1. Structural Sealant: ASTM C 1184, single-component neutral-curing silicone formulation that is compatible with system components with which it comes in contact, specifically formulated and tested for use as structural sealant and approved by a structural-sealant manufacturer for use in aluminum-framed systems indicated.
    a. Color: See exterior elevations.
2. Weatherseal Sealant: ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; single-component neutral-curing formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weatherseal-sealant, and aluminum-framed-system manufacturers for this use.
    a. Color: Matching structural sealant.

5. ACCESSORY MATERIALS
    A. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Division 07 Section "Joint Sealants."
    B. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30 mil (0.762 mm) thickness per coat.
6. FABRICATION
    A. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
        1. Profiles that are sharp, straight, and free of defects or deformations.
        2. Accurately fit joints; make joints flush, hairline and weatherproof.
        3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
        4. Physical and thermal isolation of glazing from framing members.
        5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
        6. Provisions for field replacement of glazing.
        7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
    B. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
    C. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.
    D. Storefront Framing: Fabricate components for assembly using manufactures standard installation instructions.
    E. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.
7. ALUMINUM FINISHES
    A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
    B. Factory Finishing:
        1. Kawneer Permanodic® AA-M12C22A44, AAMA 611, Architectural Class I Color Anodic Coating (**Dark Bronze**).
8. EXAMINATION
    A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of sill plate and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather tight framed aluminum storefront system installation.
        1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
        2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches (76 mm) of opening.
        3. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
        4. Proceed with installation only after unsatisfactory conditions have been corrected.
9. INSTALLATION
    A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing aluminum framed storefront system, accessories, and other components.
    B. Install aluminum framed storefront system level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
    C. Set sill members in bed of sealant or with gaskets, as indicated, for weather tight construction.
    D. Install aluminum framed storefront system and components to drain condensation, water penetrating joints, and moisture migrating within sliding door to the exterior.
    E. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
10. ADJUSTING, CLEANING, AND PROTECTION
    A. Clean aluminum surfaces immediately after installing aluminum framed storefronts. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
    B. Clean glass immediately after installation. Comply with glass manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.
    C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

END OF SECTION

SECTION 08 50 00 - VINYL WINDOWS

PART 1 - GENERAL
1. It is the intent of this section to establish minimum standards for the fabrication and installation of the vinyl windows. Aluminum windows with equal performance will be accepted with prior approval. Reference the drawings for the locations, sizes, and details of all products specified in this section.
2. It is the intent that all installed products shall be weather and water tight.
3. Applicable provisions of the ADA shall be incorporated into the fabrication and installation of the various elements.
4. All windows shall be provided with screens on the active side.
5. Horizontal load on the assembly shall be 24 pounds per square foot unless local code requires a higher loading. The fabricator shall add internal structural reinforcing sections as required to ensure the structural adequacy of the assembly.

PART 2 - PRODUCTS
1. Double hung and fixed exterior windows shall be double hung style, color per Exterior Color Schedule, and equal to Silverline 3900 series vinyl window. All windows shall have a tilt sash, interlock at sash meeting rails, tilt-in sashes, stainless steel constant force balances, and dual vent locks.
2. Glazing (DSB) shall carry a five year warranty against obstruction of vision due to seal failure (other than breakage). Glass shall be 7/8" tempered, low "e" double glazing, Unit shall have a "U" factor of .35 or lower, and a SHGC of .40 or lower. *** **ALL GLAZING MUST BE TEMPERED.** ***
3. All windows shall have a tilt sash, interlock at sash meeting rails, tilt-in sashes, stainless steel constant force balances, and dual vent locks. All windows shall have removable blocks added to prevent the bottom sash from moving.
4. Screens shall be manufacturer's aluminum screen.
5. Framing members provided under this section shall meet or exceed the following performance requirements:
    A. Air Infiltration not to exceed .14 CFM per square foot when tested in accordance with AAMA 101 - DP H-R30.
    B. No water shall pass the interior frame of the system when tested in accordance with ASTM E-331 at a test pressure of 5.25 PSF.
    C. When tested in accordance with ASTM E-330, the maximum stress shall not exceed 45 PSI and the maximum deflection of any member shall not exceed 1/175 of its span. When the load is removed there shall be no evidence of any permanent deformation or damage.

PART 3 - EXECUTION
1. Windows shall be installed, glazed and adjusted by experienced tradesmen in accordance with the manufacturer's printed instructions. After installation the contractor shall adjust all elements for proper operation. Protect all exposed portions from damage by other trades.
2. Members shall be accurately fitted and mechanically attached by means of screws and other fasteners which for the most part shall be concealed; exposed fasteners shall match the finish of the vinyl/aluminum members.
3. Screws, bolts, and other fasteners shall be firmly seated forming connections that are free of voids, gaps, and cracks that will allow water to pass.
4. Vertical elements shall be plumb, straight, and square.
5. Prior to erection the installer shall verify the opening provided is adequate to support the assembly.
6. Intersections with other work and materials shall be made neatly, with even joints. All vinyl to masonry shall be sealed with Dymeric sealant, tooled and compressed complete with backer rod. The color shall match that of the exposed aluminum.
7. All ferrous metals, including galvanized iron, shall be separated from the frame with a bond breaker.
8. Protect all exposed vinyl from damage at all times, including masonry cleaning solutions and other chemicals.

END OF SECTION

SECTION 08 70 00 - FINISH HARDWARE

PART 1 - GENERAL
1. It is the intent of this section to establish minimum standards for the fabrication and installation of the finish hardware. Reference the drawings for the location of all products scheduled.
2. It is the intent of this section for all operable doors to have finish hardware. Any door not having hardware specifically called for shall be fitted with finish hardware based on similar doors with similar functions.
3. The Owner desires all cores on all buildings be of the same manufacturer and specification; therefore, no substitutions will be allowed.
4. All labeled hardware shall conform to U.L. specifications. NFPA #80 Pamphlet shall be the guide for fire and safety.
5. The Contractor's finish hardware supplier shall prepare a final finish hardware schedule for review by the Architect before any hardware is ordered.
6. Hardware templates shall be transmitted to the Aluminum Door, Hollow Metal, Wood Door, and other related suppliers.
7. All locations shall be verified and coordinated by the Hardware Supplier before fabrication.
8. Unless otherwise directed, hardware shall be mounted per specifications, or the hardware manufacturer's standards. Accessible door hardware shall be installed in conformance with ADA regulations. It is the intent to have all hardware usable by the children to be installed low enough so small children can operate doors in normal and emergency situations. All door operating hardware to be mounted at 3'-2" A.F.F. unless noted otherwise.
9. Each hardware item shall be packaged separately with all screws, wrenches, templates, and instructions. Mark with door number to which each piece belongs.

PART 2 - PRODUCTS
1. The numbers used in the schedule are of the following manufacturers:
2. All cylinder locks shall be removable core. Provide construction cores for all exterior doors.
    A. Provide 4 "Do Not Duplicate" master keys and 6 copies of all other keys to the Owner upon completion of the project. Door locks shall be keyed per the direction of the Architect.
3. Closers shall have backcheck device and installed parallel mount on the push side of all doors.
4. Hardware shall comply with the requirements of state and local codes.

PART 3 - EXECUTION
1. All hardware shall be carefully fitted, secured, and adjusted by skilled mechanics in accordance with the manufacturer's instructions. Damage to surrounding surfaces shall be repaired to completely conceal the damage and/or replaced at the direction of the Architect.
2. All doors shall operate without binding of any type and shall return to a smooth even fit with the surface of the door equal distant from the sides and faces of the frame. Closers shall gently return all doors to the closed position with latches fully engaged. Labeled hardware shall have the labels and other operating portions masked off before painting commences, remove after painting is complete.
3. All hollow metal frames for doors shall have three rubber silencers in the strike jamb. Fire rated doors shall have smoke seals.
4. Thresholds, regardless of location, shall be set in a full bed of silicone.
5. Adjust, clean and oil all hardware before final inspection.

END OF SECTION

SECTION 08 80 00 - GLAZING

PART 1 - GENERAL
1. It is the intent of this section to establish minimum standards for the manufacturer and installation of glass and glazing.
2. All glass products shall comply with State and Federal safety regulations and shall be in compliance with child care licensing regulations for the area.
3. Vertical exterior glass shall be designed to sustain 24 PSF wind loads without failure.
4. Reference drawings for locations and sizes of all glass panels.
5. The glass installer shall be responsible and shall verify all glass sizes, dimensions, and framed openings.
6. Where there is an exterior and interior surface orientation to be maintained, the piece shall have a label on the exterior surface indicating this side out.
7. All glass products shall be cleaned of all dust, dirt, and surface contaminates prior to punch list. Both sides of all glass shall be cleaned at all locations.
8. Any glass product that has a crack, internal/external flaw, chips, holes, voids, or other surface damage shall be replaced at no cost to the Owner.
9. Glass products shall be protected from the work of adjacent trades. Protect glass from masonry cleaning solutions and all paint.
10. It is the intent of this section that all glass and glazing be water and weather tight in all wind loading and moisture situations.
11. All glass shall be from the same manufacturer to insure consistent color and transparency.

PART 2 - PRODUCTS
1. All glass products shall be PPG, Pittsburgh Plate Glass Company or approved equal. All glass to be float glass. Glass shall be manufactured to meet Federal Specification DD- G-45ld and ANSI Z97.1.
2. All glass in the center shall be safety tempered or laminated. *** **ALL GLAZING SHALL BE TEMPERED.** ***
3. See Section 08 4110 for aluminum storefront glazing.
4. Interior Glazing shall be 1/4" tempered or laminated, clear. Laminated safety glass shall be one-quarter (1/4) inch thick clear laminated glass equal to that manufactured by Hordis Brothers, Inc.
5. Mirrors shall be 1/4" polished plate mirror quality with concealed fasteners. Size shall be 24"x36" unless noted otherwise on plans.
6. All glazing in fire rated doors or walls shall be 1/4" wire glass, equal to that manufactured by Hordis Brothers, Inc., in U.L. listed pre-finished metal frames.
7. Glazing Compound for Hollow Metal Frames: Pecora "M-242", Dow Corning "795" or equal.
8. Reference Section 08 20 00 for requirements of Aluminum Door and Frame glazing and installation.

PART 3 - EXECUTION
1. All glass shall be set atop setting blocks of resilient rubber with a minimum 5/8" bite on all glass and proper tolerance for glass and aluminum expansion in the vertical and horizontal directions.
2. All pressure plates and covers shall be installed to produce an even pressure with distortion free images.
3. All aluminum to glass sealants shall be silicone based. All aluminum to masonry sealants shall be two part Dymeric to match adjacent aluminum.
4. All glass products shall have temporary markings and symbols on one or both sides to clearly indicate the opening has been glazed with a glass product. Specifically doors, sidelights and glass at normal walking levels and pathways shall be marked. Remove all markings prior to final punchlist.

END OF SECTION

SECTION 09 25 00 - GYPSUM WALLBOARD

PART 1 - GENERAL
1. It is the intent of this section to establish the minimum standards for the installation and manufacture of Drywall.
2. All the drywall shall be provided, hung, taped, sanded and ready for painting, vinyl covering, and related finishes. Drywall above the ceiling line is required to be properly taped.
3. Draftstops shall be installed in the attic area as shown on drawings. Draftstops shall be standard type drywall and require fire taping only, no finish sanding is required.
4. Material systems specified are those of United States Gypsum Company (USG) and shall establish a standard of quality. Johns-Manville and Bestwall Gypsum Company are acceptable alternates; however, all products must meet or exceed the minimum standard of quality.
5. Coordinate work with other trades, especially electrical and mechanical, for location of accessories in drywall construction. At a minimum, mark all studs on the subfloor with a permanent black marker. Also, mark locations of pipes hidden in walls. Spray paint a red circle below every electrical box to be covered with drywall.
6. Temperatures in the building shall be maintained within the range of 55 degrees F. to 95 degrees F. Adequate ventilation shall be provided to eliminate excess moisture within the building during this same period.

PART 2 - PRODUCTS
1. Interior Partitions:
    A. Wallboard: As shown on Drawings, shall be ASTM C36 Regular (Type III, Grade R, Class I) or Fire-Rated (Type III, Grade X, Class I) wallboard as indicated with thickness to be five-eighths (5/8) inch and width to be forty-eight (48) inches.
    B. Use 5/8" Water Resistant (W/R) type wallboard ASTM C630 as a 4' wainscot in all toilet rooms, utility rooms, and kitchen.
    C. Ceilings: As shown on drawings, shall be ASTM C36 drywall with thickness to be five-eighths (5/8) inch, (Type III, Grade R, Class I).
2. Fastening System: Nails or screws per manufacturer's specifications. Nails in accordance with ASTM C514 and steel screws in accordance with ASTM C954 and C1002.
3. Trim Accessories:
    A. All external corners to be reinforced with U.S. Gypsum Dur-A-Bead No. 103, single length.
    B. Metal Trim: U.S. Gypsum, 200-A U-shaped channel.
4. Joint Tape and Joint Compound: Use the three (3) coat finishing method. Drywall shall be left ready to paint. Use Durabond 90 Joint Compound and Perf-A-Tape Joint Reinforcing tape in accordance with ASTM C474 anb C475. Exterior applications require a water resistant joint treatment and galvanized accessories.

PART 3 - EXECUTION
1. Electrical and mechanical piping, equipment, fixtures, cabinets, and miscellaneous accessories shall be enclosed in partitions. Contractor shall coordinate with other trades to install partitions of the required thickness to enclose work.
2. Cut all board accurately. Apply the long dimension parallel and over framing members. Joints shall be staggered. Position all end joints over stud. Stagger joints at multiple layer applications.
3. Walls shall be screwed a minimum of 8" o.c. on edges on framing members and 12"o.c. in the field of the board.
4. Ceilings shall be screwed 6" o.c. on edges supported by framing members and 8" o.c. in the field of the board. Furring channels shall be spaced 24"o.c. maximum. Furring channels shall be attached to the bottom chord of the truss with two 16d nails and two 1.5" long sheet metal crews.
5. Coordinate the application of drywall with other trades for the installation of their work, in particular wood blocking for the attachment of shelves, door stops, fixtures, etc.
6. All vertical and horizontal outside corners shall be reinforced with #900 corner bead fastened with staples not more than 6"o.c. at both flanges along the entire length of the bead.
7. When drywall terminates at masonry or other dissimilar materials, apply a USG Metal 200-A fastened at the perforated side at 6"o.c. with staples spaced 6"o.c. The trim shall firmly abut the dissimilar material forming a neat joint.
8. Perf-A-Tape Joint System shall cover all metal trim, face board joints, fastenings, and any defect. Tape shall be applied over the full length of all joints, but shall not overlap at intersections. At wall-ceiling intersections, and interior wall and partition corners, tape shall be folded and installed as above, working from top to bottom. All interior corners shall have tape positioned to bridge the joint. Taping shall be done in a three step application, final coat to be feathered out to a total width of not less than 12" at tapered joints, and 18" at butt joints. Sand smooth and leave ready for painting or coating, take care not to roughen paper surface.
9. Fill and finish all depressions around nail and screw heads.
10. Lightly mop all walls to be painted after final sanding.
11. At the completion of all drywall work, all joint compound shall be cleaned from beads, screeds, metal base and trim, leaving work ready for decoration by others. All drywall mud and trash shall be removed from building, leaving floors broom clean.

END OF SECTION

SECTION 09310 - CERAMIC TILE

PART 1 - GENERAL
1. The extent of the ceramic tile work is indicated on the plans and schedules.
2. Provide materials from one source for each type of tile.
3. Provide tile as specified. If unable to find specified tile provide Architect with a full size sample of tile.
4. Installer shall examine the substrate and the conditions under which the tile is to be installed. Notify the General Contractor in writing of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

PART 2 - PRODUCTS
1. Ceramic tile shall as specified on plans.
2. All floor tile shall have a skid inhibiting surface.
3. Trim pieces shall be as required for a complete, continuously coved installation, of same material, size, color, and finish of field tile.
4. At all transitions to vinyl, vinyl tile, carpet or other floor surfaces, provide a marble threshold located directly under the door unit. Shall be sound group "A", white.
5. Mortar shall be dryset presanded portland cement and additives complying with ANSI A118.3.
6. Grout shall be latex portland cement as specified on Interior Finish Schedule.
7. Sealant shall be urethane multi-part equal to Sumitseal SL 99.

PART 3 - EXECUTION
1. Comply with ANSI standard installation specifications A108.1 through A108.7 except as otherwise indicated. Maintain minimum temperature levels as recommended by material manufacturers.
2. Extend all tile work into recesses and under equipment and fixtures to form a complete covering without interruptions, except as otherwise shown. Terminate work neatly at obstructions, edges and corners without disruption of pattern or joint alignment.
3. Comply with the manufacturer's instructions for mixing and installation of proprietary materials.
4. Neutralize and seal substrates in accordance with mortar and adhesive manufacturer's instructions.
5. Use organic adhesive only on clean, smooth drywall walls.
6. Unless shown otherwise, lay tile in a neat grid pattern. Align joints when adjoining tiles on floor, base, walls, and trim are the same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless shown otherwise.
7. Apply sealer to tile surface and grrouted joints after installation.
7. Seal the top edge of all coved tile base with GE Silicone #1702 or approved equal.
8. Leave finished installation free of cracked, chipped, broken, unbonded or otherwise defective work. Protect all floor tile installations with Kraft paper or other heavy covering during construction period to prevent staining or damage. No foot or wheel traffic permitted on floor for at least seven (7) days after grouting. Clean as necessary for final inspection

END OF SECTION

SECTION 09 51 00 - ACOUSTICAL CEILING (NON FIRE RATED)

PART 1 - GENERAL
1. Provide lay-in ceilings and suspension system as shown on the drawings and as specified herein.
2. When acoustical tile ceilings are shown on Drawings, suspension system and lay-in panels shall be 2 x 2' exposed grid type and conform to ASTM C635 with finish of exposed metal to be white.
3. Suspension system shall be installed as shown on drawings to allow for grid to align with trusses above and for lighting and diffusers to be placed as shown on the drawings.
4. The manufacturer and installer shall guarantee the acoustic board to be stable and not to sag.
5. Maintain a minimum temperature of 55 degrees F. prior to the installation of materials.

PART 2 - PRODUCTS
1. Where acoustical tile ceilings are shown on Drawings, suspension system and panels shall be installed to provide Class A Flame spread.
2. Acoustical ceiling boards shall be as specified on drawings. Provide miscellaneous sizes and shapes as shown on drawings.
3. In lieu of drywall ceilings, the contractor may at his option, provide a Marlite or Glasboard lay in ceiling with hold down clips. It shall be the Contractor's responsibility to receive approval of the local health department for the change.
4. Structural class of the suspension system shall be intermediate duty.
5. Hanger wire shall be not less than 12 gauge galvanized steel.
6. Carrying channels shall be not less than 1-1/2" cold rolled steel with white baked enamel finish. In humid, coastal climates, provide aluminum materials with same structural properties.

PART 3 - EXECUTION
1. Lay out in accordance with plan. Install in accordance with ASTM C-636 and manufacturer's instructions. A tolerance of greater than 1/8" in 12 feet will be allowed.
2. Secure edge mouldings to substrate with screw anchors 16"o.c. set in full be of white sealant. Miter corner joints. Butt running joints and clip so that finished bottom surface will be in same plane and not overlapped.
3. Intermediate suspension members that touch the edge moulding shall be cut so that the bottom flange of the member is in the same plane and a tight fit with the edge moulding. The vertical flange of the member shall rest on the edge member. It is imperative the entire suspension system exposed to view is in the same plane so the ceiling board will lay perfectly flat, without gaps between the grid and ceiling boards. Provide additional hangers at lay-in light fixtures. Wrap wire a minimum of three time horizontally, turning ends upward.
4. Ceiling penetrations shall be made by the ceiling contractor, but with the full cooperation of other trades.

END OF SECTION

SECTION 09 65 19 - LUXURY VINYL TILE FLOORING

PART 1 - GENERAL
1. SUMMARY
    A. Section Includes:
        1. Flooring and accessories as shown on the drawings and schedules and as indicated by the requirements of this section.
2. RELATED REQUIREMENTS:
    A. DOCUMENTS:
        1. Drawings and General Provisions of the Contract (including General and Supplementary Conditions and Division 1 sections) apply to the work of this section.
    B. REFERENCE STANDARDS:
        1. ASTM International:
            a. ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
            b. ASTM E 662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
            c. ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
            d. ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring
            e. ASTM F 1700 Standard Specification for Solid Vinyl Tile
            f. ASTM F 1861 Standard Specification for Resilient Wall Base
            g. ASTM F 1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
            h. ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes
        2. National Fire Protection Association (NFPA):
            a. NFPA 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
            b. NFPA 258 Standard Test Method for Measuring the Smoke Generated by Solid Materials
        3. Standards Council of Canada
            a. CAN/ULC-S102.2 Standard Test Method for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies
        4. Armstrong Flooring Technical Manuals
            a. Armstrong Flooring Guaranteed Installation Systems manual, F-5061
            b. Armstrong Flooring Maintenance Recommendations and Procedures, manual, F-8663.
    C. SYSTEM DESCRIPTION
        1. Performance Requirements: Provide flooring which has been manufactured, fabricated and installed to performance criteria certified by manufacturer without defects, damage, or failure.
        2. Administrative Requirements
            a. Pre-installation Meeting: Conduct an on-site pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.
            b. Pre-installation Testing: Conduct pre-installation testing as follows: [Specify testing (i.e. moisture tests, bond test, pH test, etc).]
        3. Sequencing and Scheduling
            a. Install flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during the installation of the flooring.
            b. Do not install flooring over concrete slabs until they are sufficiently dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond, moisture tests and pH test.
3. SUBMITTALS:
    A. Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions (latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F-5061. for flooring and accessories.
    B. Submit the manufacturer's standard samples showing the required colors for flooring and applicable accessories.
    C. Submit Safety Data Sheets (SDS) available for flooring product, adhesives, patching/leveling compounds, floor finishes and cleaning agents.
    D. If required, submit the manufacturer's certification that the flooring has been tested by an independent laboratory and complies with the required fire tests.
    E. Closeout Submittals: Submit the following:
        1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.
        2. Warranty: Warranty documents specified herein
4. QUALITY ASSURANCE
    A. Single-Source Responsibility: provide types of flooring and accessories supplied by one manufacturer, including leveling and patching compounds, and adhesives.
    B. Select an installer who is competent in the installation of Armstrong resilient solid vinyl tile flooring.
        1. Engage installers certified as Armstrong Commercial Flooring Certified Installers
        2. Confirm installer's certification by requesting their credentials
    C. Fire Performance Characteristics: Provide resilient tile flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:
        1. ASTM E 648 (NFPA 253) Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I
        2. ASTM E 662 (NFPA 258) (Smoke Generation) Maximum Specific Optical Density of 450 or less
        3. CAN/ULC-S102.2 - Flame Spread Rating and Smoke Developed - Results as tested
5. DELIVERY, STORAGE AND HANDLING
    A. Comply with Division 1 Product Requirements Sections
    B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
    C. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.
    D. Store materials in a clean, dry, enclosed space off the ground, protected from harmful weather conditions and at temperature and humidity conditions recommended by the manufacturer. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.
6. PROJECT CONDITIONS
    A. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65ºF (18ºC) and a maximum temperature of [100ºF (38ºC)][85ºF (29ºC)] for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55ºF (13ºC) in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances. Refer to the Armstrong Flooring Guaranteed Installations Systems manual, F-5061 for a complete guide on project conditions.
7. LIMITED WARRANTY
    A. Resilient Flooring: Submit a written warranty executed by the manufacturer, agreeing to repair or replace resilient flooring that fails within the warranty period.
    B. Limited Warranty Period: 20 years for Natural Creations.
    C. The Limited Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.
    D. For the Limited Warranty to be valid, this product is required to be installed using the appropriate Armstrong Flooring Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.
8. MAINTENANCE
    A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials from same production run as products installed. Packaged with protective covering for storage and identified with appropriate labels.
        1. Quantity: Furnish quantity of flooring units equal to 5% of amount installed.
        2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra material.

PART 2 - PRODUCTS
1. MANUFACTURER
    A. Resilient tile flooring, wall base, adhesives and accessories:
        1. Armstrong Flooring Inc., 2500 Columbia Avenue, Lancaster, PA 17604,
        2. Manufacturer must have a headquarters in the United States of America
2. RESILIENT TILE FLOORING MATERIALS
    A. Provide NATURAL CREATIONS®: Rustics Premium Luxury Solid Vinyl Tile.
        1. Description: A layered construction consisting of a tough, clear, vinyl wear layer protecting a high-fidelity print layer on a solid vinyl backing. Protected by a UV-cured polyurethane finish, the wear surface is embossed with different textures to enhance each of the printed visuals. Colors are insoluble in water and resistant to cleaning agents and light.
        2. Luxury Solid Vinyl Tile shall conform to the requirements of ASTM F 1700, "Standard Specification for Solid Vinyl Tile", Class III, Type B - Embossed Surface.
        3. Pattern and Color: As indicated on Finish Schedule.
        4. Size: As indicated on Finish Schedule.
        5. Wear layer thickness: 0.020 (0.5 mm)
        6. Thickness: 1/8 in. 0.125 in. (3.2mm)
3. PRODUCT SUBSTITUTION
    A. Substitutions: No substitutions permitted.
4. ACCESSORIES
    A. For patching, smoothing, and leveling monolithic subfloors (concrete, terrazzo, quarry tile, ceramic tile, and certain metals), provide Armstrong S-194 Cement-Based Patch, Underlayment and Embossing Leveler
    B. For sealing joints between the top of wall base or integral cove cap and irregular wall surfaces such as masonry, provide plastic filler applied according to the manufacturer's recommendations.
    C. Provide transition/reducing strips tapered to meet abutting materials.
    D. Provide threshold of thickness and width as shown on the drawings.
    E. Provide resilient edge strips of width shown on the drawings, of equal gauge to the flooring, homogeneous vinyl or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring, or as selected by the Architect from standard colors available.
    F. Provide metal edge strips of width shown on the drawings and of required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type metal edge strips for concealed anchorage, or overlap-type metal edge strips for exposed anchorage. Unless otherwise shown, provide strips made of extruded aluminum with a mill finish.

PART 3 - EXECUTION
1. MANUFACTURER'S INSTRUCTIONS
    A. Compliance: Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as needed.
2. EXAMINATION
    A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions (i.e. moisture tests, bond test, pH test, etc.).
    B. Visually inspect flooring materials, adhesives and accessories prior to installation. Flooring material with visual defects shall not be installed and shall not be considered as a legitimate claim.
    C. Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.
    D. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.
    E. Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.
    F. Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation.
3. PREPARATION
    A. Subfloor Preparation: Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with Armstrong S-184 Fast-Setting Cement-Based Patch and Underlayment][S-194 Cement-Based Patch, Underlayment and Embossing Leveler / S-195 Underlayment Additive] as recommended by the flooring manufacturer. Refer to Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.
    B. Subfloor Cleaning: The surface shall be free of dust, solvents, varnish, paint, wax, oil, grease, sealers, release agents, curing compounds, residual adhesive, adhesive removers and other foreign materials that might affect the adhesion of resilient flooring to the concrete or cause a discoloration of the flooring from below. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents. Spray paints, permanent markers and other indelible ink markers must not be used to write on the back of the flooring material or used to mark the concrete slab as they could bleed through, telegraphing up to the surface and permanently staining the flooring material. If these contaminants are present on the substrate they must be mechanically removed prior to the installation of the flooring material. Refer to the Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.
    C. When using S-288 Adhesive, perform subfloor moisture testing in accordance with [ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes"] [ASTM F 1869,"Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride"] and Bond Tests as described in publication F-5061, "Armstrong Flooring Guaranteed Installation System," to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. [Internal relative humidity of the concrete shall not exceed 90%.][MVER shall not exceed 5 lbs./1000 sq. ft./24 hrs.] On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained.
    D. When using S-543 Adhesive, perform subfloor moisture testing in accordance with ASTM F 2170, "Standard T est Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes" or ASTM F 1869,"Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" and Bond Tests as described in publication F-5061, "Armstrong Flooring Guaranteed Installation System," to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. [Internal relative humidity of the concrete shall not exceed 90%.] [MVER shall not exceed 7 lbs. /1000 sq. ft. /24 hrs.] On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained].
    E. When using Armstrong Flooring Flip™ Spray Adhesive, perform subfloor moisture testing in accordance with ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes" and Bond Tests as described in publication F-5061, "Armstrong Flooring Guaranteed Installation System," manual to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Internal relative humidity of the concrete shall not exceed 93%. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained.
    F. Concrete pH Testing: Perform pH tests on concrete floors regardless of their age or grade level. All test results shall be documented and retained.
4. INSTALLATION OF FLOORING
    A. Install flooring in strict accordance with the latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F-5061. Failure to comply may result in voiding the manufacturer's warranty listed in Section 1.08.
    B. Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.
    C. If required, install flooring on pan-type floor access covers. Maintain continuity of color and pattern within pieces of flooring installed on these covers. Adhere flooring to the subfloor around covers and to covers.
    D. Scribe, cut, and fit to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets.
    E. Roll with a 100-pound (45.36 kilogram) roller in the field areas. Refer to specific rolling instructions of the flooring manufacturer
    F. Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.
5. INSTALLATION OF ACCESSORIES
    A. Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths as long as practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.
    B. Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.
    C. Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.
    D. Apply [butt-type] [overlap] metal edge strips where shown on the drawings, [before] [after] flooring installation. Secure units to the substrate, complying with the edge strip manufacturer's recommendations.

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