TETRA TECH

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Addendum No. 2

Delaware Army National Guard
Duncan Armory/Readiness Center – Envelope and Interior Improvements
New Castle, Delaware
OMB/DFM Contract No.: MC7601000102
DEARNG Contract No.:2018-04

Tt Project No. 200-76984-18001

Addendum No. 02
to
Drawings and Project Manual
August 30, 2018

To: ALL BIDDERS

This ADDENDUM forms a part of the BIDDING AND CONTRACT DOCUMENTS and modifies the following documents:

Original DRAWINGS dated August 15, 2018
PROJECT MANUAL dated August 15, 2018

Acknowledge receipt of the ADDENDUM in the space provided on the FORM OF PROPOSAL

This ADDENDUM consists of three (3) pages and the following:

2.1 GENERAL ADMNISTRATIVE DISCUSSION

A. All questions and substitution requests must go to Chuck Dobbs of Tetra Tech (Tt): chuck.dobbs@tetratech.com, via e-mail, and to Tt's administrative assistant team's e-mail address: ier.deng@tetratech.com

B. Critical Dates:

1. **Bid Due Date: as advertised: Wednesday, September 5, 2018 by 2:00pm**.
2. Sub-walk thru: No formal day will be established, call Bill Davis at (302) 326-7131, to schedule access to the building for your subs.
3. Cut off for questions and Substitutions: 8/24/18 (Close of Business)
4. Last Addendum (for technical content): 8/30/18

C. Addenda: all Pre-bid meeting attendees will receive a copy of Addendum 1. Only plan holders will receive copies of subsequent Addenda.

D. References to "DEARNG" is the Delaware Army National Guard

2.2 **PROJECT MANUAL MODIFICATIONS**

A. Section 00 82 13 – Additional General Requirements

1. Paragraph 1.03 A (a) – **DELETE** subparagraphs iii, iv, vi

B. Section 08 71 00 – Door Hardware

1. **REPLACE** 08 71 00 – Door Hardware in its entirety with the **REVISED** Spec Section attached this addendum. Note: the changes include eliminating the power operators and adding a new Access Door Entry Controller unit, in the form of a remote intercom with door latch release switch (Basis of Design- Aiphone no LEM-1DL-DA). This Controller will replace the existing call button at the exterior door. See Modifications to Drawing E-101 below.

C. Section 09 67 23 Resinous Flooring

1. **ADD** Spec Section in its entirety. Note: the flooring material outlined in this section shall be for the Kitchen floor & wall base.

2.3 **DRAWING MODIFICATIONS**

A. AD-101 - 1sf Fl Demo Plan

1. In Room 122 kitchen: **ADD** cutting out a section of the floor slab and excavating the subbase to accommodate the new recessed Grease Interceptor Cradle. Actual size shall be coordinated with the Cradle unit recommended by the Grease Interceptor Manufacturer by the contractor. See the following paragraph B.

B. A-101 – 1st Fl FLOOR PLAN – **REPLACE** originally issued version with the attached copy.

1. Floor Plan Key Notes: CHANGE key note 8 to the following wording:

   PROVIDE NEW GREESE INTERCEPTOR AT THE 3 BOW SINK:

   - BASIS OF DESIGN: JR SMITH NO.8020, IN SEMI-RECESSED CONFIGURATION, WITH CRADLE UNIT, AS RECOMMENDED BY JR SMITH. THE DEPTH TO BE COORDINATED WITH SINK DRAINAGE PIPING SYSTEM, AND VERIFIED BY CONTRACTOR, PRIOR TO PURCHASING. PROVIDE SUITABLE FLOW CONTROL FITTING.
   - PROVIDE NEW 2" SCHL. 40 CPVC DRAIN PIPE, AND AN AIR GAP FITTINGS ("FUNNEL" TYPE - ASTM D2665 & ASME A112.12) AT EACH OF THE (3) DRAINS BELOW THE SINKS.
   - FILL IN CONCRETE AROUND CRADLE.
   - MODIFY DRAIN AND VENT ASSEMBLY TO ACCOMIDATE THE NEW INTERCEPTOR INSTALLATION.

2. Room Finish Legend: **ADD** Floor finish "B2 - Resinous Flooring"

3. Kitchen Room 122 – Room Finish tag: **CHANGE** the floor finish tag to "B2"

C. A-102 – 2nd Fl. FLOOR PLAN – Corridor 200, Room Finish tag: **CHANGE** the wall finish to "C"

D. E-101 1st Fl. Electrical Demo & New Work Plan

1. **REPLACE** this sheet with the attached version in it's entirety.

E. A-103 – Door Schedule, this also modifies sketch ASK-1 issued in Addendum 1: **ADD** door ST1 (Stair Tower 1), Size – 3'- 0" x 7'-0", Hollow Metal door and Frame, Door Type 'A"

2.4 **QUESTIONS/CLARIFICATIONS:**

1. Q: Please clarify who is responsible for updating the CAD files to reflect the changes in construction for the record drawings

A: As it is noted several times in the specifications the General Contractor (GC) shall be responsible for updating the CAD files. Tetra Tech will provide the GC with the DWG / CAD files to make the record edits.

2. Q: Please clarify the scope of work shown on the elevations 1,2,3 and 4 on A-103:
   A. The intent of these elevations is to show the new windows and exterior doors that are called out on the Floor plans.

ATTACHMENTS

Spec Section 00 81 00 Door Hardware – Rev 1
Spec Section 09 67 23 Resinous Flooring
Revised Drawing E-101

END OF ADDENDUM No. 2

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SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Mechanical door hardware for the following:

a. Swinging doors.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

B. Keying Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For electrified door hardware.

1. Include diagrams for power, signal, and control wiring.
2. Include details of interface of electrified door hardware and building safety and security systems.

C. Samples: For each exposed product in each finish specified.

D. Door hardware schedule.

E. Keying schedule.

1.4 INFORMATIONAL SUBMITTALS

A. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.

1. Scheduling Responsibility: Preparation of door hardware and keying schedule.
2. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as an Architectural Hardware Consultant (AHC).

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated below:
   a. Exit Devices: Three years from date of Substantial Completion.
   b. Manual Closers: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. agency, and marked for intended location and application.

B. Means of Egress Doors: Latches do not require more than 15 lbf to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

C. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the DOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1.

2.2 SCHEDULED DOOR HARDWARE

A. Provide products for each door that comply with requirements indicated in Part 2 and door hardware schedule.

1. Door hardware is scheduled on Drawings.

2.3 HINGES

A. Hinges: BHMA A156.1, 5 Knuckle Concealed Ball Bearing
1. Basis of Design: Stanley 5 knuckle concealed ball bearing: CB179, CB168 and CECB 179-12C as listed in hardware sets.
2. Comparable products by Bommer and Hager will be acceptable.

2.4 MECHANICAL LOCKS AND LATCHES

A. Lock Functions: As indicated in door hardware schedule.

B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
1. Mortise Locks: Minimum 3/4-inch latchbolt throw.
2. Deadbolts: Minimum 1-inch bolt throw.

C. Lock Backset: 2-3/4 inches unless otherwise indicated.

D. Lock Trim:

1. Description: Lever x Rose
2. Levers: Forged or Cast

a. BEST Locking: 14H

3. Roses: Forged or Cast.
4. Dummy Trim: Match lever lock trim and escutcheons.

E. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

1. Flat-Lip Strikes: For locks antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.
4. Rabbet Front and Strike: Provide on locksets for rabbeted meeting stiles.

F. Mortise Locks: BHMA A156.13; Operational Grade 1; stamped steel case with steel or brass parts; Series 1000.

1. Basis of Design: BEST Locking model 45H Mortise Lock

2. Comparable products by Schlage and Sargent will be acceptable

2.5 AUXILIARY LOCKS

A. Mortise Auxiliary Locks: BHMA A156.36; Grade 1; with strike that suits frame.

1. Basis of Design: BEST Locking model 48H

2.6 MANUAL FLUSH BOLTS

A. Manual Flush Bolts: BHMA A156.16; minimum 3/4-inch throw; designed for mortising into door edge.

1. Basis of Design: Trimco model 3917
2. Comparable products by Burns Manufacturing and Door Controls International will be acceptable.

2.7 EXIT DEVICES

A. Exit Devices: BHMA A156.3. Grade 1

1. Basis of Design: Precision models 2800 series, ELR 2800 series, 2100 series, 671DR dummy touch bars.
2. Comparable products by Von Duprin and Sargent will be acceptable.

2.8 LOCK CYLINDERS and CORES

A. Standard Lock Cylinders: BHMA A156.5; Grade 1, face finished to match lockset.

1. Core Type: Interchangeable

B. High-Security Lock Cores: BHMA A156.30; Grade 1 permanent cores that are removable; face finished to match lockset.

1. Type: M, mechanical, Existing MEDECO SFIC system NO SUBSTITUTIONS.

C. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

2.9 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, appendix. Provide one extra key blank for each lock. Incorporate decisions made in keying conference.

1. Grand Master Key System: Change keys, a master key, and a grand master key operate cylinders.

a. Provide three-cylinder change keys and five each of master and grand master keys.

2. Existing System:

a. Master key or grand master key locks to Owner's existing system.

B. Keys: Nickel silver.

1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:

a. Notation: "DO NOT DUPLICATE."

2.10 KEY CONTROL SYSTEM

A. Key Control Cabinet: BHMA A156.28; metal cabinet with baked-enamel finish; containing key-holding hooks, labels, two sets of key tags with self-locking key holders, key-gathering envelopes, and temporary and permanent markers; with key capacity of 100.

1. Basis of Design: Lund, Model BH-570-3
2. Wall-Mounted Cabinet: Grade 1 cabinet with hinged-panel door equipped with key-holding panels and pin-tumbler cylinder door lock.

2.11 OPERATING TRIM

A. Operating Trim: BHMA A156.6; stainless steel unless otherwise indicated.

1. Basis of Design: TRIMCO models 1171-40 SPL, 111A and as indicated in hardware sets.
2. Comparable products by Forms & Surfaces, Burns Manufacturing and Rockwood will be acceptable.

2.12 ACCESSORIES FOR PAIRS OF DOORS

A. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release.

B. Carry-Open Bars: BHMA A156.3; prevent the inactive leaf from opening before the active leaf; provide polished brass or bronze carry-open bars with strike plate for inactive leaves of pairs of doors unless automatic or self-latching bolts are used.

C. Astragals: BHMA A156.22.

2.13 SURFACE CLOSERS

A. Surface Closers: BHMA A156.4; Grade 1, rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

1. Basis of Design: Stanley model CLD-4550, arm types and options as listed in hardware sets.
2. Comparable products by LCN Door Closers, Dorma Door Closers will be acceptable as approved by architect.

2.14 MECHANICAL STOPS AND HOLDERS

A. Wall- and Floor-Mounted Stops: BHMA A156.16.

1. Basis of Design: Trimco
2. Comparable products by Rockwood and Burns Manufacturing will be acceptable

2.15 OVERHEAD STOPS AND HOLDERS

A. Overhead Stops and Holders: BHMA A156.8.

1. Basis of Design: Architectural Builders Hardware Mfg. (ABH)
2. Comparable products by Trimco and Chek-mate will be acceptable.

2.16 DOOR GASKETING

A. Door Gasketing: BHMA A156.22; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.

1. Basis of Design: National Guard Products (NGP)
2. Comparable products by Reese and Door Hardware Systems Inc. (DHSI) will be acceptable.

B. Maximum Air Leakage: When tested according to ASTM E 283 with tested pressure differential of 0.3-inch wg, as follows:

1. Smoke-Rated Gasketing: 0.3 cfm/sq. ft. of door opening.
2. Gasketing on Single Doors: 0.3 cfm/sq. ft. of door opening.
3. Gasketing on Double Doors: 0.50 cfm per foot of door opening.

2.17 THRESHOLDS

A. Thresholds: BHMA A156.21; anodized aluminum, fabricated to full width of opening indicated.

1. Basis of Design: National Guard Products (NGP)
2. Comparable products by Reese and Door Hardware Systems Inc. (DHSI) will be acceptable.

2.18 METAL PROTECTIVE TRIM UNITS

A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch thick stainless steel, beveled 4 edges, counter sunk screw holes with manufacturer's standard machine or self-tapping screw fasteners.

1. Basis of Design: Trimco Model KO050

2.19 AUXILIARY DOOR HARDWARE

A. Auxiliary Hardware: BHMA A156.16.

1. Basis of Design: Trimco Model 1229A

2.20 AUXILIARY ELECTRIFIED DOOR HARDWARE

A. Auxiliary Electrified Door Hardware:

1. Powers supplies: Precision Basis of Design - Model ELR151
2. Electric Power Transfers: Basis of Design - Precision EPT-12
3. Wiring Harness: Basis of Design - Precision WH-192P, WH-6E
4. Access Door Entry Control: Basis of Design – Aiphone, LEM-1DL-DA

2.21 FINIS

A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as directed by Owner.
2. Furnish permanent cores to Owner for installation.

E. Key Control Cabinet: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

F. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Architect.

1. Configuration: Provide least number of power supplies required to adequately serve doors with electrified door hardware.

G. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 07 92 00 "Joint Sealants."

H. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

I. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

1. Do not notch perimeter gasketing to install other surface-applied hardware.

J. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

K. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.2 ADJUSTING

A. Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.3 DOOR HARDWARE SETS SCHEDULE

Manufacturer's Abbreviations (Column 4):

AiP	Aiphone
BE	Best Locking
BY	By Others
DO	Dorma
ST	Stanley
PR	Precision Hardware Inc.
ME	Medeco
NA	National Guard Products
SD	Stanley Door Closers
SDC	Security Door Controls
TR	Trimco Inc.

A. **Hardware Set# 01**

Doors: 100A
Pair to have:

1ea.	Continuous Hinges	661HD	628	ST
1ea.	Continuous Hinges	661HD (Prep'd for EPT)	628	ST
1ea.	Electric Power Transfer	PT1000	630	ABH
1ea.	Key removeable Mullion	KR822 MCS	PTD	PR
1ea.	Rim Cylinder (Mullion)	12E-72 L/C R706	626	BE
1ea	Exit Device	MLR 3RO 2101 CD	630	PR
1ea.	MLR Power Supply	RPSMLR2BB	PTD	PR
1ea	Exit Device	3RO 2101 CD	630	PR

2ea.	Mortise Cylinders (Dogging)	1E-74 L/C C4 R705	626	BE
1ea.	Rim Cylinder (Trim)	12E-72 L/C R706	626	BE
4ea.	SFIC Cores	Medco 33N700006 Pinned	626	ME
2ea.	Door Pulls	1191-4	630	TR
2ea.	Door Closer	CLD-4550 HCS P45HD P45HD-112689		ST
2ea.	Kick Plates	KO050 10”x 2” LDW CS	630	TR
1ea.	Threshold	425 SIA ssms/ea	689	NA
2ea.	Door Sweeps	200NA	689	NA
1set	Perimeter W/S	5075B LAR (Head & Jambs)	BRN	NA
1set	Mullion Seal	5100N	BLK	NA
1ea.	Access Door Entry Control	LEM-1DL-DA	PL	AiP

Description of Operation: Access via mechanical key or via Aiphone announcement call. Remote Aiphone console push button initiates latch retraction of exit device. Free egress at all times via exit device touch bar. Exit devices may be dogged for push/pull operation via mechanical cylinder at touch bar.

B. **Hardware Set# 02**

Doors: 100B
Pair to have:

2ea.	Continuous Hinges	661HD	628	ST
2ea.	Door Pulls	1191-4	630	TR
2ea.	Dummy Touchbars	671DR-3	630	PR
2ea.	Door Closers	CLD-4550 HCS P45HD P45HD-112689		ST
2ea.	Kick Plates	KO050 10”x 2” LDW CS	630	TR
1ea.	Threshold	425 SIA ssms/ea	689	NA
2ea.	Door Sweeps	200NA	689	NA
1set	Perimeter W/S	5075B LAR (Head & Jambs)	BRN	NA

C. **Hardware Set# 03**

Doors: 100C, 109A
Pair to have:

6ea.	Hinges	FBB168 4½” x 4 ½”	630	ST
2ea.	Door Pulls	1191-4	630	TR
2ea.	Push Plates	1001-3	630	TR
2ea.	Door Closer	CLD-4550 HCS P45HD P45HD-112689	689	ST
2ea.	Kick Plates	KO050 10”x 2” LDW CS	630	TR
1set	Perimeter W/S	5075B LAR (Head & Jambs)	BRN	NA

D. **Hardware Set# 04**

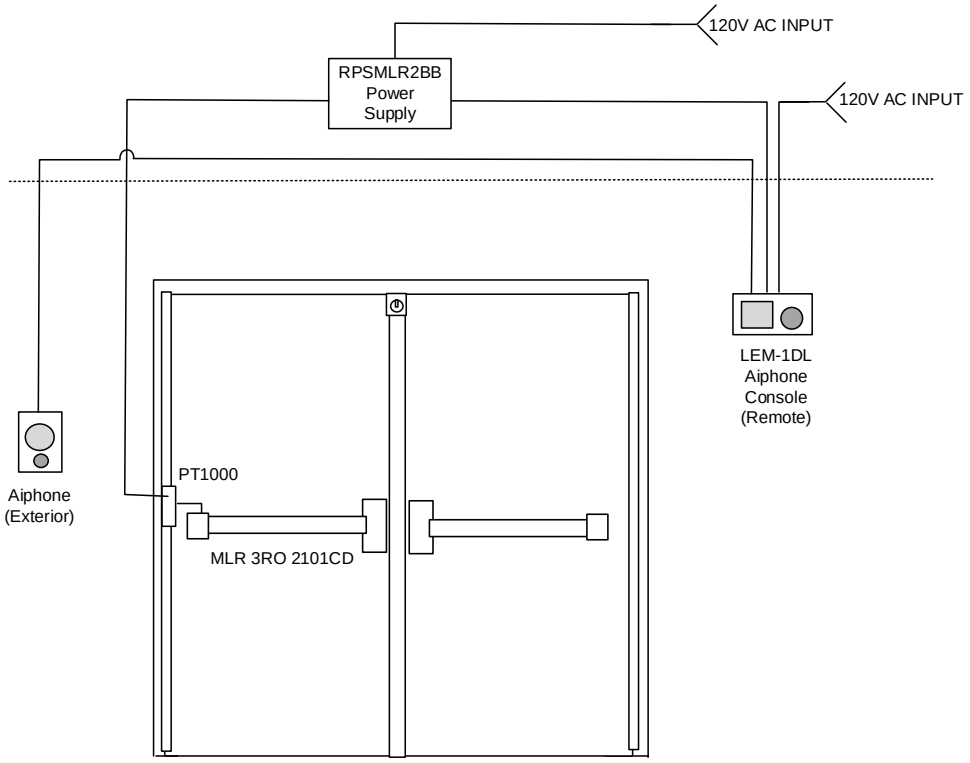
Doors: 103, 122 (Exterior Mechanical, Kitchen)
Pair to have:

2ea.	Continuous Hinges	661HD	628	ST
2ea.	Flush Bolts	3917-12	626	TR
1ea.	Mortise Lockset	45H7D 14R (less outside trim)	630	BE
1ea.	SFIC Core	Medco 33N700006 Pinned	626	ME

2ea.	Flush Pulls	1111B	630	TR
2ea.	Door Closers	CLD-4550 HCS P45HD P45HD-112	689	ST
2ea.	Kick Plates	KO050 10”x 2” LDW CS	630	TR
1ea.	Threshold	425 SIA ssms/ea	689	NA
1ea.	Astragal	148NA	689	NA
2ea.	Door Sweeps	96VA	689	NA
1set	Perimeter W/S	5075B LAR (Head & Jambs)	BRN	NA

Project: Ducan Readiness Center

Door#: 100A



Description of Operation: Access via mechanical key or via Aiphone announcement call. Remote Aiphone console push button initiates latch retraction of exit device. Free egress at all times via exit device touch bar. Exit devices may be dogged for push/pull operation via mechanical cylinder at touch bar.

END OF SECTION

SECTION 09 67 23

RESINOUS FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes resinous flooring systems.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include manufacturer's technical data, application instructions, and recommendations for each resinous flooring component required.

B. Sustainable Design Submittals:

C. Samples for Initial Selection: For each type of exposed finish required.

D. Samples for Verification: For each resinous flooring system required, 6 inches square, applied to a rigid backing by Installer for this Project.

1.5 INFORMATIONAL SUBMITTALS

A. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.

B. Material Certificates: For each resinous flooring component, from manufacturer.

C. Material Test Reports: For each resinous flooring system, by a qualified testing agency.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For resinous flooring to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

B. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated.

C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Apply full-thickness mockups on 96-inch-square floor area selected by Architect.

a. Include 96-inch length of integral cove base with inside and outside corner.

2. Simulate finished lighting conditions for Architect's review of mockups.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.

1.9 FIELD CONDITIONS

A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.

B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.

C. Close spaces to traffic during resinous flooring application and for 24 hours after application unless manufacturer recommends a longer period.

PART 2 - PRODUCTS

2.1 PERORMANCE REQUIREMENTS

A. Flammability: Self-extinguishing according to ASTM D 635.

2.2 MANUFACTURERS

A. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, from single source from single manufacturer. Obtain secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from manufacturer recommended in writing by manufacturer of primary materials.

2.3 RESINOUS FLOORING (PFI) Kitchen Areas.

A. Resinous Flooring System: Abrasion-, impact-, and chemical-resistant, aggregate-filled, and resin-based monolithic floor surfacing designed to produce a seamless floor and integral cove base.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Stonhard, Inc.

2. Product: Stonclad UT, with UT 7 Sealer 4” Integral base.

B. System Characteristics:

1. Color: Steel Gray.
2. Wearing Surface: Textured for slip resistance.
3. Overall System Thickness: 3/16 inch - 1/4 inch.
4. Federal Agency Approvals: USDA FDA approved for food-processing environments.

C. Primer: Stonclad UT is a self-priming mortar. No additional primer is necessary.

D. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

E. Body Coats:

1. Resin: Urethane.

F. Motar:

1. Material design basis: Stonclad.
2. Resin: Urethane.
3. Formulation Description: 100 percent solids (4) four-component.
4. Type: Pigmented.
5. Thickness of Coat: 3/16”.

G. Topcoats: Sealing or finish coats.

1. Material design Basis: UT 7 Sealer.
2. Resin: Urethane.
3. Formulation Description: 100 percent solids (2) two-components.
4. Type: Pigmented.

5. Number of Coats: One.
6. Finish: Matte.

H. System Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested according to test methods indicated:

1. Compressive Strength: 7,700 psi minimum according to ASTM C 579.
2. Tensile Strength: 1,000 psi minimum according to ASTM C 307.
3. Flexural Modulus of Elasticity: 2400 psi minimum according to ASTM C 580.
4. Water Absorption: **1 %** maximum according to ASTM C 413.
5. Impact Resistance: No chipping, cracking, or delamination and not more than 1/16-inch permanent indentation according to MIL-D-3134J.
6. Resistance to Elevated Temperature: No slip or flow of more than 1/16 inch according to MIL-D-3134J.
7. Hardness: 80 to 84, Shore D according to ASTM D 2240.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry substrate for resinous flooring application.

B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring.

1. Roughen concrete substrates as follows:

a. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
b. Comply with ASTM C 811 requirements unless manufacturer's written instructions are more stringent.

2. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written instructions.
3. Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.

a. Anhydrous Calcium Chloride Test: ASTM F 1869. Proceed with application of resinous flooring only after substrates have maximum moisture-vapor-emission rate of 7 lbs. of water/1000 sq. ft. of slab area in 24 hours.
b. Plastic Sheet Test: ASTM D 4263. Proceed with application only after testing indicates absence of moisture in substrates.
c. Relative Humidity Test: Use in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 85 percent relative humidity level measurement.

4. Alkalinity and Adhesion Testing: Verify that concrete substrates have pH within acceptable range. Perform tests recommended by manufacturer. Proceed with application only after substrates pass testing.

C. Patching and Filling: Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.

1. Control Joint Treatment: Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written instructions.

D. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.

3.2 APPLICATION

A. Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.

1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
3. Expansion and Isolation Joint Treatment: At substrate expansion and isolation joints, comply with resinous flooring manufacturer's written instructions.

B. Primer: Apply primer over prepared substrate at manufacturer's recommended spreading rate.

C. Integral Cove Base: Apply cove base mix to wall surfaces before applying flooring. Apply according to manufacturer's written instructions and details, including those for taping, mixing, priming, troweling, sanding, and topcoating of cove base. Round internal and external corners.

1. Integral Cove Base: 4 inches high.

D. Self-Leveling Body Coats: Apply self-leveling slurry body coats in thickness indicated for flooring system.

1. Aggregates: Broadcast aggregates at rate recommended by manufacturer and, after resin is cured, remove excess aggregates to provide surface texture indicated.

E. Troweled or Screeded Body Coats: Apply troweled or screeded body coats in thickness indicated for flooring system. Hand or power trowel and grout to fill voids. When body coats are cured, remove trowel marks and roughness using method recommended by manufacturer.

F. Grout Coat: Apply grout coat, of type recommended by resinous flooring manufacturer, to fill voids in surface of final body coat.

G. Topcoats: Apply topcoats in number indicated for flooring system and at spreading rates recommended in writing by manufacturer and to produce wearing surface indicated.

3.3 FIELD QUALITY CONTROL

A. Material Sampling: Owner may, at any time and any number of times during resinous flooring application, require material samples for testing for compliance with requirements.

1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in presence of Contractor.
2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.
3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.

B. Core Sampling: At the direction of Owner and at locations designated by Owner, take one core sample per 1000 sq. ft. of resinous flooring, or portion of, to verify thickness. For each sample that fails to comply with requirements, take two additional samples. Repair damage caused by coring. Correct deficiencies in installed flooring as indicated by testing.

3.4 PROTECTION

A. Protect resinous flooring from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by resinous flooring manufacturer.

END OF SECTION