

PROJECT MANUAL

FOR:
RENOVATION OF
CLIFFVIEW APARTMENTS,
ROCHESTER HILLS, MICHIGAN

CLIENT:
CLIFFVIEW APARTMENTS II
LIMITED DIVIDEND HOUSING
ASSOCIATION LIMITED PARTNERSHIP
1691 CLIFFVIEW DRIVE
ROCHESTER HILLS, MI 48306

GENERAL CONTRACTOR:
G Fisher Construction Co
31313 Northwestern Hwy # 206,
Farmington Hills, MI 48334

ARCHITECT:
SCHNEIDER + SMITH ARCHITECTS AIA
833 S. CENTER STREET ROYAL OAK, MI 48067

PROJECT NO.:
MSHDA #

JULY 28, 2020 REVIEW

SIGNATURE SHEET

OWNER:

By: _____

ARCHITECT:
SCHNEIDER + SMITH ARCHITECTS

By: _____

CONTRACTOR:

By: _____

BONDING COMPANY:

By: _____

MORTGAGE COMPANY:

BY: _____

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CLIFFVIEW APARTMENTS
ROCHESTER HILLS, MI

SCHNEIDER+SMITH ARCHITECTS

DOCUMENT 00 73 00

SUPPLEMENTARY CONDITIONS

- A. GENERAL CONDITIONS AIA A201

- 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.

SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.1 SUMMARY

- A. Project Identification: Cliffview Apartments, 1691 Cliffview Drive, Rochester Hills, MI 48306
- B. Project Summary: Renovation of 126-unit multi building residential apartment campus. Interior renovations to common areas. Select interior renovation of apartments. Replacement of windows, masonry repairs. Select replacement of interior and exterior doors. Refurbishment and replacement of Mechanical Equipment. Mill and cap Access Road and Parking areas, Re-stripping of parking areas. Selected replacement of damaged concrete sidewalks.
- C. Particular Project Requirements:
 - 1. Coordinate construction schedule with owner's management to facilitate work in occupied units and required vacancy of proposed accessible units.
 - 2. Coordinate separate disposal and storage facilities for materials and items to be recycled.
 - 3. Coordinate testing and documentation for energy improvements.
 - 4. Coordinate identification, abatement and disposal of hazardous items identified in environmental report.
- D. 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.
- E. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices and similar communications to Architect.
- F. Dimensions: Verify dimensions indicated on drawings with field dimensions before fabrication or ordering of materials. Do not scale drawings.
- G. 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.
- H. 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.
- I. 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.

- J. Limit of Use: Limit use of work as indicated. Keep driveways and entrances clear.
- K. Existing Construction: Maintain existing building in a weather tight condition. Repair damage caused by construction operations. Protect building and its occupants.
- L. Definitions:
 - 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.
- M. 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.
- N. 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.'

PART 2 PRODUCTS - NOT APPLICABLE TO THIS SECTION

PART 3 EXECUTION - NOT APPLICABLE TO THIS SECTION

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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:

MSHDA Minimum Property Standards

MSHDA Materials Bulletins

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 Architect including Architect's submittal and shop drawing stamp. 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

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.

PART 2 PRODUCTS - NOT APPLICABLE TO THIS SECTION

PART 3 EXECUTION - NOT APPLICABLE TO THIS SECTION

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.

PART 2 PRODUCTS - NOT APPLICABLE TO THIS SECTION

PART 3 EXECUTION - NOT APPLICABLE TO THIS SECTION

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.

PART 2 EXECUTION - NOT APPLICABLE TO THIS SECTION

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.
- B. Product Selection: Provide products selected by Architect.

PART 2 PRODUCTS - NOT APPLICABLE TO THIS SECTION

PART 3 EXECUTION - NOT APPLICABLE TO THIS SECTION

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.

PART 2 PRODUCTS - NOT APPLICABLE TO THIS SECTION

PART 3 EXECUTION

3.1 CUTTING AND PATCHING

- A. Cutting and Patching: Provide cutting and patching work to properly complete the work of the project, complying with project requirements for:
1. Structural work.
 2. Mechanical/electrical systems.
 3. Visual requirements, including detailing and tolerances.
 4. Operational and safety limitations.
 5. Fire resistance ratings.
 6. Inspection, preparation, and performance.
 7. Cleaning.
- B. Means and Methods: Do not cut and patch in a manner that would result in a failure of the work to perform as intended, decrease energy performance, increase maintenance, decrease operational life, or decrease safety performance.

- C. Inspection: Inspect conditions prior to work to identify scope and type of work required. Protect adjacent work. Notify Owner of work requiring interruption to building services or Owner's operations.
- D. Performance of Operations: Perform work with workmen skilled in the trades involved. Prepare sample area of each type of work for approval.
- E. Cutting: Use cutting tools, not chopping tools. Make neat holes. Minimize damage to adjacent work. Inspect for concealed utilities and structure before cutting.
- F. Patching: Make patches, seams, and joints durable and inconspicuous. Comply with tolerances for new work.
- G. Cleaning: Clean work area and areas affected by cutting and patching operations.

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, Trowel 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: 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.

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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 01 00

MAINTENANCE OF MASONRY

PART 1 GENERAL

1.1 SUMMARY

- A. Provide masonry restoration and limestone sill replacement at select areas.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Mortar Mix: Submit for approval mortar mix proposed for use.

1.3 QUALITY ASSURANCE

- A. Perform test cleaning to demonstrate/select appropriate cleaning materials, mixes, and methods.
- B. 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.

1.4 PROJECT CONDITIONS

- A. Protect persons and property from injury and damage from cleaning operations. Do no work when winds prevent control of sand, cleaners or rinse water. Dispose of run-off in a legal manner. For chemical cleaning, clean only when ambient 40 degrees F temperature and above will be maintained during cleaning and seven days after.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Masonry Restoration:
 - 1. Manufacturers: ProSoCo, Inc.; or approved equal.
 - 2. Application: Repointing mortar joints.
 - 3. Materials: Repointing mortar.
 - a. Strength: Suitable for project conditions.
 - b. Appearance: Match existing.
 - c. Portland cement: ASTM C 150, Type I.
 - d. Hydrated Lime: ASTM C 207, Type S.
 - e. Aggregate for Mortar: ASTM C 144.
 - f. Colored Mortar Aggregate: Colored sand.
 - g. Colored Mortar Pigment: Iron oxides and chromium oxides.
 - h. Aggregate for Grout: ASTM C 404.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Repointing:
 - 1. Obtain materials from one source to maintain color/texture/quality consistency.
 - 2. Work only when ambient 40 degrees F to 80 degrees F temperature will be maintained until

72 hours after completion.

3. Remove old mortar by hand chisel and mallet, unless Contractor can demonstrate that power tools will not damage masonry.
 4. Rake out old mortar to depth equal to 2-1/2 times joint width and in no case less than 1/2 inch or depth required to expose sound mortar.
 5. Do not damage masonry units.
 6. Rinse joints and install pointing mortar in 1/2 inch deep layers.
 7. Tool joints to match existing and cure mortar for not less than 72 hours.
 8. After pointing, clean masonry using Tampico fiber brushes and running water.
- B. Schedule: [Refer to Drawings for extent.]
1. Repointing Mortar Joints: Select Lintels and Porches.

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 Plastic Laminate Clad Countertops:
1. Manufacturers: Manufacturers: Wilsonart International Div. of Premark International, Inc.; Nevamar Company, LLC, Decorative Products Div.; Formica Corporation, .
 2. Laminate: High pressure decorative laminate, NEMA LD-3.
 3. Grade: Custom.
 4. Core: Particleboard.
 5. Edge: Laminate.
 6. Edge: Decorative.
 7. Adhesives: Low VOC contact adhesive (less than 80 g/L).
- C. Interior Shelving and Closet Specialties:
1. Shelving: Plywood with hardwood edgeband.
 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.

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 19 00

WATER REPELLENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide water repellent coating for 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: Vertical concrete surfaces.
 - 3. Application: Horizontal concrete surfaces.
 - 4. Type: Film-forming silicone or acrylic.
 - 5. Appearance: Clear, non-gloss, non-yellowing.
 - 6. Vapor Transmission: Vapor permeable.
 - 7. Application Rate: Suitable for substrate and project conditions.

CLIFFVIEW APARTMENTS
ROCHESTER HILLS, MI
PART 3 EXECUTION

SCHNEIDER+SMITH ARCHITECTS

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 31 00

SHINGLES AND SHAKES

PART 1 GENERAL

1.1 SUMMARY

- A. Remove existing asphalt shingles. Inspect and replace damaged wood decking as required. Install ice and water shield per code. Install 15# building paper. Install new asphalt shingles and new ridge ventilation.

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: 20 years.
 - 2. Warranty Period: 25 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. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Asphalt Shingles:
 - 1. Manufacturers: Timberline Natural Shadow; or approved equal.
 - 2. Type: Architectural grade, fiberglass strip shingles.
 - 3. Color: Weathered Wood
 - 4. Accessories:
 - a. Hip and ridge shingles.
 - b. Underlayment felt, ASTM D 226.
 - c. Self-adhering sheet underlayment, granular or polyethylene Surfaced: ASTM D 1970 perimeter underlayment.
 - d. Metal flashing and drip edge.
 - e. Mechanically fastened snow guards.
- B. Roofing Underlayment:
 - 1. Manufacturer: W. R. Grace Inc.; Interwrap, Inc.; or approved equal.
 - 2. Type: Self-adhering sheet underlayment, ASTM D1970.

3.1 INSTALLATION

- A. Comply with recommendations of NRCA Steep Roofing Manual.
- 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. Install water protection sheet at valleys, ridges, and eaves.
- D. Restore damaged components. Clean and protect work from damage.

END OF SECTION

SECTION 07 46 00

SIDING

PART 1 GENERAL

1.1 SUMMARY

- A. Repair and or replace select 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

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved 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 62 00

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SUMMARY

- A. Provide flashing, trim and select gutters and downspouts.

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: Beach Sheet Metal Co., Inc.; Berger Building Products, Inc.; Englert, Inc.; Fiberweb Clark/Hammerbeam Corp.; Hohmann & Barnard, 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: Gutters and downspouts.
 - 4. Application: Exposed metal trim and fascia units.
 - 5. Application: Ridge and soffit vents.
 - 6. Metal: Zinc-coated steel.
 - a. Standard: ASTM A 653, G90 hot-dip galvanized, 2-Coat 70 percent Fluoropolymer, 20-gauge (.0359 inch).
 - 7. Metal: Sheet aluminum.
 - a. Standard: ASTM B 209, alloy 3003, prefinished 2-coat 70 percent fluoropolymer, 20 gauge (.0359 inch).
 - 8. Metal: Extruded aluminum.
 - a. Standard: 6063-T52, prefinished 2-coat 70 percent Fluoropolymer, 0.080 inches for primary legs of extrusion.
 - 9. Soffit Vents: Continuous aluminum strip soffit vents
 - 10. Ridge Vents: Baffled ridge vent suitable for direct application of shingles.
- B. Auxiliary Materials:
 - 1. Mastic and elastomeric sealants.

2. Epoxy seam sealer.
3. Rosin-sized building paper slip sheet.
4. Polyethylene underlayment.
5. Reglets and metal accessories.

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 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.

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: Two component silicone sealant.
- B. Exterior Joints in Vertical Surfaces, Urethane:
 - 1. Manufacturers: Pecora Corp.; Sika Corp.; Sonneborn; Tremco;.
 - 2. Materials: Two-component urethane sealant.
- C. Exterior Joints in Vertical Surfaces, Preformed Compression Seals:
 - 1. Manufacturers: Watson-Bowman Acme Corp.; or approved equal.
 - 2. Materials: Preformed precompressed foam sealant.
- 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.
- 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.

- F. Exterior Paving Joint Fillers, Bituminous:
 - 1. Manufacturers:
 - 2. Materials: Bituminous fiber.

- 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: Taylor Door, Amweld Building Products; Curries Co.; 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: Taylor Door; Amweld Building Products; Curries Co.; Steelcraft Manufacturing;.
 - 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: Taylor Door; Amweld Building Products; Steelcraft Manufacturing; Windsor Republic Doors;
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. Silencers.

D. Exterior Steel Frames:

1. Manufacturers: Taylor Door; Amweld Building Products; Steel Door Institute; Windsor Republic Doors.
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. Install new steel entry door frames with minimum 6" steel screws Reinforce strike plate with 6" steel screws.
- F. Hardware: Prepare doors and frames to receive hardware on final schedule. Provide for 3 silencers on single doorframes; 2 on double doorframes.
- G. 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.
- H. 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. Replacement of selected existing wood doors.
- B. Provide prefinished wood doors in existing 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 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 Flush Wood Doors:
 - 1. Manufacturers: Algoma Hardwoods; Eggers Industries, Masonite Marshfield Door Systems, Inc.;
 - 2. Type: Solid core.
 - 3. Thickness: 1-3/8 inches thick.
 - 4. Grade: Premium.
 - 5. Frames: Metal.
 - 6. Face: Pre finished.

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 in existing frame. Field measure openings to verify size requirements for replacement doors.
- C. Field fit 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. Comply with NFPA 80 for rated assemblies.
- E. Adjust, clean, and protect.

END OF SECTION

SECTION 08 53 13

VINYL SLIDING DOORS AND WINDOWS

PART 1 GENERAL

1.1 SUMMARY

- A. Provide replacement vinyl windows and vinyl sliding patio doors.

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. Performance: Comply with AAMA/NWWDA 101/I.S.2 for performance class and grade of window specified.
- D. Operable doors to have grab able handle and lock for operating and meet UFAS rules for proper operating force.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Vinyl Sliding Patio Doors and Windows:
 - 1. Manufacturers: Anderson Silver Line, Crown Windows Inc, Certainteed; Ply Gem, or equal.
 - 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
 - 6. Window Operation: Fixed
 - 7. Window Operation; Single hung
 - 8. Door Operation: Horizontal sliding doors.

9. Frame Color: Match existing windows.
10. Glazing: Tempered Insulating glass with low-e coating.
11. Glazing Color: Clear glass.
12. Auxiliary Materials:
 - a. Operating hardware.
 - b. 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 and new 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: Shield Security, Schlage Lock Co.; Yale Locks and Hardware.
 - 2. Application: Common area doors.
 - 3. Application: Maintenance Area doors.
 - 4. Application: Unit Entry doors.
 - 5. Application: Unit Interior doors.
 - 6. Quality Level: 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: Satin 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. Electronic door strike.

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.

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: Insulating glass units, tempered at locations as required by Code.
3. Type: High-performance insulating glass units with low-e coating, 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

GYP SUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

- A. Repair gypsum board assemblies as required.

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, or approved equal.
 - 2. Application: Interior walls, partitions, and ceilings with tape and joint compound finish.
 - 3. Application: Steel framing systems to receive gypsum board.
 - 4. Application: Insulation and vapor barrier systems in gypsum board assemblies.
 - 5. Application: Remodeling at existing gypsum board construction.
 - 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, field verify.
 - c. Typical Thickness: 5/8 inch, field verify.
 - 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.

PART 3 EXECUTION

3.1 INSTALLATION

- A. 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.
- B. 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.
- C. Provide fire-rated systems where indicated and where required by authorities having jurisdiction.
- D. Install boards vertically. Do not allow butt-to-butt joints and joints that do not fall over framing members.
- E. Where new partitions meet existing construction, remove existing corner beads to provide a smooth transition.
- F. Provide insulation full height and thickness in partitions at conference rooms, toilet rooms, between different occupancies, and where required.
- G. Provide acoustical sealant at both faces at top and bottom runner tracks, wall perimeters, openings, expansion and control joints.
- H. Install trim in strict compliance with manufacturer's instructions and recommendations.
- I. Repair surface defects. Leave ready for finish painting or wall treatment.

END OF SECTION

SECTION 09 65 00
RESILIENT FLOORING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide resilient flooring 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. 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: 545 Downtown
 - 7. Application: Common Areas
 - 8. Warranty: 10 year commercial use
 - 9. Auxiliary Materials:
 - 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: 102 Chesapeake
 - 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).

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 16

CARPETING

PART 1 GENERAL

1.1 SUMMARY

- A. Provide sheet and tile 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

PART 2 PRODUCTS

2.1 MATERIALS

- A. Carpet Material:
 - 1. Manufacturers, Unit Interiors: Shaw Industries Property Solutions, PS528 CRITERIA, Color: to be determined, 25.0 oz, 0.450in pile. or approved equal
 - 2. Color: To be determined
 - 3. Manufactures, Common Areas: Philadelphia Commercial, Awestruck Collection, Carpet tile, or approved equal.
 - 4. Color:
 - 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:
 - 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. Flat Paints: Less than 50 g/L.
 - b. Non-Flat Paints: Less than 150 g/L.
 - c. Paints applied to Ferrous Metals: Less than 250 g/L.
 - 8. Primary Paint Systems: Primer plus one finish coat.

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 14 00

SIGNAGE

PART 1 GENERAL

1.1 SUMMARY

- A. Provide New Accessible and Van Accessible parking signs.

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. Parking Signs, Post Mounted:
 - 1. Manufacturers: Apple Signs; Bench Mark; Best Sign Systems, Inc.; or approved equal.
 - 2. Type: Flat Metal with ADA compliant Graphic, Blue on White Background, single sided.
 - 3. Copy: Applied Vinyl.
 - 4. Sign Material: Metal.
 - 5. Post: Painted Steel.
 - 6. Mounting: Permanent direct-burial.

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. Clean and protect work from damage.

END OF SECTION

SECTION 10 28 13

TOILET ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Provide toilet, bath 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.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Toilet and Bath Accessories:
 - 1. Manufacturers: Epcos; Franklin Brass Corp.; Tubular Specialties Mfg., Inc. (TSM).
 - 2. Accessory: Toilet tissue dispensers, single roll Franklin Brass Futura #1408B.
 - 3. Accessory: Shower curtain rod, Franklin Brass, #336.
 - 4. Accessory: Towel bars, Franklin Brass Futura 24" WIDE, #1424.
 - 5. Accessory: Medicine cabinets,
 - 6. 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 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: Range hoods, recirculating type.
 - 3. Appliance: Garbage disposals.

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 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, Builders Mark, Smart Cabinetry 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, Sierra
 - 9. Face Style: Square recessed panel, Brighton
 - 10. Frame Fabrication: Face frame.
 - 11. Finish: Stain, Color: Graphite
 - 12. Finish: Stain, Color: Slate
- B. Residential Countertops:
 - 1. Manufacturers: Formica, Wilson Art.
 - 2. Application: Kitchens.
 - 3. Application: Bathrooms.

4. Front Profile: Post formed, verify with owner.
5. Backsplash: Post Formed, verify with owner
6. Color: To be determined

C. Hardware:

1. Manufacture: Essence, Williams Distributing.
2. Application: Drawer and Door pulls
3. Style and Finish: Conquest P14402-SN satin nickle knob

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 21 00 00

FIRE SUPPRESSION

PART 1 GENERAL

1.1 SUMMARY

- A. Install (2) fire suppression canisters in each range hood.

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 13 for sprinkler system, NFPA 14 for standpipes; UL listed and labeled; FM approved.

PART 2 PRODUCTS

2.1 MATERIALS

- 1. Williams RDM 675-3D Stovetop Firestop Range hood, or equal
 - a. Must have 27-35" (68-88 cm) between surface of stove top and mounting point in range hood.
 - b. Clean and dry areas in range hood where both magnets will attach.
 - c. Position canisters in range hood at the midpoint between the center of front and back burners on each side.
 - d. Raise canisters to the spot directly above in range hood, Place the enclosed decal where it can be seen in the ventilation hood.

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. Center ceiling mounted elements in center of ceiling tiles as applicable.
- D. Clearly label and tag all components.
- E. Test and balance all systems for proper operation.
- F. Restore damaged finishes. Clean and protect work from damage.
- G. Range Hood Suppression Canister;
 - 1). Instruct Owner's personnel in proper operation of systems.
 - 2). Must have 27-35" (68-88 cm) between surface of stove top and mounting point in range hood.
 - 3). Clean and dry areas in range hood where both magnets will attach.
 - 4). Position canisters in range hood at the midpoint between the center of front and back burners on each side.
 - 5). Raise canisters to the spot directly above in range hood,
Place the enclosed decal where it can be seen in the ventilation hood.

END OF SECTION

SECTION 22 00 00

PLUMBING

PART 1 GENERAL

1.1 SUMMARY

- A. Replace select faucets, sinks, supply valves, fixture supply lines, and drains.

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.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Plumbing Systems:
 - 1. Manufacturers, Piping, Valves and Fittings: Anvil International; Lawler Mfg. Co., Inc.; MAPA Products; Sioux Chief.
 - 2. Manufactures, Toilet Flush Mechanisms: Fluid Masters, Korky.
 - 3. Manufacturers, Sleeves, Hangers and Supports: Advanced Support Products, Inc.; Anvil International; JV-Industries, LLC; MAPA Products; MIRO Industries, Inc.; PHP Systems and Design; Universal Support Systems, LLC; Sioux Chief.
 - 4. Manufacturers, Identification Systems: Seton Identification Systems. Seton Identification Products.
 - 5. Manufacturers, Insulation: Knauf Insulation; Sioux Chief.
 - 6. Manufacturers, Thermostatic Water Mixing Valves: Lawler Mfg. Co., Inc.;
 - 7. Manufacturers, Fixtures, Fittings and Trim: Bradley Corp.; Chicago Faucet Co. (The); Dayton; Delta Faucet Co.; Mansfield, Peerless Co.
 - 8. Manufactureres, Domestic Hot Water Storage Tanks: A.O. Smith, Dayton, Rheem-Rudd, Weil McLain.
 - 9. Application: Residential plumbing fixtures.
 - 10. Components: Suitable for service.
 - a. Fixtures.

- b. Piping.
 - c. Pumps.
 - d. Expansion fittings and loops.
 - e. Meters and gauges.
 - f. General-duty valves.
 - g. Hangers and supports.
 - h. Heat tracing.
 - i. Identification devices.
 - j. Piping insulation.
 - k.
11. Fixture Schedule: See Drawings.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. 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. Install shutoff valves on each piece of equipment on both hot and cold water supply.
- D. Clearly label and tag all valves and components.
- E. Sterilize water distribution system. Flush and test all systems for proper operation. Adjust system to prevent water hammer.
- 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 23 00 00

HEATING, VENTILATING AND AIR CONDITIONING

PART 1 GENERAL

1.1 SUMMARY

- A. Replace Select HVAC units.
 - 1. Apartments
 - 2. Community/Office building

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. 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.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Heating, Ventilating and Air-Conditioning Systems:
 - 1. Manufacturers, Piping, Valves and Fittings: Anvil International; MAPA Products; Natural Light Energy Systems; Taco Inc..
 - 2. Manufacturers, Sleeves, Hangers and Supports: Advanced Support Products, Inc.; Anvil International; JV-Industries, LLC ; MAPA Products; MIRO Industries, Inc.; PHP Systems and Design; Universal Support Systems, LLC;.
 - 3. Manufacturers, Identification Systems: Seton Identification Products;.
 - 4. Manufacturers, Insulation: Knauf Insulation;.
 - 5. Manufacturers, Thermostats: Emerson Climate Technologies; Honeywell;
 - 6. Manufacture, Common and Office Fan Coil: Whalen,
 - 7. Application: Central heating, ventilating and air-conditioning systems.
 - 8. Application: Decentralized heating, ventilating and air-conditioning systems.
 - 9. Components: Suitable for service:
 - a. Motors.
 - b. Expansion fittings and loops.
 - c. Meters and gages.

- d. General-duty valves.
- e. Hangers and supports.
- f. Vibration and seismic controls.
- g. Identification devices.
- h. Testing, adjusting, and balancing devices.
- i. Duct insulation.
- j. Piping insulation.
- k. HVAC ducts and casings.
- l. Air plenums and chases.
- m. Air duct accessories.
- n. HVAC fans.
- o. Air outlets and inlets.
- p. Packaged compressor and condenser units.
- q. Packaged outdoor HVAC equipment.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. 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. Install shutoff valves on each piece of equipment on both hot and cold water supply.
- D. Install ductwork in accordance with SMACNA recommendations. Seal duct seams with sealer. Provide splitters and balancing dampers. Provide fire dampers and automatic smoke and fire dampers. Provide flexible connectors and inlet and discharge connections. Clean before testing and balancing.
- 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 26 00 00

ELECTRICAL

PART 1 GENERAL

1.1 SUMMARY

- A. Replace damaged light fixtures.
- B. Rebulb light fixtures with LED bulbs
- C. Install new lithium battery powered smoke detectors
- D. Install new battery powered C.O. detectors.

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. 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. Compliance: National Electrical Code.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Electrical Systems:
 - 1. Manufacturers, Lighting: Sun Park Electronics lighting, Affordable Lighting INC., Cooper, G.E. Lighting, Hubbell, Leviton, Lithonia, Wiremold/Legrand.
 - 2. Manufactures, Light Bulbs: Sunco, Sylvania, GE, or equal
 - 3. Manufactures, Smoke and carbon monoxide detectors: Kidde, First Alert, or approved equal.
 - 4. Application: Interior and Exterior lighting.
 - 5. Application; Detectors
 - 6. Application: Replacement devices.
 - 7. Sustainable Design: Energy efficient bulbs.
 - 8. Connected Loads: Suitable for service:
 - a. Public area lighting.

- b. Internal operations lighting.
- c. Site lighting.
- 9. Components: Suitable for service:
 - a. Cables, conduit and tubing.
 - b. Grounding and bonding devices.
 - c. Hangers and supports.
 - d. Identification devices.
 - e. Service entrance components.
 - f. Low-voltage power switchgear.
 - g. Grounding components.
 - h. Transformers.
 - i. Busways.
 - j. Panelboards.
 - k. Overcurrent protective devices.
 - l. Motor controllers.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. 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. Coordinate with other trades for system requirements.
- C. Comply with National Electrical Code and building code requirements. Maintain continuity of circuits required to supply new or existing equipment in service.
- D. Center ceiling-mounted elements in center of ceiling tiles as applicable.
- E. Conceal conduit to the greatest extent practical.
- F. Install switches, thermostats and similar items at uniform height above finished floor. Locate switches within rooms at strike side of door unless noted otherwise.
- G. Gang-mount multiple control and outlet locations. Mount multiple types of controls and outlets as close together as practical and in-line with each other. Avoid back-to-back box locations.
- H. Clearly label and tag all components.
- I. Test all systems for proper operation.
- J. Restore damaged finishes. Clean and protect work from damage.
- K. Instruct Owner's personnel in proper operation of systems.

END OF SECTION

SECTION 31 20 00

EARTH MOVING

PART 1 GENERAL

1.1 SUMMARY

- A. Selected Repair of areas disturbed by construction operations.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Test Reports: Submit for approval test reports, list of materials and gradations proposed for use.

1.3 QUALITY ASSURANCE

- A. Compaction:
 - 1. Under structures, building slabs, steps, pavements, and walkways, 95 percent maximum density, ASTM D 1557.
 - 2. Under lawns or unpaved areas, 90 percent maximum density, ASTM D 1557.
- B. Grading Tolerances Outside Building Lines:
 - 1. Lawns, unpaved areas, and walks, plus or minus 1 inch.
 - 2. Pavements, plus or minus 1/2 inch.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Earthwork:
 - 1. Application: Excavation, filling, compacting and grading operations outside building limit for on-grade improvements and to correct grades and elevations to provide positive drainage.
 - 2. Application: Subbase materials, drainage fill, common fill, and structural fill materials for new sidewalk, replacement sidewalk slabs, new pavement on existing base.
 - 3. Subbase Material: Graded gravel or crushed stone to repair existing areas as required.
 - 4. Bedding Course: Graded crushed gravel and sand.
 - 5. Borrow Soil: Off-site soil for fill or backfill.
 - 6. Common Fill: Mineral soil free from unsuitable materials.
 - 7. Impervious Fill: Gravel and sand mixture.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Excavation is unclassified and includes excavation to subgrade regardless of materials encountered. Repair excavations beyond elevations and dimensions indicated as follows:
 - 1. Backfill and compact as directed.
- B. Maintain stability of excavations; coordinate shoring and bracing required by authorities having jurisdiction. Prevent surface and subsurface water from accumulating in excavations. Stockpile satisfactory materials for reuse, allow for proper drainage and do not stockpile materials within

drip line of trees to remain.

- C. Compact materials at the optimum moisture content as determined by ASTM D 1557 by aeration or wetting to the following percentages of maximum dry density:
 - 1. Structure, Pavement, Walkways: Subgrade and each fill layer to 95 percent of maximum dry density to suitable depth.
 - 2. Unpaved Areas: Top 6 inches of subgrade and each fill layer to 90 percent maximum dry density.
- D. Place acceptable materials in layers not more than 8 inches loose depth for materials compacted by heavy equipment and not more than 4 inches loose depth for materials compacted by hand equipment to subgrades indicated as follows:
 - 1. Common Fill: Use under unpaved areas.
 - 2. Subbase Material: Use under pavement, walks, steps, piping and conduit.
- E. Grade to within 1/2 inch above or below required subgrade and within a tolerance of 1/2 inch in 10 feet.
- F. Protect newly graded areas from traffic and erosion. Recompact and regrade settled, disturbed and damaged areas as necessary to restore quality, appearance, and condition of work.
- G. Control erosion to prevent runoff into sewers or damage to sloped or surfaced areas.
- H. Control dust to prevent hazards to adjacent properties and vehicles. Immediately repair or remedy damage caused by dust including air filters in equipment and vehicles. Clean soiled surfaces.
- I. Dispose of waste and unsuitable materials off-site in a legal manner.

END OF SECTION

SECTION 32 12 16

ASPHALT PAVING

PART 1 GENERAL

1.1 SUMMARY

- A. Crack fill, repair select areas, mill and cap drive aisles, and parking areas. Restripe parking lanes. Repair asphalt curbs.
- B. Refer to Site Drawings.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Test Reports: 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. Construction Tolerances:
 - 1. Base Course Thickness: Within 1/2 inch.
 - 2. Surface Course Thickness: Within 1/4 inch.
 - 3. Base Course Surface Smoothness: Within 1/4 inch.
 - 4. Surface Course Surface Smoothness: Within 3/16 inch. No ponding acceptable.
 - 5. Crowned Surfaces: Within 1/4 inch from template.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Hot-Mixed Asphalt Paving:
 - 1. Application: Roadways and Parking.
 - 2. Asphalt-Aggregate Mixture: Plant-mixed, hot-laid asphalt-aggregate mixture, ASTM D 3515, complying with MDOT and DPW regulations.
 - 3. Prime Coat: Cut-back asphalt, ASTM D 2027.
 - 4. Tack Coat: Emulsified asphalt, ASTM D 977.
 - 5. Herbicide Treatment: EPA registered chemical for weed control.
 - 6. Marking Paint: Alkyd-resin type, lead and chromate free, white or yellow.
 - 7. Wheel Stops: Precast, concrete.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Coordinate work with Owners and assist in accommodating building access and parking during asphalt operations.
- B. Asphalt/Aggregate Mixture: Comply with MDOT Standard Specifications for Highways and Bridges. Class as required by loading and use.

- C. Remove loose material from compacted subbase. Proof roll and check for areas requiring additional compaction. Report unsatisfactory conditions in writing. Beginning of work means acceptance of subbase.
- D. Apply prime coat to prepared subbase. Apply tack coat to previous laid work and adjacent in-place concrete surfaces.
- E. Place asphalt concrete at minimum temperature of 225 degrees F in strips not less than 10 feet wide overlapping previous strips. Complete entire base course before beginning surface course.
- F. Construct curbs to dimensions indicated or if not indicated to standard shapes. Provide tack coat between curb and pavement.
- G. Begin rolling when pavement can withstand weight of roller. Roll while still hot to obtain maximum density and to eliminate roller marks.
- H. Provide 4-foot lane and striping paint in uniform, straight lines. Provide wheel stops where indicated and securely dowel into pavement. Protect work from traffic and damage.
- I. Test in-place asphalt work for thickness and smoothness. Remove and replace defective work and patch to eliminate evidence of patching

END OF SECTION

SECTION 32 13 13
CONCRETE PAVING

PART 1 GENERAL

1.1 SUMMARY

- A. Removal and replacement of select cast-in-place concrete paving. Modify select sidewalks for accessible route. Install accessible route and seating pad at playground.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Design Mixes: Submit for approval design mixes, including adjustments for variations in project conditions.
- C. Test Reports: 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. Construction Tolerance: 1/8 inch in 10 feet for grade and alignment of top of forms; 1/4 inch in 10 feet for vertical face on longitudinal axis.
- C. Testing: Independent testing laboratory.
- D. Mock-Ups: Provide mock-up as required to demonstrate quality of workmanship.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Concrete Paving Materials:
 - 1. Accessories:
 - a. Wire Mesh Reinforcement: Welded plain steel wire fabric, ASTM A 185.
 - b. Reinforcing Bars: Deformed steel bars, ASTM A 615, Grade 60.
 - c. Fabricated Bar Mats: Steel bar or rod mats, ASTM A 184, using ASTM A 615, Grade 60 steel bars.
 - d. Joint Dowel Bars: Plain steel bars, ASTM A 615, Grade 60.
 - e. Hook Bolts: ASTM A 307, Grade A threaded bolts.
 - f. Liquid-Membrane Forming and Sealing Curing Compound: ASTM C 309, Type I, Class A.
 - g. Bonding Compound: Polyvinyl acetate or acrylic base.
 - h. Color Pigment: ASTM C 979.
 - i. Marking Paint: FS TT-P-1952 white or yellow.
 - j. Epoxy Adhesive: ASTM C 881.
 - 2. Application: Approach, Parking, and Sidewalks.

3.1 INSTALLATION

- A. Coordinate work with Owners and assist in accommodating building access during concrete replacement operations.
- B. Comply with ACI 301 for measuring, mixing, transporting, and placing concrete.
- C. Proof roll subbase and check for unstable areas. Report unsatisfactory conditions in writing. Beginning paving work means acceptance of subbase.
- D. Comply with concrete section for concrete mix, testing placement, joints, tolerances, curing, repairs and protection.
- E. Dispose of over-mixed concrete off-site in a legal manner.
- F. Protect concrete paving until weight of a person will not leave any impression. Remove and replace concrete paving, which shows impressions or other defects. Skim coating defects are not acceptable.
- G. Sweep and clean surface to eliminate loose material and dust and apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

END OF SECTION