

ADDENDUM NO. 2

TO

ALL CONTRACTORS

FOR THE

GRIMSLEY SENIOR HIGH SCHOOL

FOR THE

GUILFORD COUNTY SCHOOLS

ISSUED: November 19, 2024

The following information contained in this Addendum is issued to amend, clarify or supersede the drawings and specifications, as applicable, and shall become part of the Contract Documents for the subject project as if fully incorporated and bound therein.

GENERAL

Item #1 City of Greensboro permit review comment: Link all permits of each trade including power, low voltage and signs with the associated Building Permit. Install per The City of Greensboro Ordinances, NEC 2020 for Commercial/Industrial buildings and NEC 2017 for R101.2 One- and Two-Family Dwellings. All wiring, including but not limited to low voltage, data, phone, fire alarm, pool bonding, fiber, security, HVAC controls, power and access control shall be installed, permitted and inspected per NC General Statutes and/or City of Greensboro City Ordinance. All electrical materials, devices, appliances, and equipment shall be evaluated by a NC approved third party agency for safety and suitability for intended use.

SPECIFICATIONS

Section 00 41 13 – Bid Bond Form

Item #1 Omit complete section. No Bid Bond or performance and Labor and Material Payment Bonds are required.

Section 00 43 13 02 – Bid Form

Item #2 **Revised Bid form. See attached.**

Section 01 22-00 – Unit Prices

Item #3 Revised section 3.1. See attached. **(To be included with bid)**

Section 01 23 00 – Alternates

Item #4 Alternate #1 – Omit completely the change of warranty from 5 year to 2 year

Item #5 Alternate #2 – Omit automatic folding lift

Item #6 Alternate #3 - change from wired phone to wireless phone at each lift

- Item #7 Alternate #4 – Omit completely the platform from wood to concrete.
- Item #8 **Not used**
- Item #9 Alternate for working at night during the school year for base bid. Contractor can work any time from 5pm to 7am.
- Item #10 **Not used**

Section 05 52 13 – Pipe and Tube Railings

- Item #11 Delete paragraph 2.4.A.3
- Item #12 Delete paragraph 2.7.D
- Item #13 Edit paragraph 2.7.E to read “PROVIDE FIELD APPLIED FINISH PAINT COATINGS PER SECTION 099000 PARAGRAPH 2.4.E.1.”
- Item #14 Delete paragraph 3.6.B

Section 06 16 00 - Sheathing

- Item #15 Delete paragraphs 2.2, 2.6, 2.9 B&C, 3.2, 3.3, 3.6

Section 08 14 16 – Flush Wood Doors

- Item #16 Replace the entire section. See attached revised Section.

Section 09 29 00 – Gypsum Wallboard

- Item #17 Delete paragraphs 1.2.B.1, 1.2.B.6, 2.3, 3.4

Section 09 30 00 – Tile

- Item #18 Replace entire section to reduce the tile options. See attached revised Section.

Section 09 90 00 – Interior Paints and Coatings

- Item #19 Replace entire section to omit exterior paint sections. See attached revised Section.

Section 01 77 00 – Closeout Procedures

- Item #20 See revised section 3.1.B.1 on next page.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances. **(Only in area of laydown and areas where materials were moved from laydown to building and port a john area)**
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits. **(Only in area of laydown and port a john)**
 - c. Pressure wash all concrete and paved surfaces. **(Only in area of laydown and port a john if soiled)**
 - d. Rake grounds that are neither planted nor paved to a smooth, even-textured surface. **(Only in area of laydown and port a john and areas if damaged while moving supplies)**
 - e. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - ~~f. Remove snow and ice to provide for safe access to facility. Continue providing this service until substantial completion has been achieved.~~
 - ~~g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults / closets, manholes, attics, mezzanines and similar spaces.~~
 - h. Sweep ~~concrete~~ **hard surface** floors broom clean with sweeping compound.
 - ~~i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; have carpets professionally shampooed / cleaned if visible soil or stains remain.~~
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision obscuring materials. Replace chipped or broken glass and other materials. Polish mirrors and glass, taking care not to scratch surfaces. **(On items provided in scope of work)**
 - k. Remove labels that are not permanent. **(On items provided in scope of work)**
 - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration. **(Only in work area or damaged items outside work area while moving materials in and out of building)**
 - m. Remove any paint from “UL” and similar labels, including ~~mechanical and~~ electrical nameplates. **(Provided in scope of work)**
 - n. Wipe surfaces of ~~mechanical and~~ electrical equipment, ~~elevator~~ **and lift** equipment and similar equipment. Remove excess lubrication, paint and mortar drippings, and other foreign substances.
 - ~~o. Replace parts subject to unusual operating conditions.~~
 - ~~p. Clean plumbing fixtures to a sanitary condition, free of stains, including stains from water exposure.~~
 - ~~q. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of all diffusers, registers and grilles.~~
 - ~~r. Clean ducts, blowers and coils.~~
 - s. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned out bulbs, and those noticeably dimmed by hours of use, and defective and / or noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures. **(Only new fixtures provided in scope of work)**

DRAWINGS

Item#21 Revised landing design made from CMU and concrete landing coming soon.

Attachments to this Addendum:

Revised specification Sections 00 43 13 02, 01 22 00, 08 14 16, 09 30 00, 09 90 00

Bidder shall give due consideration to the contents of this Addendum in the preparation of the proposal and shall so indicate on their proposal in the space provided therein. Failure of bidder to acknowledge receipt of this Addendum on their proposal may be sufficient cause for rejection of the bid.

McKissick Associates PC / 404 East 4th Street / Winston-Salem, NC 27101
info@mckissickassociates.com

ALTERNATES:

The Bidder proposes to perform the work indicated as alternates for the amounts entered below, which amounts shall be added to or deducted from the Base Bid as indicated in the space below.

(Bidders must enter an amount for each alternate. If acceptance of the alternate will not change the contract amount, enter “No Change”. Insert the words “Add” or “Deduct” in the space provided before the amount.)

List of Alternates:	<u>Add or Deduct</u>	<u>Amount</u>
Alternate #1 Provide Wireless Emergency Telephones	_____	\$ _____
Alternate #2 Performed night during school year for base bid.	_____	\$ _____

BID UNIT PRICES:

UNIT PRICES TO BE SUBMITTED,ALONG WITH BID, ON FORM PROVIDED IN 012200

ADDENDA:

The following addenda were received and used in computing this bid:

	Date	Initial
Addendum #1	_____	_____
Addendum #2	_____	_____
Addendum #3	_____	_____
Addendum #4	_____	_____

The Bidder further proposes and agrees hereby to commence work under this contract on a date to be specified in a written order by the Owner or Designer on or before TBD and shall substantially complete the work on or before TBD. There will be no liquidated damages.

The undersigned further agrees that in the case of failure on his part to execute the said contract within ten (10) consecutive calendar days after written notice being given of the award of the contract.

RESPECTFULLY SUBMITTED this _____ day of _____, 20__.

(Name of firm or corporation making bid)

By: _____

Title: _____
(Owner / Partner / President / Vice President)

License No. _____

Federal ID No. _____

WITNESS: (Proprietorship / Partnership)

By: _____

ATTEST: (Corporation)

By: _____

(CORPORATE SEAL)

Title: _____
(Corporate Secretary or Asst. Secretary Only)

END OF SECTION 00 41 13.02

UNIT PRICES Section 01 22 00 Revised 11/18/24

Guilford County Schools
Grimsley Senior High School
Main Building – Vertical Lifts

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, general provisions of the Contract, including General Conditions, other Division 1 Specification Sections, and all other contract bid documents apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.
- B. Specific requirements of each contract are also indicated in individual Specification Sections, All Bid Documents and on Drawings.
- C. Unit price is an amount proposed by bidders, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit. Unit Prices represent a full and total cost for the listed unit.
 - 1. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- B. Guilford County Schools reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Guilford County Schools' expense, by an independent surveyor acceptable to Contractor. If the findings are that the Contractor's measurement of work-in-pace is inaccurate, the Contractor shall bear the responsibility for said survey.
- C. List of Unit Prices: A list of unit prices is included in this section. Specification Sections referenced in the schedule contain requirements for materials described under each unit price. The bidder(s) shall submit a completed unit price sheet along with the bid. The unit prices will be reviewed and discussed with the Contractor if any units are found to be inequitable.
- D. Unit Prices may be equitably adjusted after bid day if they are found to be unreasonable in cost.

UNIT PRICES Section 01 22 00 Revised 11/18/24

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES (INCLUDE WITH BID) REVISED FROM

UNIT PRICES

Unit Price U-1 Remove and replace deteriorated Wood Blocking
Description: In addition to quantities depicted or indicated by the Contract Documents, state in the proposal the price per board foot to remove and replace deteriorated wood blocking with 2x treated wood blocking. Contractor shall include an additional **One Hundred (50) BF** of blocking in the base bid in addition the quantity required to complete the work scope indicated by the Contract Documents.

\$ _____ per Board Foot (BF)

Unit Price U-2 Gypsum Board Partition
Description: State in the proposal the unit price to provide installation of abuse resistant type X 5/8" gypsum wallboard on one side, taped, spackled, finished and painted on 6"-20 gauge metal studs at 16" o.c., as detailed and specified. A total of **One hundred (100) SF** of drywall shall be included in the base bid in addition to the quantity indicated by the Contract Documents.

\$ _____ per Square Foot (SF)

Unit Price U-3 Suspended Acoustic Panel Ceiling Tiles
Description: State in the proposal the unit price to provide installation 24" x 24" ceiling tiles as detailed and specified in overhead installation. A total of **64 square feet or 32 ceiling tiles (128) SF** of ceiling tiles shall be included in the base bid in addition to the quantity indicated by the Contract Documents.

\$ _____ per Square Foot (SF)

Unit Price U-4 CMU Partition
Description: State in the proposal the amount per square foot to provide 8" CMU partitions, finished and painted, as detailed and specified. A total of **one hundred (100) SF** of CMU shall be included in the base bid in addition to the quantity indicated by the Contract Documents.

\$ _____ per Square Foot (SF)

Unit Price U-5 LVT Flooring
Description: In addition to quantities depicted or indicated by the Contract Documents, state in the proposal the amount per square foot to provide LVT as specified. This unit price shall include "flash-patch" floor preparation.

\$ _____ Square Foot (SF)

UNIT PRICES Section 01 22 00 Revised 11/18/24

Unit Price U-6 Painting

Description: State in the proposal the amount per square foot to prepare, prime, and paint interior partitions. Contractor shall include an additional **One Thousand (1,000) SF** of painting in the base bid in addition the quantity required to complete the work scope indicated by the Contract Documents.

\$ _____ Square Foot (SF)

Unit Price U-7 Additional Convenience Outlets

Description: In addition to quantities depicted or indicated by the Contract Documents, state in the proposal the amount per unit to install and wire additional duplex outlets, complete, as specified. **Two (2)** outlets including wiring and conduit up to 100 LF per device shall be included in the Base Bid in addition to the quantity indicated by the Contract Documents.

\$ _____ Each Unit (EA)

END OF SECTION 01 22 00

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions as Amended and Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

A. Section Includes:

1. Solid core doors with wood veneer, hardboard or MDF faces.
2. Flush and flush glazed configurations.
3. Fire rated, acoustical and special function.
4. Factory finishing wood doors.
5. Factory fitting wood doors to frames and factory machining for hardware.
6. Louvers installed in flush wood doors.
7. Light frames installed in wood doors.

1.3. RELATED SECTIONS

- A. Section 08 71 00 - Door Hardware
- B. Section 09 29 00 - Gypsum Board

1.4. REFERENCE STANDARDS

- A. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009
- B. ANSI A208.1 – Wood Particleboard.
- C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014
- D. Intertek Testing Service (ITS Warnock Hersey) - Certification Listings for Fire Doors.
- E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives
- F. NFPA 252 - Standard for Fire Tests of Door Assemblies
- G. UL 10C - Positive Pressure Fire Tests of Door Assemblies; UL 1784 - Standard for Air Leakage Tests of Door Assemblies.
- H. WDMA I.S.1-A - Interior Architectural Wood Flush Doors.

1.5. SUBMITTALS

- A. Product Data: For each type of door indicated. Include details of core and edge construction, louvers, trim for openings, and WDMA I.S.1-A or AWS classifications. Include factory finishing specifications.

- B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the wood door supplier in order to prepare the doors and frames to receive the finish hardware items.
- C. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.
 - 1. Indicate dimensions and locations of mortises and holes for hardware.
 - 2. Indicate dimensions and locations of cutouts.
 - 3. Indicate requirements for veneer matching.
 - 4. Indicate doors to be factory finished and finish requirements.
 - 5. Indicate fire protection ratings for fire rated doors.
- D. Samples for Initial Selection: For factory finished doors.
 - 1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches, for each material and finish. For each wood species and transparent finish, provide set of three samples showing typical range of color and grain to be expected in the finished work.
 - 2. Corner sections of doors, 8 by 10 inches, with door faces and edges representing actual materials to be used.
 - a. Provide samples for each species of veneer and solid lumber required.
 - b. Finish veneer faced door samples with same materials proposed for factory finished doors.
 - 3. Frames for light openings, 6 inches long, for each material, type, and finish required.

1.6. QUALITY ASSURANCE

- A. Source Limitations: Obtain flush wood doors through one source from a single manufacturer wherever possible.
- B. Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, latest edition, "Industry Standard for Architectural Wood Flush Doors".
- C. Fire Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing at positive pressure according to NFPA 252 (neutral pressure at 40" above sill) or UL 10C (neutral pressure testing according to UL 10B where specified).
 - 1. Oversize Fire Rated Door Assemblies: For units exceeding sizes of tested assemblies provide manufacturer's construction label, indicating compliance to independent 3rd party certification agency's procedure, except for size.
 - 2. Temperature Rise Limit: Where indicated, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire test exposure.
 - 3. Smoke Control Door Assemblies: Comply with NFPA 105.
 - a. Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.
 - 4. Blocking: When through-bolts are not to be used, indicate size and location of blocking in 45, 60 and 90 minute mineral core doors.

1.7. DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package pre-finished doors individually in plastic bags or cardboard cartons and wrap bundles of doors in plastic sheeting.
- C. Do not store in damp or wet locations; or in areas where sunlight might bleach finish.
- D. Mark each door on top rail with opening number used on Shop Drawings.

1.8. WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
 - b. Telegraphing of core construction in wood face veneers exceeding 0.01 inch in a 3-inch span.
 - c. Telegraphing of core construction and delaminating of face in decorative laminate-faced doors.
 - 2. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.
- B. Warranty Period for Solid Core Interior Doors: Life of installation according to manufacturer's written warranty.

1.9. PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weather tight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
- B. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1. DOOR CONSTRUCTION – GENERAL

- A. WDMA I.S.1-A Performance Grade: Extra Heavy Duty; Aesthetic Grade: Premium.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Masonite Architectural : Solid Core Wood Stile & Rail.
 - a. Panel configuration to match existing. Contractor to field verify.
 - b. Fire ratings as indicated on drawings.

2. Other manufacturer as approved by Architect.
- C. Fire Rated Doors: Provide construction and core specified above as needed to provide fire ratings indicated.
 1. Category A Edge Construction: Provide 20, 45, 60 and 90 minute fire rated doors edge construction with intumescent seals concealed by outer stile (Category A). Comply with specified requirements for exposed edges.
 2. Pairs: Provide fire retardant stiles that are listed and labeled for applications indicated without formed steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
 - a. Where required or specified, provide formed steel edges and astragals with intumescent seals. Finish steel edges and astragals with baked enamel.

2.2. VENEERED DOORS FOR TRANSPARENT FINISH

A. Manufacturers

1. Masonite Architectural : Aspiro Series – Marshfield-Algoma (Basis of Design)
2. Eggers Industries.
3. Other manufacturer as approved by Architect.

B. Interior Solid Core Doors:

1. Grade: Premium
2. Faces: Veneer grades as noted below; veneer minimum 1/50-inch (0.5mm) thickness at moisture content of 12% or less.
 - a. Species: Contractor to submit minimum five (5) species and finish samples to match existing doors.
3. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
4. Vertical Edges: Matching same species as faces. Wood or composite material, one piece, laminated, or veneered. Minimum requirements per WDMA section P-1, Performance Standards for Architectural Wood Flush Doors.
5. Horizontal Edges: Solid wood or structural composite material meeting the minimum requirements per WDMA section P-1, Performance Standards for Architectural Wood Flush Doors
6. Construction: Five plies. Stiles and rails are bonded to core, then entire unit sanded before applying face veneers.
7. At doors over 40% of the face cut-out for lights and or louvers, furnish engineered composite lumber core.

2.3. LIGHT FRAMES AND GLAZING

A. Wood Beads for Light Openings in Wood Doors up to and including 20-minute rating:

1. Wood Species: Same species as door faces.
2. Profile: Manufacturer's straight lipped profile. At wood core doors with 20-minute fire protection ratings, provide wood beads and metal glazing clips approved for such use.

- B. Metal Frames for Light Openings in Fire Rated Doors over 20-minute rating: Manufacturer's standard frame and approved for use in doors of fire protection rating indicated.

2.4. FABRICATION

- A. Factory fit doors to suit frame opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
 - 1. Comply with requirements in NFPA 80 for fire rated doors.
- B. Factory machine doors for hardware that is not surface applied. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates.
 - 1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
 - 2. Astragals: Factory machine astragals and formed steel edges for hardware for pairs of fire rated doors.
- C. Transom and Side Panels: Fabricate matching panels with same construction, exposed surfaces, and finish as specified for associated doors. Finish bottom edges of transoms and top edges of rabbeted doors same as door stiles.
- D. Openings: Cut and trim openings through doors in factory.
 - 1. Light Openings: Trim openings with moldings of material and profile indicated.
 - 2. Glazing: Comply with applicable requirements in Division 08 Section "Glazing."

2.5. **FACTORY FINISHING START HERE**

- A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
 - 1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.
- B. Transparent Finish: Provide a clear protective coating over the wood veneer allowing the natural color and grain of the selected wood species to provide the appearance specified. Stain is applied to the wood surface underneath the transparent finish to add color and design flexibility.
 - 1. Grade: Premium.
 - 2. Finish: Meet or exceed WDMA I.S. 1A TR6 Catalyzed Polyurethane finish performance requirements.
 - 3. Staining: As selected by Architect from manufacturer's full range.
 - 4. Sheen: Satin.

PART 3 - EXECUTION

3.1. EXAMINATION

- A. Examine doors and installed door frames before hanging doors.
 - 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.

- 2. Reject doors with defects.
 - B. Proceed with installation only after unsatisfactory conditions have been corrected.
- 3.2. INSTALLATION
- A. Hardware: For installation, see Division 8 Section "Door Hardware."
 - B. Installation Instructions: Install doors to comply with manufacturer's written instructions and the referenced quality standard, and as indicated.
 - 1. Install fire rated doors in corresponding fire rated frames according to NFPA 80.
 - C. Factory Fitted Doors: Align in frames for uniform clearance at each edge.
 - D. Factory Finished Doors: Restore finish before installation if fitting or machining is required at Project site.
- 3.3. ADJUSTING
- A. Operation: Re-hang or replace doors that do not swing or operate freely.
 - B. Finished Doors: Replace doors that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 08 14 16

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions as Amended and Division 01 Specification Sections, apply to this Section.

1.2. SUMMARY

- A. Section Includes:
 - 1. Glazed Ceramic Floor Tile.

1.3. DEFINITIONS

- A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1 apply to Work of this Section unless otherwise specified.
- B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B, ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in "American National Standard Specifications for Installation of Ceramic Tile."
- C. Module Size: Actual tile size plus joint width indicated.
- D. Face Size: Actual tile size, excluding spacer lugs.

1.4. PERFORMANCE REQUIREMENTS

- A. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ASTM C 1028:
 - 1. Level Surfaces: Minimum 0.6

1.5. SUBMITTALS

- A. Contractor shall submit no less than three physical samples for approval to match the existing floor tile as closely as possible.
- B. Product Data: For each type of product indicated.
 - 1. Colors and Patterns of Tile: After award of contract provide to the Architect the latest brochure on tile colors and patterns of the successful supplier.
 - 2. Manufacturers of mortars and/or grouts shall give written certification that their materials are suitable for intended use and meet or exceed the standards of American National Standards Institute or other specified standards.
- C. Samples for Verification:
 - 1. For each type of product indicated, submit the manufacturer's full color line or sample binder for the product line. Samples may be of manufacturer's standard sample size.
 - 2. Full-sized units of each type and composition of tile and for each color and finish referenced in Section 09 00 00 – Color and Material Schedule.

3. Full-size units of each type of trim and accessory for each color and finish required.
 4. Stone thresholds in 6-inch (150-mm) lengths.
 5. Metal edge strips in 6-inch (150-mm) lengths.
- D. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
1. Show details of special patterns.
- E. Qualification Data: For qualified Installer.
- F. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.
- G. Product Certificates: For each type of product, signed by product manufacturer.
- H. Material Test Reports: For each tile-setting and -grouting product.

1.6. QUALITY ASSURANCE

- A. Source Limitations for Tile: Obtain tile of each type and color or finish from one source or producer.
1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.
 2. Maintain same source or producer for tile/base combination or for wall/base combination as listed in the color and material schedule unless other special accessories or conditions are specifically listed.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from one manufacturer and each aggregate from one source or producer.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer for each product:
1. Crack isolation membrane.
 2. Joint sealants.
 3. Metal edge strips.
- D. Preinstallation Conference: Conduct conference at Project site.
1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

1.7. DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination can be avoided.
- D. Store liquid materials in unopened containers and protected from freezing.

- E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.8. PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

1.9. EXTRA MATERIALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 2 percent of amount installed for each type, composition, color, pattern, and size indicated.
 - 2. Grout: Furnish quantity of grout equal to 2 percent of amount installed for each type, composition, and color indicated.

1.10. PROTECTION

- A. Protection: Protect adjoining work surfaces before tile work begins.

PART 2 - PRODUCTS

2.1. PRODUCTS, GENERAL

- A. ANSI Glazed Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
 - 1. Provide tile complying with Standard grade requirements unless otherwise indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCA installation methods specified in tile installation schedules, and other requirements specified.
- C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- D. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer unless otherwise indicated.
 - 1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.
- E. Factory-Applied Temporary Protective Coating: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating with continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.

2.2. METAL EDGE TRIM AT TILE TERMINATIONS

- A. Basis of Design Manufacturer: Schluter Systems or approved equal.
 - 1. Profile: Jolly straight edge trim.
- B. Provide at all top and bottom tile edge terminations.

2.3. THRESHOLDS

- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes. Provide fabricated stone thresholds that are free of cracks, seams, and starts impairing their structural integrity or function, and are from a single quarry for each type, variety, color, and quality of stone specified
 - 1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to **1/16 inch (1.5 mm)** above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to **1/2 inch (12.7 mm)** or less above adjacent floor surface.
- B. Marble Thresholds: Marble Thresholds: Meet ASTM C 503 and meet a minimum abrasion resistance of 12 per ASTM C 241 with a honed finish as follows:
 - 1. Color and Finish: Uniform, fine to medium-grained gray, honed stone classified Group A per definitions for soundness classification in MIA "Dimension Stone Design Manual".
- C. Metal Edge Thresholds: Provide as an option if metal edge transition strip does not provide enough elevation to make transition between flooring surfaces. Review with Architect before installation in case profile needs to be cut from gradual surface transition, as to maintain handicapped accessibility.

2.4. SETTING MATERIALS

- A. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Boiardi Products; a QEP company.
 - b. Bostik, Inc.
 - c. Laticrete International, Inc.
 - d. MAPEI Corporation.
 - e. Summitville Tiles, Inc.
 - 2. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.

2.5. GROUT MATERIALS

- A. Water-Cleanable Epoxy Grout: ANSI A118.3.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Bonsal American; an Oldcastle company.
 - b. Bostik, Inc.
 - c. Laticrete International, Inc.
 - d. MAPEI Corporation.
 - e. Southern Grouts & Mortars, Inc.
 - f. Summitville Tiles, Inc.
2. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to **140 deg F (60 deg C)** and **212 deg F (100 deg C)**, respectively, and certified by manufacturer for intended use.

2.6. MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; white zinc alloy exposed-edge material.
- C. Temporary Protective Coating: Either product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout; compatible with tile, mortar, and grout products; and easily removable after grouting is completed without damaging grout or tile.
 1. Petroleum paraffin wax, fully refined and odorless, containing at least 0.5 percent oil with a melting point of 120 to 140 deg F per ASTM D 87.
 2. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as temporary protective coating for tile.
- D. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- E. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints and that does not change color or appearance of grout.
 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Bonsal American; an Oldcastle company; Grout Sealer.
 - b. Bostik, Inc.; CeramaSeal Grout & Tile Sealer.
 - c. MAPEI Corporation; KER 003, Silicone Spray Sealer for Cementitious Tile Grout.
 - d. Summitville Tiles, Inc.; SL-15, Invisible Seal Penetrating Grout and Tile Sealer.

2.7. MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.

- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1. EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 2. Verify that concrete substrates for tile floors installed with thin-set mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
 - a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
 - b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.
 3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
 4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Deviations beyond allowable tolerances of surfaces to receive tile shall not exceed the following limits:
1. Portland Cement Mortar Methods:
 - a. Maximum variation in subfloor surface: $\frac{1}{4}$ " in 10'-0".
 - b. Maximum variation in vertical and ceiling surfaces: $\frac{1}{4}$ " in 8'-0".
 2. Latex-Portland Cement Mortar Method:
 - a. Maximum Variation in subfloor surface: $\frac{1}{16}$ " in 3'-0".
 - b. Maximum height of abrupt irregularities: $\frac{1}{32}$ ".
- C. Maximum variation in vertical and ceiling surfaces: $\frac{1}{8}$ " in 8'-0".
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2. PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Prepare substrates that have been previously covered with other adhered floor finishes by using a shot-blast process.

- C. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped approximately **1/8 inch min. per foot** toward drains as room conditions and floor tile sizes allow. The contractor shall review with the Architect its approach for tile arrangement around floor drains before permanently installing tile.
- D. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.
- E. Field-Applied Temporary Protective Coating: If indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3. TILE INSTALLATION

- A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors in wet areas.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
 - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
 - 2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
 - 3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.
- E. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 - 1. Porcelain Body Floor and Wall Tile: 1/8 inch
- F. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.

1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
- G. Metal Edge Strips: Install at locations indicated.
- H. Grout Sealer: Apply grout sealer to cementitious grout joints in tile floors according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

3.4. CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
1. Remove epoxy and latex-portland cement grout residue from tile as soon as possible.
 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
 3. Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.
- B. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- D. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

3.5. INTERIOR TILE INSTALLATION SCHEDULE

- A. Interior Floor Tile
1. Tile Installation W202: Thin-set mortar; TCA W202.
 - a. Tile Type: Porcelain Tile Or Ceramic Tile.
 - b. Thin-Set Mortar: Latex-portland cement mortar.
 - c. Grout: Polymer-modified sanded or Polymer-modified unsanded grout depending on the joint size appropriate for the specific tile.

END OF SECTION 09 30 00

PART 1 - GENERAL

1.1. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions as Amended and Division 01 Specification Sections, apply to this Section.

1.2. SECTION INCLUDES

- A. Interior paint and coating commercial systems including surface preparation.

1.3. REFERENCES

- A. Steel Structures Painting Council (SSPC):
 - 1. SSPC-SP 1 - Solvent Cleaning.
 - 2. SSPC-SP 2 - Hand Tool Cleaning.
 - 3. SSPC-SP 3 - Power Tool Cleaning.
 - 4. SSPC-SP5/NACE No. 1, White Metal Blast Cleaning.
 - 5. SSPC-SP6/NACE No. 3, Commercial Blast Cleaning.
 - 6. SSPC-SP7/NACE No. 4, Brush-Off Blast Cleaning.
 - 7. SSPC-SP10/NACE No. 2, Near-White Blast Cleaning.
 - 8. SSPC-SP11, Power Tool Cleaning to Bare Metal.
 - 9. SSPC-SP12/NACE No. 5, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating.
 - 10. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete.
- B. Material Safety Data Sheets / Environmental Data Sheets: Per manufacturer's MSDS/EDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.
- C. California Department of Public Health (CDPH):
 - 1. CDPH v1.1-2010 and V1.2-2017

1.4. SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: For each paint system indicated, including.
 - 1. Product characteristics.
 - 2. Surface preparation instructions and recommendations.
 - 3. Primer requirements and finish specification.
 - 4. Storage and handling requirements and recommendations.
 - 5. Application methods.
 - 6. Cautions for storage, handling and installation.
- C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's products, colors and sheens available.
- D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.

-
- E. Coating Maintenance Manual: Upon conclusion of project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams, "Custodian Paint Maintenance Manual" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used. "
 - F. Only submit complying products based on project requirements. One must also comply with the regulations regarding VOCs (CARB, OTC, SCAQMD, LADCO). To ensure compliance with district regulations and other rules, businesses that perform coating activities should contact the local district in each area where the coating will be used.

1.5. QUALITY CONTROL

- A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Paint exposed surfaces. If a color of finish, or a surface is not specifically mentioned, Architect will select from standard products, colors and sheens available.
- C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels unless indicated.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish surfaces for verification of products, colors and sheens.
 - 2. Finish area designated by Architect.
 - 3. Provide samples that designate primer and finish coats.
 - 4. Compatibility and Adhesion: Check after one week of drying and curing by testing in accordance with ASTM D3359; Adhesion by tape test. If coating system is incompatible, additional surface preparation up to and including complete removal may be required.
 - 5. Do not proceed with remaining work until the Architect approves the mock-up.

1.6. DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information.
 - 1. Product name, and type (description).
 - 2. Application and use instructions.
 - 3. Surface preparation.
 - 4. VOC content.
 - 5. Environmental handling and SDS.
 - 6. Batch date.
 - 7. Color number.
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

- D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.7. PROJECT CONDITIONS

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

1.8. EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
- B. Furnish Owner with an additional one percent of each material and color, but not less than 1 gal (3.8 l) or 1 case, as appropriate.

PART 2 - PRODUCTS

2.1. MANUFACTURERS

- A. Basis of Design Manufacturer: Sherwin-Williams, which is located at: 101 Prospect Ave.; Cleveland, OH 44115; ASD Toll Free Tel: 800-524-5979; Tel: 216-566-2000; Fax: 440-826-1989; Email: requestinfospecifications@sherwin.com; Web: www.swspecs.com.
- B. Or provide Products listed in the MPI (Master Painters Institute) Standard Coating Index that demonstrate equivalence to the basis of design products will be accepted.
 - 1. Acceptable Manufacturers will include, but are not limited to:
 - a. PPG Paints
 - b. Tnemec Commercial and Industrial Paint Coatings

2.2. APPLICATIONS/SCOPE

- A. Interior Paint and Coating Commercial Systems:
 - 1. Concrete: Poured, precast, tilt-up, cast-in-place, cement board, plaster.
 - 2. Concrete: Non-vehicular floors.
 - 3. Masonry: Concrete masonry units, including split-face, scored, and smooth block.
 - 4. Metal: Aluminum, galvanized steel.
 - 5. Metal: Structural steel, joists, trusses, beams, partitions and similar items.
 - 6. Wood: Walls, ceilings, doors, trim and similar items.
 - 7. Drywall: Drywall board, Gypsum board.

2.3. PAINT MATERIALS - GENERAL

- A. Paints and Coatings:
 - 1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

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. Or follow manufactures product instructions for optimal color conformance.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.
- D. Color: Colors to be selected by Architect. Color selection to be determined based on product submittals and coordination of other material colors.

2.4. INTERIOR PAINT AND COATING COMMERCIAL SYSTEMS

- A. Concrete: Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place including Plaster Walls and Ceilings.
 1. Alkyd Systems; Waterbased:
 - a. Low Sheen Finish:
 - (1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02 Series (8 mils wet, 3.2 mils dry).
 - (2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53 Series.
 - (3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - B. Masonry CMU: Concrete, Split Face, Scored, Smooth, High Density, Low Density, and Fluted.
 1. Latex Systems:
 - a. Semi-Gloss Finish: High Performance (HP) Upgrade.
 - (1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - (2) 2nd Coat: S-W Pro Industrial Semi-Gloss Acrylic, B66-650 Series.
 - (3) 3rd Coat: S-W Pro Industrial Semi-Gloss Acrylic, B66-650 Series (6 mils wet, 2.2 mils dry per coat).
 - C. Metal: Aluminum and Galvanized.
 1. Alkyd Systems; Waterbased:
 - a. Semi-Gloss Finish:
 - (1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series (5.0 mils wet, 1.9 mils dry).
 - (2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53 Series.
 - (3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - D. Metal; Galvanized: Ceilings and Duct work.
 1. Dryfall Waterborne Topcoats:
 - a. Flat Finish:
 - (1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series (5.0 mils wet, 1.9 mils dry). Painter to inspect field conditions of these items and recommend primer type prior to installation.
 - (2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Flat, B42

- Series.
- (3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Flat, B42 Series (6.0 mils wet, 1.5 mils dry per coat).
- E. Metal: Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous and Ornamental Iron, Structural Iron, and Ferrous Metal.
 - 1. Alkyd Systems; Waterbased:
 - a. Semi-Gloss Finish:
 - (1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series (5.0 mils wet, 1.9 mils dry).
 - (2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53 Series.
 - (3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - 2. Dryfall Waterborne Topcoat:
 - a. Flat Finish:
 - (1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series (5.0 mils wet, 1.9 mils dry).
 - (2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Flat, B42 Series.
 - (3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Flat, B42 Series (6.0 mils wet, 1.5 mils dry per coat).
- F. Wood: Walls, ceilings, doors, and trim.
 - 1. Alkyd Systems; Waterbased:
 - a. Low Sheen Finish:
 - (1) 1st Coat: S-W Premium Wood and Wall Primer, B28W8111 (4 mils wet, 1.6 mils dry).
 - (2) 2nd Coat: S-W Scuff Tuff Interior Waterbased Enamel, Eg-shel S24-50 Series.
 - (3) 3rd Coat: S-W Scuff Tuff Interior Waterbased Enamel, Eg-shel S24-50 Series.
 - 2. Stain and Varnish System:
 - a. Satin Finish:
 - (1) 1st Coat: SW Minwax Performance Series Tintable Wood Stain 250 VOC.
 - (2) 2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane.
 - (3) 3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane (4 mils wet, 1.0 mil dry per coat).
- G. Drywall: Walls, Ceilings, Gypsum Board and similar items.
 - 1. Latex Systems:
 - a. Eg-Shel / Satin Finish: High Performance (HP) Upgrade.
 - (1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.0 mils dry).
 - (2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B26-2600 Series.
 - (3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B26-2600 Series (4 mils wet, 1.7 mils dry per coat).

- b. Flat Finish:
 - (1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.0 mils dry).
 - (2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series.
 - (3) 3rd Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series (3.75 mils wet, 1.5 mils dry per coat).
- 2. Provide paint finishes on gypsum wallboard substrates for conditions as follows:
 - a. Gypsum wallboard/drywall walls: provide “satin” finish.
 - b. Gypsum wallboard/drywall ceilings: provide “flat finish” on ceilings and soffits, with the exception of restrooms, janitors and service areas, provide satin finish in those areas.

PART 3 - EXECUTION

3.1. EXAMINATION

- A. Do not begin installation until substrates have been properly prepared; notify Architect of unsatisfactory conditions before proceeding.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.
- D. Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

3.2. SURFACE PREPARATION

- A. General: Surfaces shall be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
 - 1. Prior to attempting to remove mildew, it is recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions are advised.
 - 2. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply solution and scrub the mildewed area. Allow solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow surface to dry before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.
 - 3. Remove items including but not limited to thermostats, electrical outlets, switch covers and similar items prior to painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
 - 4. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50 degrees F (10 degrees C), unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface and material temperatures must be 50 degrees F (10 degrees F) or higher to use low temperature products.

-
- B. Aluminum: Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.
 - C. Block (Cinder and Concrete): Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75 degrees F (24 degrees C). The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a cement patching compound.
 - D. Concrete, SSPC-SP13 or NACE 6: This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.
 - E. Cement Composition Siding/Panels: Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Pressure clean, if needed, with a minimum of 2100 psi pressure to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments.
 - F. Copper and Stainless Steel: Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP 2, Hand Tool Cleaning.
 - G. Exterior Composition Board (Hardboard): Some composition boards may exude a waxy material that must be removed with a solvent prior to coating. Whether factory primed or unprimed, exterior composition board siding (hardboard) must be cleaned thoroughly and primed with an alkyd primer.
 - H. Drywall - Exterior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting. Exterior surfaces must be spackled with exterior grade compounds.
 - I. Drywall - Interior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting.
 - J. Galvanized Metal: Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP16 is necessary to remove these treatments.
 - K. Plaster: Must be allowed to dry thoroughly for at least 30 days before painting unless the products are designed to be used in high pH environments. Room must be ventilated while drying; in cold, damp weather, rooms must be heated. Damaged areas must be repaired with an appropriate patching material. Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of water. Repeat until the surface is hard, rinse with clear water and allow to dry.

-
- L. Steel: Structural, Plate, And Similar Items: Should be cleaned by one or more of the surface preparations described below. These methods are used throughout the world for describing methods for cleaning structural steel. Visual standards are available through the Society of Protective Coatings. A brief description of these standards together with numbers by which they can be specified follow.
1. Solvent Cleaning, SSPC-SP1: Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation.
 2. Hand Tool Cleaning, SSPC-SP2: Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before hand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
 3. Power Tool Cleaning, SSPC-SP3: Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before power tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
 4. White Metal Blast Cleaning, SSPC-SP5 or NACE 1: A White Metal Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.
 5. Commercial Blast Cleaning, SSPC-SP6 or NACE 3: A Commercial Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 33 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.
 6. Brush-Off Blast Cleaning, SSPC-SP7 or NACE 4: A Brush-Off Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose paint. Tightly adherent mill scale, rust, and paint may remain on the surface. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP 1 or other agreed upon methods.
 7. Power Tool Cleaning to Bare Metal, SSPC-SP11: Metallic surfaces that are prepared according to this specification, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portions of pits if the original surface is pitted. Prior to power tool surface preparation, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP1, Solvent Cleaning, or other agreed upon methods.

8. Near-White Blast Cleaning, SSPC-SP10 or NACE 2: A Near White Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 5 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.
 9. High- and Ultra-High Pressure Water Jetting for Steel and Other Hard Materials: SSPC-SP12 or NACE 5: This standard provides requirements for the use of high- and ultra-high pressure water jetting to achieve various degrees of surface cleanliness. This standard is limited in scope to the use of water only without the addition of solid particles in the stream.
 10. Water Blasting, SSPC-SP12/NACE No. 5: Removal of oil grease dirt, loose rust, loose mill scale, and loose paint by water at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute.
- M. Vinyl Siding, Architectural Plastics, EIFS and Fiberglass: Clean vinyl siding thoroughly by scrubbing with a warm, soapy water solution. Rinse thoroughly. Do not paint vinyl siding with any color darker than the original color unless the paint system features Sherwin-Williams VinylSafe technology. Painting with darker colors that are not Sherwin-Williams VinylSafe may cause siding to warp. Follow all painting guidelines of the vinyl manufacturer when painting. Only paint properly installed vinyl siding. Deviating from the manufacturer's painting guidelines may cause the warranty to be voided.
- N. Stucco: Must be clean and free of any loose stucco. If recommended procedures for applying stucco are followed, and normal drying conditions prevail, the surface may be painted in 30 days. The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments such as Loxon.
- O. Wood: Must be clean and dry. Prime and paint as soon as possible. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.

3.3. INSTALLATION

- A. Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendations.
- B. Do not apply to wet or damp surfaces. Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days. Test new concrete for moisture content. Wait until wood is fully dry after rain or morning fog or dew.
- C. Apply coatings using methods recommended by manufacturer.
- D. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
- E. Apply coatings at spreading rate required to achieve the manufacturers recommended dry film thickness.
- F. Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.

- G. Inspection: The coated surface must be inspected and approved by the Architect just prior to the application of each coat.

3.4. PROTECTION

- A. Protect finished coatings from damage until completion of project.
- B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION 09 90 00