

ADDENDUM #3 Dated August 9, 2004

TO CONTRACT DOCUMENTS FOR:

East End Elementary School  
Portland, Maine

City of Portland BID # 8704

PREPARED BY:

STEPHEN BLATT ARCHITECTS  
P.O. BOX 583  
10 DANFORTH STREET  
PORTLAND, ME 04112-0583

Dated: July 15, 2004

To all interested parties:

This addendum modifies, amends, and supplements designated parts of the Contract Documents, Project Manuals, and Drawings for the **East End Elementary School** and is hereby made an integral part thereof by reference and shall be as binding as though inserted in its entirety in the location specified herein. It shall be the responsibility of the Contractor to notify all Subcontractors and suppliers he/she proposes to use for the various parts of the work for any changes or modifications contained in this addendum. The Contractor shall acknowledge receipt of this addendum in the appropriate section of the Bid Form.

This ADDENDUM consists of **56** pages, plus three (3) 30"x48" sheets.

### SPECIFICATIONS

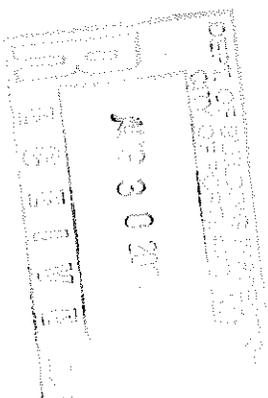
#### DIVISION 0 - CONTRACT REQUIREMENTS

##### Clarification to Information to Bidders

1. During the July 29<sup>th</sup> prebid meeting a potential bidder inquired about the type of construction fencing required and who is responsible for its installation.

The following response has been provided:

See specification section 01500 3.4 D. General contractor shall provide and install construction fence in coordination with site subcontractor.



8 A 4

Section 02831 SITEWORK CHAIN LINK FENCING AND GATES

A question was raised concerning the length of the stretcher bar and number of wire ties. Reference is made to Paragraph 2.02 M which specifies the stretcher bar is to be equal to the height of fabric;

"M. *Stretcher Bars: Galvanized steel, with exposed portions finished with a black vinyl coating, one piece lengths equal to full height of fabric, with minimum cross-section of 3/16" x 3/4". Provide one stretch bar for each gate and end post, and two for each corner and pull post.*"

Paragraph 3.04 L which specifies the spacing of attachments to the stretcher bar;

"L. *Stretcher Bars: Secure at end, corner, pull, and gate posts by threading through or clamping to fabric at 4" o.c., and secure to posts with metal bands spaced at 15" o.c.*"

and 3.04 M which specifies the spacing of the wire ties.

"M. *Tie Wires*

...

2. *Tie fabric to line posts with wire ties spaced 12" o.c. Tie fabric to rails and braces with wire ties spaced 24" o.c. Tie fabric to tension wires with hog rings spaced 24" o.c.*

Section 02850 – SITE IMPROVEMENTS

Request for "or equal alternate": The Owner received a request to use an aluminum flagpole as an "or equal" alternate to the flagpole specified under Section 02850. The specification requires a fiberglass flagpole. The substitution of an aluminum flagpole does not meet the requirements of the contract. Therefore, the request for approval of this alternate has been denied.

Section 04810 - UNIT MASONRY ASSEMBLIES

ADD: the following new subparagraph 3 to 1.2, B:

"3. Division 7 Section "Cavity Exterior Wall Insulation" for rigid insulation to be installed behind siding systems."  
ADD: the following new paragraph D to article 2.13.

"D. Metal Masonry Flashing: Provide stainless steel flashing by Hohmann & Barnard, Inc., No. FTSA Form-Tile Seal Drip Plate.; No. 1007 by Heckman, or approved substitute.

Section 06402 - INTERIOR ARCHITECTURAL WOODWORK

DELETE: Subparagraph 2.1, A, 1:

CHANGE: Subparagraph 2.1, A, 2 to read "West Minot Millworks (966-3200)

Section 06450 - MODULAR CASEWORK

DELETE: Subparagraph 1.5, A, 1:

CHANGE: Subparagraph 1.5, A, 2 to read "West Minot Millworks (966-3200)

3. Application: Where indicated in toilets for future installation of ceramic tile."

ADD: New paragraph G in article 3.9 as follows:

"G. Glass-Mat, Water-Resistant Backing Board: Provide Level 5 gypsum board finish (skim coat).

Section 09653 - RESILIENT WALL BASE AND ACCESSORIES  
CHANGE: Paragraph A to read as follows:

"A. Treads: Provide custom stair treads consisting of a metal nosing fastened to the front of the tread and Stair and Landing Tile installed behind the metal nosing.  
1. Metal Nosing: Provide model 8501 by American Safety Tread or approved substitute."

DELETE: Paragraphs B through G.

CHANGE: Paragraph J to read as follows:

"J. Stair and Landing Tile: Provide rubber tile with raised disc pattern and minimum thickness of 0.12 inch. Color as selected by the Architect.  
2. Product: Provide Rouleau Tile by Burk Mercer or Roundel RT by Johnsonite or approved substitute."

CHANGE: Subparagraph 3.4, A, 1 to read as follows:

"A. Use stair-tread-nose filler to fill metal nosing substrates. Use epoxy adhesive on rubber stair tiles and risers."

Section 09912 - PAINTING

DELETE: Subparagraphs 1, 3, and 4 in paragraph 2.1, B

ADD: The Owner has requested that only ICI Dulux Paint brand paints be used for this project (except where indicated otherwise) to reduce the number of paint manufacturers and paint types throughout the School Department.

DELETE: Paint products by manufacturers other than ICI Dulux Paint in articles 2.3, 2.4, 2.5, 2.6, 2.7, and 2.8.

### DIVISION 15 - MECHANICAL

Section 15400 PLUMBING

Page 5, paragraph 2.5 FIXTURES AND TRIM:

ADD: (P7) Water Closet: Wall-mounted "dual flush", tank-type water conserving toilet, Caroma "Wallvit", or approved equal. The water closet installation shall be ADA-compliant. The water closet shall be constructed of white vitreous china and have a 4" trapway, dual ADA-compliant pushbuttons and shall flush with 1.6 / .8 gallons per cycle. The flush tank shall be designed for concealed "in-wall" installation. Furnish with the "Scandinavia" seat for heavy commercial use and P-trap. The installation shall be in accordance with the manufacturers recommendations.

Page 9, paragraph 2.6 MISCELLANEOUS EQUIPMENT:

ADD: Thermostatic Mixing Valves (TMV): Symmons "Tempcontrol", Leonard or Powers,

supplemental survey of a material stockpile in the former skinned area of the site will be provided in a future addendum.

#### C7 SITE LAYOUT PLAN WITH DETAIL REFERENCES

The Site Layout Plan depicts a bicycle rack. Contractors are directed to Detail K on Drawing C-22 and Detail 12 on Drawing C-9.1 and the Division 2 specifications Section 02850 for additional information concerning this bicycle rack. This drawing also has a reference to the detail for the gate at the entrance to the hard play area from the parking lot. The gate shall be constructed in accordance with Detail E on Drawing C-21; not Detail F. Also, materials for the walkways have been revised and corrected as shown on Drawing NS-C-4 discussed later in this addendum.

#### C10 SITE GRADING AND DRAINAGE PLAN

**CHANGE:** This drawing shall be modified to add an underdrain and two cleanouts on the south and easterly side of the parking lot. This underdrain shall to connect to the catch basin in front of the parking lot. SK-C-2 showing this underdrain is attached to this addendum and is hereby made a part of the contract requirements. This sketch also corrects the catch basin number (6 not 10) and revises the rim elevation for this catch basin.

#### C14 UTILITY PLAN

A potential bidder inquired if a watermain blow off shown on North Street is correct.

Drawing C-14 identifies an 8" cap and blow off just west of the hydrant in front of the school. The cap and blow off is **not required**. The plan shall be modified to eliminate the cap and blow off.

#### C14 UTILITY PLAN

There is an existing water service to the community garden opposite Station 10+80. This service shall be reconnected to the new water main.

#### C14 UTILITY PLAN

The Jewish Home for the Aged has two water services. One is a 4" service, the other is a 6" fire service based upon Portland Water District's records. These services shall be reconnected to the new water main. There is also a private hydrant in the esplanade between North Street and their parking lot which shall be reconnected to the new main.

#### C21 FENCING DETAILS

**CHANGE:** This drawing has been revised. A replacement drawing is attached to this addendum.

#### C26, C27, NSC5 STORMDRAIN PROFILES, OFFSITE STORM DRAIN IMPROVEMENTS

A potential bidder inquired about the size of inlets. The profiles identify the size of the inlets, catch basins, and manholes.

#### NSC4 OVERALL PROJECT PERMANENT AND SIGNAGE PLAN

**CHANGE:** This drawing has been revised to include revisions to the traffic and street signage for the project. A replacement drawing is attached to this addendum. All traffic and related signage shall be constructed in accordance with this plan. This drawing also corrects the walkway type within the site and shall be used to determine the type of walkway to be installed under the base bid.

Corr 177 M2 #4  
Vest 101 M2 #4"

- ADD: a junction box, a receptacle and a reference to Note 6 to the east wall in Vestibule 101. Circuit the receptacle to Panel M2 #4.
- ADD: a junction box, a receptacle and a reference to Note 6 to the east wall in Corridor 177. Circuit the receptacle to Panel M2 #4.
- ADD: a junction box, a receptacle and a reference to Note 6 to the east wall in Corridor 324. Circuit the receptacle to Panel P7 #27
- ADD: an audio visual labeled 30cd to the southwest wall adjacent to the receptacle shown in Maintenance Office 175.
- ADD: a visual only fire alarm device labeled 30cd centered on the northeast wall in Kiln 341.
- CHANGE: the circuit designation from Panel P4 #1 to Panel P4 #33 in Front Office 105.
- CHANGE: the circuit designation from Panel P4 #3 to Panel P4 #35 in Front Office 105.
- CHANGE: the symbol of Panel P4 to indicate that it is a two section panel and change: the designation of Panel P4 to indicate that it is a two section panel.
- ADD: three junction boxes for Temperature Control Panels in Storage 316. Circuit to Panel P7 #29,31,33. Coordinate location with Mechanical Contractor.

## E2.2 GROUND FLOOR SOUTH POWER PLAN

- CHANGE: receptacle, data and telephone jack groupings in Health Clinic 113 to receptacle and split data/telephone jack groupings.
- CHANGE: receptacle, data and telephone jack grouping in Guidance Group 117 to receptacle and split data/telephone jack grouping.
- CHANGE: receptacle, data and telephone jack grouping in Guidance Office 118 to receptacle and split data/telephone jack grouping.
- CHANGE: receptacle, data and telephone jack grouping in Self-Contained 119 to receptacle and split data/telephone jack grouping.
- CHANGE: receptacle, data and telephone jack grouping in Reading Recovery 122 to receptacle and split data/telephone jack grouping.
- CHANGE: receptacle, data and telephone jack grouping in Resource 123 to receptacle and split data/telephone jack grouping.
- CHANGE: receptacle, data and telephone jack grouping in O.T./P.T. 124 to receptacle and split data/telephone jack grouping.
- CHANGE: receptacle, data and telephone jack grouping in Hands On 125 to receptacle and split data/telephone jack grouping.
- CHANGE: receptacle, data and telephone jack grouping in Explore 131 to receptacle and split data/telephone jack grouping.
- CHANGE: receptacle, data and telephone jack grouping in Reading Recovery 140 to receptacle and split data/telephone jack grouping.
- CHANGE: receptacle, data and telephone jack grouping in Explore 147 to receptacle and split data/telephone jack grouping.
- CHANGE: receptacle, data and telephone jack groupings in Speech 142 to receptacle and split data/telephone jack groupings.
- ADD: a split data/telephone jack adjacent to the receptacle on the north west wall in Exam 115.
- ADD: two junction boxes for Temperature Control Panels in Janitor 143. Circuit to Panel M2 #35,37. Coordinate location with Mechanical Contractor.
- ADD: two junction boxes for Temperature Control Panels in Sprinkler 126. Circuit to Panel M2 #36,38. Coordinate location with Mechanical Contractor.

ADD: an audio visual device labeled 30cd centered on the northeast wall in Literacy Book Storage 202

DELETE the smoke detector in Literacy Book Storage 202.

ADD: two junction boxes for Temperature Control Panels in Storage 259. Circuit to Panel M5 #1,3. Coordinate location with Mechanical Contractor.

#### E2.4 SECOND FLOOR SOUTH POWER PLAN

CHANGE: receptacle, data and telephone jack grouping in Conference 207 to receptacle and split data/telephone jack grouping.

CHANGE: receptacle, data and telephone jack grouping in Guidance Group 209 to receptacle and split data/telephone jack grouping.

CHANGE: receptacle, data and telephone jack grouping in Office 210 to receptacle and split data/telephone jack grouping.

CHANGE: receptacle, data and telephone jack grouping in Self-Contained 213 to receptacle and split data/telephone jack grouping.

CHANGE: receptacle, data and telephone jack grouping in Resource 215 to receptacle and split data/telephone jack grouping..

CHANGE: receptacle, data and telephone jack grouping in Explore 222 to receptacle and split data/telephone jack grouping.

CHANGE: receptacle, data and telephone jack grouping in Reading Recovery 230 to receptacle and split data/telephone jack grouping.

CHANGE: receptacle, data and telephone jack grouping in Speech 231 to receptacle and split data/telephone jack grouping.

CHANGE: receptacle, data and telephone jack grouping in Explore 236 to receptacle and split data/telephone jack grouping.

ADD: a split data/telephone jack adjacent to the south-most receptacle on the southeast wall in Greenhouse 218.

ADD: one split data/telephone jack adjacent to the receptacle on the southwest wall and one split data/telephone jack adjacent to the receptacle on the northwest wall in Literacy Data Specialist 216.

CHANGE: horsepower notation on AC1P from 1/3 to 1/4.  
ADD: an audio visual device labeled 30cd centered on the north wall in Literacy Data Specialist 216.

DELETE the smoke detector in Literacy Data Specialist 216.

ADD: two junction boxes for Temperature Control Panels in Janitor 232. Circuit to Panel M5 #11,13. Coordinate location with Mechanical Contractor.

ADD: two junction boxes for Temperature Control Panels in Janitor 217. Circuit to Panel M5 #14,16. Coordinate location with Mechanical Contractor.

#### E3.1 FIRST FLOOR NORTH LIGHTING PLAN

CHANGE: the lighting fixture designation of the three Type Y1 lighting fixture to Type V1.

#### E3.3 SECOND FLOOR NORTH LIGHTING PLAN

CHANGE: lighting fixtures Type G2 to lighting fixtures Type A1 in Literacy Book Storage 202. Space at eight foot on center, center in room

#### E3.4 SECOND FLOOR SOUTH LIGHTING PLAN

ADD: lighting fixture Type E1 to northeast wall adjacent to door in Self-Contained 213.

ADD: lighting fixture Type E1 to northeast wall adjacent to door in Resource 215.

ADD: a homerun and circuit designation to the south most quad receptacle on the east wall. Circuit to Panel P6 #58.  
ADD: a homerun and circuit designation to the three north most quad receptacles on the east wall. Circuit to Panel P6 #60.  
ADD: a homerun and circuit designation to the quad receptacle on the northeast wall. Circuit to Panel P6 #62.

E4.4 FIRE ALARM RISER DIAGRAM

DELETE the smoke detector for Storage 202.

ADD: an audio visual device between Corridor 201 and Wash Closet 203 for Literacy Book Storage 202.

DELTE the smoke detector for Storage 216.

ADD: an audio visual device between Resource 215 and Corridor 208 for Literacy Data Specialist 216.

ADD: an audio visual device between Electrical 176 and Corridor 161 for Maintenance Office 175.

ADD: a visual only device between Art 340 and Music 338 for Kiln 341.

CHANGE: room numbers on per the following table:

<u>Listed as on Dwg</u>	<u>Change: to Read</u>
Elev Mach 250	Elev Mach 260
Corr 201	Corr 204
PE Office 237	PE Office 327
Music 328	Music 338
Fifth Grade 229	Fifth Grade 224
Kinder 132	Kinder 137

E4.4 SECURITY SYSTEM WIRING DIAGRAM

CHANGE: the label on the Security System / Access Control Panel from Maintenance Room 175 to Corridor 107.

DELETE the reference to Stair 169 indicating a keypad under Alt Bid #6 from Note 4.

CHANGE: the designations for the motion detectors and keypads as indicated on attached sketch SKE-4.4A

M1 HVAC GROUND FLOOR PLAN NORTH

CHANGE: the 24"X24" roof outside air intake vent to include a fire damper and a 24"X24" return air grille.

M5 PLUMBING GROUND FLOOR PLAN NORTH

CHANGE: plumbing fixture type at Men No. 330 from 'P1' to 'P7'.

CHANGE: plumbing fixture type at Men No. 330 from 'P2' to 'P7'.

CHANGE: plumbing fixture type at Women No. 331 from 'P1' to 'P7' (typ. for 3 locations)

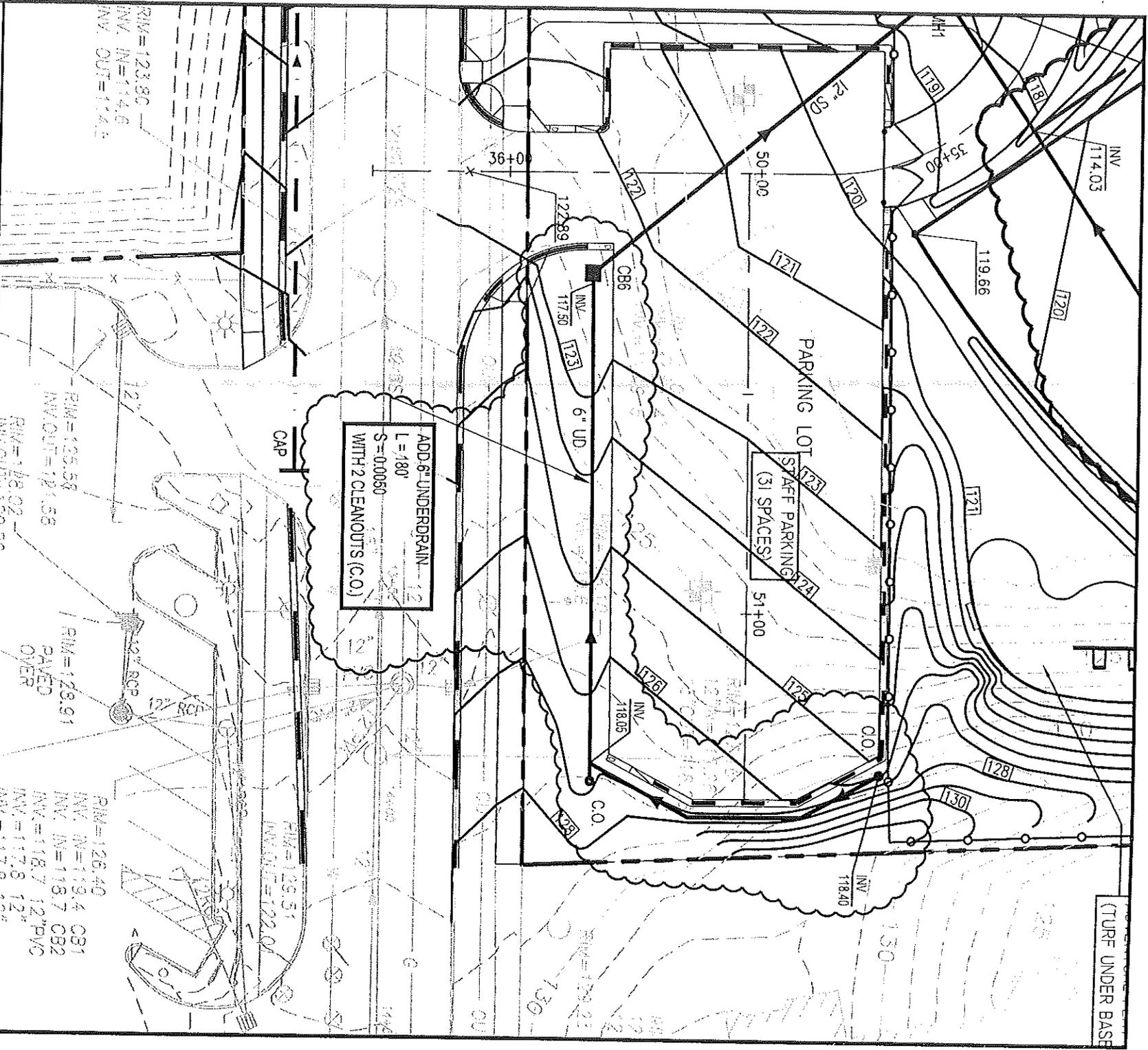
CHANGE: plumbing fixture type at Women No. 331 from 'P2' to 'P7'.

M6 PLUMBING GROUND FLOOR PLAN SOUTH

CHANGE: plumbing fixture type at Staff W.C. No. 155 from 'P2' to 'P7'.

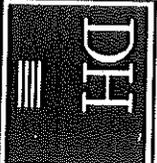
M7 PLUMBING SECOND FLOOR PLAN NORTH

CHANGE: plumbing fixture type at Staff W.C. No. 203 from 'P2' to 'P7'.



# EAST END ELEMENTARY SCHOOL

## SKETCH SHOWING LOCATION OF NEW 6" UNDERDRAIN AND CLEANOUTS



Deluca-Hoffman Associates, Inc.  
 778 MAIN STREET, SUITE 8  
 SOUTH PORTLAND, ME 04106  
 (207) 775-1121  
 DHA@DelucaHoffman.COM

DRAWN:	DED	DATE:	8.09.04
DESIGNED:	WGH	SCALE:	1"=30'
CHECKED:	WGH	JOB NO.	2370
FILE NAME:	2370-SP.DWG		

FIGURE  
**SK-C-2**

UST CLOSURE ASSESSMENT  
of  
FORMER JACK SCHOOL  
414 EASTERN PROMENADE  
PORTLAND, MAINE 04402

Facility Owner/Operator: City of Portland  
389 Congress Street  
Portland, Maine 04101

Project Contact: William Hoffman  
Deluca-Hoffman Associates Inc.  
778 Main Street  
South Portland, Maine 04106

Fire Department: Lt. Gaylen W. McDougal  
Fire Prevention Officer  
(207) 874-8405

Facility ID: # 12151

Project: Removal of one 8,000 gallon No. 4 fuel oil underground storage tanks

Contractor: JE Butler Co.  
PO Box 2382  
Bangor, Maine 04402

UST Closure Assessment Prepared By: Robert L. Hoffman, PE, President  
Hoffman Engineering Inc.  
640 Ten Rod Road  
North Kingstown, RI 02852

UST Closure Assessment Date: July 1, 2004

UST Closure Assessment Conclusion: It is HEI's belief that no evidence of a release or  
spillage associated with the subject UST.

The tank sat beneath a 3' concrete pad and approximately 4' of pea stone, which also surrounded the tank system. Due to its location within a high groundwater level area, the tank sat on a concrete pad secured with four tie downs to dead men.

#### **SITE GEOLOGY**

Maine Geological Survey Sand & Gravel Aquifer Map 5, indicated the Site is not a mapped "Sand & Gravel Aquifer". No water supply wells are depicted within a 1-mile radius of the subject Site. A former reservoir (presently filled and developed), south of the Site, is shown on this map. There are no landfills or salt storage facilities shown in the area of the Site.

Soils encountered along the sidewalls of the tank during removal were comprised of medium sand to a depth of approximately 6 feet below grade overlying clay to a depth of approximately 13 feet below grade. (Burmister Classification). Groundwater was encountered at approximately 6-7 feet below grade.

#### **SITE TOPOGRAPHY & DRAINAGE**

Based on a review of USGS Topographic Mapping (Portland West, ME quadrant, 1978), the Site is situated approximately 50 feet National Geodetic Vertical Datum (NGVD).

In general, regional topography declines steeply in a northeasterly direction toward the Atlantic Ocean and the entrance to Back Cove located approximately 700 feet from the Site. Due to grading, the Site itself is generally flat. Similarly, based on observations of site topography and USGS mapping, surface drainage, as well as groundwater, flow in a northeasterly direction.

It should be noted that localized groundwater flow can be affected by such parameters as seasonal groundwater table fluctuation, private wells, surface water bodies, bedrock and regional topography.

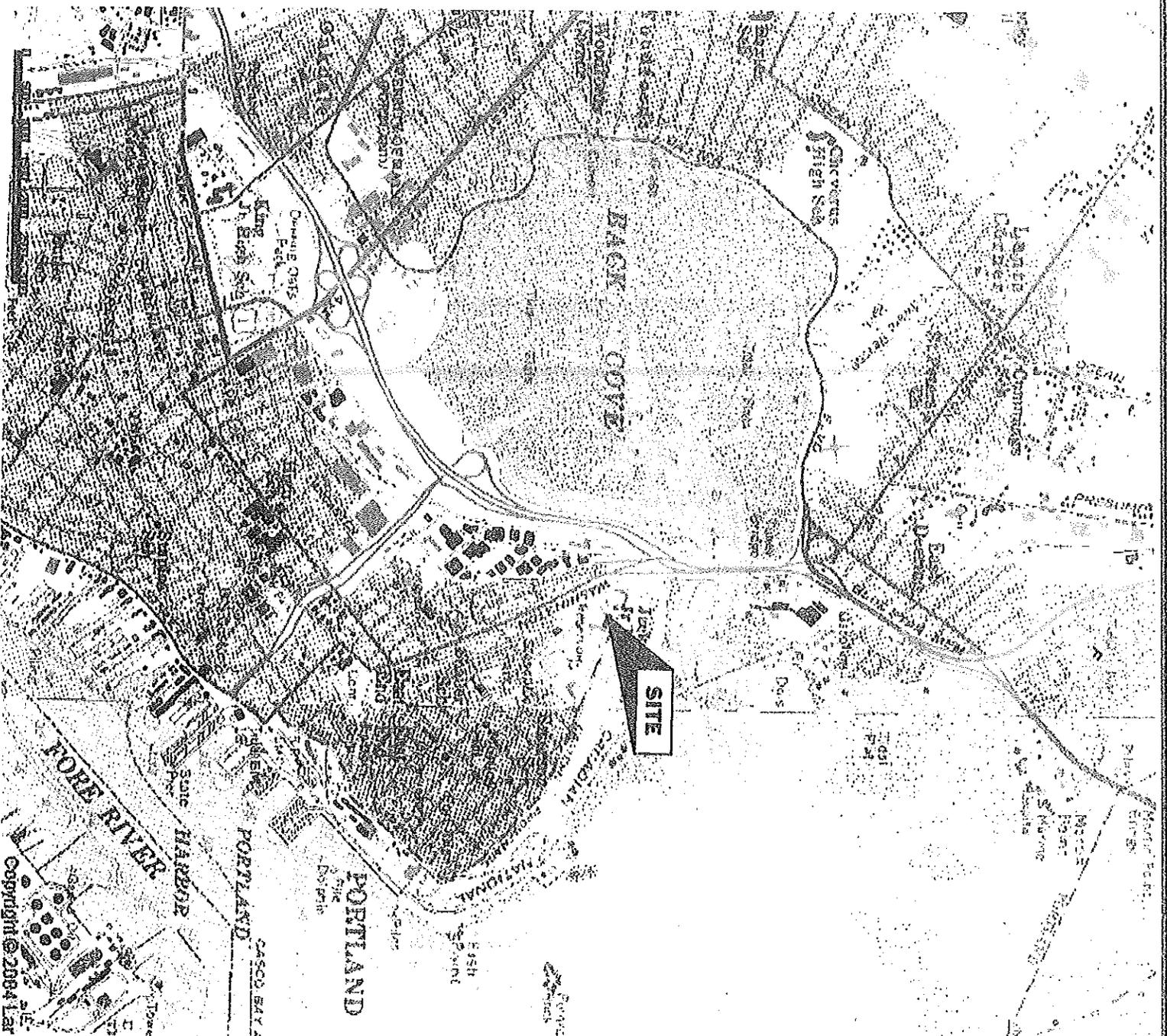
#### **SENSITIVE RECEPTORS**

The Site and surrounding area are serviced by the municipal sewer and private drinking water systems. There are no water supply wells (public or private) in the vicinity of the Site. There are currently no buildings on the Site. No wetlands, streams or sensitive ecosystems exist on the Site. Based on its location, the Site would have a Baseline 1 Clean-Up Goal (removal of free product and petroleum saturate soils) if contamination was encountered.

#### **SITE ASSESSMENT PROCEDURES**

##### Field Activities

- UST closure activities were conducted on July 1, 2004.
- UST excavation and cleaning activities were performed by JE Butler Co. of Bangor, Maine and witnessed by an HEI representative. The Portland Fire Department observed the condition of the tank and tank grave prior to backfilling.
- On June 30, 2004, Clean Harbors of South Portland pumped 849 gallons of residual No. 4 fuel oil from the tank for recycling. Copies of the disposal paperwork are provided in the Appendix.



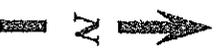
**HEI**

HOFFMAN ENGINEERING, INC.  
 640 Ten Rod Rd.  
 North Kingstown, RI 02852

**LOCUS MAP**

UST Closure Assessment  
 (UST# 12151)

Former Jack School  
 414 East Promenade  
 Portland, Maine

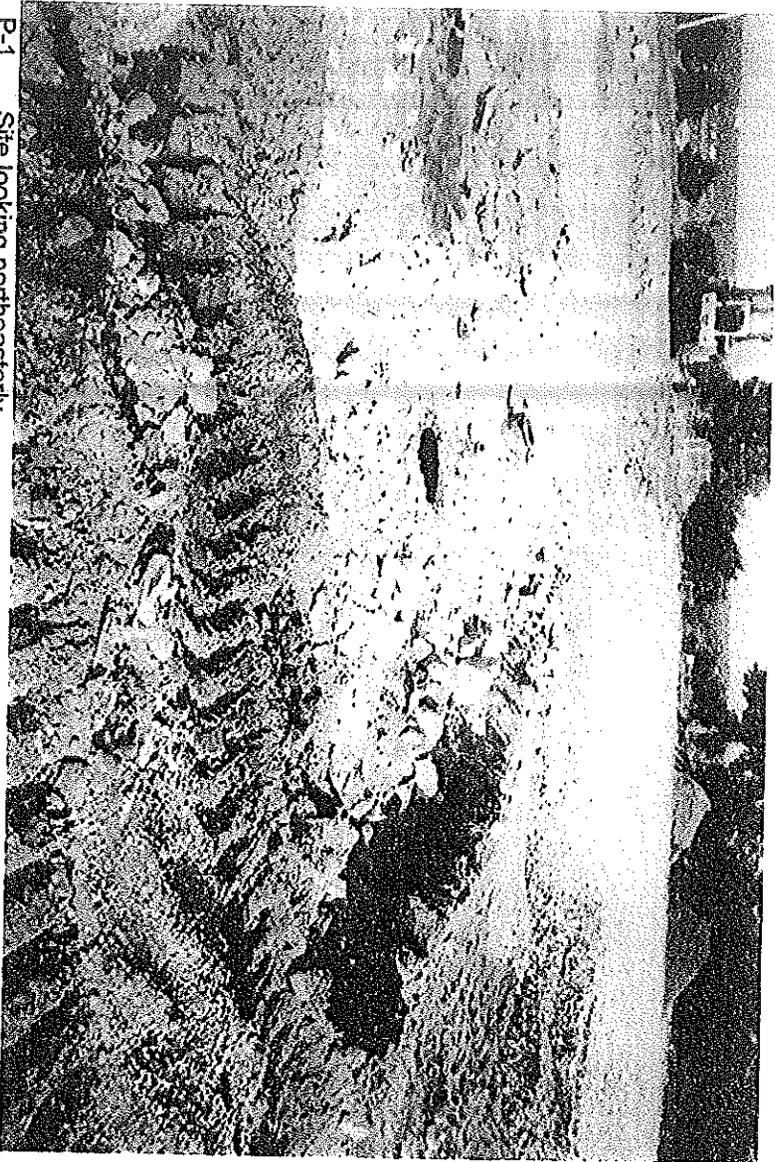


Date: 06-27-04

By: BLR

Base Map: USGS Quad,  
 Portland West, ME, dated  
 photorevised 1978

Scale: ±1:2400  
 Figure 1



P-1 Site looking northeasterly.



P-2 UST during removal

Former Jack School  
414 East Promenade  
Portland, Maine

July 1, 2004

HEI 03-47.1

Figure 3

**CHANGE ORDER # 1    OCTOBER 15, 2004**

TO CONTRACT DOCUMENTS FOR:

**East End Elementary School**  
Portland, Maine

City of Portland BID # 8704

PREPARED BY:

STEPHEN BLATT ARCHITECTS  
P.O. BOX 583  
10 DANFORTH STREET  
PORTLAND, ME 04112-0583

This CHANGE ORDER # 1 is based on the approved Ledgewood Value Engineering/Cost Savings totaling \$ 915,794. and has been incorporated into the Contract. It modifies, amends, and supplements designated parts of the Contract Documents, Project Manuals, and Drawings for the **East End Elementary School** and is hereby made an integral part thereof by reference and shall be as binding as though inserted in its entirety in the location specified herein. It shall be the responsibility of the Contractor to notify all Subcontractors and suppliers he/she proposes to use for the various parts of the work for any changes or modifications contained in this addendum.

This CHANGE ORDER # 1 consists of 10 pages (+ referenced spec sections).

## **DRAWINGS**

The drawings have been revised for the specific Value Engineering/Cost Saving changes. Changes on the drawings are indicated with "clouds" surrounding the changed area or notes, with specific VE numbers attached. The revision column has noted Change Order # 1 October 15, 2004. The drawing numbers have an "R" after indicating revised. See drawing T-1R for a list of specific VE numbers.

## **SPECIFICATIONS**

The specifications have been revised for the specific Value Engineering/Cost Saving changes. The following revisions are noted with specific VE numbers attached.

SECTION 02821-A - ORNAMENTAL FENCE GATE - OPTION 1  
DELETE: Section 02821-A. (VE #6)

SECTION 02821-S - ORNAMENTAL FENCE - OPTION 1  
DELETE: Section 02821-S. (VE #6)

"2.7 KNOCKED-DOWN, ATHLETIC LOCKERS

- A. Available Products:
  - 1. Knocked-Down, Athletic Metal Lockers:
    - a. Lyon Workspace Products; Expanded Metal Lockers.
    - b. Penco Products, Inc., Subsidiary of Vesper Corporation; Invincible II Lockers.
    - c. Republic Storage Systems Company; Heavy Duty Ventilated Lockers.
- B. Locker Arrangement: Double tier (type 3).
- C. Body: Assembled by riveting or bolting body components together. Fabricate from unperforated, cold-rolled steel sheet with thicknesses as follows:
  - 1. Tops and Bottoms: 0.0528 inch (1.35 mm) thick, with single bend at edges.
  - 2. Backs: 0.0428 inch (1.1 mm) thick.
  - 3. Shelves: 0.0528 inch (1.35 mm) thick, with double bend at front and right-angle single bend at sides and back.
- D. Expanded-Metal Sides: Fabricated from 0.0897-inch- (2.3-mm-) thick expanded metal; welded to 0.0966-inch- (2.5-mm-) thick steel angles or 0.0528-inch- (1.35-mm-) thick, steel channel frames.
- E. Frames: Channel formed; fabricated from 0.0528-inch- (1.35-mm-) thick, cold-rolled steel sheet or 0.0966-inch- (2.5-mm-) thick steel angles; lapped and factory welded at corners; with top and bottom main frames factory welded into vertical main frames. Form continuous, integral door strike full height on vertical main frames.
- F. Expanded-Metal Doors: Fabricated from 0.0897-inch- (2.3-mm-) thick expanded metal; welded to 0.0966-inch- (2.5-mm-) thick steel angle frame; with 0.0897-inch- (2.3-mm-) thick, cold-rolled steel sheet lock panel backed by 0.0528-inch- (1.35-mm-) thick, cold-rolled steel sheet retainer welded to door frame.
- G. Hinges: Heavy-duty, minimum 0.0500-inch- (1.27-mm-) thick steel, full loop, five or seven knuckle; tight pin; minimum 2 inches (51 mm) high. Weld to inside of door frame and attach to door with at least two factory-installed fasteners that are completely concealed and tamper resistant when door is closed.
  - 1. Provide at least three hinges for each door more than 42 inches (1067 mm) high and at least two hinges for each door 42 inches (1067 mm) high or less.
- H. Recessed Door Handle and Latch: Stainless-steel cup with integral door pull, recessed so locking device does not protrude beyond face of door; pry resistant.
  - 1. Multipoint Latching: Finger-lift latch control designed for use with built-in combination locks, built-in key locks, or padlocks; positive automatic and prelocking.

Manufacturer: Mod-U-Serve  
Change quantity from 3 to 2 (1 model MCT-DM1 and 1 model MCT-DM3)

Item #: 15

Description: Serving Counter, Cold Food  
Manufacturer: Mod-U-Serve  
Change model # to MCT-CF3-Modified  
Change quantity from 2 to 1

Specification: (Revised)

Unit to be model MCT-CF3 as manufactured by Mod-U-Serve. Unit to be size and shape as shown on plan. 50" long x 28 1/2" wide x 36" high.  
Frame: Featuring frameless construction utilizing 16 gauge type 304 stainless steel formed end panels with top and bottom horizontal members of 16 gauge type 304 stainless steel.  
Casters: Heavy duty 5" diameter plate casters with polyurethane tires. Brake models to be supplied on rear corners of cabinet.  
Top: 14 gauge type 304 stainless steel with 2" turndown on all sides and sound deadened applied between top and frame.  
Serving Shelf: 16 gauge stainless steel serving shelf with 1 1/2" turndown on all sides. Support posts of 1 1/4" square 18 gauge stainless steel tubing. Pre-wired fluorescent light fixture with safety shields and toggle switch in control panel.  
Sneeze Guard: 1/2" thick tempered plate glass with polished edges.  
Front Body Panel: Field removable plastic laminate panel. (Color to be determined)  
Undershelf: 18 gauge type 304 stainless steel wit 18" high ends and 6" high back. Undershelf is held back 6" from front panel forming a utility chase for plumbing and electrical services.  
Work Shelf: 16 gauge stainless steel 8" wide shelf mounted at rear on fold down brackets.  
Trayslide: 14 gauge type 304 stainless steel trayslide mounted on fixed brackets.  
Cold Food Units: Unit to have (1) one, (3) three pan capacity, mechanically cooled stainless steel cold pan 6" deep. Bottom sloped to 1/2" drain. Self contained condensing unit.  
Control Panel: All switches to be centrally located in common control panel assembly with fold down front for ease of maintenance and service.  
Stainless Steel Specification: All stainless steel to be type 304 with number 4 finish.

Options and Accessories:

1. Line Up Locks
2. Interconnection to single connection point with Item # 16.
3. Stainless steel adjustable legs in lieu of casters.

Item #: 16

Description: Serving Counter, Hot Food  
Manufacturer: Mod-U-Serve

Model # to MCT-FT2

Quantity: 1

Specification:

Unit to be model MCT-FT2 as manufactured by Mod-U-Serve. 36" L x 28-1/2" W x 36" H.  
Frame: Featuring frameless construction utilizing 16 gauge type 304 stainless steel formed end panels with top and bottom horizontal members of 16 gauge type 304 stainless steel.  
Casters: Heavy duty 5" diameter plate casters with polyurethane tires. Brake models to be supplied on rear corners of cabinet.  
Top: 14 gauge type 304 stainless steel with 2" turndown on all sides and sound deadened applied between top and frame.  
Front Body Panel: Field removable plastic laminate panel. (Color to be determined)  
Undershelf: 18 gauge type 304 stainless steel wit 18" high ends and 6" high back. Undershelf is held back 6" from front panel forming a utility chase for plumbing and electrical services.  
Work Shelf: 16 gauge stainless steel 8" wide shelf mounted at rear on fold down brackets.  
Trayslide: 14 gauge type 304 stainless steel trayslide mounted on fold down brackets.  
Stainless Steel Specification: All stainless steel to be type 304 with number 4 finish.

Options and Accessories:

1. Line Up Locks
2. Stainless steel adjustable legs in lieu of casters.

Item #: 20

Description: Traffic Barrier

Manufacturer: Brass Smith

Model #: 930/20/20-87

Change quantity from 4 to 2

Specification:

Each unit shall include model 930/20/20-87 classic Beltway post with polished chrome head, and post with red belt.

## SECTION 12494 - ROLLER SHADES

~~DELETE: Article 2.3 and 2.5. (VE # 36)~~

## SECTION 15700 HVAC

Page 8, paragraph 2.8 BOILER/BURNER UNITS:

VE #45

SECTION 16470 PANELBOARDS (VE # 48)  
DELETE the Panelboard Schedule for Panels L2 and M3.  
REVISE Panelboard Schedules as attached:

SECTION 16510 INTERIOR LUMNAIRES (VE # 47)

ADD the following approved alternate light fixtures to the Lighting Fixture Schedule:

A1 Columbia # P4D24-332G-MA36-S-EB8LH277  
A2 Columbia # J14-232G-FSA12-EB8LH277  
A3 Columbia # P4D22-340TTG-MA33-S-EBTT277  
A4 Columbia # JT824-332G-FSA12-EB8LH277-G2  
A5 Columbia # JT822-340TTG-FSA12-3EBTT277  
A6 Columbia # P4D24-332G-MA36-S-EB8LH120  
A7 Columbia # P4D2340TTG-MA33-S-EBTT120

S5 Spaulding # CE1-A-H17-H3-F-Q-GR/ARM-S-5-S-GR/SSS14-40-1-A1-GR  
S5A Spaulding # CE1-A-H25-F-Q-GR/ARM-S-5-S-GR/SSS20-40-1-A1-GR

X1 Hubbell # NV3RENNW  
X2 Hubbell # NV3RENNW-WGLX  
X3 Hubbell # NV3RENNW

SECTION 16722 INTRUSION DETECTION SYSTEM (VE # 50)

REVISE Paragraph 1.1.C to read as follows:

"Wiring only for future Door Access Control System."

REVISE Paragraph 1.1.D to read as follows:

"Wiring only for future Door Security Intercom System."  
REVISE Paragraph 2.5.A to read as follows:

"Provide wiring only to facilitate the future installation of a Door Access Control System. Wiring shall include conductors as indicated on the Contract Drawings between the location of the future Door Access Control Panel and door card readers and exit detectors."

DELETE Paragraph 2.5.B.

DELETE Paragraph 2.6 in its entirety.

DELETE Paragraph 2.7 in its entirety.

DELETE Paragraph 2.8 in its entirety.

REVISE Paragraph 2.9.A as follows:

"Provide wiring only to facilitate the future installation of a Door Security Intercom System. Wiring shall include conductors as indicated on the Contract Drawings between the location of the future Master Station and vestibule stations."

DELETE Paragraphs 2.9.B, C and D in their entirety.

DELETE Paragraph 3.2.L.

SECTION 16746 INTEGRATED TECHNOLOGY NETWORK SYSTEM (VE # 49)

DELETE Paragraph 1.2 a 5z.

DELETE Paragraphs 2.12 D 15, 16, 17 and 18 in their entirety.

## ARCHITECTURAL DRAWINGS

A0.1r	Building Code Notes – 1/16"
A1.01r	Ground Floor Plan – 3/32"
A1.02r	Second Floor Plan – 3/32"
A1.1r	Ground Floor Plan – North – 1/8"
A1.2r	Ground Floor Plan – South – 1/8" Partition Types
A1.3r	Second Floor Plan – North – 1/8"
A1.4r	Second Floor Plan – South – 1/8", Room Finish Schedule
A1.5r	Reflected Ceiling Plan, Ground Floor North – 1/8"
A1.6r	Reflected Ceiling Plan, Ground Floor South – 1/8"
A1.7r	Reflected Ceiling Plan, Ground Floor North – 1/8"
A1.8r	Reflected Ceiling Plan, Ground Floor South – 1/8"
A1.9r	Game Lines, Plan Detailsum Game Line Layout – 1/8"
A1.10r	Plan Details
A1.11r	Plan Details
A1.12r	Roof Plan
A1.13r	Roof Details
A1.14r	Slip Joint, Misc. Opening, Locker, & HM Sill Details
A2.1r	Building Elevations
A2.2r	Building Elevations
A2.3r	Building Sections
A2.4r	Window Schedule & Details
A3.1r	Wall Sections
A3.2r	Wall Sections
A3.3r	Wall Sections
A3.4r	Wall Sections
A3.5r	Wall Sections
A3.6r	Wall Sections
A3.7r	Wall Sections
A3.8r	Wall Sections
A3.9r	Wall Sections
A3.10r	Wall Sections
A3.11r	Wall Sections
A3.12r	Wall Sections
A3.13r	Wall Sections
A3.14r	Section Details
A4.1r	Stair Sections, Stair Details, Elevator Plan & Section
A4.2r	Stair Sections, Stair Details, Ramp Details
A5.0r	Casework Legend & Details
A5.1r	Interior Elevations - Classrooms
A5.2r	Interior Elevations - Offices
A5.3r	Interior Elevations – Cafeteria, Platform, & Kitchen
A5.4r	Media Center
A5.5r	Interior Elevations – Office & Clinic
A5.6r	Interior Elevations – Art, Music & Hands-On
A5.7r	Interior Elevations – OT/PT, Staff, Lobby, Misc.
A5.8r	Interior Elevations – Gymnasium
A5.9r	Interior Elevations – Corridors

## ELECTRICAL DRAWINGS

E1.1r	Site Plan
E1.2r	Site Plan Details
E2.1r	Ground Floor North Power Plan
E2.2r	Ground Floor South Power Plan
E2.3r	Second Floor North Power Plan
E2.4r	Second Floor South Power Plan
E3.1r	First Floor North Lighting Plan
E3.2r	First Floor South Lighting Plan
E3.3r	Second Floor North Lighting Plan
E3.4r	Second Floor South Lighting Plan
E4.1r	Single Line Diagram, Sound System Riser
E4.2r	Telecommunications Riser Diagram & Details
E4.3r	Telecommunications Details
E4.4r	Fire Alarm Riser Diagram & Security Riser
E4.5r	Single Line Diagram & Security Riser
E4.6r	Lighting Control Diagram

- E. Samples: Submit the following:
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. **Plastic-Laminate Door Faces: Show the full range of colors, textures, and patterns available.**
  3. Louver blade and frame sections, 6 inches long, for each material and finish specified.
  4. Frames for light openings, 6 inches long, for each material, type, and finish required.
- F. LEED Submittals:
1. Credit MR 2.1 and 2.2: Waste management plan complying with Division 1 Section "Construction Waste Management."
- 1.4 QUALITY ASSURANCE
- A. Source Limitations: Obtain flush wood doors through one source from a single manufacturer.
  - B. Quality Standard: Comply with WDMA I.S.1-A, "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 according to NFPA 252.
- 1.5 DELIVERY, STORAGE, AND HANDLING
- A. Protect wood doors during transit, storage, and handling to prevent damage, soiling and deterioration. Comply with requirements of referenced standard and recommendations of NWWDA I.S. 1, Appendix, "How to Store, Handle, Finish, Install and Maintain Wood Doors," as well as with manufacturer's instructions.
    1. Package doors at factory prior to shipping, using manufacturer's standard method.
    2. Protect doors from extremes of heat and cold. Relative humidity shall not be less than 30% nor more than 60%.
    3. Compare pre-finished doors to approved finish sample upon delivery. Notify the Architect if sample does not match.
  - B. Package doors individually in plastic bags or cardboard cartons.
  - C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

FLUSH WOOD DOORS

B. Plastic-Laminate-Faced Doors:

1. Grade: Premium.
2. Laminate Faces: High-pressure decorative laminates complying with NEMA LD 3, Grade HGS.
3. Colors, Patterns, and Finishes: As selected by Architect from laminate manufacturer's full range of products.
4. Stiles: Plastic-laminate matching faces, applied before faces.

2.3 SOLID-CORE DOORS

A. Particleboard Cores: Comply with the following requirements:

1. Particleboard: ANSI A208.1, Grade 1-LD-2.
2. Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.
3. Provide doors with structural composite lumber cores instead of particleboard cores at locations where oversized glass lites or louvers exceed more than 40 percent of the door surface area are indicated.
4. Construction: Five plies with stiles and rails bonded to core, then entire unit abrasive planed before veneering.

B. Fire-Rated Doors:

1. Construction: Construction and core specified above for type of face indicated or manufacturer's standard mineral-core construction as needed to provide fire rating indicated.
2. Blocking: For mineral-core doors, provide composite blocking with improved screw-holding capability approved for use in doors of fire ratings indicated as needed to eliminate through-bolting hardware.
3. Edge Construction: At hinge stiles, provide manufacturer's standard laminated-edge construction with improved screw-holding capability and split resistance and with outer stile matching face veneer.
4. Pairs: Where required to meet rating, provide fire-rated pairs with fire-retardant stiles matching face veneer that are labeled and listed for kinds of applications indicated without formed-steel edges and astragals.

C. Acoustical Doors:

1. Construction: Construction and type of face indicated with manufacturer's standard core construction as needed to provide an STC 41 rating.
2. Sound seals specified in Division 8 Section "Door Hardware."

2.4 LIGHT FRAMES

A. Wood Beads for Light Openings in Wood Doors:

1. Wood Species: Same species as door faces.
2. Profile: Manufacturer's standard shape, same configuration for rated and non-rated doors.
3. At 20-minute, fire-rated, wood-core doors, provide wood beads and metal glazing clips approved for such use.

FLUSH WOOD DOORS

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. Manufacturer's Written Instructions: Install doors to comply with manufacturer's written instructions, referenced quality standard, and as indicated.
  - 1. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80.
  - 2. All locks, exit devices, door closers and other hardware shall be installed in accordance with the manufacturer's instructions. Pilot holes of recommended size, for wood screws required to fasten the hardware, shall be drilled by the installing contractor before screws are fastened to the wood doors. In particular, wood fire rated doors, require pre-drilling for all screw holes, to prevent splitting the door edges

- 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: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

3.4 WASTE MANAGEMENT

- A. Separate and recycle waste materials in accordance with the Waste management Plan.
- B. Separate corrugated cardboard packaging accordance with the Waste management Plan and place in designated areas for recycling.
- C. Fold up metal banding; flatten and place in designated area for recycling.

FLUSH WOOD DOORS

SECTION 08711 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
  - 1. Commercial door hardware for the following:
    - a. Swinging doors.
    - 2. Cylinders for doors specified in other Sections.
    - 3. Electrified door hardware.
  - B. Related Sections include the following:
    - 1. Division 1 Section "Alternates" for information on alternate pertaining to this section.
    - 2. Division 8 Section "Steel Doors and Frames" for astragals provided as part of a fire-rated labeled assembly and for door silencers provided as part of the frame.
    - 3. Division 8 Section "Flush Wood Doors" for astragals provided as part of a fire-rated labeled assembly.
    - 4. Division 8 Section "Glazed Aluminum Curtain Wall System" for partial entrance door hardware.

1.3 SUBMITTALS

- A. General: Submit in accordance with Section 01330.
  - 1. Submittals for Sections 08110, 08211, and 08711 shall be made concurrently.
- B. Product Data: Include installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- C. Shop Drawings: Details of electrified door hardware, indicating the following:
  - 1. Wiring Diagrams: Detail wiring for power, signal, and control systems and differentiate between manufacturer-installed and field-installed wiring. Include
    - a. System schematic.

DOOR HARDWARE

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- F. Keying Schedule: Meet directly with the Owner to review hardware function and keying requirements. Prepare keying schedule by or under the supervision of supplier, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.
- G. Qualification Data: For firms and persons specified in "Quality Assurance" Article.
  1. Include lists of completed projects with project names and addresses of architects and owners, and other information specified.
- H. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, indicating current products comply with requirements.
- I. Maintenance Data: For each type of door hardware to include in maintenance manuals specified in Division 1.
- J. Warranties: Special warranties specified in this Section.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Supplier Qualifications: Door hardware supplier with warehousing facilities in Project's vicinity and who is or employs a qualified Architectural Hardware Consultant, available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
  1. Electrified Door Hardware Supplier Qualifications: An experienced door hardware supplier who has completed projects with electrified door hardware similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance, and who is acceptable to manufacturer of primary materials.
  2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- C. Architectural Hardware Consultant Qualifications: A person who is currently certified by the Door and Hardware Institute as an Architectural Hardware Consultant and 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.

DOOR HARDWARE

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- H. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings." Review methods and procedures related to door hardware including, but not limited to, the following:
  - 1. Inspect and discuss electrical roughing-in and other preparatory work performed by other trades.
  - 2. Review sequence of operation for each type of electrified door hardware.
  - 3. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 4. Review required testing, inspecting, and certifying procedures.
- 1.5 DELIVERY, STORAGE, AND HANDLING
  - A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
  - B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
  - C. Deliver keys to manufacturer of key control system.
  - D. Deliver keys to Owner by registered mail or overnight package service.
- 1.6 COORDINATION
  - A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
  - B. Electrical System Roughing-in: Coordinate layout and installation of electrified door hardware with connections to power supplies, fire alarm system and detection devices, and access control system.
- 1.7 WARRANTY
  - A. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
  - B. Special Warranty: Written warranty, executed by manufacturer agreeing to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:

DOOR HARDWARE

2. Template Hinge Dimensions: BHMA A156.7.
3. Self-Closing Hinges and Pivots: BHMA A156.17.

C. Quantity: Provide the following, unless otherwise indicated:

1. Two Hinges: For doors with heights up to 60 inches (1524 mm).
2. Three Hinges: For doors with heights 61 to 90 inches (1549 to 2286 mm).
3. Four Hinges: For doors with heights 91 to 120 inches (2311 to 3048 mm).
4. For doors with heights more than 120 inches (3048 mm), provide 4 hinges, plus 1 hinge for every 30 inches (750 mm) of door height greater than 120 inches (3048 mm).

D. Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

Maximum Door Size (inches)	Hinge Height (inches)	Metal Thickness (inches)	
		Standard Weight	Heavy Weight
40 and under by 1-3/4	4-1/2	0.134	0.180
Over 40 by 1-3/4	5	0.146	0.190

E. Hinge Weight: Unless otherwise indicated, provide the following:

1. Entrance Doors: Heavy-weight hinges.
2. Doors with Closers: Antifriction-bearing hinges.
3. Interior Doors: Standard-weight hinges, oil-impregnated bearings unless specified otherwise.

F. Hinge Base Metal: Unless otherwise indicated, provide the following:

1. Exterior Hinges: Stainless steel, with stainless-steel pin.
2. Interior Hinges: Steel, with steel pin.
3. Hinges for Fire-Rated Assemblies: Steel, with steel pin.

G. Hinge Options: Comply with the following:

1. Nonremovable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the following applications:
  - a. Outswinging exterior doors.
  - b. Outswinging corridor doors with locks.
2. Corners: Square.

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E (Vestibule)	16
F (Classroom)	37
G (Spec Classroom)	38
H (Privacy)	65

2. Mortise Deadlocks:

Function	Sargent
A (Key both sides)	4874
B (Key w/throw)	4875
C (Key one side only)	4876
D (Key w/retract only lever)	4877

F. Lock Throw: Comply with testing requirements for length of bolts to comply with labeled fire door requirements, and as follows:

1. Mortise Locks: Minimum 3/4-inch (19-mm) latchbolt throw.
2. Deadbolts: Minimum 1-inch (25-mm) bolt throw.

G. Backset: 2-3/4 inches (70 mm), unless otherwise indicated.

2.4 BORED LOCKS AND LATCHES

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

1. Mechanical Locks and Latches:
  - a. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc. (SGT).

B. Bored Locks: BHMA Grade 1; Series 4000.

1. Provide one of the following manufacturers and designs:
  - a. Sargent: 10 Line

C. Auxiliary Locks: BHMA Grade 1.

D. Lock Trim: Comply with the following:

1. Lever: Cast.
2. Escutcheon (Rose): Forged.
3. Dummy Trim: Match lever lock trim and escutcheons.
4. Lockset Designs: Provide the lockset design designated below or, if sets are provided by another manufacturer, provide designs that match those designated:
  - a. Sargent: LL

E. Lock Functions: Lock functions as indicated in the hardware schedule shall be as follows:

DOOR HARDWARE

- 2. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc. (SGT).
  - 3. Von Duprin; an Ingersoll-Rand Company (VD).
- B. Panic Exit Devices: Listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.
- C. Fire Exit Devices: Complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire and panic protection, based on testing according to UL 305 and NFPA 252.
- D. Card Reader System Hardware: Provide card reader system hardware consisting of the following:
- 1. Electric Latch Retraction Exit Devices: Provide hardware package consisting of Sargent exit device No. 56-80 Series, electric hinge, and No. 3510 power supply. Equivalent package by other listed manufacturers will be acceptable.
  - 2. Proximity Card Reader System: Refer to Division 16 Section "Intrusion Detection System".
  - 3. Door Status Switches: Where indicated, provide Sargent No. 3287 switches or approved substitute.
- E. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
- 1. Operation: Rigid.
- F. Outside Trim: Lever with cylinder, Cylinder at doors scheduled to receive pulls; material and finish to match locksets, unless otherwise indicated.
- 1. Match design for locksets and latchsets, unless otherwise indicated.
- G. Exit Device Functions:
- | Function | Von Duprin       | Sargent        | Precision                    |
|----------|------------------|----------------|------------------------------|
| A        | CD99NL-OP        | 16-8804        | 1103CD x 1123-38             |
| B        | CD99EO           | 16-8810        | 1101CD x 1123-38             |
| C        | CD99L            | 16-8813ET      | 1108CD x 39L x 1123-38       |
| D        | 99L-BE           | 8815ET         | 1108A x 39L x 1123-38        |
| E        | 99EO-F           | 12-8810        | FL-1101 x 1123-38            |
| F        | 99L-F            | 12-8813ET      | FL-1108 x 39L x 1123-38      |
| G        | 99L-F-BE         | 12-8815ET      | FL-1108A x 39L x 1123-38     |
| H        | CD9927EO         | 16-8710        | 1201CD x 1123-38             |
| I        | CD9927L          | 16-8713ET      | 1208CD x 39L x 1123-38       |
| J        | 9927L-BE         | 8715ET         | 1208A x 39L x 1123-38        |
| K        | CD9927EO x LBR   | 16-PP/PR8710   | 1201CD x 1123-38             |
| L        | CD9927L x LBR    | 16-PP/PR8713ET | 1208CD x 39L x 1123-38 x LBR |
| M        | CD9927L-BE x LBR | 16-PP/PR8715ET | 1208A x 39L x 1123-38 x LBR  |
| N        | 9927EO-F         | 12-8710        | FL-1201 x 1123-38            |
| O        | 9927L-F          | 12-8713ET      | FL-1208 x 39L x 1123-38      |
| P        | 9927L-F-BE       | 12-8715ET      | FL-1208A x 39L x 1123-38     |

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1. Master Key and/or Grand Master Key System: Cylinders are operated by a change key, a master key, and a grand master key.
  2. Master Keys shall be sent to the Owner by registered mail, return receipt required.
  3. Furnish manufacturer's job number to Architect and Owner.
  4. Keyed Alike: Key all cylinders to the same change key.
    - a. Cylinders shall be master keyed.
- H. Keys: Provide nickel-silver keys complying with the following:
1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
    - a. Notation: "DO NOT DUPLICATE."
  2. Quantity: In addition to one extra blank key for each lock, provide the following:
    - a. Cylinder Change Keys: Three for each cylinder keyed differently; Six for each set keyed alike; Four fir sets where only two cylinders are keyed alike.
    - b. Master Keys, Grand Master Keys: Six for each set.
1. Key Control System: BHMA Grade 1 system, including key-holding hooks, labels, two sets of key tags with self-locking key holders, key-gathering envelopes, and temporary and permanent markers. Contain system in metal cabinet with baked-enamel finish.
1. Wall-Mounted Cabinet: Cabinet with hinged-panel door equipped with key-holding panels and pin-tumbler cylinder door lock.
  2. Capacity: Able to hold keys for 150 percent of the number of locks.
- 2.8 STRIKES
- A. Standards: Comply with the following:
1. Strikes for Mortise Locks and Latches: BHMA A156.13.
  2. Strikes for Auxiliary Deadlocks: BHMA A156.5.
  3. Dustproof Strikes: BHMA A156.16.
- B. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated.
- C. Dustproof Strikes: BHMA Grade 1.
- 2.9 OPERATING TRIM
- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

DOOR HARDWARE

1. Coordinators: BHMA A156.3, Type #21
  - a. Shall be provided at all pairs of label doors equipped with overlapping astragals or where improper closing sequence would interfere with proper operating of doors.
  - b. Furnish filler pieces to close opening between coordinator and jamb of frame. Provide mounting brackets as required for proper mounting of additional hardware.
  - c. Models: Hager 297D, Door Controls 600 Series, Glynn Johnson Series "COR", or Rockwood 1600 Series

2.11 CLOSERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Surface-Mounted Closers:
    - a. LCN Closers; an Ingersoll-Rand Company (LCN).
    - b. Sargent Manufacturing Company, Div. of ESSEX Industries, Inc. (SGT).
  2. Swing Free Closer/Holder Release Devices:
    - a. LCN Closers; an Ingersoll-Rand Company (LCN).
    - b. Sargent Manufacturing Company; Div. of ESSEX Industries, Inc. (SGT).
- B. Standards: Comply with the following:
  1. Closers: BHMA A156.4.
  2. Closer Holder Release Devices: BHMA A156.15.
- C. Surface Closers: BHMA Grade 1, cast-iron body.
  1. Door closers shall have fully hydraulic, full rack and pinion action. Cylinder body shall be 1-1/2" in diameter, and double heat treated pinion shall be 11/16" in diameter.
  2. Spring power shall be continuously adjustable over the full range of closer sizes, and allow for reduced opening force for the physically handicapped. Hydraulic regulation shall be by tamper-proof, non-critical valves. Closers shall have separate adjustment for latch speed, general speed, and hydraulic back-check.
  3. All closers shall have solid forged steel main arms (and forged forearms for parallel arm closers).
  4. Closer arms shall have a powder coating finish.
  5. Provide drop, mounting plates where required.
  6. Do not locate closers on the side of doors facing corridors, passageways or similar type areas. Where it is necessary, due to certain conditions and approval of the Architect, to have closers in corridors, provide such closers with parallel or track type arms.

DOOR HARDWARE

1. Door opening time: Adjustable but not less than 4 seconds.
  2. Door closing time: Adjustable but not less than 4.5 seconds.
  3. Hold Open: Adjustable from 6 to 60 seconds, to allow safe passage between series of doors at entrance and vestibule.
  - c. Furnish unit without power assist ("Push-N-Go" ) feature, or with device that allows Owner to activate or disconnect the feature after the door has been installed.
  5. Header: 0.125 minimum wall thickness extruded aluminum.
  6. Metal Finish: Finish covers, mounting plates, and arm system with manufacturer's standard powder-coat finish. Match finish of storefront framing system.
  7. Push-Plate Control: Nominal 4 inch square or 4-1/2 inch diameter round push-plate control; stainless steel with No. 4 satin finish; with international accessibility symbol engraved and painted blue.
    - a. Furnish wall-mounted type, as appropriate to mounting conditions indicated on Drawings.
- 2.13 PROTECTIVE TRIM UNITS
- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Metal Protective Trim Units:
    - a. Burns Manufacturing Incorporated (BM).
    - b. Don-Jo Mfg., Inc. (DJO).
    - c. Rockwood Manufacturing Company (RM).
  - B. Standard: Comply with BHMA A156.6.
  - C. Materials: Fabricate protection plates from the following:
    1. Stainless Steel: 0.050 inch (1.3 mm) thick; beveled top and 2 sides.
  - D. Fasteners: Provide manufacturer's oval head exposed fasteners for door trim units consisting of either machine or self-tapping screws, for installation in counter sunk holes.
  - E. Furnish protection plates sized 1-1/2 inches (38 mm) less than door width on push side by the following height:
    1. Armor Plates: 34 inches.
    2. Kick Plates: 8 inches
    3. Push Plates: 8 inches wide by 16 inches high.

DOOR HARDWARE

- c. Reese Enterprises, Inc. (RE).
  - d. Zero International, Inc. (ZRO).
- B. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
1. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
  2. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
  3. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
- C. Weather-Strip Gasketing Models: Listed manufacturers with comparable models to the following:
- | Product           | Pemko        | Reese    | NGP        |
|-------------------|--------------|----------|------------|
| Brush Seal        | 45062AP      | 970      | A626A      |
| Auto. Door Bottom | 430CR        | 330      | 420        |
| Door Sweep        | 345AV        | 353      | 101AV      |
| Set Astragals     | 351C x 351CP | 95 x 95P | 140 x 140P |
| Astragal          | 357SP        | 183S     | 139SP      |
| Rain Drip         | 346C         | R201A    | 16AD       |
- D. Fire-Labelled Gasketing: Assemblies 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 according to UL 10B or NFPA 252.
- E. Sound-Rated Gasketing:
1. Head and Jambs: Self-adhesive silicone, teardrop configuration, equal to NGP 5050, Pemko S88.
    - a. Apply after final painting. Apply two rows of gasketing to sides and top of frame, located per Marshfield DoorSystems door gasketing detail.
  2. Sill: Concealed mortised automatic drop seal, equal to NGP 111NA.

2.16 THRESHOLDS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. National Guard Products, Inc. (NGP).
  2. Pemko Manufacturing Co., Inc. (PEM).
  3. Reese Enterprises, Inc. (RE).
  4. Zero International, Inc. (ZRO).

DOOR HARDWARE

- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. BHMA Designations: Comply with base material and finish requirements indicated by the following:
  - 1. BHMA 626 (US26D): Satin chromium plated over nickel, over brass or bronze base metal.
  - 2. BHMA 627 (US27): Satin aluminum, clear coated, over aluminum base metal.
  - 3. BHMA 628 (US28): Satin aluminum, clear anodized, over aluminum base metal.
  - 4. BHMA 630 (US32D): Satin stainless steel, over stainless-steel base metal.
- E. With the exceptions of exit devices, door closers, plates, push bars, pulls, thresholds and weatherstripping, all hardware items shall be furnished in dull chrome finish 26D.
  - 1. Exceptions are as follows:
    - Exit Devices: 32D
    - Door Closers: Sprayed Aluminum
    - Plates: 32D
    - Push Bars: 32D
    - Pulls: 32D
    - Thresholds: Aluminum
    - Weatherstripping: Aluminum

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Contractor shall examine doors and frames, with installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance. If errors in dimensions or preparation are encountered, they are to be corrected by the responsible parties prior to the installation of hardware.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- A. Steel Doors and Frames: Comply with DHI A115 series.
  - 1. Surface-Applied Door Hardware: Drill and tap doors and frames according to SDI 107.

### DOOR HARDWARE

- B. Six-Month Adjustment: Approximately six months after date of Substantial Completion, Installer shall perform the following:
  - 1. Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.
  - 2. Consult with and instruct Owner's personnel on recommended maintenance procedures.
  - 3. Replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation of door hardware units.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes.

3.7 DOOR HARDWARE SCHEDULE

- A. The hardware sets listed below indicate the items of hardware required for each opening. It is the bidders responsibility to accurately furnish the proper quantities, items, sizes, weights and functions as required by the plans and specifications. If an opening has, through error, been omitted from the following hardware sets, it shall be the bidders responsibility to supply hardware of equivalent quality and quantity, as that which is specified for a comparable opening.

HW1

Doors 101.2

- 1 - Exit Device (function H)
- 1 - Exit Device (function 306 x H)
- 1 - Automatic door operator
- 3 - Cylinders
- 3 - I/C Cylinder cores
- 2 - Pulls, type B
- 1 - Closer-H-cush (par arm)
- 2 - Floor Stop

Balance of hardware by aluminum door supplier.

DOOR HARDWARE

- 2 - Push/Pull Set
- 1 - Closers (par arm)
- 1 - Automatic door operator
- 2 - Floor Stops

Balance of hardware by aluminum door supplier.

HW6

- Doors 101.3, 158.1
- 2 - Push/Pull Set
- 2- Closers (par arm)
- 2 - Floor Stops

Balance of hardware by aluminum door supplier.

HW7

- Doors 177.2, 324.2

Hinges

- 1 - Exit Device (function H)
- 1 - Exit Device (function 306 x H)
- 3 - Cylinders
- 3 - I/C Cylinder cores
- 2 - Closers-H-cush (par arm)
- 2 - Pulls, type B
- 1 - Set of Weatherstripping
- 2 - Door Sweeps
- 1 - Threshold
- 2 - Kickplates

HW8

- Doors 259.2, 350.1

Hinges

- 1 - Lockset (function A) (function B at dr 350.1)
- 1 - Closer (par arm)
- 1 - Threshold
- 1 - Set of Weatherstripping
- 1 - Door Sweep
- 1 - Rain Drip

DOOR HARDWARE

HW13

Doors 334.1, 335.1,

Hinges

- 1 - Push Plate
- 1 - Pull, type A
- 1 - Deadbolt (function B)
- 1 - Closer (par arm)
- 1 - Kick Plate
- 1 - Door Stop
- 3 - Silencers

HW14

Doors 330.1, 331.1,

Hinges

- 1 - Push Plate
- 1 - Pull, type A
- 1 - Closer (par arm)
- 1 - Kick Plate
- 1 - Door Stop
- 3 - Silencers

HW15

Doors 169.1, 136.1, 152.1, 226.1, 240.1, 253.1, 325.4

Hinges

- 1 - Closer (reg arm) (par arm for drs 325.4, 338.2)
- 1 - Fire Rated Exit Device (function F)
- 1 - Cylinder
- 1 - I/C Cylinder core
- 1 - Kickplate
- 1 - Door Stop
- 3 - Silencers

HW16

Doors 102.1, 104.1, 104.2, 201.1, 302.1

Hinges

- 2 - Closers (reg arm)
- 1 - Vertical Rod Fire Rated Exit Devices (function N)
- 1 - Vertical Rod Fire Rated Exit Devices (function O)
- 1 - Cylinder

DOOR HARDWARE

3 - Silencers

HW21

Doors 131.1, 147.1, 164.1, 222.1, 236.1, 249.1

Hinges

- ~~1 - Lockset (function G)~~
- 1 - Lockset (function 38)
- 2 - Manual Flush Bolts
- 2 - Door Stops
- 2 - Silencers

HW22

~~Doors 134.2, 150.2, 167.2, 224.2, 238.2, 251.2,~~

Hinges

- ~~1 - Lockset (function A)~~
- 2 - Manual Flush Bolts
- ~~2 - Door Stops~~
- ~~2 - Silencers~~

HW23

Doors 323.1, 325.3, 326.1, 339.1,

Hinges

- 1 - Closer (par arm) (reg arm for dr 326.1)
- ~~4 - Lockset (function F)~~
- 1 - Lockset (function 4)
- 2 - Self-latching Flush Bolts
- 2 - Door Stops
- 2 - Silencers

HW24

Doors 302.2, 315.2, 324.1, 338.2

Hinges

- 1 - Closer (reg arm) (par arm for dr 302.2)
- 1 - Exit Device (function C)
- 1 - Cylinder
- 1 - I/C Cylinder core
- 1 - Kickplate
- 1 - Door Stop
- 3 - Silencers

DOOR HARDWARE

SECTION 09310 - CERAMIC TILE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

1. Ceramic mosaic tile.
2. Quarry tile.
3. Glazed wall tile.
4. Paver tile.
5. Preparation of cementitious tile backer units for tile installation.
6. Metal edge strips installed as part of tile installations.
7. Marble Thresholds

- B. Related Sections include the following:

1. Division 1 Section "Special Environmental Requirements" for additional LEED requirements.
2. Division 3 Section "Cast-in-Place Concrete" for monolithic slab finishes specified for tile substrates.
3. Division 9 Section "Gypsum Board Assemblies" for cementitious backer units, or water-resistant backer board.

1.3 DEFINITIONS

- A. Module Size: Actual tile size (minor facial dimension as measured per ASTM C 499) plus joint width indicated.
- B. Facial Dimension: Nominal tile size as defined in ANSI A137.1.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Initial Selection: For each type of tile and grout indicated. Include Samples of accessories involving color selection.

CERAMIC TILE

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where tiles below introduce lists, the following requirements apply for product selection:
1. Basis-of-Design Product: The design for each tile type is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
1. Provide tile complying with Standard grade requirements, unless otherwise indicated.
  2. For facial dimensions of tile, comply with requirements relating to tile sizes specified in Part 1 "Definitions" Article.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.
- C. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:
1. As selected by Architect from manufacturer's full range.
- D. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, 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.
- E. 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 on exteriors or 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.

1. **Composition:** Natural clay or porcelain.
2. **Facial Dimensions:** 4 by 8, 6 by 6, or 12 by 12 inches.
3. **Thickness:** 1/2 inch (12.7 mm).
4. **Face:** Pattern of design indicated.
5. **Colors:** 80% standard colors, 20% designer colors.
6. **Static Coefficient of Friction:** Level Surfaces, minimum 0.6.
7. **Tile Type/Products:** Available product options include the following:

- a. **Crossville "Cross-Colors".**
- b. **Quarry Floor tile by Daltile.**

- F. **Glazed Wall Tile Trim Units:** Matching characteristics of adjoining flat tile and coordinated with sizes and coursing of adjoining flat tile where applicable. Provide shapes as follows, selected from manufacturer's standard shapes:
1. **Base for Thin-Set Mortar Installations:** Straight, module size 4-1/4 by 4-1/4 inches or as indicated.
  2. **Wainscot Cap for Thin-Set Mortar Installations:** Surface bullnose, module size 4-1/4 by 4-1/4 inches or as indicated.
  3. **Wainscot Cap for Flush Conditions:** Regular flat tile for conditions where tile wainscot is shown flush with wall surface above.
  4. **External Corners for Thin-Set Mortar Installations:** Surface bullnose.
  5. **Internal Corners:** Field-buted square corners except with coved base and cap angle pieces designed to fit with stretcher shapes.

- G. **Quarry Tile Trim Units:** Matching characteristics of adjoining flat tile and coordinated with sizes and coursing of adjoining flat tile where applicable. Provide shapes as follows, selected from manufacturer's standard shapes:

1. **Base:** Coved with surface bullnose top edge, facial dimensions 6 by 6 inches or as indicated. Accessories below are generally used with glazed wall tile. Delete paragraph and subparagraphs if not applicable. Verify availability with manufacturers selected. Revise if colors of accessories are different from adjoining tile.

## 2.4 STONE THRESHOLDS

- A. **General:** Provide stone thresholds that are uniform in color and finish, fabricated to sizes and profiles indicated to provide transition between tile surfaces and adjoining finished floor surfaces.

1. **Fabricate thresholds to heights indicated, but not more than 1/2 inch (12.7 mm) above adjoining finished floor surfaces, with transition edges beveled on a slope of no greater than 1:2.**

- B. **Marble Thresholds:** Marble threshold shall have bevel profiles meeting ADA requirements of sufficient length to form the transition from the tile flooring to adjacent flooring materials. Threshold shall be available in lengths of up to 48" to minimize joints.

1. **Thickness:** Minimum 5/8" or sufficient to match tile thickness.

## CERAMIC TILE

- 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: White aluminum strips, 1/8 inch (3.2 mm) wide at top edge, with integral provision for anchorage to mortar bed or substrate, unless otherwise indicated.
  - 1. Provide Schiene by Schluter or approved substitute.
- C. 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.
- D. Grout Sealer: Manufacturer's standard product for sealing grout joints that does not change color or appearance of grout.
  - 1. Available Products:
    - a. Bonsal, W. R., Company; Grout Sealer.
    - b. Bostik; CeramaSeal Grout Sealer.
    - c. Custom Building Products; Grout and Tile Sealer.
    - d. MAPEI Corporation; KER 004, Keraseal Penetrating Sealer for Unglazed Grout and Tile.
- E. Crack Suppression for Thin Set Tile:
  - 1. Sheet or trowelable membrane designed to bridge small cracks for tile setting applications. Provide one of the following products:
    - a. Laticrete 9235 Waterproof & Anti-Fracture Membrane
    - b. Noblesseal CIS
    - c. Hydroment Ultra-Set
    - d. Mapei PRP M19

## 2.8 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

### CERAMIC TILE

- A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.
  - B. TCA Installation Guidelines: TCA's "Handbook for Ceramic Tile Installation." Comply with TCA installation methods indicated in ceramic tile installation schedules.
  - 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. Jointing Pattern: Lay tile in grid pattern, unless otherwise indicated. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless 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.
  - F. Lay out tile wainscots to next full tile beyond dimensions indicated.
  - G. Grout tile to comply with requirements of the following tile installation standards:
    - 1. For ceramic tile grouts, comply with ANSI A108.10.
  - H. At showers, tubs, and where indicated, install cementitious backer units and treat joints to comply with ANSI A108.11 and manufacturer's written instructions for type of application indicated.
- 3.4 FLOOR TILE INSTALLATION
- A. General: Install tile to comply with requirements in the Floor Tile Installation Schedule, including those referencing TCA installation methods and ANSI A108 Series of tile installation standards.
    - 1. For installations indicated below, follow procedures in ANSI A108 Series tile installation standards for providing 95 percent mortar coverage.
      - a. Tile floors in wet areas.
      - b. Tile floors composed of tiles 8 by 8 inches or larger.
      - c. Tile floors composed of rib-backed tiles.
  - B. Joint Widths: Install tile on floors with the following joint widths:

- D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

### 3.7 FLOOR TILE INSTALLATION SCHEDULE

- A. Tile Installation: Interior floor installation on concrete; thin-set mortar, TCA F113 and ANSI A108.5.
  - 1. Tile Type: Unglazed ceramic mosaic tile.
  - 2. Thin-Set Mortar: Portland cement mortar.
  - 3. Grout: Unsanded polymer-modified tile grout.
- B. Tile Installation : Interior floor installation on concrete; thin-set mortar, epoxy grout, TCA F115 and ANSI A108.5.
  - 1. Tile Type: Unglazed quarry tile.
  - 2. Thin-Set Mortar: Water-Cleanable, Tile-Setting Epoxy Adhesive.
  - 3. Grout: Modified-Epoxy Emulsion Mortar.

### 3.8 WALL TILE INSTALLATION SCHEDULE

- A. Tile Installation : Interior wall installation over cementitious backer units; thin-set mortar, TCA W244 and ANSI A108.5.
  - 1. Tile Type: Glazed wall tile.
  - 2. Thin-Set Mortar: Latex Portland cement mortar.
  - 3. Grout: Unsanded polymer-modified tile grout.

### 3.9 WASTE MANAGEMENT

- A. Separate waste in accordance with the Waste Management Plan and place in designated areas in the following categories for recycling:
  - 1. Half tiles and larger: Set aside for reuse by Owner.
  - 2. Broken tile, cutoffs smaller than 1/2 tile, and excess mortar and grout: Crush for use as mosaic, sub-base, or fill.
  - 3. Separate metal waste and place in designated area for recycling.
  - 4. Separate cardboard waste and place in designated area for recycling.

END OF SECTION 09310

CERAMIC TILE

09310 - 11



VOLTS: 120/208 AMPS 225  
MOUNT: SURFACE PHASE: 3

MAIN: MLO  
WIRES: 4

PANEL: M2  
LOCATION: BOILER ROOM 178

BREAKER		DESCRIPTION	CKT VA	TYPE	CKT NO.	LOAD			CKT NO.	TYPE	CKT VA	DESCRIPTION	BREAKER	
A	P					A	B	C					P	A
20	1	RECEPTACLES	1200	R	1	1600			2	R	400	ELEVATOR PIT	1	20
20	1	TELEPHONE TERMINAL BD	500	O	3		1300		4	R	800	SECURITY CAMERA RECEPT	1	20
20	1	CH6, CH7, CH8	450	H	5			1314	6	M	864	CP7	1	15
20	1	EF2, CH4, CH5	600	M	7	1464			8	M	864	CP8	1	15
15	1	SAC-1	120	M	9		816		10	M	696	EF7	1	15
20	1	CH1, CH2, CH3, UH1	600	H	11			1296	12	M	696	EF4	1	15
20	1	FIRE ALARM PANEL	500	O	13	1000			14	M	500	B-1 CONTROL CIRCUIT	1	20
20	1	WHI	864	H	15		1364		16	M	500	B-2 CONTROL CIRCUIT	1	20
20	1	SPARE	500	S	17			1000	18	S	500	SPARE	1	20
20	1	SPARE	500	S	19	1000			20	S	500	SPARE	1	20
20	1	CP1A	1176	M	21		2352		22	M	1176	CP2A	1	20
20	1	DOOR HOLDERS	600	O	23			1100	24	O	500	LMP PANEL	1	20
20	1	DOOR OPERATOR	1000	O	25	1500			26	S	500	SPARE	1	20
20	1	SUMP PUMP	500	M	27		1000		28	O	500	DAY TANK ALARM	1	20
20	1	INTERCOM MASTER STA	500	O	29			1000	30	O	500	SECURITY PANEL	1	20
20	1	AUTO TEMP CONTROLS	500	O	31	1000			32	O	500	ELECTRIC DOOR LOCK	1	20
20	1	AUTO TEMP CONTROLS	500	O	33		2156		34	M	1656	CP5	1	20
20	1	SPARE	500	S	35			1000	36	O	500	TEMP CONTROL PANEL	1	20
20	1	SPARE	500	S	37	1000			38	O	500	TEMP CONTROL PANEL	1	20
20	1	SPARE	500	S	39		1000		40	S	500	SPARE	1	20
20	1	SPARE	500	S	41			1000	42	S	500	SPARE	1	20
PHASE TOTALS						8564	9988	7710						

CONNECTED VOLT-AMPERES= 26262  
CONNECTED AMPERES= 73  
DEMAND VOLT-AMPERES= 14088  
DEMAND AMPERES= 39

CIRCUIT TYPE CODES		DEMAND FACTOR
L	LIGHTS	1.0
M	MOTORS	0.5
R	RECEPTACLES	0.5
H	HEAT	1.0
O	OTHER	0.5
S	SPARE	0.5

EAST END ELEMENTARY  
SCHOOL

PROJECT: SCHOOL  
PROJ. NO: 03-0024  
DATE: 10/15/04  
STATUS: CHANGE ORDER #1

**Bartlett Design**  
LIGHTING & ELECTRICAL ENGINEERING  
942 WASHINGTON STREET BATH, MAINE 04530  
TEL (207) 443-5447 FAX (207) 443-5560

VOLTS: 120/208 AMPS 60  
MOUNT: SURFACE PHASE: 3

MAIN: MLO  
WIRES: 4

PANEL: M5  
LOCATION: STORAGE 259

BREAKER		DESCRIPTION	CKT VA	TYPE	CKT NO.	LOAD			CKT NO.	TYPE	CKT VA	DESCRIPTION	BREAKER	
A	P					A	B	C					P	A
20	1	TEMP CONTROL PANEL	500	O	1	1196			2	M	696	AC4P	1	15
20	1	TEMP CONTROL PANEL	500	O	3		1000		4	S	500	SPARE	1	20
20	1	SPARE	500	S	5			1700	6	R	1200	ROOFTOP RECEPTACLES	1	20
15	1	SFI	696	M	7	1392			8	M	696	AC6P	1	15
20	1	DOOR HOLDERS	150	O	9		810		10	M	660	SCU1	2	15
20	1	SPARE	500	S	11			1160	12	M	660	SCU1	2	15
20	1	SPARE	500	S	13	1000			14	O	500	TEMP CONTROL PANEL	1	20
20	1	SPARE	500	S	15		1000		16	O	500	TEMP CONTROL PANEL	1	20
20	1	SPARE	500	S	17			1000	18	S	500	SPARE	1	20
20	1	SPARE	500	S	19	1000			20	S	500	SPARE	1	20
20	1	SPARE	500	S	21		1000		22	S	500	SPARE	1	20
20	1	SPARE	500	S	23			1000	24	S	500	SPARE	1	20
20	1	SPARE	500	S	25	1000			26	S	500	SPARE	1	20
20	1	SPARE	500	S	27		1000		28	S	500	SPARE	1	20
20	1	SPARE	500	S	29			1000	30	S	500	SPARE	1	20
PHASE TOTALS						5588	4810	5860						

CONNECTED VOLT-AMPERES= 16258  
CONNECTED AMPERES= 45  
DEMAND VOLT-AMPERES= 8129  
DEMAND AMPERES= 23

DEMAND FACTOR

L	LIGHTS	1.0
M	MOTORS	0.5
R	RECEPTACLES	0.5
H	HEAT	1.0
O	OTHER	0.5
S	SPARE	0.5

PROJECT: EAST END ELEMENTARY SCHOOL  
PROJ. NO: 03-0024  
DATE: 10/15/04  
STATUS: CHANGE ORDER #1

**Bartlett Design**  
LIGHTING & ELECTRICAL ENGINEERING  
942 WASHINGTON STREET BATH, MAINE 04530  
TEL (207) 443-5447 FAX (207) 443-5560

VOLTS: 120/208 AMPS 225  
MOUNT: SURFACE PHASE: 3

MAIN: MLO  
WIRES: 4

PANEL: P1  
LOCATION: COORDOR 161

BREAKER		DESCRIPTION	CKT VA	TYPE	CKT NO.	LOAD			CKT NO.	TYPE	CKT VA	DESCRIPTION	BREAKER	
A	P					A	B	C					P	A
20	1	RECEPTACLES	1000	R	1	2200			2	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	3		2400		4	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	5			2200	6	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	7	2400			8	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	9		2400		10	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	400	R	11			900	12	O	500	EMERGENCY BATTER UNIT	1	20
20	1	RECEPTACLES	800	R	13	2000			14	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	15		2400		16	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	17			2200	18	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	19	2400			20	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	21		2400		22	R	1200	RECEPTACLES	1	20
20	1	LIGHTS	1260	L	23			1760	24	S	500	SPARE	1	20
20	1	LIGHTS	1260	L	25	1760			26	S	500	SPARE	1	20
20	1	LIGHTS	1260	L	27		1760		28	S	500	SPARE	1	20
20	1	LIGHTS	1260	L	29			1760	30	S	500	SPARE	1	20
20	1	LIGHTS	1552	L	31	2052			32	S	500	SPARE	1	20
20	1	LIGHTS	1068	L	33		1568		34	S	500	SPARE	1	20
20	1	SPARE	500	S	35			1000	36	S	500	SPARE	1	20
20	1	SPARE	500	S	37	1000			38	S	500	SPARE	1	20
20	1	SPARE	500	S	39		1000		40	S	500	SPARE	1	20
20	1	SPARE	500	S	41			1000	42	S	500	SPARE	1	20
PHASE TOTALS						13812	13928	10820						

CONNECTED VOLT-AMPERES= 38560  
CONNECTED AMPERES= 107  
DEMAND VOLT-AMPERES= 23110  
DEMAND AMPERES= 64

CIRCUIT TYPE CODES		DEMAND FACTOR
L	LIGHTS	1.0
M	MOTORS	0.5
R	RECEPTACLES	0.5
H	HEAT	1.0
O	OTHER	0.5
S	SPARE	0.5

PROJECT: EAST END ELEMENTARY SCHOOL  
PROJ. NO: 03-0024  
DATE: 10/15/04  
STATUS: CHANGE ORDER #1

**Bartlett Design**  
LIGHTING & ELECTRICAL ENGINEERING  
942 WASHINGTON STREET BATH, MAINE 04530  
TEL (207) 443-5447 FAX (207) 443-5560

VOLTS: 120/208 AMPS 225  
MOUNT: SURFACE PHASE: 3

MAIN: MLO  
WIRES: 4

PANEL: P3  
LOCATION: CORRIDOR 128

BREAKER		DESCRIPTION	CKT VA	TYPE	CKT NO.	LOAD			CKT NO.	TYPE	CKT VA	DESCRIPTION	BREAKER	
A	P					A	B	C					P	A
20	1	RECEPTACLES	1200	R	1	2400			2	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	3		2400		4	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	5			2200	6	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	7	2400			8	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	9		2400		10	R	1200	RECEPTACLES	1	20
20	1	SPARE	500	S	11			1000	12	O	500	EMERGENCY BATTERY UNI	1	20
20	1	RECEPTACLES	800	R	13	2000			14	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	15		2400		16	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	17			2200	18	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	19	2400			20	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	21		2400		22	R	1200	RECEPTACLES	1	20
20	1	LIGHTS	1260	L	23			1760	24	S	500	SPARE	1	20
20	1	LIGHTS	1260	L	25	1760			26	S	500	SPARE	1	20
20	1	LIGHTS	1260	L	27		1760		28	S	500	SPARE	1	20
20	1	LIGHTS	1260	L	29			1760	30	S	500	SPARE	1	20
20	1	LIGHTS	1552	L	31	2052			32	S	500	SPARE	1	20
20	1	LIGHTS	1068	L	33		1568		34	S	500	SPARE	1	20
20	1	SPARE	500	S	35			1000	36	S	500	SPARE	1	20
20	1	SPARE	500	S	37	1000			38	S	500	SPARE	1	20
20	1	SPARE	500	S	39		1000		40	S	500	SPARE	1	20
20	1	SPARE	500	S	41			1000	42	S	500	SPARE	1	20
PHASE TOTALS						14012	13928	10920						

CONNECTED VOLT-AMPERES= 38860  
CONNECTED AMPERES= 108  
DEMAND VOLT-AMPERES= 23260  
DEMAND AMPERES= 65

CIRCUIT TYPE CODES		DEMAND FACTOR
L	LIGHTS	1.0
M	MOTORS	0.5
R	RECEPTACLES	0.5
H	HEAT	1.0
O	OTHER	0.5
S	SPARE	0.5

PROJECT: EAST END ELEMENTARY SCHOOL  
PROJ. NO: 03-0024  
DATE: 10/15/04  
STATUS: CHANGE ORDER #1

**Bartlett Design**  
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942 WASHINGTON STREET BATH, MAINE 04530  
TEL (207) 443-5447 FAX (207) 443-5560



VOLTS: 120/208 AMPS 225  
MOUNT: SURFACE PHASE: 3

MAIN: MLO  
WIRES: 4

PANEL: P6 SECTION 1  
LOCATION: ELECTRICAL ROOM 176

BREAKER		DESCRIPTION	CKT VA	TYPE	CKT NO.	LOAD			CKT NO.	TYPE	CKT VA	DESCRIPTION	BREAKER	
A	P					A	B	C					P	A
20	1	RECEPTACLES	1400	R	1	2600			2	R	1200	RECEPTACLES	1	20
50	2	RANGE	4000	O	3		4800		4	R	800	RECEPTACLES	1	20
50	2	RANGE	4000	O	5			4600	6	R	600	RECEPTACLES	1	20
		SHUNT TRIP				1400			8	R	1400	RECEPTACLES	1	20
		SHUNT TRIP					1400		10	R	1400	RECEPTACLES	1	20
20	1	REFRIGERATOR	1500	R	7			2500	12	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	9	2000			14	R	800	RECEPTACLES	1	20
20	1	RECEPTACLES	1400	R	11		2600		16	R	1200	RECEPTACLES	1	20
30	2	DRYER	2500	O	13			3700	18	R	1200	RECEPTACLES	1	20
30	2	DRYER	2500	O	15	3700			20	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1000	R	17		2500		22	R	1500	WASHER	1	20
20	1	RECEPTACLES	1000	R	19			2500	24	H	1500	EWH	1	20
100	3	PANEL P6 SECTION 2	8300	L	21	9800			26	H	1500	EWH	1	20
100	3	PANEL P6 SECTION 2	11300	L	23		12800		28	R	1500	COPIER	1	20
100	3	PANEL P6 SECTION 2	11500	L	25			12500	30	R	1000	MICROWAVE	1	20
PHASE TOTALS						19500	24100	25800						

CONNECTED VOLT-AMPERES= 69400  
CONNECTED AMPERES= 193  
DEMAND VOLT-AMPERES= 36200  
DEMAND AMPERES= 100

CIRCUIT TYPE CODES DEMAND FACTOR  
L LIGHTS 1.0  
M MOTORS 0.5  
R RECEPTACLES 0.5  
H HEAT 1.0  
O OTHER 0.5  
S SPARE 0.5

PROJECT: EAST END ELEMENTARY SCHOOL  
PROJ. NO: 03-0024  
DATE: 10/15/04  
STATUS: CHANGE ORDER #1

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942 WASHINGTON STREET BATH, MAINE 04530  
TEL (207) 443-5447 FAX (207) 443-5560

VOLTS: 120/208 AMPS 225  
 MOUNT: SURFACE PHASE: 3

MAIN: MLO  
 WIRES: 4

PANEL: P7  
 LOCATION: STORAGE 316

BREAKER		DESCRIPTION	CKT VA	TYPE	CKT NO.	LOAD			CKT NO.	TYPE	CKT VA	DESCRIPTION	BREAKER	
A	P					A	B	C					P	A
20	1	RECEPTACLES	1000	R	1	1800			2	R	800	RECEPTACLES	1	20
20	1	RECEPTACLES	1000	R	3		2000		4	R	1000	ELECTRIC WATER COOLER	1	20
20	1	RECEPTACLES	800	R	5			1800	6	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	800	R	7	2000			8	R	1200	RECEPTACLES	1	20
20	1	RECEPTACLES	1200	R	9		2000		10	R	800	RECEPTACLES	1	20
20	1	SPARE	500	S	11			1500	12	R	1000	RECEPTACLES	1	20
20	1	RECEPTACLES	1000	R	13	2000			14	R	1000	RECEPTACLES	1	20
20	1	VENDING	1500	O	15		3000		16	O	1500	ELECTRIC WATER COOLER	1	20
20	1	PAYPHONE	1000	R	17			1500	18	M	500	VENDING	1	20
20	1	RECEPTACLES	800	R	19	1600			20	R	800	MOTOR OPER. CURTAIN	1	20
20	1	SPARE	500	S	21		1000		22	S	500	RECEPTACLES	1	20
20	1	SCOREBOARD	1000	O	23			1500	24	O	500	SPARE	1	20
20	1	GYM SOUND SYSTEM	500	O	25	1000			26	O	500	ELEC DOOR LOCK	1	20
20	1	SECURITY CAMERA RECEPT	400	R	27		900		28	O	500	ELECTRIC HAND DRYERS	1	20
20	1	TEMP CONTROL PANEL	500	O	29			1000	30	R	500	ELECTRIC HAND DRYERS	1	20
20	1	TEMP CONTROL PANEL	500	O	31	1000			32	R	500	DATA NETWORK RECEPT	1	20
20	1	TEMP CONTROL PANEL	500	O	33		1000		34	R	500	DATA NETWORK RECEPT	1	20
20	1	SPARE	500	S	35			1000	36	S	500	SPARE	1	20
20	1	SPARE	500	S	37	1000			38	S	500	SPARE	1	20
20	1	SPARE	500	S	39		1000		40	S	500	SPARE	1	20
20	1	SPARE	500	S	41			1000	42	S	500	SPARE	1	20
PHASE TOTALS						10400	10900	9300						

CONNECTED VOLT-AMPERES= 30600  
 CONNECTED AMPERES= 85  
 DEMAND VOLT-AMPERES= 15300  
 DEMAND AMPERES= 42

CIRCUIT TYPE CODES		DEMAND FACTOR
L	LIGHTS	1.0
M	MOTORS	0.5
R	RECEPTACLES	0.5
H	HEAT	1.0
O	OTHER	0.5
S	SPARE	0.5

PROJECT: EAST END ELEMENTARY SCHOOL  
 PROJ. NO: 03-0024  
 DATE: 10/15/04  
 STATUS: CHANGE ORDER #1

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