Specifications for:

### WEST DEPTFORD FIRE HOUSE CONVERSION TO A LIBRARY

611 Academy Avenue West Deptford, New Jersey 08096

### ACKNOWLEDGEMENT OF ADDENDUM NO. 8

Contractor shall sign and acknowledge receipt of this Addendum No. 8 with (19) pages and (7) drawings.

Please return this confirmation sheet via email to michelle@mckernanarchitects.com.

Firm Name:	 	 	
Signature:	 	 	
Title:	 		
Date:			

Prepared By:

Joseph F. McKernan Jr., Architects & Associates

100 Dobbs Lane, Suite 204 Cherry Hill, New Jersey 08034 (856) 616-2960 / (856) 616-2963 fax

Architect Project No. 1214A

April 24, 2024



### Joseph F. McKernan Jr. Architects and Associates, LLC

Joseph F. McKernan Jr.,AIA

Michael J. Bejsiuk • Brian J. McKernan

#### **WEST DEPTFORD TOWNSHIP**

Firehouse Conversion to a Library

Addendum No. 8

April 24, 2024

Project No. 1214A

This Addendum forms a part of the Contract Documents and modifies / clarifies the original Bidding Documents dated November 21, 2023 as noted below. Acknowledge receipt of the Addendum in the space provided on the Form of Proposal for Addendum. Failure to do so may subject the Bidder to disqualification.

Except as herein modified / clarified, all other provisions of the Contract Documents shall remain in full force as originally set forth. Additional Work called for herein, unless otherwise described in the Addendum, shall comply with the requirements originally specified for similar Work.

### **CONTRACT DOCUMENTS CLARIFICATIONS:**

A. The following clarifications are issued as a courtesy to all Bidders.

1	Sheet A-1.1 has been revised to indicate the extent of concrete topping. The specification
	shall be identical to the design mix indicated on the Structural Drawings.
2	Regarding engaging J.C. McGee for proximity readers and access control procurement and
	installation, please include those costs in your bid.
3	We have been informed that the Sitework Contract Documents shall not be issued prior
	to the Bid Date for this project. To assist the Bidders for this contract, we recommend that
	all utilities be taken to a linear distance of Five Feet (5'-0") horizontally outside the
	Building Envelope.
4	Architectural Drawings have been revised to align with the guardrail mounting condition
	shown on the Structural Drawings.
5	The Architectural and Electrical Drawings have been revised to indicate the extent of
	existing slab removal and patching needed to accommodate running electrical and
	communication lines underground and surfacing within the Electrical / Mechanical Room.
6	EV Chargers will be specified in the Civil Engineering Bid Package, when that becomes
	available. The Electrical Drawings indicate provisions for the EV Chargers.
7	Electrical Drawings have been revised to show flow / tamper switches at the fire service
	area.
8	Unit Price Schedule, within the Unit Price Section, has been revised to provide more
	clarity.
9	Contractor shall coordinate with utility companies and provide all required cables for
	electric and low-voltage utility.

- 10 Water and Sewer services are provided by the Township, who has waived permit fees. Gas is provided by PSE&G, therefore application and permit fees should be included in your Bid.
- Existing roof-top air handling unit does not have dehumidification capabilities, refer to updated Mechanical Drawings for updated sequence and notes.

### CHANGES / CLARIFICATIONS TO SPECIFICATIONS: Sections identified below are attached.

- A. Section "BID FORM", revised to acknowledge Addendum No. 8.
- B. Section 012200 "Unit Prices", Unit Price Schedule revision.
- C. Section 042613 "Masonry Veneer", an Acceptable Manufacturer has been included.

### CHANGES / CLARIFICATIONS TO DRAWINGS: Drawings identified below are attached.

- A. Sheet G-1.1, revised to indicate sheets included in this Addendum.
- B. Sheet A-1.1, revised to indicate concrete slab removal for new electric service.
- C. Sheet A-2.1, revised to indicate extent of interior concrete topping, and required concrete slab patching.
- D. Sheet A-3.3, revised to indicate guardrail securement.
- E. Sheet A-3.4, revised to indicate guardrail securement.
- F. Sheet M-3.0, revised to indicate Existing Roof-Top Unit Sequence of Operations.
- G. Sheet E-1.0, revised to indicate routing utilities from building exterior to within Electrical / Mechanical Room.

**END OF ADDENDUM NO. 8** 

### BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1	BID INFORMATION
A.	Bidder:
В.	Project Name: West Deptford Fire House Conversion to a Library.
C.	Project Location: 611 Academy Avenue, West Deptford, NJ 08096.
D.	Owner: Township of West Deptford.
E.	Owner Phone Number: (856) 845-4004.
F.	Architect: Joseph F. McKernan Jr., Architects & Associates.
G.	Architect Project Number: 1214A.
1.2	CERTIFICATIONS AND BASE BID
A.	Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by Joseph F. McKernan, Jr. Architects & Associates and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
	<ol> <li>Dollars (\$).</li> <li>The above amount may be modified by amounts indicated in Paragraphs 1.3 "Alternate Bids";</li> </ol>
	2. The above amount may be modified by amounts indicated in Paragraphs 1.3 "Alternate Bids"; Paragraph 1.4 "Quantity Allowances"; and Paragraph 1.5 "Unit Prices."
1.3	ALTERNATE BIDS
A.	Add Alternate Bid No. 1: Refer to Section 012300 "Alternates."
	1 Dollars (\$).
B.	Add Alternate Bid No. 2: Refer to Section 012300 "Alternates."
	2 Dollars (\$).
1.4	QUANTITY AND CONTINGENCY ALLOWANCES
A.	Lump Sum - Allowance No. 1: Refer to Section 012100 "Allowances."
	1

Ad	Ы	en	dı	ım	-Q
Au			u		-0

1		Dollars (\$	
	ontingency - Allowance No. 3: Refer to Section 01210		
1		Dollars(\$	
UN	NIT PRICES		
Ur	nit Price No. 1: Refer to Specification Section 012200	"Unit Prices".	
1.		Dollars (\$	
Ur	nit Price No. 2: Refer to Specification Section 012200	"Unit Prices."	
1		Dollars (\$	
BI	D GUARANTEE		
Th sui of U.	D GUARANTEE  ne undersigned Bidder agrees to execute a contract for the rety as specified within 10 days after a written Notice bids, and on failure to do so agrees to forfeit to Owner S. money order, or bid bond, as liquidated damages for a percent (10%) of the Base Bid amount above:	of Award, if offered within 60 day the attached cash, cashier's check, of	ys afte certific
Th sui of U.	ne undersigned Bidder agrees to execute a contract for rety as specified within 10 days after a written Notice bids, and on failure to do so agrees to forfeit to Owner S. money order, or bid bond, as liquidated damages for	of Award, if offered within 60 day the attached cash, cashier's check, of such failure, in the following amou	ys afto certifiont con
The sum of U.S. term 1.	ne undersigned Bidder agrees to execute a contract for rety as specified within 10 days after a written Notice bids, and on failure to do so agrees to forfeit to Owner S. money order, or bid bond, as liquidated damages for a percent (10%) of the Base Bid amount above:	of Award, if offered within 60 day the attached cash, cashier's check, of such failure, in the following amou  Dollars (\$	ys aftocertificant con
The surface of U.S. term 1.	ne undersigned Bidder agrees to execute a contract for rety as specified within 10 days after a written Notice bids, and on failure to do so agrees to forfeit to Owner S. money order, or bid bond, as liquidated damages for a percent (10%) of the Base Bid amount above:  the event Owner does not offer Notice of Award with	of Award, if offered within 60 day the attached cash, cashier's check, of such failure, in the following amou  Dollars (\$	ys aftocertificant con
The surface of U.S. term 1. In to	the undersigned Bidder agrees to execute a contract for rety as specified within 10 days after a written Notice bids, and on failure to do so agrees to forfeit to Owner S. money order, or bid bond, as liquidated damages for a percent (10%) of the Base Bid amount above:  the event Owner does not offer Notice of Award with the undersigned the cash, cashier's check, certified check	of Award, if offered within 60 day the attached cash, cashier's check, of such failure, in the following amou  Dollars (\$  in the time limits stated above, Ow eck, U.S. money order, or bid bond	ys afte certificant con ). wher w
The sum of U.S. ten	the undersigned Bidder agrees to execute a contract for rety as specified within 10 days after a written Notice bids, and on failure to do so agrees to forfeit to Owner S. money order, or bid bond, as liquidated damages for a percent (10%) of the Base Bid amount above:  the event Owner does not offer Notice of Award with the undersigned the cash, cashier's check, certified check	of Award, if offered within 60 day the attached cash, cashier's check, of such failure, in the following amou  Dollars (\$  in the time limits stated above, Oweck, U.S. money order, or bid bond the portions of the Work indicated:	ys after control of the control of t
The sum of U.S. ten	ne undersigned Bidder agrees to execute a contract for rety as specified within 10 days after a written Notice bids, and on failure to do so agrees to forfeit to Owner S. money order, or bid bond, as liquidated damages for a percent (10%) of the Base Bid amount above:  the event Owner does not offer Notice of Award with the undersigned the cash, cashier's check, certified check the UBCONTRACTORS AND SUPPLIERS  the following companies shall execute subcontracts for	of Award, if offered within 60 day the attached cash, cashier's check, of such failure, in the following amou  Dollars (\$  in the time limits stated above, Oweck, U.S. money order, or bid bond the portions of the Work indicated:	ys after certificant control c
The sum of U.S. ten 1. In to SU.Th.	the undersigned Bidder agrees to execute a contract for rety as specified within 10 days after a written Notice bids, and on failure to do so agrees to forfeit to Owner S. money order, or bid bond, as liquidated damages for a percent (10%) of the Base Bid amount above:  the event Owner does not offer Notice of Award with the undersigned the cash, cashier's check, certified check UBCONTRACTORS AND SUPPLIERS  the following companies shall execute subcontracts for Mechanical Work:	of Award, if offered within 60 day the attached cash, cashier's check, of such failure, in the following amou  Dollars (\$  in the time limits stated above, Ow eck, U.S. money order, or bid bond the portions of the Work indicated:	ys after certification control

#### 1.8 TIME OF COMPLETION

A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work within 300 calendar days.

#### 1.9 ACKNOWLEDGEMENT OF ADDENDA

A.	The undersigned	Bidder a	acknowledges	receipt of	and use	of the	following	Addenda ir	the	preparation	of
	this Bid:										

1.	Addendum No. 1, dated _	

- 2. Addendum No. 2, dated . .
- 3. Addendum No. 3, dated .
- 4. Addendum No. 4, dated \_\_\_\_\_\_.
- 5. Addendum No. 5, dated \_\_\_\_\_\_.
- 6. Addendum No. 6, dated \_\_\_\_\_\_.
- 7. Addendum No. 7, dated \_\_\_\_\_\_.
- 8. Addendum No. 8, dated \_\_\_\_\_\_.

#### 1.10 BID SUPPLEMENTS

- A. The following supplements are a part of this Bid Form.
  - 1. Bid Form Supplement Bid Bond Form (AIA Document A310-2010).

#### 1.11 CONTRACTOR'S LICENSE

A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in State of New Jersey, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

#### 1.12 SUBMISSION OF BID

A.	Respectfully submitted this	s day of	, 2023.
----	-----------------------------	----------	---------

- B. Submitted By: (Name of bidding firm or corporation).
- C. Authorized Signature: (Handwritten signature).
- D. Signed By: (Type or print name).
- E. Title:\_\_\_\_\_(Owner/Partner/President/Vice President).
- F. Witnessed By:\_\_\_\_\_(Handwritten signature).
- G. Attest:\_\_\_\_\_(Handwritten signature).
- H. By:\_\_\_\_\_\_ (Type or print name).
- I. Title: (Corporate Secretary or Assistant Secretary).

A	dd	len	du	ım	_\$
-	uu	ш	uu		

J.	Street Address:	
K.	City, State, Zip:	·
L.	Phone:	
M.	License No.:	
N.	Federal ID No.:	(Affix Corporate Seal Here).

#### SECTION 012200 - UNIT PRICES

#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
  - 1. Section 012100 "Allowances" for procedures for using unit prices to adjust quantity allowances.
  - 2. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
  - 3. Section 014000 "Quality Requirements" for field testing by an independent testing agency.

#### 1.3 DEFINITIONS

A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

#### 1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the Part 3 "Schedule of Unit Prices" Article contain requirements for materials described under each unit price.

### PART 2 - PRODUCTS (Not Used)

#### PART 3 - EXECUTION

### 3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1: Provide and install 50 linear feet (15.24m) of Cat6 Ethernet Cable, within <sup>3</sup>/<sub>4</sub>" PVC conduit, and one wall mounted, recessed, data junction box with cover plate.

END OF SECTION 012200

#### SECTION 042613 - MASONRY VENEER

#### PART 1 - GENERAL

#### 1.1 SUMMARY

#### A. Section Includes:

- 1. Nominal Veneer Face Brick.
- 2. Nominal Veneer Thin-Brick.
- 3. Mortar materials.
- 4. Ties and anchors.
- 5. Embedded flashing.
- 6. Accessories.
- 7. Mortar mixes.

#### B. Products Installed but not Furnished under This Section:

- 1. Steel lintels in masonry veneer.
- 2. Steel shelf angles for supporting masonry veneer.

#### C. Related Requirements:

- 1. Section 014339 "Mockups" for integrated exterior mockup requirements.
- 2. Section 019119.43 "Exterior Enclosure Commissioning."
- 3. Section 071900 "Water Repellents" for water repellents applied to unit masonry assemblies.
- 4. Section 077100 "Roof Specialties" for embedded flashing.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For the following:
  - 1. Masonry Units: Indicate sizes, profiles, coursing, and locations of special shapes.
  - 2. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.

#### C. Samples for Initial Selection:

- 1. Clay face brick, in the form of straps of five or more bricks.
- 2. Colored mortar.
- 3. Weep/cavity vents.

#### D. Samples for Verification: For each type and color of the following:

- 1. Clay face brick, in the form of straps of five or more bricks.
- 2. Special brick shapes.
- 3. Pigmented mortar. Make Samples using same sand and mortar ingredients to be used on Project.
- 4. Weep/cavity vents.
- 5. Cavity drainage material.
- 6. Accessories embedded in masonry.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.
  - 1. Submittal is for information only. Receipt of list does not constitute approval of deviations from the Contract Documents unless such deviations are specifically brought to the attention of Architect and approved in writing.
- B. Material Certificates: For each type and size of the following:
  - 1. Masonry units.
    - a. Include data on material properties.
    - b. For brick, include size-variation data verifying that actual range of sizes falls within specified tolerances.
    - c. For exposed brick, include test report for efflorescence in accordance with ASTM C67/C67M.
    - d. For surface-coated brick, include test report for durability of surface appearance after 50 cycles of freezing and thawing in accordance with ASTM C67/C67M.
  - 2. Cementitious materials. Include name of manufacturer, brand name, and type.
  - 3. Mortar admixtures.
  - 4. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
  - 5. Anchors, ties, and metal accessories.
- C. Mix Designs: For each type of mortar. Include description of type and proportions of ingredients. Include test reports for mortar mixes required to comply with property specification. Test in accordance with ASTM C109/C109M for compressive strength, ASTM C1506 for water retention, and ASTM C91/C91M for air content.
- D. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

#### 1.4 QUALITY ASSURANCE

A. Qualifications: Testing Agency: Qualified in accordance with ASTM C1093 for testing indicated.

#### 1.5 MOCKUPS

- A. Sample Panels: Build sample panels to verify selections made under Sample submittals and to demonstrate aesthetic effects. Comply with requirements in Section 014000 "Quality Requirements" for mockups.
  - 1. Build sample panels for each type of exposed unit masonry construction in sizes approximately 48 inches (1219 mm) long by 36 inches (914 mm) high by full thickness.
  - 2. Build sample panels facing south.
  - 3. Where masonry is to match existing, build panels adjacent and parallel to existing surface.
  - 4. Clean one-half of exposed faces of panels with masonry cleaner indicated.
  - 5. Protect approved sample panels from the elements with weather-resistant membrane.
  - 6. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Architect in writing.

a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels unless such deviations are specifically approved by Architect in writing.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

#### 1.7 FIELD CONDITIONS

- A. Protection of Masonry: During construction, cover tops of veneer, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress. Extend cover a minimum of 24 inches (610 mm) down face of veneer, and hold cover securely in place.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry. Immediately remove grout, mortar, and soil that come in contact with masonry.
  - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
  - 2. Protect sills, ledges, and projections from mortar droppings.
  - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
  - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602.
  - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602.

#### PART 2 - PRODUCTS

#### 2.1 SOURCE LIMITATIONS

For exposed masonry units and cementitious mortar components, obtain each color and grade from single A. source with resources to provide materials of consistent quality in appearance and physical properties.

#### 2.2 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with TMS 602, except as modified by requirements in the Contract Documents.
- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects will be exposed in the completed Work and will be within 20 ft. (6 m) vertically and horizontally of a walking surface.

#### **BRICK** 2.3

- General: Provide shapes indicated and as follows, with exposed surfaces matching finish and color of A. exposed faces of adjacent units. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
- B. Clay Face Brick: Facing brick complying with ASTM C216, Grade SW, Type FBS.
  - 1. Basis-Of-Design Manufacturers: The existing brick is a blend of three colors, which may no longer be available. The following three manufacturers may be the closest match available.
    - a. Brown: Continental Brick Co.; Std. 488 Modular. b. Red: Bowerston; Red w/ C Full Range Modular.
  - Taylor Clay Products; 309 Pink; Modular, Wire Cut. c. Orange:
  - 2. Initial Rate of Absorption: Less than 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested in accordance with ASTM C67/C67M.
  - Efflorescence: Provide brick that has been tested in accordance with ASTM C67/C67M and is rated "not effloresced."
  - Size (Actual Dimensions): Approx. 3-5/8 inches (92 mm) wide by approx. 2-1/4 inches (57 mm) high by approx. 7-5/8 inches (194 mm) long.
  - Application: Use where brick is exposed unless otherwise indicated.
  - Where shown to "match existing," provide clay face brick matching color range, texture, and size of existing adjacent brickwork. Refer to Paragraph 4.1.A for a photograph of the existing brick.
  - The following was brought to the Architect's attention, and verified by the Architect:
    - a. Original Brick Manufacturer may have been: Church Brick; Bowerston; Knox Blend Modular.
    - A photo taken by the Architect, of the sample panel, set against the existing wall, has been added to this specification. Refer to 4.1.2.
    - The Church Brick, noted above, shall also be an Acceptable Manufacturer.

#### 2.4 MORTAR MATERIALS

Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated. Alkali content will not be more than 0.1 percent when tested in accordance with ASTM C114.

- B. Hydrated Lime: ASTM C207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- D. Mortar Cement: ASTM C1329/C1329M.
- E. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C979/C979M. Use only pigments with a record of satisfactory performance in masonry mortar. Formulate blend as required to match existing colors.
- F. Aggregate for Mortar: ASTM C144.
  - 1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
  - 2. For joints less than 1/4 inch (6.4 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.
  - 3. White-Mortar Aggregates: Natural white sand or crushed white stone.
  - 4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- G. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C494/C494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
- H. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with CMUs containing integral water repellent from same manufacturer.
- I. Water: Potable.

#### 2.5 TIES AND ANCHORS

- A. General: Ties and anchors extend at least 1-1/2 inches (38 mm) into veneer but with at least a 5/8-inch (16-mm) cover on outside face.
- B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:
  - 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A1064/A1064M, with ASTM A153/A153M, Class B-2 coating.
- C. Corrugated-Metal Ties: Metal strips not less than 7/8 inch (22 mm) wide with corrugations having a wavelength of 0.3 to 0.5 inch (7.6 to 13 mm) and an amplitude of 0.06 to 0.10 inch (1.5 to 2.5 mm) made from 0.0336-inch- (0.85-mm-) thick, steel sheet, galvanized after fabrication.

#### 2.6 EMBEDDED FLASHING

A. Refer to Section 077100 "Roofing Specialties" for embedded flashing.

#### 2.7 ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.

- B. Weep/Vent Products: Use Rectangular Plastic Weep/Vent Tubing: Clear butyrate, 3/8 by 1-1/2 by 3-1/2 inches (10 by 38 by 89 mm) long.
- C. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity. Mortar Deflector: Strips, full depth of cavity and 10 inches (254 mm) high, with dovetail-shaped notches that prevent clogging with mortar droppings.
- D. Offset Angle Supports: Steel plate brackets anchored to structure, allowing continuous insulation behind shelf angle supporting veneer. Component and anchor size and spacing engineered by manufacturer.
- E. Proprietary Acidic Masonry Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

#### 2.8 MORTAR MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
  - 1. Do not use calcium chloride in mortar or grout.
  - 2. Use portland cement-lime or mortar cement mortar unless otherwise indicated.
  - 3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.
- C. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products.
  - 1. Pigments do not exceed 10 percent of portland cement by weight.
  - 2. Pigments do not exceed 5 percent of mortar cement by weight.
  - 3. Mix to match Architect's sample.
  - 4. Application: Use pigmented mortar for exposed mortar joints.
- D. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates and natural color or white cement as necessary to produce required mortar color.
  - 1. Mix to match existing wall mortar.
  - 2. Application: Use colored-aggregate mortar for exposed mortar joints.

#### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION, GENERAL

- A. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- B. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- C. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- D. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.
- E. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested in accordance with ASTM C67/C67M. Allow units to absorb water so they are damp but not wet at time of laying.

#### 3.3 TOLERANCES

#### A. Dimensions and Locations of Elements:

- 1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch (13 mm) or minus 1/4 inch (6.4 mm).
- 2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch (13 mm).
- 3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch (6.4 mm) in a story height or 1/2 inch (13 mm) total.

#### B. Lines and Levels:

- 1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 ft. (6.4 mm in 3 m), or 1/2-inch (13-mm) maximum.
- 2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 ft. (3.2 mm in 3 m), 1/4 inch in 20 ft. (6.4 mm in 6 m), or 1/2-inch (13-mm) maximum.
- 3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 ft. (6.4 mm in 3 m), 3/8 inch in 20 ft. (10 mm in 6 m), or 1/2-inch (13-mm) maximum.
- 4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 ft. (3.2 mm in 3 m), 1/4 inch in 20 ft. (6.4 mm in 6 m), or 1/2-inch (13-mm) maximum.
- 5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 ft. (6.4 mm in 3 m), 3/8 inch in 20 ft. (10 mm in 6 m), or 1/2-inch (13-mm) maximum.
- 6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 ft. (6.4 mm in 3 m), or 1/2-inch (13-mm) maximum.
- 7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 3/32 inch (2.3 mm) except due to warpage of masonry units within tolerances specified for warpage of units.

#### C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3.2 mm), with a maximum thickness limited to 1/2 inch (13 mm).

- 2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3.2 mm).
- 3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (10 mm) or minus 1/4 inch (6.4 mm).
- 4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3.2 mm).
- 5. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch (1.6 mm) from one masonry unit to the next.

#### 3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch (102-mm) horizontal face dimensions at corners or jambs.
- C. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

#### 3.5 MORTAR BEDDING AND JOINTING

- A. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

#### 3.6 ANCHORED MASONRY VENEERS

- A. Anchor masonry veneers to wall framing with masonry-veneer anchors to comply with the following requirements:
  - 1. Fasten screw-attached anchors through sheathing to wall framing with metal fasteners of type indicated. Use two fasteners unless anchor design only uses one fastener.
  - 2. Embed tie sections in masonry joints.
  - 3. Locate anchor sections to allow maximum vertical differential movement of ties up and down.
  - 4. Space anchors as indicated, but not more than 16 inches (406 mm) o.c. vertically and 25 inches (635 mm) o.c. horizontally, with not less than one anchor for each 2.67 sq. ft. (0.25 sq. m) of wall area. Install additional anchors within 12 inches (305 mm) of openings and at intervals, not exceeding 36 inches (914 mm), around perimeter.
- B. Provide not less than 1 inch (25 mm) of airspace between back of masonry veneer and face of sheathing. Keep airspace clean of mortar droppings and other materials during construction. Bevel beds away from airspace, to minimize mortar protrusions into airspace. Do not attempt to trowel or remove mortar fins protruding into airspace.

#### 3.7 EXPANSION JOINTS

- A. General: Install expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form expansion joints as follows:
  - 1. Build flanges of metal expansion strips into masonry. Lap each joint 4 inches (102 mm) in direction of water flow. Seal joints below grade and at junctures with horizontal expansion joints if any.
  - 2. Build flanges of factory-fabricated, expansion-joint units into masonry.
  - 3. Build in compressible joint fillers where indicated.
  - 4. Form open joint full depth of brick wythe and of width indicated, but not less than 1/2 inch (13 mm) for installation of sealant and backer rod specified in Section 079200 "Joint Sealants."
- C. Provide horizontal, pressure-relieving joints by either leaving an airspace or inserting a compressible filler of width required for installing sealant and backer rod specified in Section 079200 "Joint Sealants," but not less than 3/8 inch (10 mm). Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry.

#### 3.8 LINTELS

- A. Install steel lintels where indicated.
- B. Provide offset angle supports where indicate and where openings of more than 12 inches (305 mm) for brick-size units and 24 inches (610 mm) for block-size units are indicated without structural steel or other supporting lintels.
- C. Provide minimum bearing of 8 inches (203 mm) at each jamb unless otherwise indicated.

#### 3.9 FLASHING, WEEP HOLES, AND VENTS

- A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated. Install vents at shelf angles, ledges, and other obstructions to upward flow of air in cavities, and where indicated.
- B. Install flashing as follows unless otherwise indicated:
  - 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape.
  - 2. Extend flashing through veneer, across airspace behind veneer, and up face of sheathing at least 8 inches (203 mm); with upper edge tucked under water-resistive barrier, lapping at least 4 inches (102 mm).
  - 3. At lintels and shelf angles, extend flashing 6 inches (152 mm) minimum, to edge of next full unit at each end. At heads and sills, extend flashing 6 inches (152 mm) minimum, to edge of next full unit and turn ends up not less than 2 inches (51 mm) to form end dams.
  - 4. Interlock end joints of sawtooth sheet metal flashing by overlapping ribs not less than 1-1/2 inches (38 mm) or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Section 079200 "Joint Sealants" for application indicated.
  - 5. Install metal drip edges with sawtooth sheet metal flashing by interlocking hemmed edges to form hooked seam. Seal seam with elastomeric sealant complying with requirements in Section 079200 "Joint Sealants" for application indicated.

- 6. Install metal flashing termination beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch (13 mm) back from outside face of wall, and adhere flexible flashing to top of metal flashing termination.
- C. Install reglets and nailers for flashing and other related construction where they are indicated to be built into masonry.
- D. Install weep holes in veneers in head joints of first course of masonry immediately above embedded flashing.
  - 1. Use specified weep/cavity vent products to form weep holes.
  - 2. Use wicking material to form weep holes above flashing under brick sills. Turn wicking down at lip of sill to be as inconspicuous as possible.
  - 3. Space weep holes formed from plastic tubing 16 inches (406 mm) o.c.
  - 4. Cover cavity side of weep holes with plastic insect screening at cavities insulated with loose-fill insulation
  - 5. Trim wicking material flush with outside face of wall after mortar has set.
- E. Place cavity drainage material in airspace behind veneers to comply with configuration requirements for cavity drainage material in "Accessories" Article.

#### 3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements will be at Contractor's expense.
- B. Testing Prior to Construction: One set of tests.
- C. Clay Masonry Unit Test: For each type of unit provided, in accordance with ASTM C67/C67M for compressive strength.
- D. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, in accordance with ASTM C780.
- E. Mortar Test (Property Specification): For each mix provided, in accordance with ASTM C780. Test mortar for mortar air content and compressive strength.

#### 3.11 REPAIRING, POINTING, AND CLEANING

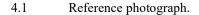
- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

- 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
- 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
- 3. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
- 4. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

#### 3.12 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

#### PART 4 - REFERENCE





4.2 Reference Photograph (Church Brick)



END OF SECTION 042613

# WEST DEPTFORD FIRE HOUSE CONVERSION TO A LIBRARY

# 611 ACADEMY AVE., WEST DEPTFORD TWP. GLOUCESTER COUNTY, NEW JERSEY 08096

TAX MAP INFO: BLOCK 184 LOT 2 **ZONING MAP: ZONE R-3** 

-COLONIAL MANOR

PROJECT LOCATION MAP

/ SCALE: NONE

CS-1 / SCALE: NONE

**CONSULTING ENGINEERS:** 

FIRE ASSOCIATION

COLONIAL MANOR

FIRE ASSOCIATION

### **ABBREVIATIONS** ABBREVIATIONS AND NOT ALL ARE USED IN THIS PROJECT. IF AN ABBREVIATION CONFLICTS WITH DRAWING, NOTIFY ARCHITECT PRIOR TO THE START OF ANY WORK. PLUS OR MINUS ACOUSTICAL CEILING PANE ARCHITECTURA BOARD FEET Building CONTROL JOINT CONCRETE MASONRY UNIT CONCRETE CONSTRUCTION CONTINUOUS CERAMIC TILE DEGREE(S DIAMETER DOWN ELECTRIC OR ELECTRICAL EQUAL EQUIP EQUIPMENT EXIST EXISTING EXPANSION JOINT FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET FINISH OR FINISHED FIBERGLASS REINFORCED PAN GALVANIZED HOLLOW METAL HORIZONTAL HIGH DENSITY POLYETHLYENE HARDWARE INSULATION KIPS PER SQUARE INCH LINEAR FEET LONG LEG HORIZONTAL LONG LEG VERTICAL MANUFACTURER MINIMUM NOT IN CONTRACT NOM NOMINAL ON CENTER OPPOSITE PLYWOOD PORCELAIN PROX PROXIMITY POUNDS PER SQUARE INCH PTD PAINTED RAD RADIUS ROOF DRAIN REINFORCING BAR REINFORCED req'd REQUIRED REQUEST-TO-EXIT ROUGH OPENING RIDGE VENT RAIN WATER CONDUCTOR STAINLESS STEEL SPLASHBLOCK STYRENE-BUTADIENE-STYRENE SQUARE FEET SIMILAR SQUARE YARD

TYPICAL

VERTICAL

VERIFY IN FIELD

WELDED WIRE FABRIC

# **GRAPHIC SYMBOLS**

GRAPHIC SYMBOLS BELOW ARE STANDARD SYMBOLS WHICH MAY APPEAR WITHIN SEVERAL SHEET SERIES WITHIN THIS DRAWING SET; AND NOT ALL ARE USED FOR THIS PROJECT GRAPHIC SYMBOLS ONLY APPEARING WITHIN ONE SHEET SERIES, SUCH AS THE CEILING SERIES, APPEAR ON THE

ROOM NAME AND NUMBER TAG

DOOR NUMBER TAG

PARTITION TYPE / RESTROOM

ELEVATION / SECTION FLAG

PLAN DETAIL FLAG

MATERIAL TO REMAIN

MATERIAL DEMOLITION

MATERIAL NEW CONSTRUCTION

EXISTING ELEVATION / LOCATION

2 x 4 SUSPENDED CEILING GRID

SUSPENDED GYPSUM BOARD

CEILING MOUNTED EXIT LIGHT

WALL MOUNTED FIRE ALARM HORN /

WALL / BRACKET MOUNTED FIRE

FIRE EXTINGUISHER CABINET

FIRE EXTINGUISHER CABINET

EXTINGUISHER

(RECESS MOUNT)

(SURFACE MOUNT)

PROXIMITY READER

NEW ELEVATION / LOCATION

NORTH ARROW

NEW DOOR

BENCHMARK

. THE DRAWINGS SHOW THE GENERAL ARRANGEMENT AND EXTENT OF THE WORK. AS THE WORK PROGRESSES, THE CONTRACTOR, AT NO EXTRA

> 10. COMPLY WITH MANUFACTURERS INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS ARE MORE EXPLICIT OR STRINGENT THAN REQUIREMENTS CONTAINED IN CONTRACT DOCUMENTS.

I. PROVIDE ATTACHMENTS AND CONNECTION DEVICES AND METHODS NECESSARY FOR SECURING WORK. SECURE WORK TRUE TO LINE AND LEVEL. ALLOW FOR EXPANSION AND BUILDING MOVEMENT.

CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. 13. CONTRACTOR SHALL PROVIDE A DUMPSTER FOR THEIR USE. REMOVE FROM THE SITE EXCESS EXCAVATED MATERIALS, TRASH, DEBRIS, AND

14. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A SAFE WORK AREA AND IS RESPONSIBLE FOR SAFETY AT THE SITE.

15. THE CONTRACTOR SHALL PROVIDE ANY REQUIRED PROTECTION OF WORK. NOTHING HEREIN CONTAINED SHALL BE CONSTRUED TO NULLIFY ANY RULES, REGULATIONS OR STATUTES OF STATE OR FEDERAL AGENCIES GOVERNING THE PROTECTION OF THE PUBLIC WORKERS FROM HEALTH OR OTHER HAZARDS INVOLVED IN THE OPERATIONS REQUIRED TO PERFORM

16. CONSTRUCT AND INSTALL TEMPORARY PROTECTION MEASURES PRIOR TO START OF CONSTRUCTION. TEMPORARY PROTECTION SHALL BE REMOVED WHEN WORK IS COMPLETE. THE CONTRACTORS SHALL AT ALL TIMES PRESERVE AND PROTECT THE SITE, BUILDING OR STRUCTURE FROM

THE PUBLIC, THE WORKERS OR THE ADJOINING PROPERTY.

20. COORDINATE WITH THE OWNER FOR SITE ACCESS AND MATERIAL STAGING AREAS DURING CONSTRUCTION.

REQUIRED, INCLUDING PROVISION OF PORTABLE TOILET FACILITIES.

NOTED. HOWEVER, THE DRAWINGS AND NOTES ARE NOT TOTALLY INCLUSIVE. ITEMS TO REMAIN SHALL BE PROTECTED THROUGHOUT THE DURATION OF THE PROJECT. REPAIR TO ALL DAMAGE INFLICTED TO ITEMS TO REMAIN SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY.

REGULATIONS. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL RUBBISH AND WASTE AS REQUIRED, THROUGHOUT THE COURSE OF CONSTRUCTION ACCUMULATED ON THE SITE FROM WORK BY ITS' OWN EMPLOYEES AND SUBCONTRACTORS. ALL DEBRIS SHALL BE REMOVED FROM THE CONSTRUCTION SITE DAILY AND IN ACCORDANCE WITH OWNERS' REQUIREMENTS AND DIRECTION.

### PAVING & LANDSCAPING NOTE:

PAVING & LANDSCAPING WORK FOR THIS PROJECT IS LIMITED TO PATCHING & REPAIRING AREAS DISTURBED AT PERIMETER OF BUILDING, ETC. ADDITIONAL LANDSCAPING & PAVING TO BE PROVIDED UNDER SEPARATE CONTRACT ACCORDING TO CIVIL DRAWINGS/ CONTRACT.

## **GENERAL PROJECT NOTES**

- THE DRAWING SET AND SPECIFICATION BOOK SHALL JOINTLY FORM THE
- CONSTRUCTION DEVIATES FROM THE DRAWINGS.
- 4. ALL WORK AND MATERIALS SHALL MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE STATE AND LOCAL CONSTRUCTION CODES AND ALL AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS FOR THE EXTENT OF
- . CONTRACTOR SHALL CHECK AND VERIFY ALL PLAN DIMENSIONS AND CONDITIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. SHOULD QUESTIONS ARISE, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARCHITECT, IN WRITING, PRIOR TO PROCEEDING WITH THE WORK.
- INSTALLATION, INSPECT BOTH THE SUBSTRATE AND THE CONDITIONS FOR EACH MAJOR COMPONENT. DO NOT PROCEED UNTIL ANY UNSATISFACTORY CONDITION(S) HAVE BEEN CORRECTED IN AN ACCEPTABLE MANNER.
- COST, SHALL MAKE MODIFICATIONS TO MAKE PARTS ALIGN

- STATE AND LOCAL AUTHORITIES. ALL WASTE MATERIALS SHALL BE
- 18. PROTECT EXISTING ROADWAYS, WALKWAYS AND ADJOINING PROPERTIES. SITE FROM DAMAGE OR INJURY.

- 22. ITEMS TO REMAIN ARE INDICATED ON THE DRAWINGS AND/ OR AS SPECIFICALLY

5. ALL WRITTEN DIMENSIONS SHALL GOVERN, DO NOT SCALE THE DRAWINGS

THE WORK TO BE COMPLETED AND COORDINATED.

8. RE-CHECK MEASUREMENTS AND DIMENSIONS BEFORE STARTING EACH

RECOMMENDATIONS TO THE EXTENT THAT THOSE INSTRUCTIONS AND

2. ANY MINOR OMISSIONS FROM THE DOCUMENTS WHICH WOULD CUSTOMARILY BE PART OF THE SYSTEM OR FINISHES SHALL BE PROVIDED BY THE

REMOVED IN A MANNER WHICH PREVENTS INJURY OR DAMAGE TO PERSONS, AND PUBLIC RIGHT OF WAY.

17. ALL CONSTRUCTION EQUIPMENT AND SAFEGUARDS SHALL BE CONSTRUCTED, INSTALLED AND MAINTAINED IN A SUBSTANTIAL MANNER AND SHALL BE SO OPERATED AS TO INSURE PROTECTION TO THE WORKERS ENGAGED THEREON AND TO THE GENERAL PUBLIC. ALL EXISTING AND ADJOINING IMPROVEMENTS SHALL BE PROTECTED FROM DAMAGE INCIDENTAL TO CONSTRUCTION OPERATIONS.

THE CONTRACTOR SHALL AT ALL TIMES PRESERVE AND PROTECT THE

19. MATERIALS AND EQUIPMENT REQUIRED IN CONSTRUCTION OPERATIONS SHALL BE STORED AND PLACED SO AS NOT TO ENDANGER OR OBSTRUCT

21. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY UTILITIES

Architect: McKernan Architects \$ Associates 100 Dobbs Lane, Suite 204 Cherry Hill, NJ 08034 Phone: (856) 616-2960

**Civil Engineer:** 23. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE OWNER'S Remington \$ Vernick Engineers 2059 Springdale Road, Cherry Hill, NJ 08003 Phone: (856) 216-1890 Mechanical, Electrical, Plumbing & Fire Protection:

3800 Horizon Blvd. - Suite 503, Trevose, PA 19053 Phone: (215) 322-7711 Structural Engineer:

Michael A. Beach & Associates, Twin Ponds Executive Campus Suite 205 200 Birchfield Drive Mount Laurel, New Jersey 08054 Phone: (856) 273-1909

PROJECT AERIAL VIEW

# DRAWING INDEX

### GENERAL:

LS-I LIFE SAFETY PLAN

ARCHITECTURAL SITE PLAN DEMOLITION - FLOOR PLAN DEMOLITION - ROOF PLAN DEMOLITION - EXTERIOR ELEVATIONS FLOOR PLAN, ROOM FINISH SCHEDULE

A-2.4 ROOF DETAILS TOILET ROOM PLANS & ELEVATIONS

CASEWORK PLANS, ELEVATIONS, DETAILS & PARTITION TYPES A-3.1 HANDICAP RAMP & STAIR PLANS, SECTIONS & DETAILS HANDICAP RAMP PLANS & ELEVATIONS

HANDICAP RAMP SECTIONS & DETAILS (NEW SHEET)

DOOR SCHEDULE, TYPES & DETAILS DOOR HEAD, JAMB & SILL DETAILS WINDOW SCHEDULE, TYPES & DETAILS

### STRUCTURAL:

TRUE NORTH

TRUE NORTH

STRUCTURAL LEAD SHEET (SHEET 1 OF 3) STRUCTURAL LEAD SHEET (SHEET 2 OF 3) STRUCTURAL LEAD SHEET (SHEET 3 OF 3) FOUNDATION PLAN ROOF FRAMING PLAN S-2.0 TYPICAL DETAILS SECTIONS 5-3.0

### **MECHANICAL:**

SECTIONS

S-3.I

FIRST FLOOR DEMOLITION MECHANICAL PLAN ROOF DEMOLITION MECHANICAL PLAN FIRST FLOOR MECHANICAL PLAN M-240 ROOF MECHANICAL PLAN M-3.0 MECHANICAL SCHEDULES M-31 MEGHANICAL SCHEDULES 22

### **ELECTRICAL**

E-0.0 SIVE POWER PLAN FIRST FLOOR POWER PLAN E-1.L FIRST FLOOR/LIGHTING PLAN ROOF POWER PLAN ELECTRICAL SCHEDULES & DETAILS E-3.1 ELECTRICAL SCHEDULES & DETAILS E-3.2 ELECTRICAL SCHEDULES & DETAILS E-3.3 ELECTRICAL SCHEDULES & DETAILS

### **PLUMBING**

FIRST FLOOR DEMOLITION PLUMBING PLAN ROOF DEMOLITION DOMESTIC WATER PLAN FIRST FLOOR SANITARY PLAN FIRST FLOOR DOMESTIC WATER PLAN ROOF PLUMBING PLAN PLUMBING SCHEDULES & DETAILS

# FIRE PROTECTION

FIRST FLOOR FIRE PROTECTION PLAN

# PROJECT SUMMARY

WEST DEPTFORD TOWNSHIP SHALL BID OUT THE CIVIL ENGINEERING PACKAGE AS A SEPARATE CONSTRUCTION CONTRACT, WHICH SHALL BE EXECUTED IN SPRING 2024. THIS CONTRACTOR IS REQUIRED TO COORDINATE ALL EXTERIOR RELATED WORK, WHEN THAT CIVIL ENGINEERING PACKAGE BECOMES AVAILABLE

THIS PROJECT INCLUDES A BUILDING-WIDE CHANGE-OF-USE. THE PROPOSED EXTERIOR AND INTERIOR ALTERATIONS SHALL ACCOMMODATE THE REQUIREMENTS FOR THE PROPOSED RELOCATION OF THE WEST DEPTFORD PUBLIC LIBRARY. THE BUILDING'S MAIN ENTRANCE SHALL BE CHANGED FROM STREET-SIDE TO PARKING LOT-SIDE.

### EXTERIOR ALTERATIONS INCLUDE THE FOLLOWING:

- FULL ROOF COVERING SYSTEM REPLACEMENT.
- WINDOW INSTALLATION TO REPLACE APARATUS BAY DOORS.
- TWO ADA COMPLIANT ACCESSIBLE RAMPS. THIN-BRICK MASONRY VENEER AT EXPOSED CMU SURFACES. UPGRADES TO EXISTING BUILDING MOUNTED SITE LIGHTING.

# INTERIOR ALTERATIONS INCLUDE THE FOLLOWING:

- FULL ADA ACCESSIBLE PUBLIC GENDER SPECIFIC RESTROOMS, STAFF/SINGLE USER RESTROOM AND CHILD/FAMILY/SINGLE USER RESTROOM.
- UPGRADES TO EXISTING HVAC SYSTEM.
- UPGRADES TO EXISTING PLUMBING SYSTEM
- UPGRADES TO EXISTING LIGHTING.
- INSTALLATION OF NEW WATER METER ACCOMMODATIONS FOR EXISTING BOOK SHELVING
- NEW SUSPENDED ACOUSTICAL CEILING SYSTEM. NEW FLOOR FINISH SYSTEM.

AN EXISTING OFFICE SHALL BE RETAINED FOR THE COLONIAL MANOR FIRE ASSOCIATION.

# **APPLICABLE CONSTRUCTION CODES:**

NEW JERSEY UNIFORM CONSTRUCTION CODE W/ TECHNICAL AMENDMENTS.

2021 INTERNATIONAL BUILDING CODE - NJ EDITION 2021 INTERNATIONAL MECHANICAL CODE

2020 NATIONAL ELECTRIC CODE 2021 NATIONAL STANDARD PLUMBING CODE

### 2017 ICC/ANSI AI17.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES. NFPA 10 PORTABLE FIRE EXTINGUISHERS

BUILDING USE GROUP AND OCCUPANCY CRITERIA:

USE GROUP: B, A-3 \$ S-2 A-3

CONSTR. TYPE

FULL COVERAGE SPRINKLER SYSTEM: NONE BUILDING AREA:

11,455 GSF

11,300 GSF FLOOR AREA: MAXIMUM FLOOR AREA PERMITTED:

W/O SPRINKLERS: W/ SPRINKLERS: 38,000 GSF

BUILDING OCCUPANT LOADS: READING AREAS: 50 SF / PERSON 100 SF / PERSON STACK AREAS: COMPUTER:

# PROPOSED BUILDING OCCUPANCY: 122 PERSONS

OFFICES:

WORKROOMS:

STORAGE /MECH .:

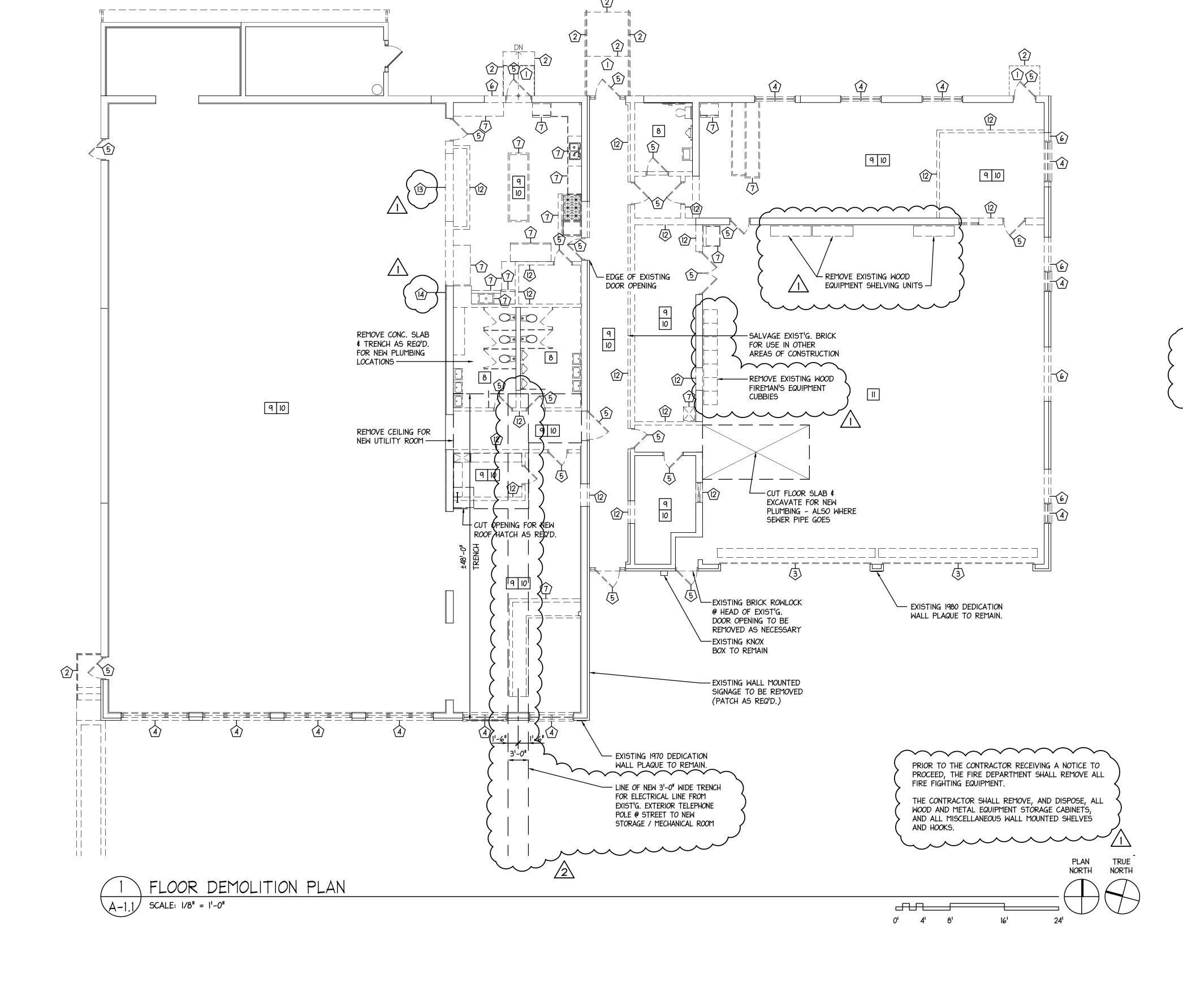
MINIMUM PLUMBING FIXTURES REQUIRED PER PUBLIC RESTROOM 2 TOILETS AND 2 SINKS EACH.

150 SF / PERSON

300 SF / PERSON

>	FEB. 27, 2024	ADDENDUM #	<del>#</del> 3				DF & JF
	NOV. 21, 2023	ISSUE FOR I	BID				DF & JF
No.	DATE		DESC	RIPTION			REV'D B
			REV	SIONS		•	
APPROVAL	:		CON	DEPTFORD VERSION TO 611 ACADEMY EPTFORD, NI	O A LIBRAR AVENUE	RY	
V	Jose	•	McKernan Jr., Architects obbs Lane Suite 204 Cherry Hill,		TITLE: COVER SH	EET	
	I F. MCKERNAN ( 0984 . PA ARCH RA-011402-X .		SEAL:	DIMENSIONS MUST BE VERIFIED BY CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE PRAWING	SCALE: AS NOTED PROJ.NO.: 1214A DATE: 1/11/23	DRAWING NO:	1

APRIL 24, 2024 ADDENDUM #8 - STEEL PLATES ADDED @ RAILINGS & AREA OF RAISED CONC. SLAB / ADDITION OF A 3'-0" WIDE TRENCH

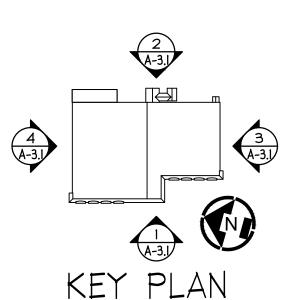


### SPECIFIC DEMOLITION NOTES (#)

- REMOVE EXISTING NON-STRUCTURAL, PREFABRICATED METAL ROOF ASSEMBLIES. WHERE MECHANICAL ANCHORS REMAIN WITHIN THE EXTERIOR WALL ASSEMBLY, CUT BACK AND GRIND DOWN TO FLUSH CONDITION WITH EXISTING WALL SURFACE.
- 2. REMOVE EXISTING CONCRETE RAMP, SLAB, OR STAIR, ASSEMBLY, AND ASSOCIATED FOUNDATIONS.
- 3. REMOVE EXISTING SECTIONAL, OVERHEAD, APPARATUS BAY
- 4. REMOVE EXISTING EXTERIOR WINDOW ASSEMBLY, AND ALL ASSOCIATED INTERIOR WINDOW TREATMENTS.
- 5. REMOVE EXISTING DOOR & FRAME ASSEMBLY.
- 6. REMOVE PORTION OF EXISTING EXTERIOR WALL TO ACCOMMODATE NEW DOOR OR WINDOW ASSEMBLY, AND HEADER.
- REMOVE EXISTING CASEWORK. WHERE MECHANICAL ANCHORS REMAIN, CUT BACK AND GRIND DOWN TO FLUSH CONDITION WITH EXISTING FLOOR OR WALL SURFACE.
- 8. WITHIN EXISTING RESTROOMS, REMOVE THE FOLLOWING: - ALL PLUMBING FIXTURES (SEE PLUMBING DRAWINGS). - ALL PRIVACY PARTITIONS.
- ALL RESTROOM ACCESSORIES. - ALL FLOOR FINISHES. NOTIFY ARCHITECT IF CERAMIC MOSAIC
- FLOOR TILE WAS INSTALLED WITH A TRADITIONAL MUD BASE. - ALL CERAMIC WALL AND BASE TILE. - ALL SUSPENDED ACOUSTICAL CEILING ASSEMBLIES, INCLUDING HANGER WIRE.
- 9. REMOVE EXISTING VINYL TILE, ASSOCIATED WALL BASE, AND ALL FLOORING ADHESIVE / MASTIC.
- 10. REMOVE EXISTING SUSPENDED ACOUSTICAL CEILING SYSTEM, INCLUDING ALL FIXTURES WITHIN, AND ALL HANGER WIRES.
- II. REMOVE EXISTING INSULATION MATERIAL, SECURED TO ROOF FRAMING SYSTEM, ABOVE APPARATUS BAYS.
- 12. REMOVE PORTION OF EXISTING PARTITION ASSEMBLY AS SHOWN. WHERE NEW DOORS ARE SHOWN ON THE CONSTRUCTION PLANS WITHIN EXISTING MASONRY PARTITIONS, REMOVE ADDITIONAL PARTITION MATERIAL TO ACCOMMODATE THE NEW
- 13. REMOVE EXISTING WALL FINISHES, COUNTERTOP AND CURTAIN, INCLUDING TRACK AND HARDWARE, AT KITCHEN SERVERY
- 14. REMOVE EXISTING HVAC WALL GRILLE. REFER TO MECHANICAL DEMOLITION DRAWINGS FOR ADDITIONAL ASSOCIATED DEMOLITION WORK.

### GENERAL DEMOLITION NOTES

- A. DEMOLITION NOTES FOR DIFFERENT TRADES OCCUR ON OTHER DRAWINGS AND ARE INDICATED IN THE PROJECT MANUAL. THE CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS FOR THE EXTENT OF THE WORK TO BE COMPLETED AND COORDINATED.
- B. CONTRACTOR WILL VERIFY ALL CONDITIONS PRIOR TO COMMENCING DEMOLITION. SHOULD QUESTIONS ARISE, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING PRIOR TO PROCEEDING WITH DEMOLITION.
- C. ITEMS TO BE SALVAGED OR RELOCATED SHALL BE AS INDICATED. SPECIAL CARE SHALL BE TAKEN SO AS NOT TO DAMAGE THESE ITEMS. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER THE STORAGE OF ALL SALVAGED ITEMS TO BE EITHER RELOCATED OR REINSTALLED.
- D. LOCATIONS AND/OR ELEVATIONS OF EXISTING ITEMS, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE. ALL TRADES SHALL FIELD VERIFY ALL LOCATIONS.
- DEMOLITION WORK INCLUDES, BUT IS NOT LIMITED TO THE WORK INDICATED HEREWITH, AS COORDINATED WITH WORK OF ALL OTHER TRADES, AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION.
- DEMOLITION DRAWINGS ARE ONLY FOR GENERAL INDICATION OF SCOPE OF WORK. ACTUAL CONDITIONS MAY VARY. CONTRACTOR SHALL VERIFY ACTUAL EXISTING CONDITIONS.
- G. ITEMS TO REMAIN ARE INDICATED ON THE DRAWINGS AND/ OR AS SPECIFICALLY NOTED. HOWEVER, THE DRAWINGS AND NOTES ARE NOT TOTALLY INCLUSIVE. ITEMS TO REMAIN SHALL BE PROTECTED THROUGHOUT THE DURATION OF THE PROJECT. REPAIR TO ALL DAMAGE INFLICTED TO ITEMS TO REMAIN SHALL BE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- H. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE OWNER'S REGULATIONS. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL RUBBISH AND WASTE AS REQUIRED, THROUGHOUT THE COURSE OF CONSTRUCTION, ACCUMMULATED ON THE SITE FROM WORK BY ITS' OWN EMPLOYEES AND SUBCONTRACTORS, ALL DEBRIS SHALL BE REMOVED FROM THE CONSTRUCTION SITE DAILY AND IN ACCORDANCE WITH OWNERS' REQUIREMENTS AND DIRECTION.
- ALL AREAS ADJACENT TO AREA OF WORK SHALL BE PROTECTED AND BE RESTORED IF DAMAGED IN THE COURSE OF DEMOLITION TO THE SATISFACTION OF THE OWNER AND THE ARCHITECT. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED FOR THESE DAMAGES.
- WHERE PARTITIONS ARE INDICATED FOR DEMOLITION, ALL OPENING COMPONENTS WITH THEIR ASSOCIATED HARDWARE, AND UTILITIES ATTACHED TO THE PARTITION SURFACES, SHALL ALSO BE DEMOLISHED.
- K. WHEN DEMOLISHING EXISTING UTILITIES, DEMOLISH BACK TO NEAREST JUNCTION WHERE SAID UTILITY SHALL REMAIN.
- GENERAL CONTRACTOR TO PROVIDE PHOTOGRAPHS, SUFFICIENTLY DETAILED, OF EXISTING CONDITIONS, OF ADJOINING CONSTRUCTION AND SITE IMPROVEMENTS THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY SELECTIVE DEMOLITION OPERATIONS PRIOR TO THE START OF DEMOLITION.
- M. DO NOT CLOSE, BLOCK, OR OTHERWISE OBSTRUCT EXIT WAYS OF THE BUILDING.
- SURVEY THE CONDITION OF THE BUILDING(5) TO DETERMINE WHETHER REMOVING AN ELEMENT MIGHT RESULT IN STRUCTURAL DEFICIENCY OR UNPLANNED COLLAPSE OF ANY PORTION OF THE STRUCTURE DURING SELECTIVE DEMOLITION.
- O. REMOVE ELECTRICAL SWITCHES, RECEPTACLES, AND WIRES LOCATED WITHIN PARTITIONS TO BE REMOVED.
- P. REMOVE FROM BUILDING SITE: DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM DEMOLITION OPERATIONS. TRANSPORT AND LEGALLY DISPOSE OFF SITE. NOTIFY OWNER IF HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS.
- Q. EXISTING STRUCTURE TO REMAIN SHALL NOT BE DISTURBED. CONSULT WITH OWNER AND ARCHITECT REGARDING AREAS OF CONFLICT.
- R. MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION.
- S. LOCATE, IDENTIFY, SHUT OFF, DISCONNECT, AND SEAL OR CAP OFF UTILITY SERVICÉS SERVING EQUIPMENT LOCATED IN THE DEMOLITION AREA.
- T. PROVIDE TEMPORARY WEATHER PROTECTION, DURING INTERVAL BETWEEN DEMOLITION AND NEW CONSTRUCTION TO ENSURE THAT NO WATER LEAKAGE OR DAMAGE OCCURS TO STRUCTURE OR INTERIOR AREAS.
- U. RESTORE EXPOSED FINISHES OF PATCHED AREAS AND EXTEND FINISH RESTORATION INTO ADJOINING CONSTRUCTION TO REMAIN IN A MANNER THAT ELIMINATES EVIDENCE OF PATCHING AND REFINISHING.
- V. UPON COMPLETION OF DEMOLITION WORK, REMOVE TOOLS, EQUIPMENT, AND DEMOLISHED MATERIALS FROM SITE. REMOVE PROTECTION AND LEAVE INTERIOR AREAS BROOM CLEAN.
- W. COORDINATE OPENINGS FOR MECH, ELEC., AND PLMB'G.
- X. EXISTING WALLS TO REMAIN SHALL BE PATCHED TO MATCH. EXIST'G, WHERE ANY INTERSECTING WALLS ARE DEMOLISHED.



NOT TO SCALE

_			WEST DEPTFORD FIRE HOUSE		
APPROVAL	:		PROJECT:		
			REVISIONS	·	
No.	DATE		DESCRIPTION		
	NOV. 21, 2023	ISSUE FOR	BID	DF & JFM	
$\Lambda$	DEC. 11, 2023	ADDENDUM	#1	MFF & JFM	
2	APRIL 24, 2024	ADDENDUM ;	#8 - STEEL PLATES ADDED @ RAILINGS & AREA OF RAISED CONC. SLAB / ADDITION OF A 3'-0" WIDE TRENCH		

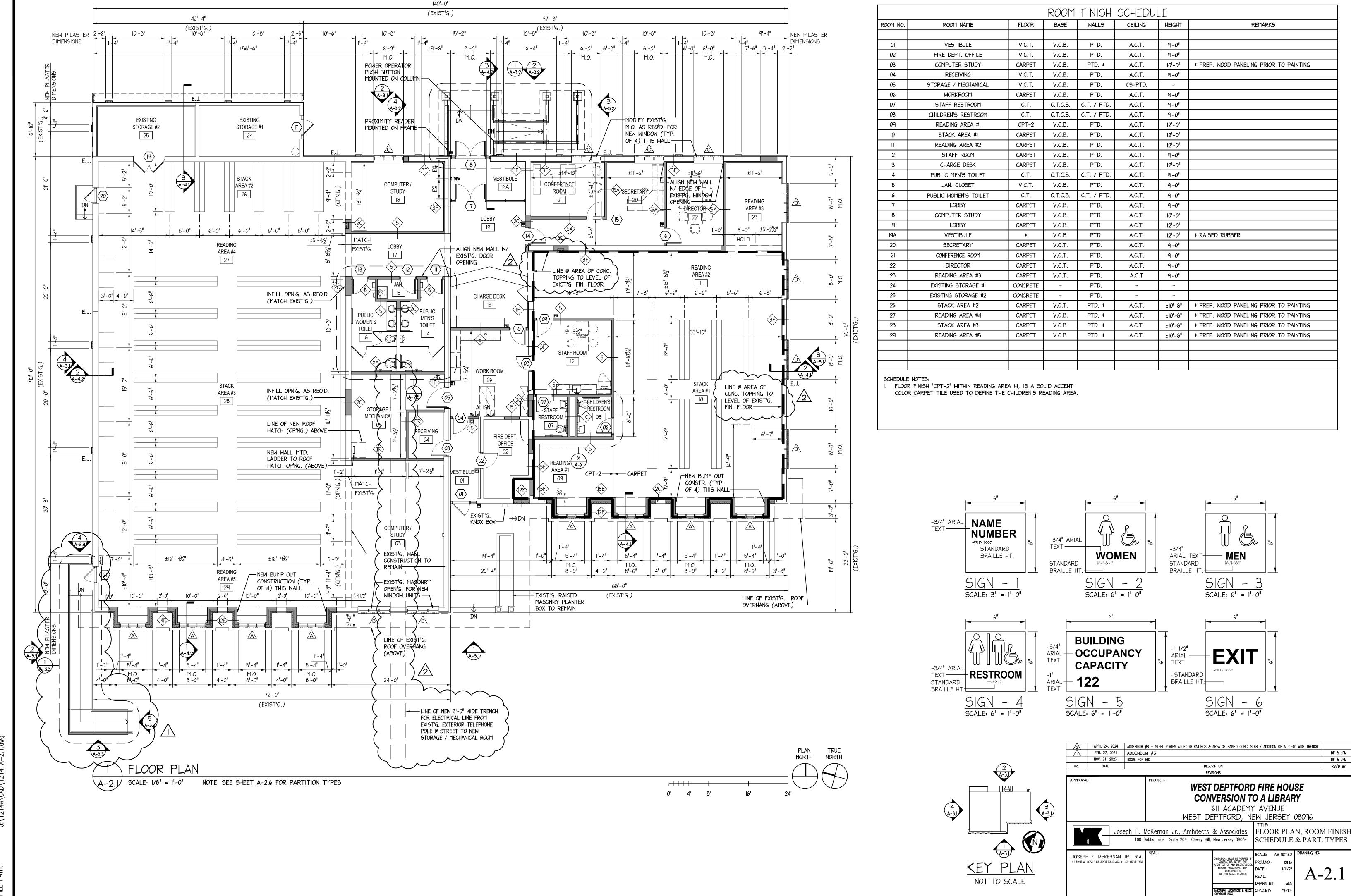
CONVERSION TO A LIBRART 611 ACADEMY AVENUE WEST DEPTFORD, NEW JERSEY 08096

NJ ARCH AL 10984 . PA ARCH RA-011402-X . CT ARCH 732

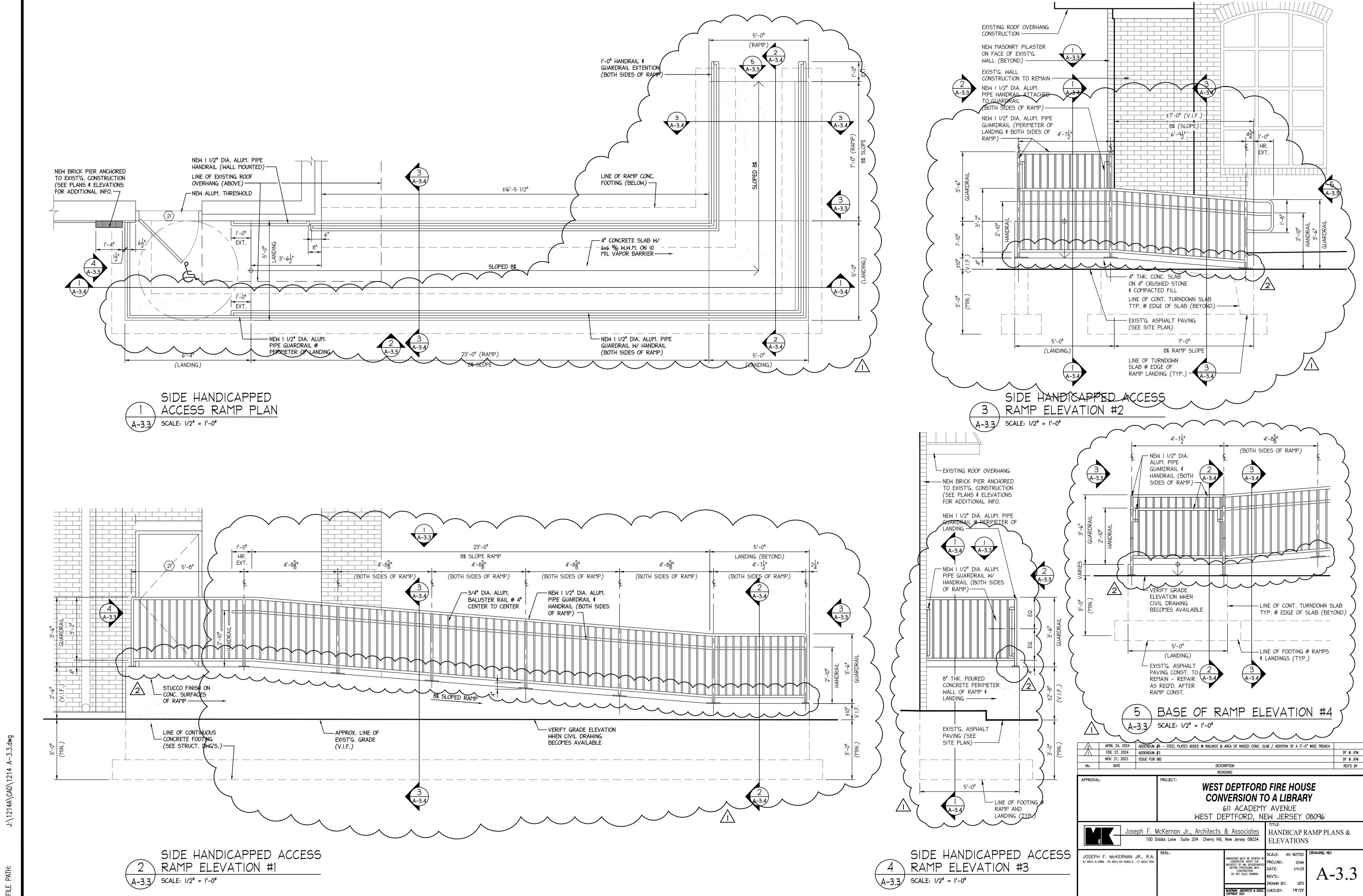
Joseph F. McKernan Jr., Architects & Associates FLOOR DEMOLITION PLAN 100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034 JOSEPH F. McKERNAN JR., R.A. SCALE: AS NOTED

DIMENSIONS MUST BE VERIFIED B CONTRACTOR. NOTIFY THE ARCHITECT OF ANY DISCREPANCIE BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING. PROJ.NO.: DRAWN BY: CHKD.BY:

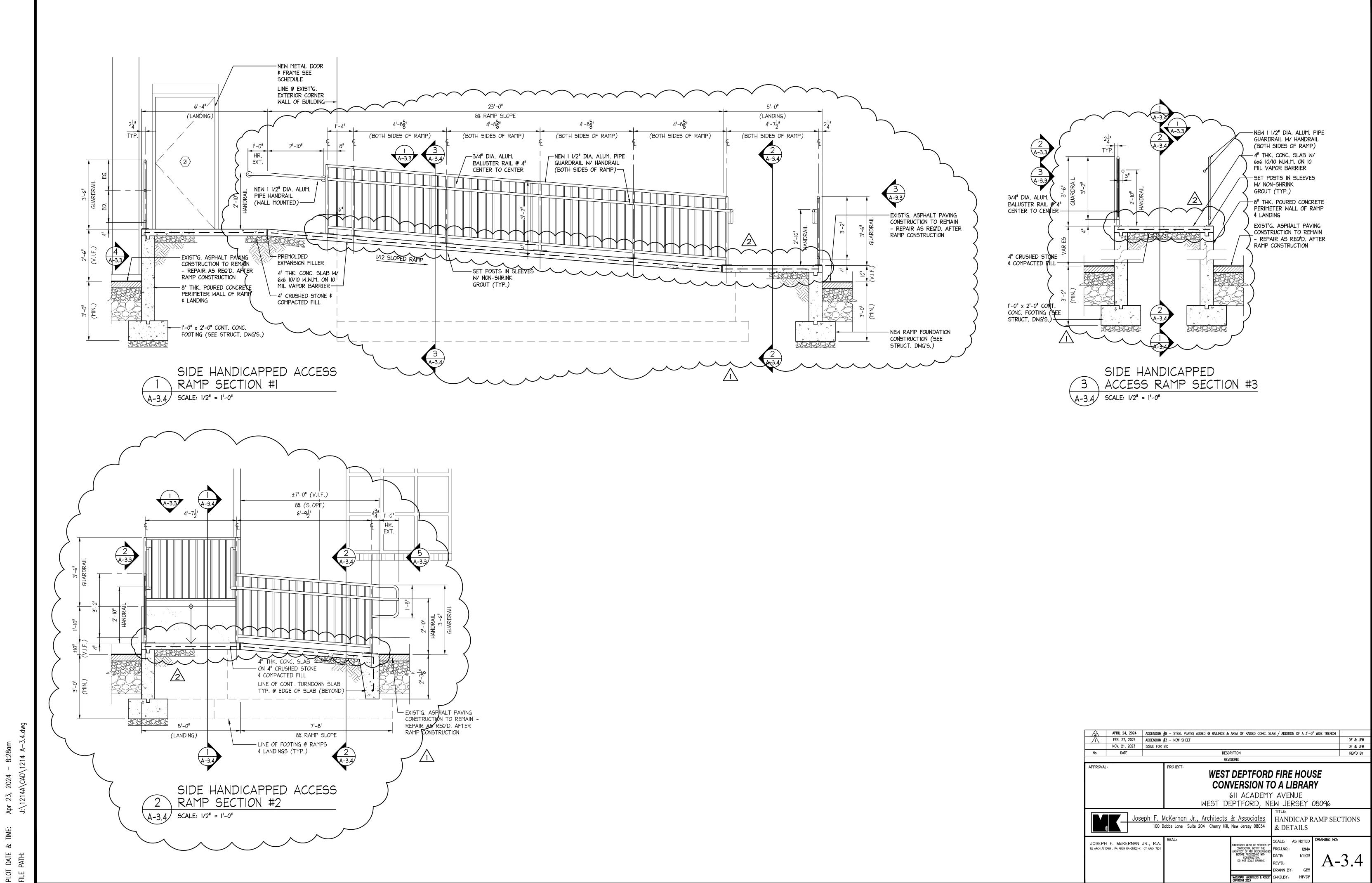
DATE PATH:



DATE PATH:



DATE PATH:



### **MECHANICAL SPECIFICATIONS**

- The Contractor shall provide all labor, materials, tools, apparatus and equipment required to complete his work in accordance with the contract documents, codes, laws and ordinances, and accepted trade procedures
- In preparing his estimate, the contractor shall review all of the contract documents including those of the other trades in order to acquaint himself with existing and related conditions that may, will, or could affect his work. He shall be experienced, skilled, and knowledgeable with this type of construction and shall be expert and proficient in the preparation of estimates and the comprehension, implementation, and interpretation of contract documents such as those prepared for this project
- The contractor by his acceptance of the contract guarantees that all work installed shall be free from all defects in workmanship and materials and that all apparatus furnished by him shall develop the capacities and characteristics specified. He further guarantees that if, during a period of one (1) year from the date of the certificate of completion and acceptance of the work, any such defects in workmanship, material or performance appear, such defects shall be remedied by him without cost to the owner. If the contractor fails to remedy the defects as outlined within a reasonable length of time, to be specified in a notice from the owner's authorized representative to the contractor, the owner will have such work done, and he will charge
- The contractor shall visit the site before he submits his proposal. He shall examine all existing conditions which affect the work. The submission of the proposal shall be considered evidence that this requirement has been fulfilled. No extra payment will be allowed for additional work made ecessary by the failure to visit the site.
- Mechanical work shall be installed in a neat and workmanlike manner in accordance with latest and best practices of the trade. Only mechanics killed in this type of Work shall be employed and utilized by Contractor for this Division in the execution of this Work
- The contract drawings are diagrammatic and indicate the general arrangement of all systems and work included in the contract. The contract drawings are not to be scaled. The architectural contract drawings and details together with the other contract documents shall be examined for all
- The contractor shall follow the contract drawings in laying out his work, and he shall also check the contract drawings of the other trades to verify spaces in which his work shall be provided
- The contractor shall, without additional costs to the owner, make reasonable modifications in the layout of his work in order to prevent conflicts with the work of other trades or for the proper execution of his work.
- The contractor shall supply all labor required to perform all work which may be claimed by trade organizations within his jurisdiction. All work shall be performed without any additional cost to the owner irregardless of which section of the contract documents the work is described. The contractor shall be responsible to verify with all local organizations the extent of any collective bargaining agreements and/or any jurisdictional decisions rendered regarding disputes between the respective trades, and provide and install his work in accordance with the accepted trade practice in the
- The entire installation shall conform with the 2021 International Mechanical Code, and all pertinent codes and regulations of the local, municipal county, state, and federal authorities, The National Board of Fire Underwriters, the codes of the International Codes Council, the National Fire Protective Association and all other regulatory bodies having jurisdiction. All materials and equipment shall bear the stamps or seals of the NFPA, ASME, NEMA, IEEE, UL and other recognized industry regulatory groups.
- The contractor shall give all necessary notices, obtain all permits, pay all governmental taxes, fees and other costs in connection with his work. He shall file all necessary plans, and prepare all other documents including additional detailed plans that are required for compliance with all applicable
- The HVAC and Plumbing trades shall coordinate with the General Contractor, locate all required cutting and patching of existing work required by the installation of their trades work, and arrange for his compensation
- All work shall be installed in strict accordance with the equipment manufacturer's recommendations and requirements. All systems are to be tested, adjusted and balanced to provide performance as indicated on the drawings. Test and adjust all safety controls.
- Coordinate to assure that all work of all trades will be concealed within the wall and ceiling construction and without the need to reduce ceiling heights. Report exceptions to the Architect prior to construction and erection of the work. Openings around piping passing through the construction shall be sealed with fire barrier caulking. All materials located within the return air plenum shall be non-combustable with flame spread ratings of 25 or less and smoke developed ratings of 50 or less. All control wiring located within ceiling return air plenums shall be plenum rated or shall be run in conduit. All work shall be located to avoid conflicts with other work and provide adequate clearances for architectural design, proper operation, djustments,, component service, and provide a minimum 2" clearance between all piping and other work.
- Provide supports, hangers, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialties and all other labor, materials, devices and services required for a complete, first quality installation. All work shall be supported from the building structural system. Work shall not be supported from the ceiling suspension system, from electrical work, nor from other mechanical work. Unless otherwise indicated, run all piping as high as possible. Provide starters for all motor driven equipment.
- The contractor shall provide and maintain in good order a complete set of blueline prints of the contract drawings. As the work progresses, the actual location of all work shall be clearly recorded, including all changes to the contract and equipment size and type. These prints shall be available at the site for inspection at all times. At the conclusion of the work, the contractor shall, at his own expense, obtain a set of reproducibles of the original contract drawings, and utilizing the symbols on the contract drawings, shall incorporate all "as built" data in a clearly legible and reproducible manner. All schedules shall be corrected to indicate "as built" conditions. All revisions shall be incorporated on these reproducibles including all sketches and written directives. All concealed equipment, mainfeeders, pull and junction boxes, etc. shall be dimensionally located from the building structure. As a condition for acceptance of the work, the "as built" reproducibles and one (1) set of prints shall be signed, dated and delivered to the engineer
- The Mechanical and Plumbing trades shall coordinate all electrical loads with the Electrical Contractor.
- The architectural general conditions shall apply to and form a part of this section of these specifications.
- The contractor shall perform all demolition work as indicated on the drawings as required to perform the work.
- The contractor shall verify all utility service information shown on the drawings with the local utility company prior to submitting a bid. Any changes or service charges imposed by the utility company shall be qualified and included in the bid.
- All equipment, materials and workmanship shall be guaranteed for a minimum of one year (five year for all compressors) from the date of acceptance
- Where products are specified by brand name, catalog numbers or by names of manufacturers, the reference is intended to be descriptive and not restrictive and is solely for the purpose of indicating the type of quality of the item that will be acceptable. An approved equal will be accepted unless
- All cutting and patching of every nature required in connection with this contract shall be done by this contractor with mechanics experienced in their respective trades. All patching shall match adjacent surfaces.
- All HVAC equipment shall be rated in excess of the available fault current, and shall be permanently labeled in accordance with the National Electric Code Sections 110.24, 430.99m 440.10, 700.5 and all applicable local codes. Coordinate exact available fault current and labeling with the Electrical Contractor. The Electrical Contractor shall provide all fault current labels.
- Contractor shall perform all system commissioning with an approved commissioning agency per Section C408 of the 2021 International Energy Conservation Code (if required).
- Provide all specialties, accessories, controls, and the like to provide a complete, quiet, properly operating automatically controlled systems
- Do not operate the air conditioning systems during construction except for testing, and provide new filters for all units and immediately prior to substantial completion
- Ductwork shall be constructed of galvanized sheet metal fabricated and erected in accordance with ASHRAE and SMACNA standards. Provide turning vanes in all elbows, manual volume dampers in all branches, air equalizers, and similar devices as required to properly balance the systems and produce quiet, draftless operation. Ductwork sizes shown on the plans are sheet metal I.D. free area.
- Ductwork shall be constructed to the sizes shown and made airtight during erection with caulked, taped or hardcast joints to restrict leakage to 5% or
- All ductwork shall be closely coordinated prior to fabrication. The architectural contract drawings and details together with the other contract documents shall be examined for all dimensional information. Full sheet metal shop drawings drawings shall be developed with all spacial requirements worked out and shown on drawings. These drawing must show: locations of openings to be cut through existing construction and any problems. These drawing shall be submitted for review by the architect and engineer prior to fabrication.
- Provide UL labeled and inspected fire dampers for all ducts and openings passing through floors, fire rated walls and ceilings, where shown on the drawings, and in locations required by codes
- Provide starters for all motor driven equipment, supports, hangers, flexible duct connections, flexible pipe connections, vibration isolation, supplementary supports, controls and wiring, cleaning, painting, specialties and all other labor, materials, devices and services required for a complete, first quality installation. Retain the General Contractor to provide all cutting and patching required by the HVAC trade.
- Prior to ordering materials and equipment, submit product data sheets for all items for review by the Engineer
- Balance all air quantities to within 5% of the CFM shown on the drawings. Finally balance individual outlets to the occupants' satisfaction. Install all devices required for balancing in the system during construction. Provide certified balancing reports for review by the Engineer.
- Provide a complete, automatic, ready-to-use system, unconditionally guaranteed in writing against defective workmanship and materials for a period of one year from the date of beneficial occupancy.
- All flexible ductwork shall conform with the UL rating under flexible air duct test UL-181.

- 1.1 Ductwork shall be galvanized steel designed for two inch W.C. pressures for supply and return systems and one inch W.C. for exhaust systems in accordance with SMACNA. All elbows shall be provided with single thickness turning vanes. All supply and return ductwork shall be insulated with 1-1/2" fiberglass duct wrap as manufactuered by Owens Corning with a minimum installed R-value of five (5) in unconditioned spaces and R-value of
- 1.1.1 Insulate all sheetmetal supply and return ducts.
- 1.1.2 Provide acoustical lining at the first ten feet of the supply and return ductwork of the rooftop unit.
- 1.2 Flexible ductwork shall be UL 181 Class 1 complete with an insulating fiberglass blanket, foil faced vapor barrier and designed to withstand pressures up to six inches positive pressure W.G. flexible duct runs shall be a maximim of 6 feet in length and shall be type 5M-insulated as manufactured byFlexmaster USA, INC. with a minimum R-value of six (6)
- 2.1 Centrifugal cabinet fans shall have centrifugal steel wheels, galvanized steel fan casing with intergral backdraft damper, disconnect switch mounted and wired and perforated metal face grille with extruded aluminum frame where scheduled. Fans shall carry the UL label and be rated in accordance with the AMCA test code. Fans shall be provided with a unit mounted speed controller. Capacities shall be as indicated on the drawings. Fans shall be as manufactured by Loren Cook Company., Inc. with model numbers as scheduled.
- 2.3 Ceiling diffusers shall be complete with balancing dampers and white enamel finish.
- 2.4 Ceiling return air registers shall be complete with balancing dampers and white enamel finish.
- 3.1 The contractor shall provide and install all necessary control components included, but not limited to, relays, automatic dampers, damper operators, thermostats, controllers, etc. and wiring as required to provide automatic temperature control. All control components shall be as manufactured by Honeywell or equal. All wiring shall be done in accordance with the local and state codes and the national electric code. 3.1.1 Thermostats for HVAC units shall be Honeywell T7350 series with seven-day programming for night setback. Thermostat shall be mounted in accordance with ADA requirements.
- 3.1.2.1 Occupied mode: supply fan shall run continuously, the outside air damper shall be open to the minimum position and the heating and cooling portions of the unit shall function as required to maintain space conditions.
- 3.1.2.1 Unoccupied mode: the outside air damper shall be closed and the fan shall cycle with heating/cooling portions of the unit 3.1.3 All exhaust fans shall be connected to Timeclock furnished by the Electrical Contractor unless otherwise indicated.
- The equipment and materials shall be completely cleaned prior to testing, insulating and placing the system in operation.
- The refrigeration system shall be tested and proven tight prior to placing in operation. Units shall be checked for proper refrigerant charge and operation and adjusted as per the manufacturer's recommendation
- The complete supply, return and exhaust air duct systems, including fans, dampers, outlets, and appurtenances shall be properly balanced to deliver air volumes within +/- 5 percent of the values indicated. The total system leakage through duct joints and connections shall not exceed five percent. Temperature, ampere and RPM readings shall also be provided to verify system performance
- The contractor shall furnish three sets of instruction manuals to the owner at the completion of construction.

MATERIAL AND INSULATION SCHEDULE												
	Material		Insulation				Remarks					
	Basis of Design	Alternate	Basis of Design	Туре	Wall (in.)	Vapor Barrier						
Ductwork, Make-Up Air	Galvanized Steel		Certainteed	Duct Wrap*	1-1/2	Integral	Construction per SMACNA standards. External wrap insulation.					
Ductwork, Supply	Galvanized Steel		Certainteed	Duct Wrap*	1-1/2	Integral	Construction per SMACNA standards. External wrap insulation.					
Ductwork, Return	Galvanized Steel		Certainteed	Duct Wrap*	1/2	Integral	Construction per SMACNA standards. External wrap insulation.					
Ductwork, Exhaust	Galvanized Steel											
Ductwork, Flexible Duct (Supply Only)	Aluminized Steel Mylar		Certainteed	Certaflex	1-1/2	Yes	UL Listed Flexible Air Duct Tested Under UL-181					
Condensate Piping	Sch. 40 PVC (Solid Wall)	Type "L" Copper	Rubatex	R-180FS	1/2	Integral	Insulate Trap Only, Provide UV Protection where exposed to sunshine					
Combstion Air Intake / Flue Exhaust Piping	Sch. 40 PVC (Solid Wall)											
*Refer to Equipment note 1.1.2 in Mechanical Drawing Notes on this sheet for further information.												

# **SEQUENCE OF OPERATIONS: GAS FIRED ROOFTOP UNIT**

GENERAL NOTE:
THIS SEQUENCE OF OPERATION IS FOR THE BASIS OF DESIGN UNIT(S). IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE ANY ALTERNATE UNIT(S) WILL CONFORM TO THIS SEQUENCE OF OPERATIONS.

A USER ADJUSTABLE OCCUPANCY SCHEDULE WILL BE ESTABLISHED AND MAINTAINED BY THE BUILDING OWNER/OPERATOR. OCCUPIED AND UNOCCUPIED HEATING AND COOLING SETPOINTS WILL BE ESTABLISHED. THE FAN SYSTEM WILL MAINTAIN SPACE CONDITIONS TO THE OCCUPIED AND UNOCCUPIED SETPOINTS BASED ON THIS OPERATING SCHEDULE.

#### INITIAL SETPOINTS (ADJUSTABLE): OCCUPIED HEATING = OCCUPIED COOLING =

UNOCCUPIED HEATING =

**GAS-FIRED ROOFTOP UNIT SCHEDULE** 

- UNOCCUPIED COOLING = DURING OCCUPIED SCHEDULE THE OUTSIDE AIR DAMPER SHALL OPEN TO THE MINIMUM POSITION AND SHALL CLOSE DURING UNOCCUPIED SCHEDULE
- THE DEMAND CONTROL VENTILATION CONTROLLER SHALL MODULATE THE OUTSIDE AIR DAMPER BETWEEN CLOSED AND THE MINIMUM FULLY OCCUPIED CFM BASED ON THE READINGS FROM THE CO2 SENSOR.
- AN OPTIMAL START ROUTINE WILL CALCULATE AN EARLY START TIME TO BRING SPACE CONDITIONS TO WITHIN OCCUPIED SETPOINTS BY THE BEGINNING OF THE SCHEDULED OCCUPANCY TIME PERIOD. THE OPTIMAL START ROUTINE FACTORS
- SPACE TEMPERATURE(S) AND OUTDOOR CONDITIONS TO CALCULATE AND LEARN THE START-UP RECOVERY TIME FROM THE UN-OCCUPIED MODE.
- JPON ACTIVATION OF THE FIRE/SMOKE SAFETY DEVICE, THE FAN SYSTEM WILL SHUTDOWN AND CEASE ALL FUNCTION, EXCEPT WHERE SPECIFIED OTHERWISE. A MANUAL RESET OF THE DEVICE WILL BE REQUIRED TO ALLOW THE SYSTEM RE-START IN ITS APPROPRIATE MODE OF OPERATION. AN ALARM WILL BE ACTIVATED AT THE OPERATOR'S TERMINAL.
- X COOLING WILL BE ENERGIZED TO MAINTAIN THE ZONE TEMPERATURE TO SETPOINT. UPON A RISE IN ZONE TEMPERATURE ABOVE SETPOINT D/X COOLING WILL BE ENERGIZED. UPON A FALL IN TEMPERATURE THE REVERSE WILL OCCUR.
- WHEN THE ECONOMIZER CONTROL DETERMINES FREE COOLING EXISTS FROM THE APPROPRIATE CHANGEOVER COMMAND (SWITCH, DRY BULB, ENTHALPY CURVE, DIFFERENTIAL DRY BULB OR DIFFERENTIAL ENTHALPY), THE UNIT WILL GO INTO CONOMIZER MODE. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR THE SPECIFICS OF THE ECONOMIZING
- THE GAS HEAT WILL MODULATE TO MAINTAIN THE ZONE TEMPERATURE SETPOINT. UPON A FALL IN ZONE TEMPERATURE BELOW SETPOINT, THE GAS HEATING VALVE WILL MODULATE OPEN. UPON A RISE IN ZONE TEMPERATURE THE REVERSE WILL

**DEHUMIDIFICATION SYSTEM:**REFER TO MANUFACTURER'S RECOMMENDATIONS FOR THE DEHUMIDIFICATION SYSTEM.

#### YSJ120A3S0M Model No **Nominal Tonnage** 3,700 Total Airflow (SA)(CFM) Outside Airflow - % / CFM Outside Airflow (OA)(CFM) 740 (20%) Max Static Pressure (in. W.G.) E.S.P. Supply Fan (IN. W.G.) 1.695 Dimensions (LxWxH)(in.) 1,300 Approx. Weight (lbs) Dimensions (L x W x H) (ft.) 7.34 x 4.44 x 4.24 Refer to Plans Downflow Discharge Direction Cooling Performance Total Cooling Capacity (MBH) Gross Total Capacity (MBH) Gross Sensible Total Capacity (MBH) 92.33 8.66 Compressor Power Input (kW) 80.00 / 67.00 EAT (db/wb)(°F) 56.96 / 58.95 LAT (db/wb)(°F) 11.0 Output Capacity (MBH) IEER / SEER 14.6 Heating Performance Minimum Circuit Ampacity Natural Gas 200.0 Compressor #1 RLA / LRA Input Capacity (MBH) Compressor #2 RLA / LRA Output Capacity (MBH) 164.0 EAT (db)(°F) 70.0 LAT (db)(°F) 110.11 Combustion Fan Motor FLA (ea) 208 / 3Ø / 60 Compressor Quantity Compressor RLA (#1 / #2) (A 25.8 / 9.7 2.36 Indoor Fan Motor Power (HP) Factory Installed RA Smoke Detector Outdoor Fan Quantity Outdoor Fan Motor Power (HP Dual Enthalpy Economizer w/ Barometric Reliet MCA (A Non-Fused Disconnect MOCP (A) 70 Mfg. Start-up & Checkout Service Deep Seal Condensate Trap **BACnet Controls** R-410A Refrigerant Factory Mtd. Powered GFCI Outlet Yes **Duct Mounted Thermostat** No Roof Curb 5 Year Compressor Warranty Yes CONTRACTOR SHALL COORDINATE W Mfg. Start-up & Checkout Service Yes CONTRACTOR TO PROVIDE PROVIS Deep Seal Condensate Trap Yes Non-Fused Disconnect Yes ROOFTOP UNITS HAVE THE FOLLOWI RA SMOKE DETECTOR AND ECONOMI Yes Field Installed Economizer ENTHALPY CONTROL. IF ANY OF TH Factory Installed RA Smoke Detector

Dual Enthalpy Control

Run condensate drain line to nearest roof drain.

MERV 13 Filters

Provide thermostat capable of operating unit at occupied and

Mechanical Contractor shall furnish all equipment disconnect

switches and Electrical Contractor shall install all equipment

Contractor shall coordinate with Owner for location of thermostat

Hot Gas Reheat Dehumidification

Stainless Steel Heatexchanger

**Humidity Duct Mounted Senor** 

unoccupied cycle.

disconnect switches.

EXISTING ROOFTOP UNIT SCHEDU	II E	] [	GAS FIRED SPLIT SYSTEM SCHEDUL	<u>.                                    </u>		
			Indoor Unit Designation	AHU-1		
Unit Designation	RTU (E)		Basis of Design	Trane		
Basis of Design			Furnace Model Number	S9X1B040U3PSBA		
Model No.	YHD240F3RHA03H		Coil Model Number	4TXCB004DS3		
Supply Airflow CFM	8,000		Nominal Tonnage	2.0		
Outside Airflow - % / CFM	15% / 1,200		Total Airflow [CFM]	800		
Max Static Pressure (in. W.G.)	-		Outside Airflow [CFM]	120 (15%)		
Dimensions (LxWxH)(in.)	-		Unit Dimensions (L x W x H)[in.]	56.5 x 28.875 x 17.5		
Weight (lbs.)	2,300		Approximate Weight [lbs.]	175		
			Configuration	Horizontal		
Cooling			5			
Nominal Tonnage	20.0		Cooling Performance			
Total Cooling Capacity (MBH)	259.0		Total Net Capacity [MBH]	23.81		
EER	11.0		Net Sensible Capacity [MBH]	18.11		
		1	EAT (db / wb)[°F]	79.0 / 65.8		
Heating			LAT (db / wb)[°F]	57.7 / 55.8		
Heating Capacity	Gas	1	Heating Performance			
Input Capacity (MBH)		1	Heating Fuel	Natural Gas		
Output Capacity (MBH)	324	1	Input Capacity [MBH]	40		
Motor / Electrical	208V / 3Ø / 60Hz	-	Output Capacity [MBH]	38.8		
Minimum Circuit Ampacity	2007/39/700112	-	Certified Temp High Rise Range [°F]	30-60		
Maximum Fuse Size			AFUE [%]	96		
Compressor #1 RLA / LRA			Electrical (Indoor Unit)	120V / 1Ph / 60Hz		
Compressor #2 RLA / LRA			MCA [A]	8.8		
Indoor Fan Motor FLA	EXISTING TO REMAIN		Max Fuse [A]	15		
			Outdoor Unit Designation	CU-1		
Combustion Fan Motor FLA (ea)			Model Number	4TTR5024N		
Outdoor Fan QTY			Nominal Tonnage	1.5		
Outdoor Fan FLA (ea)		-	Unit Dimensions (L x W x H)[in.]	32.625 x 29.75 x 28.75		
Options		_	Approximate Weight [lbs.]	175		
R410A Refrigerant			System SEER	15.2		
Factory Installed RA Smoke Detector			Electrical (Outdoor Unit)	208V / 1Ph / 60Hz		
Econo Controller			Fan Motor FLA [A]	0.64		
Dual Enthalpy Economizer w/ Barometric Relief			MCA [A]	13.0		
Non-Fused Disconnect	EXISTING TO REMAIN		Max Fuse [A]	20		
Insulated Roof Curb			Compressor LRA / RLA [A]	52.0 / 10.1		
Mfg. Start-up & Checkout Service			Options/Accessories			
Deep Seal Condensate Trap			R-410A Refrigerant	Yes		
Hot Gas Reheat			24/7 Prog. Heat/Cool Thermostat	Yes		
Occupancy Controls			10 Year Parts Warranty	Yes		
			10 Year Compressor Warranty	Yes		
			Indoor/Outdoor Disconnect Switches	Yes		
Notes			Filter Rack	Yes		
1. CONTRACTOR SHALL COORDINAT	E WITH GENERAL	1	MERV-8 Filter	Yes		
CONTRACTOR TO PROVIDE PROVI	SIONS FOR INSTALLATION	4	Scroll Compressor	Yes		
OF (N) THERMOSTAT SENSORS AN 2. CONTRACTOR SHALL VERIFY THE	POCONTROKS.	\	Low Pressure Switch	Yes		
ROOFTOP UNITS HAVE THE FOLLO	MING ACCESSORIES:	$ \cdot $	High Pressure Switch	Yes		
RA SMOKE DETECTOR AND ECON		$ \zeta $	Condensate Neutralization Kit	Yes		
ENTHALPY CONTROL. IF ANY OF THESE ACCESSORIES LISTED PREVIOUSLY ARE NOT INCLUDED IN THE UNIT,			Refrigerant Piping	Yes, Note #5		
THE CONTRACTOR SHALL MAKE 1		$  \downarrow  $	Flexible Duct Connections	Yes		
ENGINEER AWARE OF ANY DEFICI	ENCY.		General Notes			
- さらいオヤなこさのけられない からかんとからい OUTSIDE AIR %/CFM AS INDICATE!	eskstem to new	<i>y</i>	<ol> <li>Provide spring vibration isolation hangers with uni-strut supports for horizontal Indoor Units.</li> <li>Provide emergency drain pan with a water sensing device to shut down unit if water is detected in the pan.</li> <li>Outdoor Unit shall be mounted on Pate equipment rails on roof. Coordinate final location with Architect/Owner.</li> </ol>			
			<ol> <li>Coordinate refrigerant lineset length necessary.</li> </ol>	s, provide long line kit as		

#### AIR DEVICE SCHEDULE CFM Size Neck Mfgr. Model # Finish Damper Mtd. Surface Material Remarks Aluminum Supply Diffuser w/ Removable Square 0-100 | 12x12 | 6"Ø | Krueger | 1400 | Note 3 | Plaque Face. Aluminum Supply Diffuser w/ Removable Square 125-225 24x24 8"Ø Krueger | 1400 Note 3 Plague Face. Aluminum Supply Diffuser w/ Removable Square 250-400 | 24x24 | 10"Ø | Krueger | 1400 | Note 3 | Plaque Face. Aluminum Supply Diffuser w/ Removable Square 425-500 | 24x24 | 12"Ø | Krueger | 1400 | Note 3 | Ceiling Plaque Face. Return Air Grille w/ 3/4" Blade Spacing @ 0° 0-1600 | 24x24 | Duct Size | Krueger | S580 | Note 3 | Ceiling IAluminum Blade Deflection. Exhaust Air Grille w/ 3/4" Blade Spacing @ 0° 0-150 | 12x12 | Duct Size | Krueger | S580 | Note 3 | Ceiling Aluminum Blade Deflection. Air Device Notes: 1. Unless otherwise indicated, provide duct connection the full size of duct shown on drawing Provide air device frames to suit wall and ceiling construction. 3. Color and finish of all grilles, registers and diffusers shall be coordinated with Architect. **SEQUENCE OF OPERATION: (E) ROOFTOP UNIT** CONTRACTOR SHALL VERIFY AND CONFIRM THAT THE EXISTING ROOFTOP UNIT HAS ALL OF THE COMPONENTS AND ACCESSORIES REQUIRED TO PERFORM THE FOLLOWING SEQUENCE OF OPERATION. IF THE EXISTING ROOFTOP UNIT DOES NOT HAVE ALL OF THE FOLLOWING COMPONENTS AND ACCESSORIES THE CONTRACTOR SHALL PROVIDE THEM.

ADDITIONALLY, CONTRACTOR SHALL CONFIRM THAT THE EXISTING UNIT HAS HOT GAS REHEAT. IF THE EXISTING UNIT DOES NOT HAVE HOT GAS REHEAT, CONTRACTOR SHALL NOTIFY ARCHITECT AND ENGINEER. IF UNIT DOES NOT HAVE HOT GAS REHEAT, CONTRACTOR SHALL INVESTIGATE IF A HOT GAS REHEAT SECTION CAN BE ADDED TO THE UNIT, IF IT CAN, CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING HOT GAS REHEAT TO THIS UNIT UNDER THIS CONTRACT. IF HOT GAS REHEAT IS NOT SOMETHING THAT CAN BE ADDED TO THE EXISTING UNIT, CONTRACTOR SHALL FURNISHED AND INSTALL DEHUMIDIFICATION UNIT(S) UNDER THIS CONTRACT. CONTRACTOR SHALL NOTIFY ARCHITECT AND NGINEER PRIOR TO PROCEEDING.

### THE SEQUENCE OF OPERATIONS FOR THE OCCUPIED CYCLE SHALL BE AS FOLLOWS:

FAN SHALL BE ENERGIZED ON A CALL FOR HEATING OR COOLING OUTSIDE AIR DAMPER SHALL BE OPEN TO MINIMUM POSITION. ON A CALL FOR COOLING: SPACE THERMOSTAT WILL CYCLE ON THE DIRECT EXPANSION (DX) COOLING ON A RISE IN TEMPERATURE ABOVE ITS COOLING SET POINT. THE DX COOLING CYCLE WILL DE-ENERGIZE ONCE ON A CALL FOR HEATING: SPACE THERMOSTAT WILL CYCLE ON THE GAS FURNACE IF THE TEMPERATURE FALLS BELOW ITS HEATING SET POINT. THE FURNACE WILL DE-ENERGIZE ONCE THE HEATING SET POINT IS

MINIMUM ON/OFF TIMING OF THE MECHANICAL COOLING SHALL PREVENT RAPID CYCLING.

### THE SEQUENCE OF OPERATIONS FOR THE UNOCCUPIED CYCLE SHALL BE AS FOLLOWS

FAN SHALL BE ENERGIZED ON A CALL FOR HEATING OR COOLING

Mechanical Contractor shall furnish all equipment disconnect

switches and Electrical Contractor shall install all equipment

Contractor shall mark and label unit with unit designation, date,

and company who installed equipment.
Contractor shall coordinate with General Contractor to provide

provisions for and location of thermostat and controls.

disconnect switches.

OUTSIDE AIR DAMPER SHALL BE CLOSED ON A CALL FOR COOLING: SPACE THERMOSTAT WILL CYCLE ON THE DIRECT EXPANSION (DX) COOLING ON A RISE IN TEMPERATURE ABOVE ITS COOLING SET POINT. THE DX COOLING CYCLE WILL DE-ENERGIZE ONCE ON A CALL FOR HEATING: SPACE THERMOSTAT WILL CYCLE ON THE GAS FURNACE IF THE TEMPERATURE FALLS BELOW ITS HEATING SET POINT. THE FURNACE WILL DE-ENERGIZE ONCE THE HEATING SET POINT IS

### MINIMUM ON/OFF TIMING OF THE MECHANICAL COOLING SHALL PREVENT RAPID CYCLING.

THE SEQUENCE OF OPERATIONS FOR THE NEW ECONOMIZER SHALL BE AS FOLLOWS:

WHEN FREE COOLING IS AVAILABLE, THE OUTDOOR-AIR DAMPER IS MODULATED BY THE ECONOMIZER CONTROLLER TO PROVIDE A 50°F (10°C) TO 55°F (13°C) MIXED-AIR TEMPERATURE INTO THE ZONE. AS THE MIXED-AIR TEMPERATURE FLUCTUATES ABOVE 55°F (13°C) OR BELOW 50°F (10°C) DAMPERS WILL BE MODULATED (OPEN OR CLOSE) TO BRING THE MIXED-AIR TEMPERATURE BACK WITHIN CONTROL. IF MECHANICAL COOLING IS JTILIZED WITH FREE COOLING, THE OUTDOOR-AIR DAMPER WILL MAINTAIN ITS CURRENT POSITION AT THE TIME THE COMPRESSOR IS STARTED. IF THE INCREASE IN COOLING CAPACITY CAUSES THE MIXED-AIR TEMPERATUR TO DROP BELOW 45°F (9°C), THEN THE OUTDOOR-AIR DAMPER POSITION WILL BE DECREASED TO THE MINIMUM POSITION. IF THE MIXED-AIR TEMPERATURE CONTINUES TO FALL, THE OUTDOOR-AIR DAMPER WILL CLOSE. CONTROL RETURNS TO NORMAL ONCE THE MIXED-AIR TEMPERATURE RISES ABOVE 48°F (9°C). THE BAROMETRIC RELIEF WILL OPEN AND CLOSE AS THE OUTDOOR-AIR DAMPER OPENS AND CLOSES.

ON THE INITIAL POWER TO THE ECONOMISER CONTROL, IT WILL TAKE THE DAMPER UP TO 2 1/2 MINUTES BEFORE IT BEGINS TO POSITION ITSELF. AFTER THE INITIAL POWER-UP, FURTHER CHANGES IN DAMPER POSITION CAN TAKE UP TO 30 SECONDS TO INITIATE. DAMPER MOVEMENT FROM FULL CLOSED TO FULL OPEN (OR VICE VERSA) WILL TAKE BETWEEN 1-1/2 AND 2-1/2 MINUTES. IF FREE COOLING CAN BE USED AS DETERMINED FROM THE DIFFERENTIAL ENTHALPY COMMAND, THEN THE CONTROL WILL MODULATE THE DAMPERS OPEN TO MAINTAIN THE MIXED-AIR TEMPERATURE SETPOINT AT 50°F (10°C) TO 55°F (13°C). IF THERE IS A FURTHER DEMAND FOR COOLING (COOLING SECOND STAGE IS ENERGIZED), THEN THE CONTROL WILL BRING ON COMPRESSOR STAGE 1 TO MAINTAIN THE MIXED-AIR TEMPERATURE SETPOINT. THE ECONOMIZER DAMPER WILL BE OPEN AT MAXIMUM

# **SEQUENCE OF OPERATIONS:** GAS-FIRED SPLIT SYSTEM

- **AIR HANDLING UNITS:** THE AIR HANDLING SYSTEM IS EQUIPPED WITH A GAS-FIRED FURNACE, DX COOLING COIL AND SUPPLY AIR
- THE AIR HANDLING UNIT WILL BE CONTROLLED BY STANDALONE THERMOSTATIC CONTROLS.
- **OCCUPANCY:** A USER ADJUSTABLE OCCUPANCY SCHEDULE WILL BE ESTABLISHED AND MAINTAINED BY THE BUILDING OWNER/ OPERATOR. OCCUPIED AND UNOCCUPIED HEATING AND COOLING SETPOINTS WILL BE ESTABLISHED. THE FAN SYSTEM WILL MAINTAIN SPACE CONDITIONS TO THE OCCUPIED AND UNOCCUPIED SETPOINTS BASED ON THIS OPERATING SCHEDULE.
- OCCUPIED HEATING OCCUPIED COOLING = 75°F = 65°F UNOCCUPIED HEATING UNOCCUPIED COOLING
- **OPTIMAL START:** AN OPTIMAL START ROUTINE WILL CALCULATE AN EARLY START TIME TO BRING SPACE CONDITIONS TO WITHIN OCCUPIED SETPOINTS BY THE BEGINNING OF THE SCHEDULED OCCUPANCY TIME PERIOD. THE OPTIMAL START ROUTINE FACTORS SPACE TEMPERATURE(S) AND OUTDOOR CONDITIONS TO CALCULATE AND LEARN THE START-UP RECOVERY TIME FROM THE UN-OCCUPIED MODE.
- FAN SYSTEM CONTROL: THE FAN SYSTEM WILL BE ENABLED TO RUN IN THE OCCUPIED MODE. THE SUPPLY FAN WILL START AND RUN CONTINUOUSLY. ALL SAFETY DEVICES MUST BE "CLEAR" TO ALLOW RUN PERMISSIVE. FAN STATUS WILL BE MONITORED VIA CURRENT SENSING SWITCH. ALL CONTROL LOOPS WILL BE ENABLED BASED ON PROOF OF THE SUPPLY FAN, UNLESS OTHERWISE SPECIFIED.
- **HEATING:** THE GAS HEAT WILL MODULATE TO MAINTAIN THE ZONE TEMPERATURE SETPOINT UPON AFALL IN ZONE TEMPERATURE BELOW SETPOINT, THE GAS HEATING VALVE WILL MODULATÉ OPEN. UPON A RISE IN ZONE TEMPERATURE THE REVERSE WILL OCCUR.
- **COOLING D/X:** D/X COOLING WILL BE **ENERGIZED TO MAINTAIN THE ZONE** TEMPERATURE TO SETPOINT. UPON A RISE IN ZONE TEMPERATURE ABOVE SETPOINT D/X COOLING WILL BE ENERGIZED. UPON A FALL IN TEMPERATURE THE REVERSE WILL OCCUR.

1. ALL DUCTWORK SHALL BE SIZED USING A STANDARD DUCTULATOR. THE FOLLOWING CRITERIA SHALL BE

PIPING AND DUCT CRITERIA

- USED TO CALCULATE DUCT SIZES: a. SUPPLY DUCTS SHALL BE NO MORE THAN
- 0.10 IN. PER 100 FEET OF PRESSURE DROP. RETURN AND EXHAUST DUCTS SHALL BE NO MORE THAN 0.05 IN. PER 100 FEET OF
- PRESSURE DROP. VENTILATION DUCTS SHALL BE NO MORE THAN 0.075 IN. PER 100 FEET OF PRESSURE
- 2. CONDENSATE SHALL BE COLLECTED AND RUN WITH ADEQUATE PITCH TO THE CLOSEST SAFE-WASTE. PROVIDE CONDENSATE PUMPS IF PITCH CAN NOT BE ACHIEVED. CONDENSATE PIPING SHALL BE SIZED AS

**CONDENSATE PIPE SIZING CHART** 

1-1/4" 90-125 1-1/2"

3. ALL CONDENSATE DRAINS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

	<b>U</b>
Basis of Design	Q-Mark
Model Number	MUH03-21
Mount	Ceiling
Dimensions (L x W x H) (in.)	16 x 14 x 7-1/2
Weight (lbs)	27
Service	Refer to Plans
Electrical	208 / 1Ø / 60
Capacity (kW)	2.2
Number of Elements	1
Unit FLA	11
Accessories	
Finish	
Mounting Kit	Yes
Disconnect Switch	Yes
Over Current Protection	Yes
Automatic Reset Thermal Limit	Yes
Automatic Fan Delay Circuit	Yes
Control	
Unit Mounted Thermostat	Yes, Tamperproof
Osmanal Makes	·

Final finish shall be coordinated with Architect.

Contractor shall install all equipment disconnect

GV-1

Cook

8 PR

120

0.011

18-3/4

13-1/2

18-3/4 x 10-1/8

Roof

Mechanical Contractor shall furnish all equipment disconnect switches and Electrical

Basis of Design

Model Number

E.S.P. (in. W.C.)

Hood Size (Ø)(in.)

Backdraft Damper

Weight (lbs.)

Location

Roof Opening (Sq.)(in.

Dimensions (Ø x H) (in.)

CFM

GRAVITY INTAKE VENT SCHEDULE

ELECTRIC UNIT HEATER SCHEDULE

**Jnit Designation** 

switches

Unit Designation

Accessories

# **ELECTRICAL COORDINATION**

- IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE THE LOCATIONS OF SUPPRESSION SYSTEM PIPING WITH THE ELECTRICAL CONTRACTOR. DUCTWORK SHALL NOT BE INSTALLED WITHIN THE DEDICATED EQUIPMENT SPACE REQUIRED FOR EXISTING OR NEW ELECTRICAL EQUIPMENT
- COORDINATION OF DUCTWORK LOCATIONS SHALL BE SOLELY THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. APPROVAL OF SHEET METAL SUBMITTAL DRAWINGS DOES NOT RELEASE THE CONTRACTOR FROM COORDINATION RESPONSIBILITY. FINAL COORDINATION SHALL OCCUR IN FIELD WITH ELECTRICAL CONTRACTOR. FAILURE TO COMPLY RELOCAT
- PER NFPA **EQUIPME** AND EXT OF 6' ABC STRUCTU PROTEC<sup>®</sup> **FOREIGN** SHALL BE

IS REQUITION OF CTOR'S IN A 70, ARTENT SPACE BOARDS, CONTRO	TRACTOR. FAILURE IREMENT MAY RESUL SUPPRESSION SYST EXPENSE.  TICLE 110.26(F); DED CE SHALL APPLY TO , DISTRIBUTION PANE L CENTERS. THE SP	LT IN FEM PIPING AT ICATED ELS, AND ACE EQUAL	Roof Curb Burglar Bars Vibration Isolation Hangers Standard Disconnect	Yes No Yes Yes	
ENDING OVE THE	ND DEPTH OF THE EC FROM THE FLOOR T EQUIPMENT OR TO	O A HEIGHT THE	GAS-FIRED UNIT HEATER SCH Unit Designation	GUH-1	
	ILING, WHICHEVER I ATED TO THE ELECTI		Basis of Design	Modine	
ATION. N	NO PIPING, DUCTS, L	.EAK	Model Number	PTC55SS0111NBAN	
	PARATUS, OR OTHEF E ELECTRICAL INSTAL		Mount	Ceiling	
	ED IN THIS ZONE.	LATION	Dimensions (L x W x H) (in.)	30 x 20 x 16	
			Weight (lbs)	100	
			Service	Refer to Plans	
			Electrical	115 / 1Ø / 60	
LCOLLEG	NIII E		Motor HP	1/8	
SCHEE			Full Load Amps	4.35	
on	EF-1	EF-2 & EF-3	Heating		
Design	Cook	Cook	Input/Output (MBH)	55.0 / 51.2	
Number	90C17DH(VF)	GC-146	Efficiency	93%	
CFM	300	75	Accessories		
n. W.C.) 0.50 0.25			Fingerproof Fan Guard		
ve Type	Direct	Direct	Mounting Kit	Yes	

				adui a al	115 / 1Ø / 60
			EIG	ectrical	
EXHAUST FAN SCHEE	III E			Motor HP	1/8
			ļ	Full Load Amps	4.35
Unit Designation	EF-1	EF-2 & EF-3	Не	ating	
Basis of Design	Cook	Cook		Input/Output (MBH)	55.0 / 51.2
Model Number	90C17DH(VF)	GC-146	L	Efficiency	93%
CFM	300	75	Ac	cessories	
E.S.P. (in. W.C.)	0.50	0.25		Fingerproof Fan Guard	
Drive Type	Direct	Direct		Mounting Kit	Yes
Dim (L x W x H)(in.)	18-3/4 x 18-3/4 x 16-7/8	13-1/4" x 15-1/2" x 8"		Disconnect Switch	Yes
Weight (lbs.)	35	15		Over Current Protection	Yes
Location	Roof	Ceiling Mounted	Δ	utomatic Reset Thermal Limit	Yes
Service	Refer to Dwgs.	Refer to Dwgs.		Automatic Fan Delay Circuit	Yes
Electrical	208/1Ø/60	120/1Ø/60		Two Stage Gas Valve	Yes
Motor Power	1/8 HP	-		Power Exhauster	Yes
Nameplate Amps	-	.313 amps		Concentric Vent Kit	Yes
Accessories		·	Co	ntrol	
Backdraft Damper	Yes	Yes		Unit Mounted Thermostat	Yes, Tamperprod
Roof Curb	Yes	No	Ge	neral Notes	
Wall Cap	No	No	1.	Final finish shall be coordinat	ted with Architect
Roof Cap	Yes	Yes	2.	Mechanical Contractor shall t	
Exhaust Grille	-	Yes,White		equipment disconnect switch	
Vibration Isolation Kit	Yes	Yes		Contractor shall install all equ	uipment disconnect
Standard Disconnect	Yes	Yes		switches.	
Control					
Speed Controller	Yes	Yes			
Time Delay Switch	No	No			
Interlock	Interconnect w/ Timeclock (Max 8,000 hrs/yr = 20hrs/day) Coordinate w/ E.C.	Interconnect w/ Lightswitch Coordinate w/ E.C.			

٤.	equipment disconnect switches and Electrical Contractor shall install all equipment disconnect switches.

Thermostat Yes, Tamperproof

APPROVAL:			PROJECT:	WEST DEPTFORD FIRE HOUSE	
				REVISIONS	
No.	DATE			DESCRIPTION	REV'D BY
	NOV. 21, 2023	ISSUE FOR BID	)		DF & JFM
	APR. 24, 2024	ADDENDUM 8			

Joseph F. McKernan Jr., Architects & Associates

**CONVERSION TO A LIBRARY** 611 ACADEMY AVENUE WEST DEPTFORD, NEW JERSEY 08096

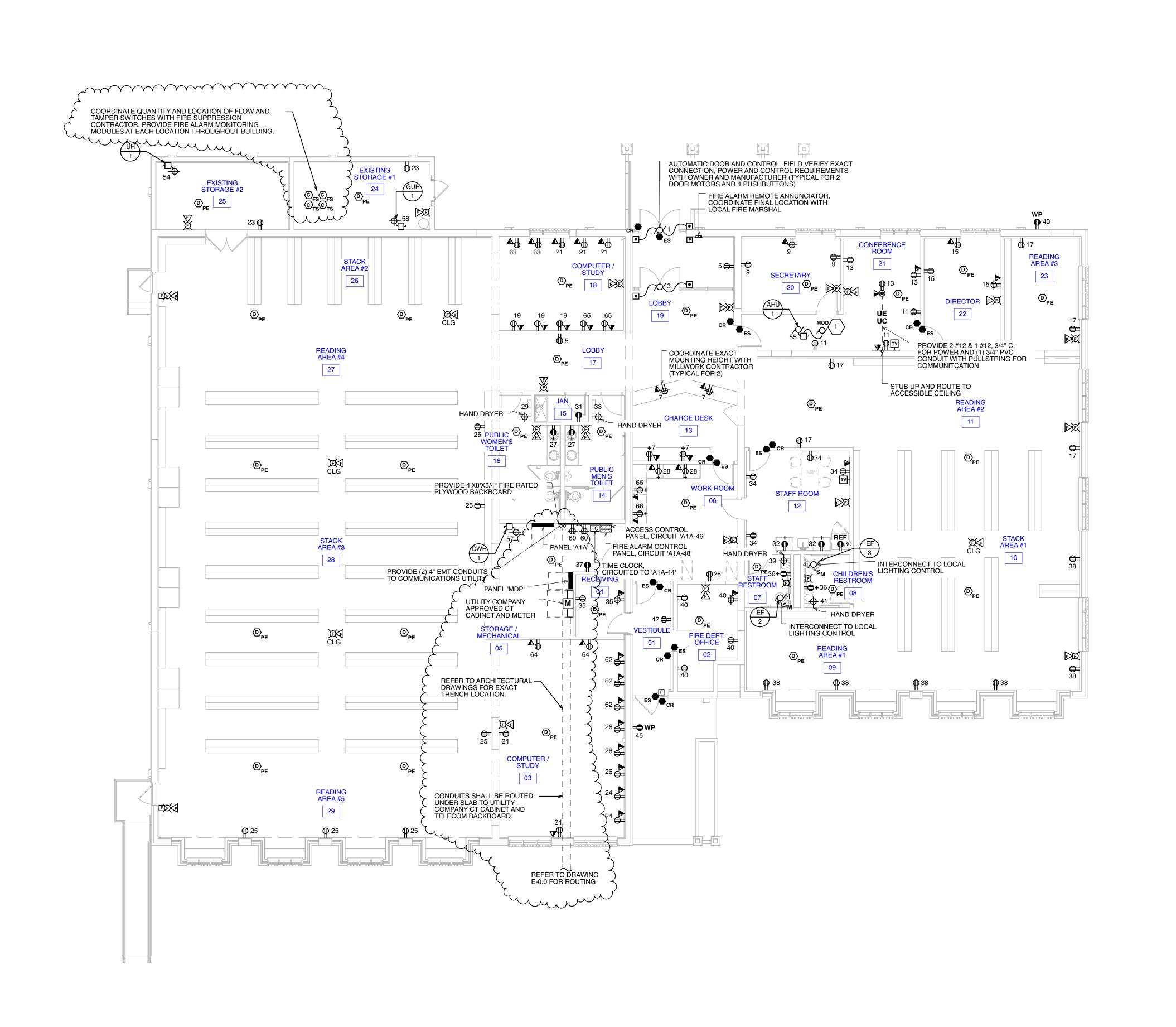
100 Dobbs Lane Suite 204 Cherry Hill, New Jersey 08034 SCOTT A. WHITE OLSTEIN WHITE

SCALE: AS NOTED DRAWING NO: 23-11 PROJ.NO.: 4/24/24 NJ PE NO. 24GE04677900 NJ AUTH NO. 24GA28143700

M - 3.0

**MECHANICAL** 

SCHEDULES





### **KEY NOTES**

MOTORIZED DAMPER PROVIDE 2 #12 & 1 #12G., 3/4" C. FOR CONTROL WIRING TO RESPECTIVE HVAC EQUIPMENT. REFER TO MECHANICAL PLANS FOR FURTHER INFORMATION.

# **DRAWING NOTES**

LOCAL AHU AS DIRECTED BY M.C.

- FIELD VERIFY LOCATION OF ALL WIRING DEVICES WITH ARCHITECT PRIOR TO ROUGH-IN.
- COORDINATE INSTALLATION OF HVAC EQUIPMENT WITH MECHANICAL CONTRACTOR AND WIRE DISCONNECTS SWITCHES FURNISHED BY MECHANICAL
- CONTRACTOR.

  MOTORIZED DAMPERS REFER TO MECHANICAL PLANS FOR EXACT LOCATION, INTERCONNECT TO
- UNLESS OTHERWISE NOTED, ALL POWER SHALL BE CIRCUITED TO PANEL 'A1A'.
- COORDINATE ALL LOW VOLTAGE WORK WITH OWNER AND OWNERS LOW VOLTAGE VENDOR. ELECTRICAL CONTRACTORS SHALL FURNISH AND INSTALL ALL BACK BOXES WITH CONDUIT AND PULL STRING TO ACCESSIBLE CEILING SPACE.

### **DEMOLITION NOTES**

- 1. WHERE EXISTING FACILITIES ARE BEING
  ALTERED, DISCONNECT AND REMOVE OR
  RELOCATE ALL EXISTING ELECTRICAL WORK THAT
  INTERFERES WITH OR IS NECESSARY BECAUSE
  OF NEW CONSTRUCTION AS SPECIFIES, SHOWN
  OR RECUIRED.
- 2. PERFORM ALTERATION AND ADDITIONS TO PRESENT ELECTRICAL SYSTEM WITH AM MINIMUM INTERRUPTION IN THE OPERATION OF THESE SYSTEMS. OBTAIN WRITTEN CLEARANCE FROM OWNER FOR SUCH INTERRUPTIONS AND SCHEDULE SAME AT WHATEVER TIME SPECIFIED IN WRITING BY OWNER.
- 3. WHERE SPECIFIED OR REQUIRED, EXTEND EXISTING SYSTEMS OR TIE INTO SAME TO PROVIDE A COMPLETE COORDINATED ELECTRICAL SYSTEM TO SATISFACTION OF OWNER AND ARCHITECT.
- 4. ALL EXISTING WORK TO REMAIN, BUT DISTURBED AND DISCONNECTED BECAUSE OF ALTERATIONS AND NEW CONSTRUCTION SHALL BE REPLACED AND PUT IN OPERATING CONDITION UNLESS INSTRUCTED OTHERWISE IN WRITING BY OWNER OR ARCHITECT.

EXISTING BRANCH CIRCUITS NOT SHOWN SHALL REMAIN INTACT TO EXTENT PRACTICABLE, AND

- SHALL BE EXTENDED AS REQUIRED.

  6. DISCONNECT AND REMOVE EXISTING WIRING
- DEVICES, LIGHTING FIXTURES AND ASSOCIATED BRANCH CIRCUIT WIRING NO LONGER REQUIRED BY NEW CONSTRUCTION.
- 7. PERFORM ALL WORK NECESSARY TO PERMIT OPERATION OF ALL EXISTING SYSTEMS DURING THE CONSTRUCTION PERIOD. PROVIDE AND MAINTAIN APPLICABLE APPROVED TEMPORARY WIRING TO MEET THIS REQUIREMENT.
- 8. DEMOLISH AND REMOVE EXISTING ELECTRICAL EQUIPMENT, FEEDERS AND CONDUIT NO LONGER REQUIRED BY NEW CONSTRUCTION BACK TO ELECTRICAL PANEL.
- ALL CIRCUIT BREAKERS NO LONGER REQUIRED BY NEW CONSTRUCTION SHALL BE MADE SPARE AND SET OPEN POSITION.
- ELECTRICAL CONTRACTOR SHALL UPDATE PANEL DIRECTORIES AT THE COMPLETION OF WORK.
- 11. THE CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING HIS PROPOSAL TO VERIFY ACTUAL SITE CONDITIONS AND ANY DISCOVERED DISCREPANCIES BETWEEN DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE OWNER'S ATTENTION PRIOR TO SUBMITTING THEIR BID. THE CONTRACTOR SHALL INCLUDE ALL DEMOLITION WORK EXPOSED AND CONCEALED, WHETHER OR NOT SHOWN ON DRAWINGS, NECESSARY FOR THE EFFECTIVE INSTALLATION AND PERFORMANCE OF NEW SYSTEM. THE OWNER SHALL NOT ACCEPT (NOR THE CONTRACTOR PAID) EXTRA COSTS ASSOCIATED WITH THE DEMOLITION AND/OR TEMPORARY REMOVAL/REINSTALLATION WORK FROM THE CONTRACTOR.

	APR. 2	4, 2024	ADDENDUM 8						
	NOV. 2	1, 2023	ISSUE FOR BID						
No.	DA	Œ	DESCRIPTION						
				RE	VISIONS				
APPROVAL:				CON	T DEPTFORI IVERSION T 611 ACADEMY ST DEPTFORD, NE	OAL AVENU	IBRAR JE	?Y	
	<u></u>		Joseph	F. McKernan Jr., Architects & A		FIR	_	OOR P	OWER
HOLSTEI	TM.	Trevose, O: (215	Blvd., Suite 503 PA 19053 -322-7711 -322-7709	SEAL:  JEFFREY E. HOLSTEIN	DIMENSIONS MUST BE VERIFIED BY CONTRACTOR NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION. DO NOT SCALE DRAWING.	SCALE: A PROJ.NO.: DATE: REV'D.: DRAWN BY:	AS NOTED 23-1110 4/24/24 JEH EP	DRAWING NO:	-1.0