

ADDENDUM # 2

Project: Alterations and Expansion to the Lt. Job Lane Elementary School
TBA Project: 1258
Date: May 26, 2016

The attention of bidders submitting proposals for the above subject project is called to the following addendum to the specifications and drawings. The items set forth herein, whether of omission, addition, substitution, or clarifications are all to be included in and form a part of the proposal submitted.

THE NUMBER OF THIS ADDENDUM MUST BE ENTERED IN THE APPROPRIATE SPACE "B" PROVIDED AFTER THE WORD "No." ON PAGE "IB 14" OF THE CONTRACT FORM ENTITLED "FORMS FOR GENERAL BID" or AFTER THE WORD "No." ON PAGE "IB 27" OF THE CONTRACT FORM ENTITLED "FORM FOR SUB-BID"

Item 1. Clarification of Alternate #2 (Alt. 2) scope indicated on Sheets C-4.1, C-5.1 and C-6.1 and referenced sheets:

The Alternate #2 scope and price proposal shall be for all parking lot, loop driveway, and playground relocation work beyond the parking expansion indicated in the base bid sheets C-2.2 and C-3.2. The base bid work indicated on sheets C-2.2 and C-3.2 and referenced sheets shall be included in the base bid price proposal and shall not be double counted in the price proposal for Alternate #2.

Item 2. Insert the following note(s) on Sheet A-0.1 Site Phasing & Work Zone Plan:

"8. REFER TO SECTION 01 32 00.2 'PHASING OF THE WORK' IN THE PROJECT MANUAL FOR DETAILED PHASING PLAN"

Item 3. Add the following note and scope on Sheet D-1.0 Demolition Plans at West Addition, first floor plan:

"Trench 2'-0"W x 8'-0" length of concrete slab in existing Corridor F for tie in of new waste piping. Coordinate with plumbing drawings."

Item 4. Replace the following note(s) on Sheet A-1.3 Proposed Roof Plan at Renovation Areas:

Delete "New PVC Roof" at Cafetorium Addition and replace with "New Membrane Roof."

Item 5. Revise the following on Sheet A-1.7 Proposed Floor Finishes Plan @ Renovation Areas:

First Floor Finishes Plan: Copy Room 130 shall receive VCT 1 per finish schedule A-6.0

Partial Second Floor Finishes Plan: Revise the following note at Corridor: "Infill with green to match existing" with "Infill with VCT to match existing."

Item 6. Insert the following note(s) on Sheet A-3.3 Wall Sections at Cafetorium Addition:

"Bottom of light fixtures to be hung at 9'-0" A.F.F."

"Provide infill aluminum blocking at bottom panel of storefront to attach baseboard heating (see mechanical). Align blocking with top of baseboard."

Item 7. Revise the following note(s) on Sheet A-4.1 Interior Elevations at Classrooms:

Interior Elevation #12: Typical New Classroom Casework Wall (O.H. Similar)

Interior Elevation #13: Typical New Classroom Teaching Wall (O.H. Similar)

Interior Elevation #14: Typical New Classroom Window Wall (O.H. Similar)

- Item 8.** Delete the following note(s) on Sheet A-4.1 Interior Elevations at Classrooms:
Interior Elevation #13: "Smartboard projector O.S.C.I."
- Item 9.** Revise the following note(s) on Sheet A-4.2 Interior Elevations at Foreign Language Classrooms:
Interior Elevation #17: Typical New Foreign Language Classroom Casework Wall **(O.H. Similar)**
Interior Elevation #18: Typical New Foreign Language Classroom Teaching Wall **(O.H. Similar)**
- Item 10.** Revise the following note(s) on Sheet A-5.0 Section Details at Classroom Addition, Detail 3 Parapet Detail at Brick Wall & Detail 13 Parapet Detail at Metal Panel Wall:
Delete "Membrane roofing taped to top of parapet wall" and replace with "Membrane roofing **fastened** to top of parapet wall."
- Item 11.** Insert the following note(s) on Sheet A-5.0 Section Details at Classroom Addition, Detail 7 Recessed Window Head Detail at Brick Wall:
Backerrod & sealant at window head similar to jamb detail 3/A-5.1
- Item 12.** Revise the following note(s) on Sheet A-5.2 Miscellaneous Details, Detail 4 Foundation Detail @ Existing Cafetorium:
#5 Rebar epoxy anchored to existing slab, **24" O.C.**
- Item 13.** Revise the following note(s) on Sheet A-5.2 Miscellaneous Details, Detail 9 New Interior Wall at Existing Block Wall Corner:
Detail at 'T' intersection between Nurse's Office Toilet & Exam Room similar.
- Item 14.** Revise the following note(s) on Sheet A-5.3 Roof Details, Detail 3 Roof Penetration Infill:
Revise the note " New 3x3 angle bolted to existing" to read "**New 3x3x1/4" angle bolted to existing with 1/4" dia. bolts at 12" o.c.**"
- Item 15.** Clarification of graphical indication of masonry pintels:
The masonry pintels indicated in all details shall meet the surface of sheathing and be anchored to framing behind.
- Item 16.** Insert the following note(s) on Sheet SE-1 Site Lighting Plan:
SITE LIGHTING PLAN IS PART OF THE SCOPE OF WORK FOR ALTERNATE #2 ONLY.
- Item 17.** Remove all electrical and lighting work associated with Classroom 104 on sheets E-1.0, E-1.2 & E-1.4. No electrical work is required at this room.
- Item 18.** Revise the following scope of work on Sheet E-1.1 First Floor Lighting Plan:
Remove fifteen (15) 'Type B' lighting fixtures and all associated wiring indicated in 'Corridor B' & at existing elevator. The two (2) new exit signs indicated at smoke doors shall remain.
- Item 19.** Revise the following note(s) on Sheet E-1.2 First & Second Floor Electrical Plan:
Second Floor Electrical Plan: Relocate all power indicated for ERV in 'Existing Classroom – No Work' to correct location in room beneath unit as indicated on Mechanical plans.
- Item 20.** Revise the following scope of work on Sheet E-1.5 First Floor Low Tension Plan:
Provide an additional data outlet at Principal's office located on opposite wall of the data outlet indicated.

Item 21. O: Waussau has responded that they will not provide a quote for this project. Please name other acceptable manufacturers.

A: Please see IFB page 56, item 2 and 3 for information on equals and substitutions. Other manufacturer's windows by EFCO, Graham, Architectural Window Manufacturing Corp. are acceptable providing they are comparable in performance, types and configuration.

Item 22. Insert attached new PART 2 paragraph to Section 09 65 19 RESILIENT TILE FLOORING.

Attachments:

09 30 00 Tiling, 10 pages

14 42 16 Vertical Wheelchair Lift, 6 pages

09 65 00 Resilient Tile Supplemental Pages (Addendum #2), 2 pages

Revised D-1.1 Demolition Plans at Renovation Area, 1 page

Revised D-1.2 Demolition Reflected Ceiling Plan at West Addition, 1 page

Revised D-1.3 Demolition Reflected Ceiling Plan at Renovation Areas, 1 page

Revised A-1.0 Proposed Floor Plans at West Addition, Expansion Joint Diagrams, 1 page

Revised A-1.1 Proposed Roof Plan at West Addition, 1 page

Revised A-1.2 Proposed Floor Plans at Renovation Areas, 1 page

Revised A-1.5 Proposed Reflected Ceiling Plan at Renovation Areas, 1 page

Revised A-5.6 Partition Types, 1 page

Revised A-6.0 Door Schedule, Finish Schedule, Frame Types, Door types, Window Schedule, 1 page

BSK-2.0 Revised Detail 9/A-5.1 Plan Detail @ Roof Plan, 1 page

BSK-2.1 Revised Detail 10/A-5.1 Plan Detail @ Existing Column, 1 page

BSK-2.2 Revised Detail 10/A-5.1 Plan Detail @ Existing Column, 1 page

BSK-3.0 Revised Elevation 2/A-7.0 Display Case Corridor Elevation, 1 page

Revised S-3.1 Foundation Sections and Details, 1 page

SSK-1.0 Footing Schedule, Column Schedule and Foundation Notes Revisions, 1 page

SSK-2.0 Cafetorium Foundation Plan, 1 page

SSK-3.0 Cafetorium Framing Plan, 1 page

SSK-4.0 Second Floor Framing Plan, 1 page

Revised M-1.1 First Floor Mechanical Plan, 1 page

Revised P-1.1 First Floor Plumbing Plan, 1 page

Revised FP-1.1 First Floor Fire Protection Plan, 1 page

Total number of pages of this addendum including attachments is forty two (42).

End of Addendum

SECTION 09 30 13
TILING
(FILED SUB-BID REQUIRED)

Revised 5-26-16

PART 1 GENERAL

1.1 FILED SUB-BID REQUIREMENT

- A. The Tiling filed sub-bid includes the Work specified in the following Sections:
 - 1. 09 30 13, Tiling
- B. Submit sub-bids in accordance with the provisions of Massachusetts General Laws, Chapter 149, Sections 44A-44H, inclusive, as amended. The time and place of submission of sub-bids is set forth in the INSTRUCTIONS TO BIDDERS.
- C. With each sub-bid, submit bid security in the form of a BID BOND, or CERTIFIED CHECK on, or a TREASURER'S or CASIHER'S CHECK issued by, a responsible bank or trust company, payable to the TOWN OF BEDFORD, MASSACHUSETTS, in the amount of five percent (5%) of the bid amount. A bid bond shall be (a) in a form satisfactory to Awarding Authority, (b) with a surety company qualified to do business in the Commonwealth of Massachusetts, and (c) conditioned upon the faithful performance by the principal of the agreements contained in the bid.
- D. Submit each sub-bid for the work of this Section on a form furnished by the Awarding Authority.
- E. The work of this Section is shown on Drawings: Cover Sheet, A-1.0, A-1.2, A-1.6, A-1.7, A-4.0, A-4.3 & A6.0

1.2 SUMMARY

- A. Section includes ceramic and porcelain tile for interior floor and wall applications and cementitious backer board as tile substrate.
- B. **Alternates: Add Alternate #1 Alteration and Reconfiguration of the Main Office.**
- C. Related Sections:
 - 1. Division 1 – General Conditions
 - 2. Section 07 90 00 – Joint Protection
 - 3. Section 09 29 00 – Gypsum Board: Wall substrate.
 - 4. Alternates: Add Alternate #1 Alteration and Reconfiguration of the Main Office

1.3 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A108.1 - Installation of Ceramic Tile, A collection.
 - 2. ANSI A108.10 - Specifications for Installation of Grout in Tilework.

3. ANSI A108.1A - Specifications for Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar.
4. ANSI A108.1B - Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar.
5. ANSI A108.4 - Specifications for Ceramic Tile Installed with Organic Adhesives or Water-Cleanable Tile Setting Epoxy Adhesive.
6. ANSI A108.5 - Specifications for Ceramic Tile Installed with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
7. ANSI A108.6 - Specifications for Ceramic Tile Installed with Chemical-Resistant, Water-Cleanable Tile-Setting and -Grouting Epoxy.
8. ANSI A108.7 - Specifications for Electrically Conductive Ceramic Tile Installed with Conductive Dry-Set Portland Cement Mortar.
9. ANSI A118.1 - Standard Specification for Dry-Set Portland Cement Mortar.
10. ANSI A118.4 - Latex-Portland Cement Mortar.
11. ANSI A118.6 - Ceramic Tile Grouts.
12. ANSI A118.8 - Modified Epoxy Emulsion Mortar/Grout.
13. ANSI A118.9 - Test Methods and Specifications for Cementitious Backer Units.
14. ANSI A136.1 - Organic Adhesives for Installation of Ceramic Tile.
15. ANSI A137.1 - Ceramic Tile.

B. ASTM International:

1. ASTM C847 - Standard Specification for Metal Lath.

C. Tile Council of North America:

1. TCNA - Handbook for Ceramic Tile Installation.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate patterned applications and thresholds.
- B. Product Data: Submit instructions for using grouts and adhesives.
- C. Samples: Submit mounted tile and grout on two plywood panels, 16x16 inch in size illustrating pattern, color variations, and grout joint size variations.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with TCNA Handbook and ANSI A108.1 Series/A118.1 Series.
- B. Maintain one copy of each document on site.

- C. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience, and with service facilities within 100 miles of Project.
- D. Installer: Company specializing in performing Work of this section with minimum three documented experience approved by manufacturer.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not install adhesives in unventilated environment.
- B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.1 TILE

- A. Basis-of Design Product: Dal-Tile International; Natural Hues Eco-Body Ceramic
- B. Manufacturers: Products are based upon one or a multiple of manufacturers to establish a quality and design standard and is not meant to discourage competition in any way.
 - 1. Dal-Tile International.
 - 2. Stark Ceramics Incorporated
 - 3. American Olean Tile Co.
 - 4. Tilecera Inc.
 - 5. Substitutions: Permitted with Architect's approval under Section 016000 – Product Requirements: Product Substitution Procedures.

2.2 COMPONENTS

- A. Ceramic Wall Tile: ANSI A137.1, conforming to the following:
 - 1. Moisture Absorption: 0 to 0.42 percent.
 - 2. Size: 4 ¼ x 4 ¼ x 5/16 inch. (At restrooms)
 - 3. Size: 12" x 12" (at corridors).
 - 4. Size: 12" x 6" (at stair)
 - 5. Shape: Square, as indicated on plans.
 - 6. Edge: Cushioned.
 - 7. Internal Corner: Cove.
 - 8. External Corner: Bull nosed.
 - 9. Surface Finish: Matt Glazed.
 - 10. Styles and Colors:
 - a) Refer to finish schedule in drawings for number of colors and location. Colors as selected by Architect from manufacturers standards.
 - 11. Pattern: Determined by Architect. Refer to finish schedule in drawings.
- B. Wainscot Cap: Same as wall tile.
 - 1. Length: 4 1/4 inch.

2. Height: 2 3/4 inch.
 3. Top Edge: Surface Bull nosed.
 4. Internal Corner: Cove.
 5. External Corner: Bull nosed.
 6. Surface Finish: Matte glazed.
 7. Styles and Colors:
 - a) Refer to finish schedule in drawings for number of colors and location. Colors as selected by Architect from manufacturers standards.
- C. Base: Same as wall tile.
1. Length: 4 1/4 inch.
 2. Height: 3 3/4 inch.
 3. Bottom Edge: Cove.
 4. Internal Corner: Cove.
 5. External Corner: Bull nosed.
 6. Moisture Absorption: 0 to 0.42 percent.
 7. Surface Finish: Matte glazed.
 8. Styles and Colors:
 - a) Refer to finish schedule in drawings for number of colors and location. Colors as selected by Architect from manufacturers standards.
- D. Ceramic Floor Tile: same as wall tile.
1. Moisture Absorption: greater than 0.42 percent.
 2. Size: 12" x12" x5/16 inch.
 3. Shape: Square, as indicated on plans.
 4. Edge: Cushioned.
 5. Surface Finish: Matte glazed, abrasive.
 6. Styles and Colors:
 - a) Refer to finish schedule in drawings for location. Colors as selected by Architect from manufacturers standards.
 7. Pattern: Determined by Architect. Refer to finish schedule in drawings.
- E. Wainscot Cap for Flush Conditions: Regular flat tile for conditions where tile wainscot is shown flush with wall surface above it, same size as adjoining flat tile.
- F. Crack Isolation Membrane:
1. Mapei "Aqua Defense" liquid roller applied waterproofing and crack isolation membrane.
- G. Grout Materials:
1. Walls:
 - a. Standard Grout: specified in ANSI A1 18.6; color as selected by architect
 2. Floors: Water-cleanable epoxy grout.
- H. Cementitious Backer Board: Provided and installed under Section 09 29 00 Gypsum Board - ANSI A1 18.9; High density, glass fiber reinforced, 5/8 inch thick; 2 inch wide coated glass fiber tape for joints and corners.

- I. Thresholds: Marble type, selected color, honed finish, full width of wall or frame opening, beveled one side, radiused edges from bevel to vertical face.

2.3 SETTING MATERIALS

- A. Walls: Dry-Set Portland Cement Mortar (Thin Set): ANSI A118.1.
 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]:
 2. Basis-of-Design Product: Subject to compliance with requirements, provide MAPEI Corporation or comparable product by one of the following:
 - a) Boiardi Products; a OEP company.
 - b) Bonsal American; an Oldcastle company.
 - c) Bostik, Inc.
 - d) Laticrete International, Inc.
 - e) MAPEI Corporation.
 3. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.1.
- B. Floors: Water-Cleanable, Tile-Setting Epoxy: ANSI A118.3, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 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:
 2. Basis-of-Design Product: Subject to compliance with requirements, provide MAPEI Corporation or comparable product by one of the following:
 - a) Atlas Minerals & Chemicals, Inc.
 - b) Bonsal American; an Oldcastle company.
 - c) Bostik, Inc.
 - d) Laticrete International, Inc.
 - e) MAPEI Corporation.
 - 2) Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 deg F and 212 deg F, respectively, and certified by manufacturer for intended use.

2.4 GROUT MATERIALS

- A. Water-Cleanable Epoxy Grout: ANSI A118.3[, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D].
 1. Manufacturers: Subject to compliance with requirements, [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
 2. Basis-of-Design Product: Subject to compliance with requirements, provide MAPEI basis of design or comparable product by one of the following:

- a) Atlas Minerals & Chemicals, Inc.
 - b) Boiardi Products; a OEP company.
 - c) Bonsal American; an Oldcastle company.
 - d) Bostik, Inc.
 - e) Laticrete International, Inc.
 - f) MAPEI Corporation.
- 2) Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 deg F and 212 deg F, respectively, and certified by manufacturer for intended use.

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 the Work.
- 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 thinset 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.
 - 5. 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 thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.
- C. 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.

3.3 CERAMIC TILE INSTALLATION

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA 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 TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
- B. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:
 - 1. Tile floors in wet areas.
 - 2. Tile floors consisting of tiles 8 by 8 inches or larger.
 - 3. Tile floors consisting of rib-backed tiles.
- C. 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.
- D. 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.
- E. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- F. 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. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
 - 2. 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.
- G. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:
 - 1. Ceramic Mosaic Tile: 1/16 inch.
 - 2. Quarry Tile: 3/8 inch.
 - 3. Glazed Wall Tile: 1/16 inch.
 - 4. Porcelain Tile: 3/8 inch.
- H. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated..
- I. 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.
- J. Stone Thresholds: Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated.
1. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in modified dry-set mortar (thinset).
 2. Do not extend crack isolation membrane under thresholds set in standard dry-set mortar. Fill joints between such thresholds and adjoining tile set on crack isolation membrane with elastomeric sealant.
- K. Metal Edge Strips: Install [at locations indicated] [where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile] [where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with or below top of tile and no threshold is indicated].
- L. Floor Sealer: Apply floor sealer to cementitious grout joints in tile floors according to floor-sealer manufacturer's written instructions. As soon as floor sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

3.4 TILE BACKING PANEL INSTALLATION

- A. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated. Use modified dry-set mortar for bonding material unless otherwise directed in manufacturer's written instructions.

3.5 CRACK ISOLATION MEMBRANE INSTALLATION

- A. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness that is bonded securely to substrate.
- B. Allow crack isolation membrane to cure before installing tile or setting materials over it.

3.6 ADJUSTING AND CLEANING

- A. Remove and replace tile that is damaged or that does not match adjoining tile. Provide new matching units, installed as specified and in a manner to eliminate evidence of replacement.
1. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - a) Remove grout residue from tile as soon as possible.
 - b) Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation.
 - c) 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.

- d) Protect metal surfaces and plumbing fixtures from effects of cleaning.
- e) Flush surfaces with clean water before and after cleaning.

3.7 PROTECTION

- A. 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.
 - 1. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
 - 2. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces. ANSI A108.1A is wet-set method, ANSI A108.1B is cured-bed method, and ANSI A108.1C allows Contractor choice of using either method

3.8 INTERIOR CERAMIC TILE INSTALLATION SCHEDULE

- A. Interior Floor Installations, Concrete Subfloor
 - 1. Ceramic Tile Installation IPCT-1 and QT-1: TCNA F131; water-cleanable, tile-setting epoxy; epoxy grout.
 - a) Ceramic Tile Type: 12 x 12 Porcelain Tile Grout: Water-cleanable epoxy grout.
- B. Interior Wall Installations, Masonry or Concrete:
 - 1. Ceramic Tile Installation CT -1,2&3, PB-1, CB-1&2 and : TCNA W202; thinset mortar.
 - a) Ceramic Tile Type: Ceramic Tile .
 - b) Thinset Mortar: Medium-bed, modified dry-set mortar.
 - c) Grout: Water-cleanable epoxy grout. Note that TCNA W223 requires smooth substrate because of thickness limitations of organic adhesives; some masonry surfaces will not be suitable.
 - 2) Ceramic Tile Installation CT – 1, 2 & 3, PB-1, CB-1 and : TCNA W244C or TCNA W244F; thinset mortar on cementitious backer units or fiber-cement backer board.
 - a) Ceramic Tile Type: Ceramic Tile and Quarry Tile.
 - b) Thinset Mortar: Standard dry-set mortar.
 - c) Grout: Water-cleanable epoxy grout.

END OF SECTION 09 30 13

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SECTION 14 42 16
VERTICAL WHEELCHAIR LIFTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Enclosed, self-contained vertical platform wheelchair lift.

1.2 RELATED SECTIONS

- A. Section 024109 Selective Structure Demolition
- B.
- C. Section 033000 - Cast-In-Place Concrete: Concrete pit depression and anchor placement.
- D. Section 061000 - Rough Carpentry: Blocking in framed construction for lift attachment.
- E. Section 092900 - Gypsum Board
- F. Division 26 - Electrical: Electrical power service and wiring connections.

1.3 REFERENCES

- A. ASME A17.1 - Safety Code for Elevators and Escalators.
- B. ASME A17.5 - Elevator and Escalator Electrical Equipment.
- C. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.
- D. 524 CMR Board of Elevator Regulation, Commonwealth of Massachusetts
- E. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- F. NFPA 70 - National Electric Code.

1.4 SUBMITTALS

- A. Submit under provisions of Section 013000.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Submit manufacturer's installation instructions, including preparation, storage and handling requirements.
 - 2. Include complete description of performance and operating characteristics.
 - 3. Show maximum and average power demands.
- C. Shop Drawings:

1. Show typical details of assembly, erection and anchorage.
 2. Include wiring diagrams for power, control, and signal systems.
 3. Show complete layout and location of equipment, including required clearances and coordination with shaftway.
- D. Selection Samples: For each finished product specified, provide two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finished product specified, two samples, minimum size 1-3/4" x 2-1/4", representing actual product, color, and patterns.
- 1.5 QUALITY ASSURANCE
- A. Manufacturer Qualifications: Firm with minimum 10 years experience in manufacturing of vertical platform lifts, with evidence of experience with similar installations of type specified.
- B. Installer Qualifications: Licensed to install equipment of this scope, with evidence of experience with specified equipment. Installer shall maintain an adequate stock of replacement parts, have qualified people available to ensure fulfillment of maintenance and callback service without unreasonable loss of time in reaching project site.
- 1.6 REGULATORY REQUIREMENTS
- A. Provide platform lifts in compliance with:
1. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.
 2. ASME A17.1 - Safety Code for Elevators and Escalators.
 3. ASME A17.5 - Elevator and Escalator Electrical Equipment.
 4. 521 CMR Rules and Regulations of the Massachusetts Architectural Access Board.
 5. 524 CMR Board of Elevator Regulation, Commonwealth of Massachusetts
 6. NFPA 70 - National Electric Code.
- B.
- 1.7 DELIVERY, STORAGE, AND HANDLING
- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store components off the ground in a dry covered area, protected from adverse weather conditions.
- 1.8 PROJECT CONDITIONS
- A. Do not use wheelchair lift for hoisting materials or personnel during construction period.
- 1.9 WARRANTY

- A. Warranty: Manufacturer shall warrant the wheelchair lift materials and workmanship for two years following completion of installation.
- B. Extended Warranty: Provide an extended manufacturer's warranty for the entire warranty period covering the wheelchair lift materials and workmanship for the following additional extended period beyond the initial one year warranty. Preventive Maintenance agreement required.
 - 1. Five additional years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garaventa Lift; United States - P.O. Box 1769, Blaine, WA 98231-1769. Canada - 7505 134A St., Surrey, BC V3W 7B3. ASD. Toll Free: 800-663-6556. Tel: (604) 594-0422. Fax: (604) 594-9915. Email: productinfo@garaventalift.com Web www.garaventalift.com
- B. Substitutions: Permitted for equivalent machinery and configuration.
- C. Requests for substitutions will be considered in accordance with provisions of Section 016000.

2.2 UNENCLOSED VERTICAL WHEELCHAIR LIFT

- A. Capacity: 750 lbs (340 kg) rated capacity.
- B. Mast Height:
 - 1. Model GVL-EN-42; 45 inches (1143 mm) maximum lifting height.
- C. Platform Size and Nominal Clear Platform Dimensions:
 - 1. Large 90 degree: 45-1/2 inches (1155 mm) by 56-7/8 inches (1446 mm) with 90 degree entry/exit configuration.
- D. Platform Configuration:
 - 1. 90 Degree: Front and side openings.
- E. Landing Openings:
 - 1. Lower Landing Door
 - 2. Upper Landing Gate
 - 3.
- F. Doors and Gates
 - 1. Door Height: Flush mount, 80 inches (2032 mm)
 - 2. Gate Height: Flush Mount, 42-1/8 inches (1070 mm).
 - 3. Door Construction: Aluminum frame with Platform Gate: Travels with platform and opens at lower landing.
 - a. Panels of 1/4 inch (6 mm) laminated safety glass with 16 gauge (1.5 mm) galvanized steel kick plate at door and gate panels.

- b. D-Handle Pull: 12 inch (305 mm) offset D-Handle.
 - 4. Power Gate Operators: Automatically opens the door/gate when platform arrives at a landing. Will also open at landing by pressing call button
 - a. ADA and MAAB Compliant and obstruction sensitive.
 - b. Low voltage, 24 VDC with all wiring concealed.
 - c. Location:
 - 1) Lower Landing: Door.
 - 2) Upper landing: Gate.

- G. Lift Components:
 - 1. Machine Tower: Custom aluminum extrusion.
 - 2. Base Frame: Structural steel.
 - 3. Platform Side Wall Panels: 42-1/8 (1070 mm) inches high. 16 gauge (1.5 mm) galvanized steel sheet. Custom aluminum extrusion tubing frame.
 - 4. Enclosure Panels:
 - a. 16 gauge (1.5 mm) painted galvanized steel sheet.
 - b. 1/4 inch (6 mm) laminated safety glass.

- H. Enclosure Height Above Upper landing:
 - 1. Enclosure shall extend 42-1/8 inches (1070 mm) above the upper landing level at Gate
 - 2. Enclosure shall extend 83-3/4 inches (2127 mm) above the lower landing level.

- I. Infill Panel Kit: Provide 16 gauge (1.5 mm) galvanized panels and mounting hardware to cover void between side of enclosure, drive mast and adjacent wall at the following locations:
 - 1. Lower landing.
 - 2. Upper landing.

- J. Base Mounting at Lower Landing:
 - 1. Pit Mount: Lift to be mounted in pit with dimensions to meet manufacturers requirements for the platform size specified. Pit construction shall be in accordance to Section 033000.

- K. Hydraulic Drive:
 - 1. Drive Type: Chain hydraulic.
 - 2. Emergency Operation: Manual device to lower platform and battery auxiliary power to raise or lower platform.
 - 3. Safety Devices:
 - a. Slack chain safety device.
 - b. Shoring device.
 - 4. Travel Speed: 17 fpm (5.2 m/minute).
 - 5. Motor: 3.0 hp (2.2 kW); 24 volts DC.
 - 6. Power Supply:
 - a. 120 VAC single phase; 60 Hz on a dedicated 15 amp circuit.
 - b. Powered by continuous building mains converted to 24 VDC, equipped with auxiliary power system capable of running lift up and down for a minimum of 5 trips with rated load.
 - c. Powered by continuously charged battery system.

- L. Platform Controls: 24 VDC control circuit with the following features.
 - 1. Direction Control: Constant pressure rocker switch.
 - 2. Direction Control: Illuminated tactile and constant pressure elevator-style buttons with dual platform courtesy lights and safety light.
 - 3. Illuminated and audible emergency stop switch shuts off power to lift and activates audio alarm with battery backup.
 - 4. Keyless operation.
 - 5. Emergency Telephone: Platform shall be equipped with ADA compliant integrated telephone with a stainless steel faceplate. Telephone shall operate in the event of power failure. A telephone line shall be supplied to the lift site as specified under Division 16.

- M. Call Station Controls: 24 VDC control circuit with the following features.
 - 1. Direction Control:
 - a. Constant pressure rocker switch.
 - b. Illuminated tactile and constant pressure with illuminated "In-Use" indicator
 - 2. Keyless operation.
 - 3. Call Station Mounting:
 - a. Lower:
 - 1) Frame mounted.
 - b. Upper:
 - 1) Frame mounted.

- N. Safety Devices and Features:
 - 1. Grounded electrical system with upper, lower, and final limit switches.
 - 2. Tamper resistant interlock to electrically monitor that the door and or gate is in the closed position and the lock is engaged before lift can move from landing.
 - 3. Pit stop switch mounted on mast wall.
 - 4. Electrical disconnect shall shut off power to the lift.
 - 5. Under platform safety pan with five waterproof safety switches to detect obstruction under platform.

- O. Finishes
 - 1. Aluminum Extrusions: Champagne anodized finish.
 - 2. Ferrous Components: Electrostatically applied baked powder finish, fine textured.
 - a. Color: Satin Grey, RAL 7030.
 - 3. Lift Finish: Baked powder coat finish as selected by the Architect from manufacturer's optional RAL color chart.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify shaft and machine space are of correct size and within tolerances.

- C. Verify required landings and openings are of correct size and within tolerances.
- D. Verify electrical rough-in is at correct location.
- E. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

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

3.3 INSTALLATION

- A. Install platform lifts in accordance with applicable regulatory requirements including ASME A 17.1, ASME A 18.1 and the manufacturer's instructions.
- B. Install platform lifts in accordance with applicable regulatory requirements including 521 CMR, Rules and Regulations of the Massachusetts Architectural Access Board. and manufacturer's instructions.
- C. Install system components and connect to building utilities.
- D. Accommodate equipment in space indicated.
- E. Startup equipment in accordance with manufacturer's instructions.
- F. Adjust for smooth operation.

3.4 FIELD QUALITY CONTROL

- A. Perform tests in compliance with ASME A 17.1 or A18.1 and as required by authorities having jurisdiction.
- B. Schedule tests with agencies and Architect, Owner, and Contractor present.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

Add new PART 2 paragraph to Section 09 65 19 RESILIENT TILE FLOORING as follows:

2.4 STAIR TREADS AND RISERS

A. Rubber Stair Treads and Nosings

1. Basis of Design: Norament or comparable product as manufactured by Armstrong, Roppe, Johnsonite or equal.
2. One piece nosing/riser/tread combination piece as follows:

Product Name:	norament® hammered stairtreads, (visually impaired strips available)
ASTM Specification:	ASTM F2169 Standard Specification for Resilient Stair Treads, defined as Type TS, Class 2, can be Group 1 and/or 2 and Grade 1
Limited Wear Warranty:	10 years
Material:	nora vulcanized rubber compound 926 with environmentally compatible color pigments that are free of toxic heavy metals like lead, cadmium or mercury
Composition:	Homogeneous
Color:	16 standard colors available
Surface:	Hammered and Smooth
Back of Tile/Sheet/Nosing:	Double-sanded smooth
Stairtread Length:	> 6 foot, not less than nominated length is required
Thickness:	ASTM F386, ± 1/32 inch (± 0.8mm) is required
Depth:	~ 1.77 (45mm), as specified ± 1/8 th inch (3.2mm) is required
Flammability:	ASTM E648; NFPA 253; NBSIR 75 950, 1.1 achieved, ≥ 0.45 watts/sq. cm for Class 1 is required
Smoke Density:	ASTM E662; NFPA 258; NBS, 380 (flaming) and 230 (non-flaming) achieved, < 450 is required
Burn Resistance:	Resistant to cigarette and solder burns
Slip Resistance:	ASTM D2047 Static coefficient of friction, Neolite dry - 0.99, Neolite wet - 0.95 achieved, ≥ 0.5 is required
Bacteria Resistance:	ASTM E2180 and ASTM G21, resistant to bacteria, fungi, and micro-organism activity
VOC's:	This flooring is GREENGUARD Gold Certified for Low VOC Emissions, GREENGUARD Certified for Low VOC Emissions, Blue Angel Certified and CA 01350 Compliant
Latex Allergies:	ASTM D6499, Inhibition Elisa, results are below detection level
Hardness:	ASTM D2240, Shore type "A", 82 achieved, ≥ 70 is required
Static Load:	ASTM F970, Residual compression of 0.005" with 800 lbs. achieved, ≤ 0.005" with 250 lbs. is required
Abrasion Resistance:	ASTM D3389, 1.1 lbs. (500g) load on H-18 wheel with 1000 cycles, 0.006 oz. (0.16g) weight loss achieved, ≤ 0.035 oz. (1.0g) is required
Oil & Grease Resistance:	No
Heat Resistance:	ASTM F1514, Avg. ΔE ≤ 8.0 is required, easily achieved with all batches and regular maintenance
Light Resistance:	ASTM F1515, Avg. ΔE ≤ 8.0, easily achieved with all batches and regular maintenance
Static Generation:	AATCC 134, < 2000 Volts at 20% RH, achieved

- Cleaning: Cleaned and maintained effectively using water, nora cleaning pads and a suitable cleaning machine, without the use of any factory and/or field-applied coatings. Also without using any chemicals that may be hazardous or containing any teratogenic, mutagenic or any other ingredients known to be carcinogenic.
- Shine: Higher shine achieved by buffing without any artificial topical applied coatings
- Stain Removal: Samples of the product must be provided for stain removal testing by the owner. Sample size must be 24 inches by 24 inches, pre-cleaned by manufacture per published recommendations. Samples must have no coatings, sealers, floor finish or other manually or mechanically applied finish on the surface of the product. Stain testing must consist of application of common healthcare related disinfectants and chemicals to include, but not limited to, Betadine, Methylene Blue, Silver Nitrate and alcohol based hand sanitizer. Duration of test period must be no less than one week. Removal of chemicals must be in accordance with manufacturers published cleaning and maintenance recommendations.
- Substrate Preparation: Per ASTM F710 and the nora Installation Guide
3. Adhesive: As recommended by Manufacturer
 4. Warranty 10 years.