



PROJECT MANUAL
Construction Documents Submittal

Victory Pointe Apartments – Unit 404 Repairs
6750 Ramona Boulevard
Jacksonville, Florida 32205
GLE Project No.: 18000-19651

Prepared for:

Jacksonville Housing Authority
1085 Golfair Boulevard
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Date: October 3, 2018

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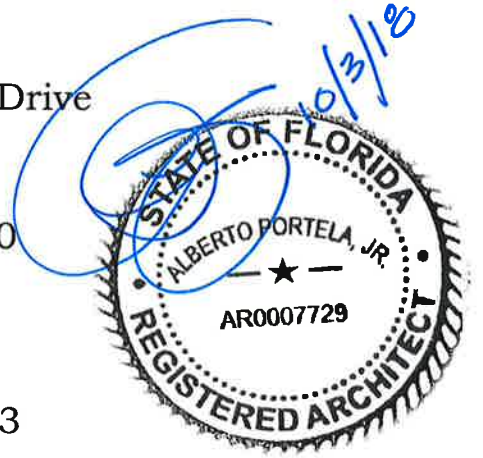
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**SECTION 02 4100
DEMOLITION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of building elements for alteration purposes.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- C. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Site Plan: Showing:
 - 1. Areas for temporary construction and field offices.

END OF SECTION

**SECTION 04 0100
MAINTENANCE OF MASONRY**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Repair of damaged masonry.

1.02 RELATED REQUIREMENTS

- A. Section 04 2000 - Unit Masonry: Brick masonry units.
- B. Section 04 2000 - Unit Masonry: Mortar and grout.

1.03 PRICE AND PAYMENT PROCEDURES

- A. See Section 01 2200 - Unit Prices, for additional unit price requirements.

1.04 REFERENCE STANDARDS

- A. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2016.

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week prior to commencing work of this section.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Samples: Submit four samples of decorative block, face brick, and stone units to illustrate matching color, texture and extremes of color range.

1.07 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of the contract documents.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry neatly stacked and tied on pallets. Store clear of ground with adequate waterproof covering.

1.09 FIELD CONDITIONS

- A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.
- B. Do not blast clean or use process creating dust, dirt, when wind is over 10 mph (16 kph).

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 MORTAR MATERIALS

- A. Conform to requirements of Section 04 0511.

2.03 MASONRY MATERIALS

- A. Brick: Section 04 2000.

PART 3 EXECUTION

3.01 EXAMINATION

3.02 PREPARATION

- A. Separate areas to be protected from restoration areas using means adequate to prevent damage.
- B. Cover existing landscaping with tarpaulins or similar covers.
- C. Mask immediately adjacent surfaces with material that will withstand cleaning and restoration procedures.

- D. Close off adjacent occupied areas with dust proof and weatherproof partitions.
- E. Protect roof membrane and flashings from damage with 1/2 inch (13 mm) plywood laid on roof surfaces over full extent of work area and traffic route.

3.03 REBUILDING

- A. Cut out damaged and deteriorated masonry with care in a manner to prevent damage to any adjacent remaining materials.
- B. Support structure as necessary in advance of cutting out units.
- C. Cut away loose or unsound adjoining masonry as directed.
- D. Build in new units following procedures for new work specified in other section(s).
- E. Mortar Mix: Colored and proportioned to match existing work.
- F. Ensure that anchors are correctly located and built in.
- G. Install built in masonry work to match and align with existing, with joints and coursing true and level, faces plumb and in line. Build in all openings, accessories and fittings.

END OF SECTION

SECTION 04 2000
UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Common Brick.
- B. Mortar and Grout.
- C. Reinforcement and Anchorage.
- D. Flashings.
- E. Lintels.
- F. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 04 0100 - Maintenance of Masonry.
- B. Section 04 0511 - Mortar and Masonry Grout.
- C. Section 06 1000 - Rough Carpentry: Nailing strips built into masonry.
- D. Section 07 2100 - Thermal Insulation: Insulation for cavity spaces.
- E. Section 07 9200 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

- A. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2016.
- B. ASTM A580/A580M - Standard Specification for Stainless Steel Wire; 2016.
- C. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale); 2017.
- D. ASTM C67 - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile; 2017.
- E. ASTM C150/C150M - Standard Specification for Portland Cement; 2018.
- F. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2014a.
- G. ASTM C476 - Standard Specification for Grout for Masonry; 2018.
- H. ASTM E11 - Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves; 2017.
- I. BIA Technical Notes No. 46 - Maintenance of Brick Masonry; 2017.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.
- D. Manufacturer's Certificate: Certify that water repellent admixture manufacturer has certified masonry unit manufacturer as an approved user of water repellent admixture in the manufacture of concrete block.
- E. Test Reports: Concrete masonry manufacturer's test reports for units with integral water repellent admixture.

1.05 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of the contract documents.

- B. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.
- C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 MOCK-UP

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

2.02 BRICK UNITS

- A. Manufacturers:
 - 1. Belden Brick; Belcrest: www.beldenbrick.com.
 - 2. Boral Bricks, Inc; _____: www.boralbricks.com.
 - 3. Endicott Clay Products Co; _____: www.endicott.com.
 - 4. General Shale Brick; _____: www.generalshale.com.
 - 5. Substitutions: See section 01 6000 - Product Requirements.
- B. Building (Common) Brick: ASTM C62, Grade SW; solid units.
 - 1. Nominal size: As indicated on drawings.

2.03 MORTAR AND GROUT MATERIALS

- A. Mortar and Grout: As specified in Section 04 0511.

2.04 REINFORCEMENT AND ANCHORAGE

- A. Single Wythe Joint Reinforcement: Truss or ladder type; ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M, Class 3; 0.1483 inch (3.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage on each exposure.
- B. Wall Ties: Corrugated formed sheet metal, 7/8 inch (22 mm) wide by 0.05 inch (1.22 mm) thick, hot dip galvanized to ASTM A 153/A 153M, Class B, sized to provide not more than 1 inch (25 mm) and not less than 1 inch (25 mm) of mortar coverage from masonry face.

2.05 FLASHINGS

- A. Plastic Flashings: Sheet polyolefin laminated to polypropylene; 40 mil (1mm) thick.
 - 1. Manufacturers:
 - a. Hohmann & Barnard, Inc; Textroflash: www.h-b.com/sle.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Prefabricated Metal Flashing: Smooth fabricated 12 oz/sq ft (3.66 kg/sq m) copper flashing for surface mounted conditions.
 - 1. Manufacturers:
 - a. Hohmann & Barnard, Inc; ____: www.h-b.com/sle.

2.06 ACCESSORIES

- A. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.
 - 1. Manufacturers:
 - a. Hohmann & Barnard, Inc; _____: www.h-b.com/sle.
 - b. WIRE-BOND: www.wirebond.com.
- B. Termination Bars: Stainless steel; compatible with membrane and adhesives.
- C. Drip Edge: Stainless steel; compatible with membrane and adhesives.
- D. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

- E. Weeps:
 - 1. Type: Polyester mesh.
 - 2. Manufacturers:
 - a. Blok-Lok Limited; _____: www.blok-lok.com.
 - b. CavClear/Archovations, Inc: www.cavclear.com.
 - c. Mortar Net Solutions; _____: www.mortarnet.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- F. Termite-Excluding Weep and Vent:
 - 1. Type: Polytetrafluoroethylene (PTFE) vent body with stainless-steel mesh closure.
 - 2. Stainless Steel Mesh: ASTM E11 ; opening size 0.018 inch (0.44 mm), maximum.
 - 3. Products:
 - a. Polyguard Barrier Systems, Inc, a division of Polyguard Products, Inc; TERM Weep and Vent Barrier: www.polyguardbarriers.com/#sle.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

- A. Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

3.04 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches (200 mm).
 - 3. Mortar Joints: Concave.
- D. Brick Units:
 - 1. Bond: Running.
 - 2. Coursing: Three units and three mortar joints to equal 8 inches (200 mm).
 - 3. Mortar Joints: Concave.

3.05 PLACING AND BONDING

- A. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- B. Remove excess mortar and mortar smears as work progresses.
- C. Remove excess mortar with water repellent admixture promptly. Do not use acids, sandblasting or high pressure cleaning methods.
- D. Interlock intersections and external corners, except for units laid in stack bond.

- E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- F. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- G. Cut mortar joints flush where wall tile is scheduled or resilient base is scheduled.
- H. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.

3.06 WEEPS/CAVITY VENTS

- A. Install weeps in veneer and cavity walls at 24 inches (600 mm) on center horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls.

3.07 REINFORCEMENT AND ANCHORAGE - GENERAL

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches (400 mm) on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches (150 mm).
- E. Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches (400 mm) on center.

3.08 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Install horizontal joint reinforcement 16 inches (400 mm) on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches (150 mm).

3.09 MASONRY FLASHINGS

- A. Extend metal flashings to within 1/4 inch (6 mm) of exterior face of masonry.

END OF SECTION

SECTION 06 1000
ROUGH CARPENTRY

PART 2 PRODUCTS

1.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. Species: Douglas Fir-Larch, unless otherwise indicated.
 - 2. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
 - 3. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
 - 4. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.
- B. Lumber fabricated from old growth timber is not permitted.
- C. Provide wood harvested within a 500 mile (805 km) radius of the project site.

1.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16 (50 by 150 mm through 100 by 400 mm)):
 - 1. Species: Douglas Fir-Larch.
 - 2. Grade: No. 1 & Btr.
- D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No. 2 or Standard Grade.
 - 2. Boards: Standard or No. 3.

1.03 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
- B. Termite-Resistant Sill Plate Barrier: Self-adhesive, film-backed barrier with release sheet; adheres to concrete substrates and blocks termite access.
 - 1. Thickness: 68 mils (0.068 inch) (1.7 mm).
 - 2. Termite Resistance: 100 percent when tested in accordance with ICC-ES AC380.

PART 3 EXECUTION

2.01 PREPARATION

2.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

2.03 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

2.04 TOLERANCES

- A. Framing Members: 1/4 inch (6 mm) from true position, maximum.
- B. Surface Flatness of Floor: 1/8 inch in 10 feet (1 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.
- C. Variation from Plane (Other than Floors): 1/4 inch in 10 feet (2 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.

2.05 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.

END OF SECTION

SECTION 06 4100
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Specially fabricated unit for Council Chambers
- B. Hardware.

1.02 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014, with Errata (2016).
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1; 2016, with Errata (2017).

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
- C. Samples: Submit actual samples of architectural cabinet construction, minimum 12 inches (300 mm) square, illustrating proposed cabinet, countertop, and shelf unit substrate and finish.
- D. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.

1.04 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1.05 MOCK-UP

- A. Provide mock-up of typical base cabinet, wall cabinet, and countertop, including hardware, finishes, and plumbing accessories.

PART 2 PRODUCTS

2.01 CABINETS

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Wood Cabinets. Refer to drawings for HUB Millwork requirements

2.02 COUNTERTOPS

- A. Countertops are specified in Section 12 3600.
- B. Plastic Laminate Countertops: Medium density fiberboard substrate covered with HPDL, conventionally fabricated and self-edge banded.

2.03 HARDWARE

- A. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards and coordinated self rests, polished chrome finish, for nominal 1 inch (25 mm) spacing adjustments.
- B. Hinges: European style concealed self-closing type, steel with polished finish.

2.04 FABRICATION

- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- C. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

- A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

3.03 ADJUSTING

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 07 2100
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board insulation and integral vapor retarder at perimeter foundation wall and exterior wall behind _____ wall finish.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 06 0573 - Wood Treatment: Field-applied termiticide for wood.
- C. Section 06 1000 - Rough Carpentry: Supporting construction for batt insulation.
- D. Section 07 2400 - Exterior Insulation and Finish Systems: Board insulation on exterior side of walls, finished with weatherproof coating.
- E. Section 07 2500 - Weather Barriers: Separate air barrier and vapor retarder materials.

1.03 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2017a.
- B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2017.
- C. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2017.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2018.
- E. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2016a.
- F. ICC-ES AC239 - Acceptance Criteria for Termite-Resistant Foam Plastic; 2008, with Editorial Revision (2014).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.
- C. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection required by ABAA QAP.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.
- F. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.
- G. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification. Keep copies of contractor accreditation and installer certification on site during and after installation. Present on-site documentation upon request.

1.05 QUALITY ASSURANCE

- A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); www.airbarrier.org/#sle:

1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.
2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.

1.06 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Thermal Insulation:
 1. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FOAM BOARD INSULATION MATERIALS

- A. Termite-Resistant Expanded Polystyrene (EPS) Board Insulation: Complies with ASTM C578.
 1. Termite Resistance: Comply with ICC-ES AC239.
 2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 4. Board Size: 48 inch by 96 inch (1220 mm by 2440 mm).
 5. Board Thickness: 2-1/2 inch (63.5 mm).
 6. Thermal Resistance: R-value (RSI-value) of 11 (1.94), for overall thickness indicated.
 7. Board Edges: Square.

2.03 BATT INSULATION MATERIALS

- A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.
- B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
 1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
 4. Formaldehyde Content: Zero.
 5. Thickness: 3-1/2 inch (___ mm)
 6. Manufacturers:
 - a. CertainTeed Corporation; _____: www.certainteed.com.
 - b. Johns Manville; _____: www.jm.com.
 - c. Owens Corning Corporation; EcoTouch PINK FIBERGLAS Insulation: www.ocbuildingspec.com/#sle.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- C. Mineral Fiber Batt Insulation: Flexible or semi-rigid preformed batt or blanket, complying with ASTM C665; friction fit; unfaced flame spread index of 0 (zero) when tested in accordance with ASTM E84.
 1. Smoke Developed Index: 0 (zero), when tested in accordance with ASTM E84.

2.04 ACCESSORIES

- A. Sheet Vapor Retarder: Specified in Section 07 2500.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

- A. Adhere a 6 inch (150 mm) wide strip of polyethylene sheet over construction, control, and expansion joints with double beads of adhesive each side of joint.
 - 1. Tape seal joints.
 - 2. Extend sheet full height of joint.
- B. Install boards horizontally on foundation perimeter.
 - 1. Place boards to maximize adhesive contact.
 - 2. Install in running bond pattern.
 - 3. Butt edges and ends tightly to adjacent boards and to protrusions.
- C. Extend boards over expansion joints, unbonded to foundation on one side of joint.
- D. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- E. Immediately following application of board insulation, place protective boards over exposed insulation surfaces.

3.03 BOARD INSTALLATION AT EXTERIOR WALLS

- A. Adhere a 6 inch (150 mm) wide strip of polyethylene sheet over expansion joints with double beads of adhesive each side of joint.
 - 1. Tape seal joints between sheets.
 - 2. Extend sheet full height of joint.
- B. Install boards horizontally on walls.
 - 1. Place boards to maximize adhesive contact.
 - 2. Install in running bond pattern.
 - 3. Butt edges and ends tightly to adjacent boards and to protrusions.
- C. Extend boards over expansion joints, unbonded to wall on one side of joint.
- D. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- E. Place 6 inch (150 mm) wide polyethylene sheet at perimeter of wall openings, from adhesive vapor retarder bed to window and door frames, and tape seal in place to ensure continuity of vapor retarder and air seal.
- F. Tape insulation board joints.

3.04 BATT INSTALLATION

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. At wood framing, place vapor retarder on warm side of insulation by stapling at 6 inches (150 mm) on center. Lap and seal sheet retarder joints over member face.
- F. Tape seal tears or cuts in vapor retarder.

- G. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.
- H. Coordinate work of this section with requirements for vapor retarder specified in Section 07 2500.
- I. Coordinate work of this section with construction of air barrier seal specified in Section 07 2500.

3.05 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 2500
WEATHER BARRIERS

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Sheathing with integral water-resistive and air barrier.

1.02 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ICC-ES AC308 - Acceptance Criteria for Termite Physical Barrier Systems; 2014, with Editorial Revision (2017).

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on material characteristics.
- C. Shop Drawings: Provide drawings of special joint conditions.
- D. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection required by ABAA QAP.
- E. Manufacturer's Installation Instructions: Indicate preparation.
- F. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.
- G. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification; keep copies of each contractor accreditation and installer certification on site during and after installation, and present on-site documentation upon request.
- H. Testing Agency Qualification Statement.

1.04 QUALITY ASSURANCE

- A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); www.airbarrier.org/#sle:
 - 1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.
 - 2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.

1.05 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the materials manufacturers before, during and after installation.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

- A. Air Barrier:
 - 1. On outside surface of sheathing of exterior walls use air barrier coating.

2.02 ACCESSORIES

- A. Sealants, Tapes, and Accessories for Sealing Weather Barrier and Sealing Weather Barrier to Adjacent Substrates: As specified or as recommended by weather barrier manufacturer.
- B. Termite-Resistant Barrier Foundation Flashing: Peel and stick flashing membrane; polyethylene film bonded to sealant.
 - 1. Thickness: 40 mils, 0.040 inch (1 mm) overall.

2. Roll Width: 12 inch (305 mm).
 3. Roll Length: 75 feet (23 m).
 4. Termite Resistance: 100 percent when tested in accordance with ICC-ES AC380.
 5. Manufacturers:
 - a. Substitutions: See Section 01 6000 - Product Requirements.
- C. Termite-Resistant Barrier Seam and Window Flashing: Peel and stick flashing membrane; polyethylene film bonded to sealant.
1. Thickness: 40 mils, 0.040 inch (1 mm) overall.
 2. Roll Width: 4 inch (102 mm).
 3. Roll Length: 75 feet (23 m).
 4. Termite Resistance: 100 percent when tested in accordance with ICC-ES AC380.
 5. Manufacturers:
 - a. Polyguard Barrier Systems, Inc, a division of Polyguard Products, Inc; TERM Seam and Window Barrier: www.polyguardbarriers.com/#sle.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions are ready to accept the work of this section.

3.02 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives in accordance with manufacturer's instructions.

3.03 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Openings and Penetrations in Exterior Weather Barriers:
 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches (125 mm) onto weather barrier and at least 6 inches (150 mm) up jambs; mechanically fasten stretched edges.
 2. At openings to be filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches (100 mm) wide; do not seal sill flange.
 3. At openings to be filled with non-flanged frames, seal weather barrier to each side of opening framing, using flashing at least 9 inches (230 mm) wide, covering entire depth of framing.
 4. At head of openings, install flashing under weather barrier extending at least 2 inches (50 mm) beyond face of jambs; seal weather barrier to flashing.
 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
 6. Service and Other Penetrations: Form flashing around penetrating item and seal to weather barrier surface.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Do not cover installed weather barriers until required inspections have been completed.
- C. Take digital photographs of each portion of the installation prior to covering up.

3.05 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.
- B. Do not leave paper- or felt-based barriers exposed to weather for longer than one week.

END OF SECTION

SECTION 07 9005
JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sealants and joint backing.
- B. Precompressed foam sealers.

1.02 REFERENCE STANDARDS

- A. ASTM C834 - Standard Specification for Latex Sealants; 2017.
- B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2012 (Reapproved 2017).
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
- E. ASTM D1667 - Standard Specification for Flexible Cellular Materials--Poly(Vinyl Chloride) Foam (Closed-Cell); 2005 (Reapproved 2011).

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with other sections referencing this section.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Manufacturer's Installation Instructions: Indicate special procedures.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.06 MOCK-UP

- A. Provide mock-up of sealant joints in conjunction with window under provisions of Section 01 4000.
- B. Construct mock-up with specified sealant types and with other components noted.
- C. Locate where directed.
- D. Mock-up may remain as part of the Work.

1.07 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Preformed Compressible Foam Sealers:
 - 1. EMSEAL Joint Systems, Ltd: www.emseal.com.
 - 2. Sandell Manufacturing Company, Inc: www.sandellmfg.com.
 - 3. Dayton Superior Corporation: www.daytonsuperior.com.
 - 4. Tremco Global Sealants: www.tremcosealants.com.

2.02 SEALANTS

- A. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, Type OP, Grade NF single component, paintable.
 - 1. Color: Match adjacent finished surfaces.
 - 2. Products:
 - a. Pecora Corporation; AC-20 + Silicone Acrylic Latex Caulking Compound: www.pecora.com.
 - b. Sherwin-Williams Company; 850A Acrylic Latex Caulk: www.sherwin-williams.com.
 - c. Tremco Global Sealants: www.tremcosealants.com.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- C. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Install bond breaker where joint backing is not used.
- D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- F. Tool joints concave.

END OF SECTION

SECTION 09 0561

COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This section applies to floors identified in contract documents that are receiving the following types of floor coverings:
 - 1. Resilient tile and sheet.
- B. Removal of existing floor coverings.
- C. Preparation of new and existing concrete floor slabs for installation of floor coverings.
- D. Testing of concrete floor slabs for moisture and alkalinity (pH).
- E. Patching compound.
- F. Preparation of new and existing wood-based floors and subfloors for installation of new floor coverings.

1.02 RELATED REQUIREMENTS

- A. Section 01 2200 - Unit Prices: Bid pricing for remediation treatments if required.

1.03 PRICE AND PAYMENT PROCEDURES

- A. Unit Prices: See Section 01 2200 - Unit Prices.

1.04 REFERENCE STANDARDS

- A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens); 2016a.
- B. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete; 1999 (Reapproved 2014).
- C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2017.
- D. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2016a.
- E. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; 2011.

1.05 SUBMITTALS

- A. Visual Observation Report: For existing floor coverings to be removed.
- B. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
 - 1. Moisture and alkalinity (pH) limits and test methods.
 - 2. Manufacturer's required bond/compatibility test procedure.
- C. Adhesive Bond and Compatibility Test Report.
- D. Copy of RFCI (RWP).

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.
- B. Deliver materials in manufacturer's packaging; include installation instructions.
- C. Keep materials from freezing.

1.07 FIELD CONDITIONS

- A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F (18 degrees C) or more than 85 degrees F (30 degrees C).
- B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
 - 1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
 - 2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
 - 3. Products:
 - a. ARDEX Engineered Cements; ARDEX Feather Finish: www.ardexamericas.com/#sle.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 CONCRETE SLAB PREPARATION

- A. Perform following operations in the order indicated:
 - 1. Existing concrete slabs (on-grade and elevated) with existing floor coverings:
 - a. Visual observation of existing floor covering, for adhesion, water damage, alkaline deposits, and other defects.
 - b. Removal of existing floor covering.
 - 2. Preliminary cleaning.
 - 3. Moisture vapor emission tests; 3 tests in the first 1000 square feet (100 square meters) and one test in each additional 1000 square feet (100 square meters), unless otherwise indicated or required by flooring manufacturer.
 - 4. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
 - 5. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
 - 6. Specified remediation, if required.
 - 7. Patching, smoothing, and leveling, as required.
 - 8. Other preparation specified.
 - 9. Adhesive bond and compatibility test.
 - 10. Protection.
- B. Remediations:
 - 1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.
 - 2. Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of moisture present is available and acceptable to flooring manufacturer, use that adhesive for installation of the flooring; if not, apply remedial floor coating or remedial sheet membrane over entire suspect floor area.
 - 3. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for

installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.

3.02 REMOVAL OF EXISTING FLOOR COVERINGS

- A. Comply with local, State, and federal regulations and recommendations of RFCI Recommended Work Practices for Removal of Resilient Floor Coverings, as applicable to floor covering being removed.
- B. Dispose of removed materials in accordance with local, State, and federal regulations and as specified.

3.03 MOISTURE VAPOR EMISSION TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F1869 and as follows.
- D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet (1.4 kg per 93 square meters) per 24 hours.
- F. Report: Report the information required by the test method.

3.04 ALKALINITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. The following procedure is the equivalent of that described in ASTM F710, repeated here for the Contractor's convenience.
- C. Use a wide range alkalinity (pH) test paper, its associated chart, and distilled or deionized water.
- D. Place several drops of water on a clean surface of concrete, forming a puddle approximately 1 inch (25 mm) in diameter. Allow the puddle to set for approximately 60 seconds, then dip the alkalinity (pH) test paper into the water, remove it, and compare immediately to chart to determine alkalinity (pH) reading.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.05 ADHESIVE BOND AND COMPATIBILITY TESTING

- A. Comply with requirements and recommendations of floor covering manufacturer.

END OF SECTION

SECTION 09 2116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Cementitious backing board.
- C. Gypsum wallboard.
- D. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.
- B. Section 09 3000 - Tiling: Tile backing board.

1.03 REFERENCE STANDARDS

- A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2010 (Reaffirmed 2016).
- B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (Reaffirmed 2016).
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.
- D. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2015.
- E. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2017.
- F. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2017a.
- G. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2016.
- H. ASTM C1288 - Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets; 2017.
- I. ASTM C1325 - Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units; 2017a.
- J. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.
- K. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2016.
- L. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).
- M. ASTM E413 - Classification for Rating Sound Insulation; 2016.
- N. GA-216 - Application and Finishing of Gypsum Panel Products; 2016.
- O. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on gypsum board, accessories, and joint finishing system.
- C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- D. Submittal shall show the composition of the indicated STC rating walls.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. Interior Partitions: Provide completed assemblies with the following characteristics:

2.02 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 - 1. American Gypsum Company: www.americangypsum.com
 - 2. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
 - 3. National Gypsum Company; www.nationalgypsum.com
 - 4. USG Corporation: www.usg.com/#sle.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 3. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
 - 4. Thickness:
 - a. Vertical Surfaces: 5/8 inch (16 mm).
 - b. Ceilings: 1/2 inch (13 mm).
 - c. Finish Level: 4
 - d. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
 - 5. Mold Resistant Paper Faced Products:
 - a. American Gypsum Company; M-Bloc.
 - b. American Gypsum Company; M-Bloc Type X.
 - c. Georgia-Pacific Gypsum; ToughRock Mold-Guard.
 - d. Georgia-Pacific Gypsum; ToughRock Fireguard X Mold-Guard.
- C. Backing Board For Wet Areas: One of the following products:
 - 1. Application: Surfaces behind tile in wet areas including.
 - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 3. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
 - a. Thickness: 1/2 inch (12.7 mm).
 - 4. ASTM Cement-Based Board: Non-gypsum-based, cementitious board complying with ASTM C1288.
 - a. Thickness: 1/2 inch (12.7 mm).
- D. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Ceilings, unless otherwise indicated.
 - 2. Thickness: 1/2 inch (13 mm).
 - 3. Edges: Tapered.
 - 4. Finish Level: 4
 - 5. Products:
 - a. Georgia-Pacific Gypsum; ToughRock Span 24 Ceiling Board.

2.03 ACCESSORIES

- A. Acoustic Insulation: As specified in Section 07 2100 and as indicated on drawings.
- B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
- C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.

1. Paper Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners, except as otherwise indicated.
 2. Ready-mixed vinyl-based joint compound.
 3. Powder-type vinyl-based joint compound.
 4. Chemical hardening type compound.
- D. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch (0.84 mm) in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.
- E. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch (0.84 to 2.84 mm) in Thickness: ASTM C954; steel drill screws, corrosion resistant.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- C. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

3.03 INSTALLATION OF TRIM AND ACCESSORIES

- A. Corner Beads: Install at external corners, using longest practical lengths. Provide rounded corner beads at all exterior corners of the walls
- B. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.04 JOINT TREATMENT

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
1. Level 3: Walls to receive textured wall finish.
- B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).

3.05 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet (3 mm in 3 m) in any direction.

END OF SECTION

SECTION 09 3000

TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Tile for floor applications.
- B. Tile for wall applications.
- C. Cementitious backer board as tile substrate.

1.02 REFERENCE STANDARDS

- A. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2017.
- B. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).
- C. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 1999 (Reaffirmed 2010).
- D. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2010 (Reaffirmed 2016).
- E. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (Reaffirmed 2016).
- F. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-set Ceramic Tile and Dimension Stone Installation; 2014.
- G. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2015.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
- C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.
- D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches (457 by 457 mm) in size illustrating pattern, color variations, and grout joint size variations.
- E. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing tile installation, with minimum of five years of documented experience.

1.05 MOCK-UP

- A. See Section 01 4000 - Quality Requirements, for general requirements for mock-up.
- B. Construct tile mock-up where indicated on drawings, incorporating all components specified for the location.
 - 1. Minimum size of mock-up is indicated on drawings.
 - 2. Approved mock-up may remain as part of the Work.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.07 FIELD CONDITIONS

- A. Do not install solvent-based products in an unventilated environment.

PART 2 PRODUCTS

2.01 TILE

- A. Manufacturers: As indicated.
- B. Refer to Allowance Section 01 2100 for tile to be provided as part of base bid. The allowance will be for the material purchase only. All other cost associated with grout, setting bed, installation etc. shall be provided as part of the base bid for a complete and total installation as is not part of the material allowance
- C. Porcelain Tile, Type as indicated:

2.02 TRIM AND ACCESSORIES

- A. Trim: Matching bullnose, double bullnose, cove base, and cove shapes in sizes coordinated with field tile.
 - 1. Applications:
 - a. Open Edges: Bullnose.
 - b. Inside Corners: Jointed.
 - c. Floor to Wall Joints: Cove base.
 - 2. Manufacturers: Same as for tile.
- B. Thresholds: Marble, white or gray, honed finish; 2 inches (51 mm) wide by full width of wall or frame opening; 1/2 inch thick (12.7 mm thick); beveled one long edge with radiused corners on top side; without holes, cracks, or open seams.
 - 1. Applications:
 - a. At doorways where tile terminates.
 - b. At open edges of floor tile where adjacent finish is a different height.

2.03 SETTING MATERIALS

2.04 GROUTS

- A. High Performance Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.
 - 1. Applications: Use this type of grout where indicated and where no other type of grout is indicated. Grout joints shall be 1/16 inch wide
 - 2. Use sanded grout for joints 1/8 inch (3.2 mm) wide and larger; use unsanded grout for joints less than 1/8 inch (3.2 mm) wide.
 - 3. Color(s): As indicated on drawings.

2.05 ACCESSORY MATERIALS

- A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.
 - 1. Thickness: 40 mils (1 mm), maximum.
 - 2. Crack Resistance: No failure at 1/16 inch (1.6 mm) gap, minimum.
 - 3. Products:
 - a. LATICRETE International, Inc; LATICRETE Blue 92 Anti-Fracture Membrane: www.laticrete.com/#sle.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, 1/2 inch (12.7 mm) thick; 2 inch (51 mm) wide coated glass fiber tape for joints and corners.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.
- C. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.
- D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

3.03 INSTALLATION - GENERAL

- A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.13, manufacturer's instructions, and TCNA (HB) recommendations.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install thresholds where indicated.
- G. Sound tile after setting. Replace hollow sounding units.
- H. Keep control and expansion joints free of mortar, grout, and adhesive.
- I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.
- J. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.
- K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

- A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.

3.05 INSTALLATION - WALL TILE

- A. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244, using membrane at toilet rooms.
- B. Over gypsum wallboard on wood or metal studs install in accordance with TCNA (HB) Method W243, thin-set with dry-set or latex-Portland cement bond coat, unless otherwise indicated.
- C. Over interior concrete and masonry install in accordance with TCNA (HB) Method W202, thin-set with dry-set or latex-Portland cement bond coat.

3.06 CLEANING

- A. Clean tile and grout surfaces.

3.07 PROTECTION

- A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

SECTION 09 6500
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient sheet flooring.
- B. Resilient tile flooring.
- C. Installation accessories.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 09 0561 - Common Work Results for Flooring Preparation: Independent agency testing of concrete slabs, removal of existing floor coverings, cleaning, and preparation.

1.03 REFERENCE STANDARDS

- A. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2017.
- B. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile; 2004, with Editorial Revision (2014).
- C. ASTM F1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing; 2004 (Reapproved 2014).
- D. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2004 (Reapproved 2014).
- E. ASTM F2034 - Standard Specification for Sheet Linoleum Floor Covering; 2008 (Reapproved 2013).
- F. ASTM F2195 - Standard Specification for Linoleum Floor Tile; 2013.
- G. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; 2011.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- D. Verification Samples: Submit two samples, 6 by 6 inch (___ by ___ mm) in size illustrating color and pattern for each resilient flooring product specified.
- E. Sustainable Design Submittal: Submit VOC content documentation for flooring and adhesives.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (72 degrees C).
- D. Protect roll materials from damage by storing on end.
- E. Do not double stack pallets.

1.06 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

PART 2 PRODUCTS

2.01 SHEET FLOORING

- A. Vinyl Sheet Flooring - Type ____: Homogeneous without backing, with color and pattern throughout full thickness.
 - 1. Manufacturers:
 - a. Shannon Specialty Floors, Inc; TEKNOFLOR Medscapes HPD: www.shannonspecialtyfloors.com/#sle.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Minimum Requirements: Comply with ASTM F1913.
 - 3. Thickness: 0.080 inch (2.0 mm) nominal.
- B. Linoleum Sheet Flooring: Homogeneous wear layer bonded to backing, with color and pattern through wear layer thickness.
 - 1. Manufacturers:
 - a. Armstrong World Industries, Inc; ____: www.armstrong.com.
 - b. Forbo Flooring, Inc; ____: www.forboflooringna.com.
 - c. Johnsonite, a Tarkett Company; ____: www.johnsonite.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Minimum Requirements: Comply with ASTM F2034, Type corresponding to type specified.
 - 3. Backing: Jute fabric.
 - 4. Thickness: 0.100 inch (2.5 mm), minimum, excluding backing.
 - 5. Color: To be selected by Architect from manufacturer's full range.

2.02 TILE FLOORING

- A. Vinyl Composition Tile: Homogeneous, with color extending throughout thickness.
 - 1. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
 - 2. Size: 12 by 12 inch (305 by 305 mm).
 - 3. Thickness: 0.125 inch (3.2 mm).
 - 4. Color: To be selected by Architect from manufacturer's full range.

2.03 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for resilient flooring installation by testing for moisture and pH.

1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

3.02 PREPARATION

- A. Remove existing resilient flooring and flooring adhesives; follow the recommendations of RFCI (RWP).
- B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- C. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
- D. Prohibit traffic until filler is fully cured.
- E. Clean substrate.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Fit joints and butt seams tightly.
- E. Set flooring in place, press with heavy roller to attain full adhesion.
- F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
- H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - SHEET FLOORING

- A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.

3.05 INSTALLATION - TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09 9000
PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints, stains, varnishes, and other coatings.
- C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
 - 1. Mechanical and Electrical:
 - a. In finished areas, paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
 - b. In finished areas, paint shop-primed items.
 - c. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Floors, unless specifically so indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.
- E. Refer to drawings for patching and painting requirements.

1.02 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this section.

1.03 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2014.
- C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 2007.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
 - 1. Base Manufacturer: Behr Paints.
 - 2. Benjamin Moore & Co: www.benjaminmoore.com/#sle.
 - 3. PPG Paints: www.ppgpaints.com/#sle.
 - 4. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
- C. Stains:
 - 1. Base Manufacturer: Behr.
 - 2. Behr Process Corporation: www.behr.com/#sle.
 - 3. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
- D. Primer Sealers: Same manufacturer as top coats.
- E. Block Fillers: Same manufacturer as top coats.
- F. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAINTS AND COATINGS - GENERAL

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
 - 1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
 - 3. Supply each coating material in quantity required to complete entire project's work from a single production run.
 - 4. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: As follows unless other primer is required or recommended by manufacturer of top coats; where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Volatile Organic Compound (VOC) Content:
 - 1. Provide coatings that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- D. Colors: to be determined from full range of color chains to be provided to architect
 - 1. Selection to be made by Architect after award of contract.
 - 2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
 - 3. Extend colors to surface edges; colors may change at any edge as directed by Architect.
 - 4. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.

2.03 PAINT SYSTEMS - EXTERIOR

- A. Paint GE-OP-3L - Gypsum Board and Plaster, Opaque, Latex, 3 Coat:
 - 1. One coat of latex primer sealer.
 - 2. Satin: Two coats of latex.
- B. Paint ME-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:
 - 1. One coat of alkyd primer.
 - 2. Gloss: Two coats of alkyd enamel.
- C. Paint ME-OP-2A - Ferrous Metals, Primed, Alkyd, 2 Coat:
 - 1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.
 - 2. Gloss: Two coats of alkyd enamel.
- D. Paint MgE-OP-3A - Galvanized Metals, Alkyd, 3 Coat:
 - 1. One coat galvanize primer.
 - 2. Semi-gloss: Two coats of alkyd enamel.

2.04 PAINT SYSTEMS - INTERIOR

- A. Paint I-OP - All Interior Surfaces Indicated to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel, and aluminum.
 - 1. Two top coats and one coat primer.
 - 2. Top Coat(s): High Performance Architectural Interior Latex; MPI #138-141.
 - 3. Primer(s): As recommended by manufacturer of top coats.
- B. Paint I-OP-DF - Dry Fall: Metals; exposed structure and overhead-mounted services , including shop primed steel deck, structural steel, metal fabrications, galvanized ducts, galvanized conduit, galvanized piping.
 - 1. Shop primer by others.
 - 2. One top coatcolor to be selected.
 - 3. Top Coat: Alkyd Dry Fall; MPI #55, 89, 225.
- C. Paint WI-TR-VS - Wood, Transparent, Varnish, Stain:
 - 1. Filler coat (for open grained wood only).
 - 2. Two coats of stain.
 - 3. One coat sealer .
 - 4. Satin: One coat of varnish.
- D. Paint MI-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:
 - 1. One coat of alkyd primer.
 - 2. Semi-gloss: Two coats of alkyd enamel.
- E. Paint MI-OP-2A - Ferrous Metals, Primed, Alkyd, 2 Coat:
 - 1. Touch-up with alkyd primer.
 - 2. Semi-gloss: Two coats of alkyd enamel.
- F. Paint GI-OP-3L - Gypsum Board/Plaster, Latex, 3 Coat:
 - 1. One coat of per manufacturer recommendation primer sealer.
 - 2. Satin: Two coats of latex enamel.

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

- C. Test shop-applied primer for compatibility with subsequent cover materials.
- D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Gypsum Wallboard: 12 percent.
 - 2. Plaster and Stucco: 12 percent.
 - 3. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
 - 4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to coating application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- G. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
- H. Plaster Surfaces to be Painted: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- I. Aluminum Surfaces to be Painted: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- J. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- K. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand or power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
- L. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
- M. Interior Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's instructions.
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- D. Apply each coat to uniform appearance.

- E. Sand wood and metal surfaces lightly between coats to achieve required finish.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

END OF SECTION

SECTION 10 2800
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Residential toilet, shower, and bath accessories.
- B. Utility room accessories.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- B. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2017.
- C. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.
- D. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.
- C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Residential Toilet, Shower, and Bath Accessories:
 - 1. Ginger by Brasstech Inc; www.gingerco.com/#sle.
 - 2. Pamex Inc; www.pamexinc.com/#sle.
 - 3. Seachrome Corporation; www.seachrome.com/#sle.

2.02 MATERIALS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
 - 1. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.
- B. Mirror Glass: Tempered safety glass, ASTM C1048; and ASTM C1036 Type I, Class 1, Quality Q2, with silvering as required.
- C. Adhesive: Two component epoxy type, waterproof.
- D. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

2.03 FINISHES

- A. Chrome/Nickel Plating: ASTM B456, SC 2, polished finish, unless otherwise noted.

2.04 RESIDENTIAL TOILET, SHOWER, AND BATH ACCESSORIES

- A. Toilet Paper Holder: Surface mounted, single roll, concealed attachment.
 - 1. Material: Stainless steel; satin finish.
 - 2. Type: Spring-loaded spindle with brackets.
 - 3. Type: Straight post holder.
- B. Towel Bar: Square tubular bar; rectangular mounting posts, concealed attachment.
 - 1. Mounting Post Material: Stainless steel; bright polished finish.
 - 2. Bar Material: Stainless steel; bright polished finish.

3. Length: 18 inches (460 mm).
- C. Shower Curtain Rod: Straight tube, 1 inch (25 mm) diameter, with mounting flanges for concealed attachment.
 1. Material: Stainless steel; bright polished finish.
 2. Length: 72 inches (1830 mm).
- D. Robe Hook: Single-prong, concealed attachment.
 1. Material: Stainless steel; bright polished finish.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.

3.02 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.

3.04 PROTECTION

- A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

**SECTION 12 3600
COUNTERTOPS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Countertops for architectural cabinet work.
- B. Plastic Laminate countertops

1.02 RELATED REQUIREMENTS

- A. Section 06 4100 - Architectural Wood Casework.

1.03 REFERENCE STANDARDS

- A. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position; 2014.
- B. AWI (QCP) - Quality Certification Program; current edition at www.awiqcp.org.
- C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014, with Errata (2016).
- D. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1; 2016, with Errata (2017).
- E. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- F. PS 1 - Structural Plywood; 2009.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation; combine with shop drawings of cabinets and casework specified in other sections.
- D. Verification Samples: For each finish product specified, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- E. Installation Instructions: Manufacturer's installation instructions and recommendations.
- F. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

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

PART 2 PRODUCTS

2.01 COUNTERTOPS

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise. Refer to drawings for HUD millwork requirements.

- B. Plastic Laminate Countertops: Self-supporting high-pressure decorative laminate (HPDL) panel with decorative surface over structural members.
 - 1. Panels: Phenolic resin impregnated Kraft paper core with melamine impregnated decorative surface papers; NEMA LD 3 Grade CGS.
 - a. Manufacturers:
 - 1) Formica Corporation; www.formica.com/#sle.
 - 2) Wilsonart; www.wilsonart.com/#sle.
 - 3) Substitutions: See Section 01 6000 - Product Requirements.
 - b. Panel Thickness: Refer to drawings
 - c. Core Color: Refer to Plans.
 - d. Finish: Matte or suede, gloss rating of 5 to 20.
 - e. Surface Color and Pattern: As selected by Architect from manufacturer's full line.
 - 2. Back and End Splashes: Same material, same construction; minimum 4 inches (102 mm) high.
 - 3. Fabricate in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 11 - Countertops, Custom Grade.

2.02 MATERIALS

- A. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch (19 mm) thick; join lengths using metal splines.
- B. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- C. Joint Sealant: Mildew-resistant silicone sealant, clear.

2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 - 1. Join lengths of tops using best method recommended by manufacturer.
 - 2. Fabricate to overhang fronts and ends of cabinets as indicated on drawings
 - a. Rout a 1/8 inch (3 mm) drip groove at underside of exposed overlapping edges, set back 1/2 inch (13 mm) from face of edge.
 - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 - 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 - 2. Height: 4 inches (102 mm), unless otherwise indicated.
- C. Solid Surfacing: Fabricate tops and wall panels up to 144 inches (3657 mm) long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Attach solid surfaces countertops using compatible adhesive.
- C. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

- A. Variation From Horizontal: 1/16 inch in 1/16 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C. Field Joints: 1/16 inch wide, maximum.

3.05 CLEANING

- A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

- A. Protect installed products until completion of project.
- B. Replace damaged product before Date of Substantial Completion

END OF SECTION

SECTION 26 0505
SELECTIVE DEMOLITION FOR ELECTRICAL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical demolition.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

- A. Materials and equipment for patching and extending work: As specified in individual sections.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify field measurements and circuiting arrangements are as indicated.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition drawings are based on casual field observation and existing record documents.
- D. Report discrepancies to Architect before disturbing existing installation.
- E. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

- A. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- B. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Remove, relocate, and extend existing installations to accommodate new construction.
- B. Remove abandoned wiring to source of supply.
- C. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.
- D. Repair adjacent construction and finishes damaged during demolition and extension work.
- E. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

END OF SECTION

SECTION 26 0519

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonmetallic-sheathed cable.
- B. Electrical tape.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 - Firestopping.
- B. Section 26 0505 - Selective Demolition for Electrical: Disconnection, removal, and/or extension of existing electrical conductors and cables.

1.03 REFERENCE STANDARDS

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire; 2013 (Reapproved 2018).
- B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2011 (Reapproved 2017).
- C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010 (Reapproved 2014).
- D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2014).
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- F. NECA 121 - Standard for Installing Nonmetallic-Sheathed Cable (Type NM-B) and Underground Feeder and Branch-Circuit Cable (Type UF); 2007.
- G. NEMA WC 70 - Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; 2009.
- H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 44 - Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
- J. UL 83 - Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
- K. UL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.
- L. UL 486C - Splicing Wire Connectors; Current Edition, Including All Revisions.
- M. UL 510 - Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.
- N. UL 719 - Nonmetallic-Sheathed Cables; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Comply with NEMA WC 70.
- D. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- E. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- F. Conductor Material:
 - 1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
 - 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
 - 3. Tinned Copper Conductors: Comply with ASTM B33.
- G. Minimum Conductor Size:
 - 1. Branch Circuits: 12 AWG.
- H. Conductor Color Coding:
 - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
 - 2. Color Coding Method: Integrally colored insulation.
 - 3. Color Code:
 - a. 240/120 V, 1 Phase, 3 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Neutral/Grounded: White.
 - b. Equipment Ground, All Systems: Green.

2.02 NONMETALLIC-SHEATHED CABLE

- A. Manufacturers:
 - 1. Cerro Wire LLC: www.cerrowire.com/#sle.
 - 2. Encore Wire Corporation: www.encorewire.com/#sle.
 - 3. Southwire Company: www.southwire.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Description: NFPA 70, Type NM multiple-conductor cable listed and labeled as complying with UL 719, Type NM-B.
- C. Conductor Stranding:
 - 1. Size 10 AWG and Smaller: Solid.
 - 2. Size 8 AWG and Larger: Stranded.
- D. Insulation Voltage Rating: 600 V.

2.03 WIRING ACCESSORIES

- A. Electrical Tape:
 - 1. Manufacturers:
 - a. 3M: www.3m.com/#sle.
 - b. Plymouth Rubber Europa: www.plymouthrubber.com/#sle.
 - c. Substitutions: See Section 01 6000 - Product Requirements.
 - 2. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil (0.18 mm); resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F (-18 degrees C) and suitable for continuous temperature environment up to 221 degrees F (105 degrees C).
- B. Cable Ties: Material and tensile strength rating suitable for application.

1. Manufacturers:
 - a. Burndy LLC; _____: www.burndy.com/#sle.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that work likely to damage wire and cable has been completed.
- B. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Circuiting Requirements:
 1. Unless dimensioned, circuit routing indicated is diagrammatic.
 2. When circuit destination is indicated without specific routing, determine exact routing required.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. Install nonmetallic-sheathed cable (Type NM-B) in accordance with NECA 121.
- E. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
- F. Terminate cables using suitable fittings.
- G. Install conductors with a minimum of 12 inches (300 mm) of slack at each outlet.
- H. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- I. Insulate ends of spare conductors using vinyl insulating electrical tape.
- J. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- K. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

END OF SECTION

SECTION 26 0533.16
BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Outlet and device boxes up to 100 cubic inches (1,650 cu cm), including those used as junction and pull boxes.

1.02 RELATED REQUIREMENTS

- A. Section 26 2726 - Wiring Devices:
 - 1. Wall plates.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- B. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2010.
- C. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
- D. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; 2013.
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.
- F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- H. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- I. UL 508A - Industrial Control Panels; 2013.
- J. UL 514A - Metallic Outlet Boxes; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
 - 4. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
 - 5. Coordinate the work with other trades to preserve insulation integrity.
 - 6. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
 - 7. Notify Architect of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for cabinets and enclosures, boxes for hazardous (classified) locations, floor boxes, and underground boxes/enclosures.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 BOXES

- A. General Requirements:
 - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
 - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 - 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches (1,650 cu cm), Including Those Used as Junction and Pull Boxes:
 - 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
 - 2. Use shallow boxes where required by the type of wall construction.
 - 3. Do not use "through-wall" boxes designed for access from both sides of wall.
 - 4. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
 - 5. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
 - 6. Wall Plates: Comply with Section 26 2726.
 - 7. Manufacturers:
 - a. Cooper Crouse-Hinds, a division of Eaton Corporation; _____: www.cooperindustries.com/#sle.
 - b. Hubbell Incorporated; Bell Products; _____: www.hubbell-rtb.com/#sle.
 - c. Hubbell Incorporated; RACO Products; _____: www.hubbell-rtb.com/#sle.
 - d. O-Z/Gedney, a brand of Emerson Electric Co; _____: www.emerson.com/#sle.
 - e. Thomas & Betts Corporation; _____: www.tnb.com/#sle.
 - f. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Box Supports:
 - 1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
- E. Install boxes plumb and level.
- F. Install boxes as required to preserve insulation integrity.

- G. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- H. Close unused box openings.
- I. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- J. Provide grounding and bonding in accordance with Section 26 0526.

END OF SECTION

SECTION 26 2726
WIRING DEVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Receptacles.
- B. Wall plates.

1.02 RELATED REQUIREMENTS

- A. Section 26 0533.16 - Boxes for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. FS W-C-596 - Connector, Electrical, Power, General Specification for; 2017h.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- C. NECA 130 - Standard for Installing and Maintaining Wiring Devices; 2010.
- D. NEMA WD 1 - General Color Requirements for Wiring Devices; 1999 (Reaffirmed 2015).
- E. NEMA WD 6 - Wiring Devices - Dimensional Specifications; 2016.
- F. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 498 - Attachment Plugs and Receptacles; Current Edition, Including All Revisions.
- H. UL 514D - Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.
- I. UL 943 - Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
 - 3. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
 - 4. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
- C. Operation and Maintenance Data:
 - 1. GFCI Receptacles: Include information on status indicators.
- D. Project Record Documents: Record actual installed locations of wiring devices.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.

PART 2 PRODUCTS

2.01 RECEPTACLES

- A. Manufacturers:
 - 1. Hubbell Incorporated; _____: www.hubbell.com/#sle.
 - 2. Leviton Manufacturing Company, Inc; _____: www.leviton.com/#sle.

3. Lutron Electronics Company, Inc; Designer Style: www.lutron.com/#sle.
 4. Pass & Seymour, a brand of Legrand North America, Inc; _____: www.legrand.us/#sle.
 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Receptacles - General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498, and where applicable, FS W-C-596; types as indicated on the drawings.
1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
 2. NEMA configurations specified are according to NEMA WD 6.
- C. Convenience Receptacles:
1. Standard Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
- D. GFCI Receptacles:
1. GFCI Receptacles - General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.
 2. Standard GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.

2.02 WALL PLATES

- A. Manufacturers:
1. Source Limitations: Where wall controls are furnished as part of lighting control system, provide accessory matching receptacles and wallplates by the same manufacturer in locations indicated.
- B. Wall Plates: Comply with UL 514D.
1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
 2. Size: Standard; _____.
 3. Screws: Metal with slotted heads finished to match wall plate finish.
- C. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of wiring devices provided under this section.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Where required, connect wiring devices using pigtails not less than 6 inches (150 mm) long. Do not connect more than one conductor to wiring device terminals.

- E. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- F. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- G. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- H. Install wall switches with OFF position down.
- I. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on left.
- J. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- K. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each wiring device for damage and defects.
- C. Test each receptacle to verify operation and proper polarity.
- D. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- E. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.04 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.

END OF SECTION

SECTION 26 5100
INTERIOR LIGHTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior luminaires.

1.02 RELATED REQUIREMENTS

- A. Section 26 0533.16 - Boxes for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.
- B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 1598 - Luminaires; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
 - 2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
 - 3. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.

1.06 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.

1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Receive, handle, and store products according to NECA/IESNA 500 (commercial lighting), NECA/IESNA 502 (industrial lighting), and manufacturer's written instructions.
- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.08 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide three year manufacturer warranty for all LED luminaires, including drivers.

PART 2 PRODUCTS

2.01 LUMINAIRE TYPES

- A. Furnish products as indicated in luminaire schedule included on the drawings.
- B. Substitutions: See Section 01 6000 - Product Requirements, except where individual luminaire types are designated with substitutions not permitted.

2.02 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Install products in accordance with manufacturer's instructions.
- D. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).
- E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- F. Install accessories furnished with each luminaire.
- G. Bond products and metal accessories to branch circuit equipment grounding conductor.
- H. Install lamps in each luminaire.

3.04 CLEANING

- A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

END OF SECTION

LIMITED RENOVATION ASBESTOS SURVEY REPORT

**Victory Pointe Apartments – Unit 404
6750 Ramona Boulevard
Jacksonville, Florida**

GLE Project No.: 18000-19651

Prepared for:

**Mr. Keith Chatman
Construction Project Manager
Jacksonville Housing Authority
1085 Golfair Boulevard
Jacksonville, Florida 32208**

August 2018

Prepared by:



**8659 Baypine Road, Suite 306
Jacksonville, Florida 32256
904-296-1880 • Fax 904-296-1860**



August 13, 2018

Mr. Keith Chatman
Construction Project Manager
Jacksonville Housing Authority
1085 Golfair Boulevard
Jacksonville, Florida 32208

**RE: Limited Renovation Asbestos Survey Report
Victory Pointe Apartments – Unit 404
6750 Ramona Boulevard
Jacksonville, Florida**

GLE Project No.: 18000-19651

Dear Mr. Chatman:

GLE Associates, Inc. (GLE) performed a limited renovation survey for asbestos-containing materials (ACM) on July 27, 2018, at Unit 404 of Victory Pointe Apartments, located at 6750 Ramona Boulevard in Jacksonville, Florida. The survey was performed by Mr. Arturo Confiado with GLE. This report outlines the sampling and testing procedures, and presents the results along with our conclusions and recommendations.

GLE appreciates the opportunity to serve as your consultant on this project. If you should have any questions, or if we can be of further service, please do not hesitate to call.

Sincerely,
GLE Associates, Inc.

Arturo R. Confiado III
Senior Project Manager

Robert B. Greene, PE, PG, CIH, LEED AP
President
Florida LAC #EA 0000009

AC/RBG/jl

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GLE Associates, Inc.

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Tampa | Orlando | Ft. Lauderdale | Miami | Gainesville | Atlanta | Nashville
Architecture AA 0002369 • Engineer CA 5483 • Asbestos ZA 0000034 • Geology GB 0000297

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1.0 INTRODUCTION

1.1 INTRODUCTION

The purpose of this limited renovation survey was to identify accessible asbestos-containing materials (ACMs) and their general locations within Unit 404 of Victory Pointe Apartments, located at 6750 Ramona Boulevard in Jacksonville, Florida. The scope of the survey was limited to the interior and exterior of the unit only. The survey was conducted pursuant to National Emission Standards for Hazardous Air Pollutants (NESHAP, 40 CFR 61) requirements, associated with the scheduled renovation plans. The survey was performed on July 27, 2018 by Mr. Arturo Confiado, an Environmental Protection Agency/Asbestos Hazard Emergency Response Act (EPA/AHERA) accredited inspector. The scope of this survey did not include demolition of any building components, evaluation of architectural plans, or the quantification of materials for abatement purposes, or removal cost estimating.

1.2 FACILITY DESCRIPTION

A summary of the facility investigated is outlined in the table below.

Facility Type:	Residential Apartment Unit
Construction Date:	1973
Number of Floors:	2
Exterior	
Floor Support:	Concrete Floor
Wall Support:	Wood Frame
Exterior Finish:	Paint, Stucco, Brick
Roof System Type:	Asphalt Shingle
Interior	
Wall Substrate:	Drywall and Joint Compound
Wall Finishes:	Paint, Wood & Vinyl Cove Base, Metal Frame Window
Floor Finishes:	Vinyl Floor Tile, Ceramic Tile
Ceiling System:	Drywall and Joint Compound
Ceiling Finishes:	Paint, Popcorn Texture

2.0 RESULTS

2.1 ASBESTOS SURVEY PROCEDURES

The survey was performed by visually observing accessible areas of the building. An EPA/AHERA accredited inspector performed the visual observations (refer to Appendix B for personnel qualifications).

After the overall visual survey was completed, representative sampling areas were determined. The surveyor delineated homogeneous areas of suspect materials and samples of each material

were obtained, in general accordance with regulations as established by the Occupational Safety and Health Administration (OSHA) and NESHAP. The field surveyor determined sample locations based on previous experience. Both friable and non-friable materials were sampled. A friable material is one that can be crushed when dry by normal hand pressure. This survey did not include the demolition of building components to access suspect material.

After completion of the fieldwork, the samples were delivered to GLE's National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory for analysis. The samples were analyzed by Polarized Light Microscopy (PLM) coupled with dispersion staining, in general accordance with EPA-600/R-93/116. Utilizing this procedure, the various asbestos minerals (chrysotile, amosite, crocidolite, actinolite, tremolite, and anthophyllite) can be determined. The percentages of asbestos minerals in the samples were visually determined by the microscopist. Please note that the EPA designates all materials containing greater than 1% asbestos as an "asbestos-containing material" (ACM).

Regulated Asbestos-Containing Material (RACM) is defined as (a) Friable asbestos materials, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

Category I and Category II non-friable ACM, as defined by the EPA:

- Category I non-friable ACM means asbestos-containing packings, gaskets, resilient floor covering, asphalt roofing products, and pliable sealants and mastics that are in good condition and not friable, containing more than 1% asbestos, as determined using the method specified in Appendix E, Subpart E, 40 CFR Part 763, Section 1, PLM.
- Category II non-friable ACM means any material, excluding Category I non-friable ACM, containing more than 1 percent asbestos as determined using the methods specified in Appendix E, Subpart E, 40 CFR Part 763 Section 1, PLM that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

2.2 IDENTIFIED SUSPECT ASBESTOS-CONTAINING MATERIALS

A total of 30 samples of suspect building materials were collected from the facility during the survey, representing ten different identified homogeneous areas. The results of the laboratory analyses are included in Appendix A, and approximate sample locations are indicated on the Sample Location Plan in Appendix C.

Due to the damage that could be caused by destructive sampling techniques and restricted accessibility, the following materials were assumed to contain asbestos minerals and were not sampled.

1. Roofing Materials

A summary of the homogenous sampling areas of suspect ACM determined to be present is outlined in the following table.

**TABLE 2.2-1: SUMMARY OF HOMOGENEOUS SAMPLING AREAS
VICTORY POINTE APARTMENTS – UNIT 404
6750 RAMONA BOULEVARD
JACKSONVILLE, FLORIDA**

HA #	HOMOGENEOUS MATERIAL DESCRIPTION	HOMOGENEOUS MATERIAL LOCATION	FRIABILITY (F/NF)	% ASBESTOS*	# OF SAMPLES COLLECTED	APPROXIMATE QUANTITY	ACM CATEGORY
DW-01	Drywall & Joint Compound	Throughout Interior Walls & Ceilings	NF	Drywall – ND Joint Compound – 5% C Composite - <1%	3	NIS	NA
FT-01	12"x12" Beige Floor Tile & Tan Mastic	Throughout Floors, except Bathroom	NF	ND	3	NIS	NA
FT-02	12"x12" Light Gray Floor Tile & Black Mastic	2nd Layer Floor Tile under FT-01, except Bathroom	NF	Floor Tile – 7% Mastic – 5%	3	900 SF	CAT I
M-01	Brown Door Caulk	Exterior Doors	NF	ND	3	NIS	NA
M-02	Brown Stucco Texture	Exterior Walls	NF	ND	3	NIS	NA
MAS-01	White Sink Undercoat	Kitchen Sink	NF	ND	3	NIS	NA
MAS-02	Gray HVAC Duct Mastic	HVAC Closet	NF	ND	3	NIS	NA
PCT-01	Popcorn Ceiling Texture	Throughout Ceilings, excluding Bathroom	F	10 % C	3	900 SF	RACM
VB-01	4" Black Cove Base & Gray Mastic	Laundry Room & HVAC Closet	NF	ND	3	NIS	NA
M-03	Brown Grout associated with Ceramic Tile	Bathroom	NF	ND	3	NIS	NA

ASBESTOS CONTENT Expressed as percent	* = The facility owner has the option of point-counting by polarized light microscopy (PLM) those RACM whose asbestos content is less than 10% in order to more accurately determine the asbestos content therein.						
	PC = Results based on Point-Count analysis						
FRIABILITY	F = Friable Material		NF = Non-Friable Material				
ACM CATEGORY	RACM = Regulated ACM		CAT I = Category I non-friable ACM		CAT II = Category II non-friable ACM		
ABBREVIATIONS:	NA = Not Applicable		ND = None Detected		NIS = Not in Scope		C = Chrysotile
	HA = Homogeneous Area		SF = Square Feet		LF = Linear Feet		CF = Cubic Feet

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 GENERAL

Asbestos-containing materials (ACMs) were identified in the scope of this survey. General and specific conclusions and recommendations are provided below.

The EPA, OSHA and the State of Florida have promulgated regulations dealing with asbestos. For commercial building owners, the EPA NESHAP (40 CFR 61) regulations require removal of RACM, prior to conducting activities which might disturb the material. They also deal with notification, handling and disposal of asbestos.

No homogenous areas of suspect RACM were determined to contain less than 10% asbestos by PLM analysis. According to the NESHAP, when the asbestos content of a bulk sample of suspect RACM is determined to be less than 10% by PLM visual estimation, you may:

1. Assume the amount to be greater than 1% and treat the material as asbestos-containing; or
2. Conduct confirmatory verification by point-counting. Note, the results obtained by point-counting are considered the definitive analytical result.

The EPA recommends that an Operations and Maintenance (O&M) Program be developed for any facilities with ACM, and this Program should address all ACM (known and/or assumed) present. The O&M Program establishes notification and training requirements along with special procedures for working around the ACM. The O&M Program would remain in effect until all asbestos is removed.

Category I and Category II non-friable materials, as defined by the EPA, may remain within a facility during demolition with no potential cessation of work, provided they remain non-friable and the appropriate engineering controls (i.e., wet methods) are utilized, with the resulting waste disposed of as asbestos-containing waste. However, there is no guarantee that these materials will remain non-friable. If the materials become friable, then they are classified as RACM.

RACM, as defined by the EPA, must be removed prior to renovation or demolition activities that may disturb the materials.

The OSHA regulations deal with employee exposure to airborne asbestos fibers. The regulations restrict employee exposure, and require special monitoring, training and handling procedures when dealing with asbestos. Additionally, OSHA has regulations that may supersede the EPA regulations. In order to protect the worker, OSHA has established a permissible exposure limit (PEL), which limits employee exposure to airborne fiber concentrations. OSHA requires objective evidence that the PEL will not be exceeded, as justification that personal air monitoring and engineering controls will not be required. OSHA has also established rules requiring the containerization and labeling of asbestos waste.

The State regulations require that anyone involved in asbestos consulting activities be a licensed asbestos consultant and that anyone involved in asbestos abatement, with the exception of roofing materials, be a licensed asbestos abatement contractor.

3.2 SPECIFIC

Ceiling Texture

This material is defined by the EPA as RACM. This material does not appear to present a significant issue, as observed, at the time of the survey. We recommend that the identified RACM be maintained as part of an O&M Program and periodically monitored for any changes in condition. Additionally, we recommend that a licensed asbestos abatement contractor properly remove and dispose of the identified RACM prior to conducting renovation activities that might disturb the ACM.

12"x12" Light Gray Floor Tile & Black Mastic

This material is defined by the EPA as a Category I or Category II non-friable material. This material does not appear to present a significant issue, as observed, at the time of the survey. We recommend that the identified ACM be maintained as part of an O&M Program and periodically monitored for any changes in condition. Additionally, we recommend that a licensed asbestos abatement contractor properly remove and dispose of the ACM prior to conducting renovation activities that might disturb the ACM.

Drywall System

The drywall system sample constituents were reported as "no asbestos detected" for the drywall and greater than one percent (>1%) asbestos for the joint compound. Composite sample analyses (combining the drywall and joint compound constituents) were reported as less than or equal to 1% asbestos. These drywall system samples are classified by the EPA as non-asbestos-containing materials, when the samples are represented as a system composite with asbestos content of less than or equal to 1% asbestos. However, OSHA regulations offer differing opinions regarding the status of drywall joint compound when subjected to disturbance. Therefore, GLE recommends that the material be considered for removal by a licensed asbestos abatement contractor prior to disturbance (i.e. removal, sanding, cutting, etc.) as part of a renovation project. However, if maintained wet, the material may remain in-place during renovation and/or demolition activities provided sufficient documentation is obtained indicating personnel performing work are not exposed to asbestos fiber levels above OSHA's PEL of 0.1 fibers per cubic centimeter (f/cc). This documentation may be obtained by performing air monitoring as required by OSHA.

Assumed Materials - Roof

Suspect roofing materials were inaccessible and appeared to be in generally good condition. These materials do not present a significant issue, as observed, at the time of the survey. We

recommend that these materials be maintained as part of an O&M Program and periodically monitored for any changes in condition. **Additionally, should planned renovation and/or demolition activities involve the disturbance of these materials, we recommend that they be sampled and analyzed for asbestos content, and if determined to be ACM, be properly removed and disposed by a licensed asbestos abatement contractor prior to conducting such activities.**

4.0 LIMITATIONS AND CONDITIONS

As a result of previous renovations, there may be hidden materials, such as floor tile, sheet vinyl flooring, insulation, etc. These materials may be found in various areas hidden under existing flooring materials or in wall cavities. Any materials found during construction activities, either not addressed in this survey report, or similar to the ACM identified in this survey report should be assumed to be ACM until sampling and analysis documents otherwise.

Because of the hidden nature of many building components (i.e. within mechanical chases), it may be impossible to determine if all of the suspect building materials have been located and subsequently tested. Destructive testing in some instances is not a viable option. We cannot, therefore, guarantee that all potential ACM has been located. For the same reasons, estimates of quantities and/or conditions are subject to readily apparent situations, and our findings reflect this condition. We do warrant, however, that the investigations and methodology reflect our best efforts based upon the prevailing standard of care in the environmental industry.

The information contained in this report was prepared based upon specific parameters and regulations in force at the time of this report. The information herein is only for the specific use of the client and GLE. GLE accepts no responsibility for the use, interpretation, or reliance by other parties on the information contained herein, unless prior written authorization has been obtained from GLE.

APPENDIX A
Analytical Results and Chain of Custody

SUMMARY OF BULK SAMPLE ANALYSIS

JHA; Victory Pointe - #404

18000-19651

Sample	Sample Type	Fiber Type
DW-01A	Drywall	100% Gypsum, Quartz, Calcite, Clay
	Joint Compound	5% Chrysotile Asbestos 95% Quartz, Calcite, Clay, Mica
	Composite Total	<1% Chrysotile Asbestos 100% Gypsum, Quartz, Calcite, Clay

Overall asbestos concentration is <1% by composite sample analysis and is not considered an asbestos containing material by EPA definition.

DW-01B	Drywall	100% Gypsum, Quartz, Calcite, Clay
	Joint Compound	5% Chrysotile Asbestos 95% Quartz, Calcite, Clay, Mica
	Composite Total	<1% Chrysotile Asbestos 100% Gypsum, Quartz, Calcite, Clay

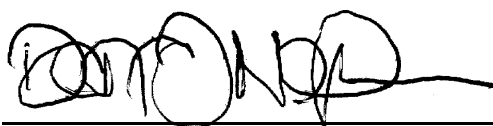
Overall asbestos concentration is <1% by composite sample analysis and is not considered an asbestos containing material by EPA definition.

DW-01C-QC	Drywall	100% Gypsum, Quartz, Calcite, Clay
	Joint Compound	5% Chrysotile Asbestos 95% Quartz, Calcite, Clay, Mica
	Composite Total	<1% Chrysotile Asbestos 100% Gypsum, Quartz, Calcite, Clay

Overall asbestos concentration is <1% by composite sample analysis and is not considered an asbestos containing material by EPA definition.

FT-01A	12x12 Beige Floor Tile & Tan Mastic	100% Polymer, Quartz, Calcite, Clay, Mica
FT-01B	12x12 Beige Floor Tile & Tan Mastic	100% Polymer, Quartz, Calcite, Clay, Mica
FT-01C	12x12 Beige Floor Tile & Tan Mastic	100% Polymer, Quartz, Calcite, Clay, Mica

Analyst / Approved Signatory:



Darryl Neldner

* Polarized Light Microscopy coupled with dispersion is the technique used for identification in accordance with EPA 600/M4-82-020, EPA 600/R-93/116, and NIOSH Method 9002.

** The percentage of each component is visually estimated. The result of this analysis relate only to the material tested. The report shall not be used to claim product endorsement by NVLAP or any agency of the U.S. Government. (>1% greater than one percent, <1% less than one percent) QC - Sample reanalyzed for QA/QC.

*** This report shall not be reproduced except in full, without the written approval of the laboratory. GLE Report # 22914

Analysis performed by GLE Associates, Inc. NVLAP Code 102003-0, CO AL-17485, TX 30-0337

Feedback regarding laboratory performance should be addressed to lab@gleassociates.com.

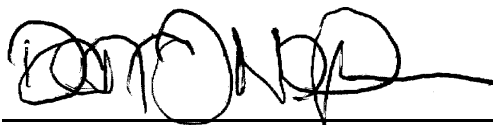
SUMMARY OF BULK SAMPLE ANALYSIS

JHA; Victory Pointe - #404

18000-19651

Sample	Sample Type	Fiber Type
FT-02A	12x12 Light Gray Floor Tile	7% Chrysotile Asbestos 93% Polymer, Quartz, Calcite, Clay, Mica
	Black Mastic	5% Chrysotile Asbestos 95% Bitumen
	Yellow Mastic	100% Polymer
FT-02B	12x12 Light Gray Floor Tile & Black Mastic	Positive Stop/Sample not analyzed
	Yellow Mastic	100% Polymer
FT-02C	12x12 Light Gray Floor Tile & Black Mastic	Positive Stop/Sample not analyzed
	Yellow Mastic	100% Polymer
M-01A	Brown Door Caulk	100% Polymer, Quartz, Calcite, Clay, Mica
M-01B	Brown Door Caulk	100% Polymer, Quartz, Calcite, Clay, Mica
M-01C	Brown Door Caulk	100% Polymer, Quartz, Calcite, Clay, Mica
M-02A-QC	Brown Stucco	100% Polymer, Quartz, Calcite, Clay, Mica
M-02B	Brown Stucco	100% Polymer, Quartz, Calcite, Clay, Mica
M-02C	Brown Stucco	100% Polymer, Quartz, Calcite, Clay, Mica
MAS-01A	White Sink Undercoat	100% Polymer, Quartz, Calcite, Clay, Mica
MAS-01B	White Sink Undercoat	100% Polymer, Quartz, Calcite, Clay, Mica

Analyst / Approved
Signatory:



Darryl Neldner

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Report Date: 7/30/2018

Page 2 of 3

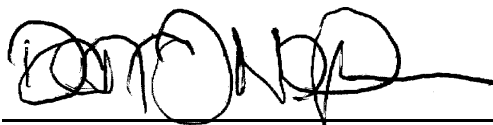
SUMMARY OF BULK SAMPLE ANALYSIS

JHA; Victory Pointe - #404

18000-19651

Sample	Sample Type	Fiber Type	
MAS-01C	White Sink Undercoat	Polymer, Quartz, Calcite, Clay, Mica	
MAS-02A	Gray Duct Mastic	100%	Polymer, Quartz, Calcite, Clay, Mica
MAS-02B	Gray Duct Mastic	100%	Polymer, Quartz, Calcite, Clay, Mica
MAS-02C	Gray Duct Mastic	100%	Polymer, Quartz, Calcite, Clay, Mica
PCT-01A	Popcorn Ceiling	10% 90%	Chrysotile Asbestos Polymer, Quartz, Calcite, Clay, Mica
PCT-01B-QC	Popcorn Ceiling	Positive Stop/Sample not analyzed	
PCT-01C	Popcorn Ceiling	Positive Stop/Sample not analyzed	
VB-01A	4" Black Cove Base & Light Gray Mastic	100%	Polymer
VB-01B	4" Black Cove Base & Light Gray Mastic	100%	Polymer
VB-01C	4" Black Cove Base & Light Gray Mastic	100%	Polymer
M-03A	Brown Ceramic Tile Grout	100%	Quartz, Calcite, Clay, Mica
M-03B	Brown Ceramic Tile Grout	100%	Quartz, Calcite, Clay, Mica
M-03C	Brown Ceramic Tile Grout	100%	Quartz, Calcite, Clay, Mica

Analyst / Approved
Signatory:



Darryl Neldner

* Polarized Light Microscopy coupled with dispersion is the technique used for identification in accordance with EPA 600/M4-82-020, EPA 600/R-93/116, and NIOSH Method 9002.

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Feedback regarding laboratory performance should be addressed to lab@gleassociates.com.

Report Date: 7/30/2018

Page 3 of 3

CHAIN OF CUSTODY/SAMPLE TRANSMITTAL FORM



GLE Associates, Inc.
 8659 Baypine Road, Suite 306
 Jacksonville, FL 32256
 PHONE: (904) 296-1880 FAX: (904) 296-1860

CLIENT:	JHA	2014
PROJECT #:	1800-19651	
PROJECT:	VICTORY POINTE - #404	
LABORATORY SENT TO:	TAMPA	
DATE:	7/27/13	

SAMPLE INFORMATION

SAMPLE #	DESCRIPTION	SAMPLE #	DESCRIPTION
DW-01 ABC	DRYWALL & JOINT COMPOUND		
FT-01 ABC	12X12 BEIGE FLOOR TILE & TAN MASTIC		
FT-02 ABC	12X12 LT GRAY FLOOR TILE & BLACK MASTIC		
M-01 ABC	BROWN DOOR CAULK		
M-02 ABC	BROWN STUCCO TEXTURE		
MAS-01 ABC	WHITE SINK UNDERCOAT		
MAS-02 ABC	GRAY DUCT MASTIC		
PCT-01 ABC	POPCORN CEILING TEXTURE		
VB-01 ABC	4" BLACK COVE BASE & LT GRAY MASTIC		
M-03 ABC	BROWN CERAMIC TILE GROUT		

IMPORTANT: TOTAL NUMBER OF SAMPLES SUBMITTED	27 30 ^(AC)
IMPORTANT: POSITIVE STOP ANALYSIS	Y
IMPORTANT: E-MAIL RESULTS TO	ACONFIADO, JELLIOTT, CDAVIS @gleassociates.com

NOTE:

Turnaround time starts at receipt by lab and does not include weekend or holidays.

Select Turnaround Time

3 hour
 6 Hour
 24 Hour
 48 Hour
 3 Day
 4 Day

REPORT RESULTS TO THE ADDRESS ABOVE

CHAIN OF CUSTODY: GLE ASSOCIATES, INC.		CHAIN OF CUSTODY: LABORATORY	
PACKAGED BY: ARTURO CONFIADO	DATE PACKAGED: 7/27/13	SAMPLES RECEIVED BY:	DATE:
METHOD OF TRANSMITTAL: GLE	TRANSMITTED BY: JHA	TIME:	CONDITION OF PACKAGED SAMPLES:
CHAIN OF CUSTODY: RETURNED TO GLE ASSOCIATES, INC.			
RECEIVED BY:	INVENTORIED BY:	REPACKAGED AND SEALED BY:	DATE:
			DATE:
			DATE:

APPENDIX B
Personnel and Laboratory Certifications



RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
ASBESTOS LICENSING UNIT

THE ASBESTOS BUSINESS ORGANIZATION HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 469, FLORIDA STATUTES

GLE ASSOCIATES INC

ROBERT BLAIR GREENE
5405 CYPRESS CENTER DRIVE
SUITE 110
TAMPA FL 33609

LICENSE NUMBER: ZA0000034

EXPIRATION DATE: NOVEMBER 30, 2019

Always verify licenses online at MyFloridaLicense.com



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**STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION**

**ASBESTOS LICENSING UNIT
2601 BLAIR STONE ROAD
TALLAHASSEE FL 32399-0783**

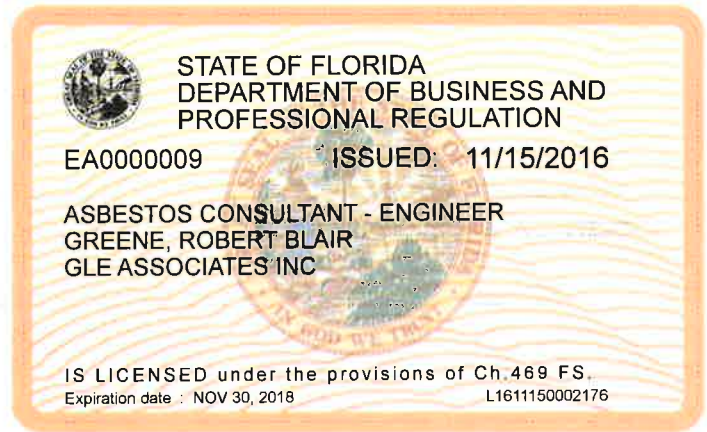
(850) 487-1395

**GREENE, ROBERT BLAIR
GLE ASSOCIATES INC
5405 CYPRESS CENTER DR
SUITE 110
TAMPA FL 33609**

Congratulations! With this license you become one of the nearly one million Floridians licensed by the Department of Business and Professional Regulation. Our professionals and businesses range from architects to yacht brokers, from boxers to barbeque restaurants, and they keep Florida's economy strong.

Every day we work to improve the way we do business in order to serve you better. For information about our services, please log onto www.myfloridalicense.com. There you can find more information about our divisions and the regulations that impact you, subscribe to department newsletters and learn more about the Department's initiatives.

Our mission at the Department is: License Efficiently, Regulate Fairly. We constantly strive to serve you better so that you can serve your customers. Thank you for doing business in Florida, and congratulations on your new license!



DETACH HERE

RICK SCOTT, GOVERNOR

KEN LAWSON, SECRETARY

**STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
ASBESTOS LICENSING UNIT**

LICENSE NUMBER

EA0000009

The ASBESTOS CONSULTANT - ENGINEER
Named below IS LICENSED
Under the provisions of Chapter 469 FS.
Expiration date: NOV 30, 2018



**GREENE, ROBERT BLAIR
GLE ASSOCIATES INC
5405 CYPRESS CENTER DR
SUITE 110
TAMPA FL 33609**

ISSUED: 11/15/2016

DISPLAY AS REQUIRED BY LAW

SEQ # L1611150002176



GLE Associates, Inc. FL 49-0001218

5405 Cypress Center Drive ~ Suite 110 ~ Tampa, Florida 33609 ~ (813) 241-8350

certifies that

Arturo Confiado

has completed the requisite training for
ASBESTOS INSPECTOR REFRESHER
accreditation under TSCA Title II Course No.: FL 49-0002824

conducted on

August 26, 2017

at

TAMPA, FLORIDA

Certificate Number

6293

Passed Exam with score of 70% or better.

EPA Accreditation Expires: August 26, 2018


Instructor


GLE Associates, Inc.

Robert B. Greene

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 102003-0

GLE Associates, Inc.
Tampa, FL

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

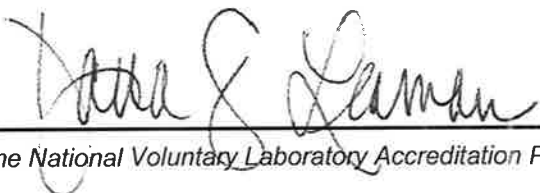
Asbestos Fiber Analysis

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2018-04-01 through 2019-03-31

Effective Dates




For the National Voluntary Laboratory Accreditation Program

APPENDIX C
Sample Location Plan



GLE

By AC Date 7/27/18 Subject VICTORY POINTE - #404 Sheet No. 1 of 1
Chkd. By _____ Date _____ Scale 1" = 10' Proj. No. 18000-19651

