickness: 0.125 inch thick.
- 6. Auxiliary Materials:
 - a. Low VOC adhesives (less than 60 g/L).

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PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's instructions and recommendations. Install in proper relation to adjacent work.
- B. Install base and accessories to minimize joints. Install base with joints as far from corners as practical.
- C. Clean, polish, and protect.

END OF SECTION

SECTION 09 68 13

TILE CARPETING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide carpet tile and floor preparation.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- C. All carpet must meet Carpet and Rug Institute (CRI) Green Label Certification
- D. Extra Stock: Submit extra stock equal to 2 percent of total used.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Performance: Fire performance meeting requirements of building code and local authorities.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Carpet Tile:
 - 1. Manufacturers: SHAW, PHILEDELPHIA; Milliken Carpet; or approved equal.
 - 2. Material: High-performance nylon bonded to resilient backing.
 - 3. Material: Selected by allowance.
 - 4. Material: As selected.
 - 5. Installation Method: Partial glue-down.
 - 6. Installation Method: Free-lay.
 - 7. Auxiliary Materials:
 - a. Edge guards.
 - b. Low VOC adhesives (less than 50 g/L), low VOC cements and fasteners.
 - c. Leveling compound.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with recommendations of Carpet and Rug Institute (CRI 104) Standard for Installation Specification of Commercial Carpet.
- B. Prepare surfaces and install materials in accordance with manufacturer's instructions and approved submittals. Clean, patch, and level substrate. Install materials in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

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- C. Install edge guards and reducer strips as required; clean and protect.

END OF SECTION

SECTION 09 68 16
SHEET CARPETING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide sheet carpet and floor preparation.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- C. Seaming Layout: Submit proposed seaming layout.
- D. Extra Stock: Submit extra stock equal to 2 percent of total used.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Performance: Fire performance meeting requirements of building code and local authorities.
- C. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
- D. All carpet must meet HUD Certified Specification # UM44D
- E. All carpet must meet Carpet and Rug Institute (CRI) Green Label Certification

PART 2 PRODUCTS

2.1 MATERIALS

- A. Carpet Material:
 - 1. Manufacturers, Unit Interiors: Shaw Industries, Milliken, Philadelphia or approved equal
 - 2. Style and Pattern: By Architect
 - 3. Color: By Architect
 - 4. Installation Method: Direct glue down at Stairs, Common Areas and Accessible Dwelling Units.
 - 5. Installation Method: Tackless mounting with carpet cushion at Standard Dwelling Units.
 - 6. Auxiliary Materials:
 - a. Edge guards.
 - b. Low VOC adhesives (less than 50 g/L), low VOC cements and fasteners.
 - c. Leveling compound.
- B. Carpet Cushions:

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1. Manufacturers: Foamex International; Healthier Choice; Mohawk Industries; Daltonian Flooring, Inc
2. Type: 3/8" Rebound FHA Approved.
3. Service: Heavy traffic.
4. Auxiliary Materials:
 - a. Low VOC adhesives (less than 50 g/L) and fasteners.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Comply with recommendations of Carpet and Rug Institute (CRI 104) Standard for Installation Specification of Commercial Carpet.
- B. Prepare surfaces and install materials in accordance with manufacturer's instructions and approved submittals. Clean, patch, and level substrate. Install materials in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- C. Install edge guards and reducer strips; clean and protect.

END OF SECTION

SECTION 09 91 00

PAINTING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide painting and surface preparation of new and existing surfaces designated for painted finish.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
 - 1. Include manufacturer's full range of color and finish options if additional selection is required.
- C. Extra Stock: Submit 2 unopened gallons of each paint and color used in the project.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Regulations: Compliance with VOC and environmental regulations.
- C. Mock-Ups: Provide mock-up to demonstrate quality of workmanship.
 - 1. Provide 4 foot x 4 foot mock-ups of each type of surface.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Painting:
 - 1. Manufacturers of Regular Paints: Sherwin-Williams or approved equal
 - 2. Application: Interior unfinished surfaces.
 - 3. Application: Interior existing painted surfaces
 - 4. Application: Exterior existing painted surfaces.
 - 5. Application: Exposed mechanical and electrical items.
 - 6. Primary Coating Type: Latex based paints.
 - 7. Primary Coating Type: Low VOC interior paints.
 - a. Primers, Sealers, and Undercoaters: 200 g/L.
 - b. Flat Paints: Less than 50 g/L.
 - c. Non-Flat Paints: Less than 150 g/L.

- d. Paints applied to Ferrous Metals: Less than 250 g/L.
- 8. Primary Paint Systems: Primer plus one finish coat.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Inspect surfaces, report unsatisfactory conditions in writing; beginning work means acceptance of substrate.
- B. Comply with manufacturer's instructions and recommendations for preparation, priming and coating work. Coordinate with work of other sections.
- C. At existing areas to be repainted, remove blistered or peeling paint to sound substrates. Remove chalk deposits and mildew and wash all surfaces with mild detergent. Perform related minor preparation including caulk and glazing compounds. Spot prime bare areas before priming and painting as specified.
- D. Match approved mock-ups for color, texture, and pattern. Re-coat or remove and replace work which does not match or shows loss of adhesion. Clean up, touch up and protect work.

3.2 PAINT SCHEDULE

- A. Gypsum Drywall Walls:
 - 1. Gloss:
 - a. Egg Shell
 - 2. System:
 - a. 1 coat latex primer.
 - b. 1 coat latex finish.
- B. Gypsum Drywall Walls and Ceilings in Bathrooms, Kitchens and Wet Areas:
 - 1. Gloss:
 - a. Semi.
 - 2. Texture:
 - a. Smooth.
 - 3. System:
 - a. 1 coat latex primer.
 - b. 1 coat latex finish.
- C. Gypsum Drywall Walls to Receive Wall Covering:
 - 1. System:
 - a. 1 coat latex primer.
- D. Gypsum Drywall Ceilings:
 - 1. Gloss:
 - a. Flat.
 - 2. System:
 - a. 1 coat latex primer.
 - b. 1 coat latex finish.

E. Interior Wood for Painted Finish:

1. Gloss:
 - a. Semi.
2. System:
 - a. 1 coat interior alkyd enamel undercoat.
 - b. 1 coat latex enamel.

F. Interior Wood for Transparent Finish:

1. Gloss:
 - a. Satin.
2. System:
 - a. 1 coat oil base sealer.
 - b. 2 coats oil base varnish.

G. Concrete Masonry Units:

1. Gloss:
 - a. Flat.
 - b. Semi.
 - c. High.
2. System:
 - a. 1 coat latex block filler.
 - b. 1 coat latex finish.
 - c. 2 coats latex finish.

H. Concrete Walls:

1. Gloss:
 - a. Semi.
2. System:
 - a. 1 coat latex primer.
 - b. 1 coat latex finish.

I. Ferrous Metals:

1. Gloss:
 - a. Flat.
2. System:
 - a. 1 coat rust-inhibiting primer.
 - b. 2 coats alkyd enamel.

END OF SECTION

SECTION 10 28 13
TOILET ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Provide toilet, bath accessories as shown on drawings.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Toilet and Bath Accessories:
 - 1. Manufacturers: American Specialties, Inc.; Bobrick Washroom Equipment; Bradley Corp.; Franklin Brass; Moen; or approved equal.
 - 2. Accessory: Toilet tissue dispensers, single roll.
 - 3. Accessory: Grab bars.
 - 4. Accessory: Sanitary napkin vendors.
 - 5. Accessory: Shower curtain rods.
 - 6. Accessory: Shower curtains and hooks.
 - 7. Accessory: Towel bars.
 - 8. Accessory: Towel pins.
 - 9. Accessory: Towel rings.
 - 10. Accessory: Medicine cabinets.
 - 11. Accessory: Robe hooks.
 - 12. Accessory: Undercounter lavatory pipe guards.
 - 13. Finish: Stainless steel.
 - 14. Finish: Chromium plated brass or steel.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Restore damaged finishes and test for proper operation. Clean and protect work from damage.

END OF SECTION

SECTION 10 55 00
POSTAL SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

- A. Provide resident mailboxes in common area.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Regulations: USPS regulations.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Mail Boxes:
 - 1. Manufacturers: 2B Global Inc.; American Device Manufacturing; Auth-Florence; Bommer Industries; Cutler Manufacturing; Florence Manufacturing Company; Postal Products Unlimited, Inc.; Security Manufacturing Corporation; or approved equal.
 - 2. Configuration: Vertical.
 - 3. Loading: Front loading type.
 - 4. Materials: Aluminum, satin anodized finish.
 - 5. Materials: Steel, baked enamel finish.
- B. Mail Collection Boxes:
 - 1. Manufacturers: 2B Global Inc.; American Device Manufacturing; Auth-Florence; Bommer Industries; Cutler Manufacturing; Florence Manufacturing Company; Postal Products Unlimited, Inc.; Security Manufacturing Corporation; or approved equal.
 - 2. Loading: Front loading type.
 - 3. Materials: Aluminum, satin anodized finish.
 - 4. Materials: Stainless steel, No. 4 finish.
 - 5. Materials: Bronze, statuary finish.
 - 6. Materials: Steel, baked enamel finish.
- C. Parcel Lockers:
 - 1. Manufacturers: 2B Global Inc.; American Device Manufacturing; Auth-Florence; Bommer

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- Industries; Cutler Manufacturing; Florence Manufacturing Company; or approved equal.
- 2. Loading: Front-loading type.
- 3. Materials: Aluminum, Anodized, color by Architect.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Restore damaged finishes and test for proper operation. Clean and protect work from damage.

END OF SECTION

SECTION 11 31 00
RESIDENTIAL APPLIANCES

PART 1 GENERAL

1.1 SUMMARY

- A. Provide residential appliances, see unit and common area appliance schedules on drawings.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
- D. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Kitchen Appliances:
 - 1. Manufacturers: GE Appliances; KitchenAid, Inc.; Maytag Co.; Whirlpool Corp; LG Corp..
 - 2. Appliance: Ranges, electric.
 - 3. Appliance: Range hoods, recirculating type.
 - 4. Appliance: Refrigerator/freezers.
 - 5. Appliance: Garbage disposals.
 - 6. Appliance: Microwave
 - 7. Appliance: Dishwasher

PART 3

PART 4 EXECUTION

4.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Restore damaged finishes and test for proper operation. Clean and protect work from damage.

END OF SECTION

SECTION 12 20 00
WINDOW TREATMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide window treatments.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Horizontal Louver Blinds:
 - 1. Manufacturers: Hunter Douglas Contract Window Coverings; RollEase, Inc.; or approved equal.
 - 2. Operation: Tilting and lifting mechanisms.
 - 3. Slats: Vinyl.
 - 4. Slat Width: 2 inches.
 - 5. Blind Type: Traversing.
 - 6. Blind Type: Non-traversing.
 - 7. Track Type: Head track only.
 - 8. Louver Blade Type: Solid.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Restore damaged finishes and test for proper operation. Clean and protect work from damage.

END OF SECTION

SECTION 12 35 30
RESIDENTIAL CASEWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Provide prefabricated modular kitchen and bathroom casework and countertops. Barrier free units to meet UFAS including height and clearances.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Standards: Kitchen Cabinet Manufacturers Association (KCMA) A161.11.
- C. Coordinate cabinet layout with appliance sizes and locations.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Residential Casework:
 - 1. Manufacturers: Wolf Home Products, Wolf Classic, or approved equal.
 - 2. Application: Kitchens.
 - 3. Application: Bathrooms.
 - 4. Materials: Face Frame, Solid wood.
 - 5. Materials: Door and drawers, Solid Wood
 - 6. Materials: Veneer plywood box.
 - 7. Materials: Plastic laminate, NEMA LD 3.
 - 8. Face Style: Square recessed panel, Dartmouth
 - 9. Frame Fabrication: Face frame.
 - 10. Finish: Stain, Color: By Architect
 - 11. Finish Application: Factory-finished.
 - 12. Hardware: Chrome Knobs.
- B. Residential Countertops:
 - 1. Manufacturers: See Drawings
 - 2. Application: Kitchens.
 - 3. Application: Bathrooms.
 - 4. Front Profile: Eased Edge.

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5. Backsplash: 4"
6. Color: See Drawings

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Restore damaged finishes and test for proper operation. Clean and protect work from damage.

END OF SECTION

SECTION 14 24 00
ELECTRIC TRACTION ELEVATOR

PART 1 GENERAL

1.1 SUMMARY

- A. Provide new 3 stop elevator in new elevator shaft.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
 - 1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.
- C. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
- D. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
- E. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Safety Code: ASME/ANSI A17.1 and local regulations.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Elevators: SHINDLER 3300 MRL 2500 lb or approved equal
 - 1. Cab Door Finish: Stainless steel, No. 4 satin finish.
 - 2. Cab Wall Finishes: Plastic laminate.
 - 3. Cab Floor: Vinyl tile.
 - 4. Cab Ceiling: Luminous.
 - 5. Cab Handrail: Stainless Steel
 - 6. Elevator Auxiliary Operations and Controls:
 - a. Key controlled car light switch and fan switch.
 - b. Alarm/emergency stop button.
 - c. Car position and direction indicators.
 - d. Audible signals.
 - e. Automatic 2-way leveling.
 - f. Key switches to lockout individual floors.
 - g. Door nudging device.

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- h. Liner blanket hooks and blankets.
- i. Emergency power operation.
- j. Fireman's switch.

B.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Restore damaged finishes and test for proper operation. Clean and protect work from damage.

3.1 SCHEDULE

- A. Hydraulic Elevator Schedule: [If more than one elevator, group or type, list different features and machine room locations.]
 - 1. Capacity: [[2500 lb.]
 - 2. Speed: [1]0 fpm].
 - 3. Car Size: [6'9" wide by 4'-10" deep by 7'-0" high.]
 - 4. Landings Served: [1st level through 3rd level.]
 - 5. Travel Distance: [22'.]
 - 6. Entrance Size: [3'-6" by 7'-0".]
 - 7. Entrance Door Operation: Right Side opening.
 - 8. Power Supply: [208] volt, 3 phase, 60 Hz.

END OF SECTION

SECTION 21 00 00
FIRE SUPPRESSION

PART 1 GENERAL

1.1 SUMMARY

- A. Provide fire suppression systems.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
 - 1. Shop drawings shall be prepared and stamped by a qualified engineer licensed in the jurisdiction of the project.
 - 2. Provide hydraulic calculations for pipe sizing.
- C. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data, including operating instructions, list of spare parts and maintenance schedule.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Coordinate location of systems to avoid interference with location of structure and other building systems. Notify Owner prior to construction of conflicts which cannot be resolved.
- C. Local Fire Department Requirements: Comply with requirements of the local Fire Department pertaining to sprinkler systems and standpipes. Obtain approval from local Fire Marshall, in writing, of proposed fire-protection system before proceeding with installation.
- D. Compliance: NFPA 13R for sprinkler system,

PART 2 PRODUCTS

2.1 MATERIALS

- A. Fire Suppression Systems:
 - 1. Application: Building fire-suppression water-service system.
 - 2. Application: Building fire-suppression standpipe system.
 - 3. Application: Building fire-suppression sprinkler system.
 - a. Fire-department connections.
 - 4. Type: Fire-suppression sprinkler systems:
 - a. Wet pipe.
 - b. Dry pipe.
 - c. Deluge.
 - d. Water spray fixed system.
 - 5. Components: Suitable for service:
 - a. Fixtures.

- b. Piping.
- c. Expansion fittings and loops.
- d. Meters and gages.
- e. General-duty valves.
- f. Hangers and supports.
- g. Vibration and seismic controls.
- h. Identification devices.
- i. Piping insulation.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Vent all fixtures. Install materials in proper relation with adjacent construction and with uniform appearance for exposed work. Coordinate with work of other sections. Comply with applicable regulations and code requirements. Provide proper clearances for servicing.
- B. Support piping properly. Pitch to drain points. Install with pipe expansion loops, mechanical expansion joints, and anchors.
- C. Conceal piping and ductwork to the greatest extent practical.
- D. Center ceiling mounted elements in center of ceiling tiles as applicable.
- E. Clearly label and tag all components.
- F. Test and balance all systems for proper operation.
- G. Restore damaged finishes. Clean and protect work from damage.
- H. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 32 90 00

PLANTING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide plantings per Landscape Drawing.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Shop Drawings: Submit shop drawings indicating material characteristics, details of construction, connections, and relationship with adjacent construction.
- C. Maintenance Data: Submit maintenance data, including maintenance schedule.
- D. Notices: Submit 48-hour written notice prior to turnover to Owner for watering and maintenance.
- E. Warranty: Warrant trees and shrubs for a period of one year after date of Substantial Completion, against defects including death and unsatisfactory growth and except for defects resulting from neglect by Owner, abuse by others, or natural phenomena. Replace unsatisfactory plant material at end of warranty period at no additional expense to the Owner. One replacement is required.

1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Balled and Burlapped Plants and Trees: Graded to American Standard for Nursery Stock, ANSI Z60.1.
- C. Testing: Laboratory testing for suitable soil amendments and fertilizer.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Planting:
 - 1. Application: Trees, shrubs, plants, and ground cover.
 - 2. Application: Finish grading and lawns.
 - 3. Application: Topsoil and soil amendments.
 - 4. Application: Initial maintenance of landscape materials.
 - 5. Application: Pruning and relocation of existing plant materials.
 - 6. Plant Materials: Deciduous trees and shrubs.
 - 7. Plant Materials: Coniferous trees and shrubs.
 - 8. Plant Materials: Ground cover and plants.
 - 9. Topsoil: From offsite
 - 10. Soil Amendments: Based on soil testing.
 - 11. Accessories:
 - a. Gravel: Water-worn gravel.

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- b. Anti-Erosion Mulch: Seed-free salt hay or threshed straw.
- c. Anti-Dessicant: Emulsion type, film-forming.
- d. Plastic Sheet: Black polyethylene, 8 mils.
- e. Filtration Fabric: Water permeable fiberglass or polypropylene fabric.
- f. Wrapping: Tree-wrap tape.
- g. Stakes and Guys: New hardwood, treated softwood, or redwood.
- h. Metal Edging: Commercial steel edging.
- i. Wood Headers and Edging: All heart redwood or pressure treated southern yellow pine.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials in accordance with approved submittals. Install landscape work in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
- B. Prepare topsoil by mixing fertilizer with loam. Apply fertilizer at a rate of 2 pounds of actual nitrogen per 1,000 square feet for plant beds and 2 pounds per inch of trunk for tree pits.
- C. Install soil mix to a depth of 18 inches in plant beds.
- D. For seeded lawns, apply seed at rate of 5 pounds per 1,000 square feet.
- E. For lawns with sod, place sod tightly, with grain in same direction.
- F. Excavate as required for trees and shrubs.
- G. Install plant material and backfill with soil mix. Stake and guy trees. Water thoroughly. Allow for soil settlement.
- H. Provide maintenance and watering until turnover to Owners for maintenance and watering. Replace damaged materials and dead or unhealthy plants prior to turnover to Owner.

END OF SECTION