

August 07, 2023

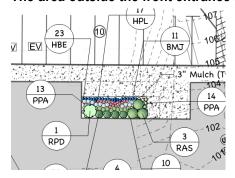
Maine Bureau of General Services Office of Chief Medical Examiner Augusta, ME

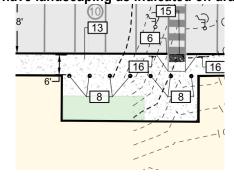
e4h Project No. 2020090 Addendum No. 2

This Addendum forms a part of the construction documents and modifies the original Issued for Bid dated July 14, 2023. The enclosed additions, deletions, corrections, and changes will be as binding as if incorporated in the original documents.

Questions:

- 1. Are precast site bollards acceptable in lieu of manually formed and placed sonotube bases/bollards as detailed? If so, would you provide an acceptable basis of design product/manufacturer?
 - a. Proceed with "BOLLARDS-USA, MODEL 360-SF" as basis of design or equal per bollard detail on C6.01
- 2. On page C6.02, Concrete walk section shows a 12" thickened edge. On page C2.01, it shows granite curbing boarding the sidewalk. Are we to price that section with the C6.02 detail?
 - a. The thickened edge is only in areas where there is no structure abutting the sidewalk slab. Where there is a structure such as a curb or foundation abutting the sidewalk, no thickened edge is required but an expansion joint/ bond breaker is needed between the slab and the structure.
- 3. There is landscaping shown on the Landscape Drawing L-1000 at the front entrance. Drawing C2.01 shows this as concrete sidewalk.
 - a. The area outside the front entrance is to have landscaping as indicated on drawings.





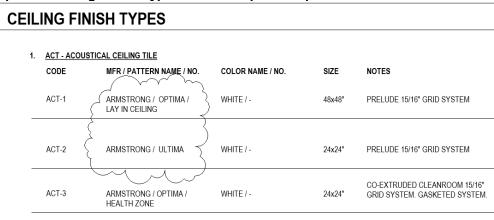
- 4. Specification 09 54 00 calls out SCT-1 as ACOUSTibuilt which is a very expensive seamless acoustical ceiling that is special custom board that then gets a built-up spray of 4-5 coats of acoustical plaster. Finish Schedule calls STC-1A as Ben Moore latex / flat dry fall finish. Please confirm what is the desired product.
 - a. (SCT-1) ACOUSTIbuilt product is no longer required on the project, STC-1A Ben Moore latex / flat dry fall finish is correct on Drawing ID1.00, refer to Finish schedule for locations.

- 5. The specifications are provided for acoustical ceiling (ACT) types 1, 2 & 3. However, the Finish Schedule indicates products that are different then the specs. Please clarify.
 - a. ACT-1 = ARMSTRONG / OPTIMA LAY IN (48" X 48")
 ACT-2 = ARMSTRONG / ULTIMA HIGH NRC (24" X 24")
 ACT-3 = ARMSTRONG / OPTIMA HEALTHZONE (24" X 24")
 (See updated spec section attached.)
- 6. Drawing C2.01 item 5 indicates a site retaining wall and refers to the structural drawings. The structural drawings indicate a CIP wall which is fine, but the architectural elevation on drawing A4.01 indicates a stone-faced retaining wall and refers to the structural. There is a discrepancy between this information. Please clarify.
 - a. The CIP retaining wall will have a thin stone face veneer which will be grouted solid to the face of retaining wall. See updated Spec Section 044313 language below for more information on stone type.
- 7. Kawneer 451UT does not allow for front glazing or butt glazing. Kawneer's 451T system is available in a front glazed option and can incorporate butt glazing.
 - a. Include Kawneer 451T for pricing in order to achieve the details we specified.
- 8. Are the stairwell windows (Types A & C) to receive window treatments?
 - a. No window treatments required in stairwells
- 9. Is Type G window to receive window treatments? If so, since this window is split by a wall, would both sides receive them?
 - a. Window treatments are required in the Visitor's Room but not required in Vestibule see Room Finish Schedule on ID1.00
- 10. It is unclear as to the start and stop is regarding where waterproofing is required vs. damp proofing.
 - Waterproofing is required at all locations where occupiable space is located below grade. Damp proofing is located at foundation walls which terminate at first floor slab.
- 11. General Conditions mention 2 different document platforms to be used during construction: Submittal Exchange (Primavera & Procore.) Which is it?
 - a. Procore
- 12. Specification section 042000 Unit Masonry mentions precast wall cap at "guardrail at entrance". I do not see a guardrail at an entrance.
 - a. Remove "Guardrail at Entrance" language from specification, precast cap is located at the Porte cochere support wall and stone faced retaining wall
- 13. Please clarify which windows are to be Manual vs Motorized. Specs mention both -- I do not see where noted in the drawings. Confirm that Draper is an acceptable window treatments manufacturer.
 - a. All window treatments to be manually operated. Confirmed, Draper is an approved manufacturer equal to Mechoshade.

- 14. Who is responsible for the abatement in the existing building being demoed?
 - a. Proper abatement of the existing building to be demolished is part of this contract.
- 15. Documents note all parking to be off site. Are all subcontractors/Job Superintendent/etc to be responsible for figuring out their own parking?
 - a. Contractor parking is restricted to the project site, as defined by the plans. (No parking is permitted in the existing lots for the Public Safety buildings.)
- 16. Are there drawings of the existing building available?
 - a. Yes, See existing Hospital Street Fire Station drawings attached
- 17. The Project Directory lists Division 27 spec section 270000 Tele Communications. This section is not in the specifications. Is this work by the owner?
 - Yes, Division 27 cabling work will be performed by owner. Cable Tray, back boxes, conduits etc. are to be carried by contractor – See "TC1.10 – TELECOM-PATHWAYS" for scope of work

Changes to Drawings:

- 1. Drawing "ID1.00 INTERIOR FINISH SCHEDULE:
 - a. Updated Ceiling Finish Types to match updated Spec section



Changes to Specifications:

- 1. Specification Section "086200 Unit Skylights"
 - a. Paragraph 2.1, B, 1a. to read "Product: Pinnacle 350 Square Pyramid" in lieu of "EcoSky Series, Model #6060."
- 2. Specification Section "044313 Stone Masonry Veneer"
 - a. Article 2.1, Paragraph A.1 & 2 "Basis of design: Champlain Stone -Cut: Roughly Squared / Rectangular Color: Corinthian Granite Veneer -Thickness: Sawn Thin

Attachments:

- 1. Updated Specification "Section 004113 CONTRACTOR BID FORM"
- 2. Updated Specification "Section 012300 ALTERNATES"
- 3. Updated Specification "Section 042000 UNIT MASONRY"
- 4. Updated Specification "Section 095100 ACOUSTICAL CEILINGS"
- 5. Existing Fire House Drawings

End of Addendum No. 2

00 41 13 Contractor Bid Form

STATE OF MAINE - Office of Chief Medical Examiner

2784

Bid Form submitted by: email only to email address below

Bid Administrator:

Robert Gurney, Project Manager
Division of Planning, Design & Construction
Bureau of General Services
111 Sewall Street, Cross State Office Building, 4th floor
77 State House Station
Augusta, Maine 04333-0077

BGS.Architect@Maine.gov

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Signature:	
Printed name and title:	
title:	
Company name:	
Mailing address:	
City, state, zip code:	
Phone number:	
E 11 11	
Email address:	
State of incorporation,	
if a corporation:	
List of all partners, if a partnership:	

The Bidder agrees, if the Owner offers to award the contract, to provide any and all bonds and certificates of insurance, as well as Schedule of Values, Project Schedule, and List of Subcontractors and Suppliers if required by the Owner, and to sign the designated Construction Contract within twelve calendar days after the date of notification of such acceptance, except if the twelfth day falls on a State of Maine government holiday or other closure day, or a Saturday, or a Sunday, in which case the aforementioned documents must be received before 12:00 noon on the first available business day following the holiday, other closure day, Saturday, or Sunday.

As a guarantee thereof, the Bidder submits, together with this bid, a bid bond or other acceptable instrument as and if required by the Bid Documents.

00 41 13 Contractor Bid Form

1.	The Bidder, having carefully examined the <u>STATE OF MAINE</u> <u>Examiner</u> Project Manual dated <u>14 July, 2023</u> , prepared by <u>E44</u> Specifications, Drawings, and any Addenda, the form of contra conditions relating to the work, proposes to furnish all labor, en necessary for and reasonably incidental to the construction and the Base Bid amount of:	<u>H Architecture</u> , as act, and the premi quipment and ma	s well as ses and terials
		\$.00
2.	Allowances are included on this project. Bid amount above includes the following Allowances 1. Interior signage		\$ 20,000 <u>.00</u>
3.	Alternate Bids <i>are included</i> on this project. Alternate Bids are as shown below Any dollar amount line below that is left blank by the Bidder shall	be read as a bid of	`\$0.00.
	1a Stainless Steel doors and Frames in lieu of FRP	\$.00
	1b Lead Lined Stainless Steel Doors and Frames in lieu of HM	\$.00
	2 Provide Electrical Support for Lodox X-Ray Equipment	\$.00.
4.	Bid security <i>is required</i> on this project. If noted above as required, or if the Base Bid amount exceeds \$125 with this bid form a satisfactory Bid Bond (section 00 43 13) or a coff the bid amount with this completed bid form submitted to the Ox	ertified or cashier'	
5.	Filed Sub-bids are not required on this project.		

If noted above as required, the Bidder shall include with this bid form a list of each Filed Sub-bidder

selected by the Bidder on the form provided (section 00 41 13F).

SECTION 012300 ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section consists of:
 - 1. Submission procedures for scheduled Alternates.
 - 2. Documentation of changes to Contract Sum and Contract Time.
- B. The description of Alternates herein below and throughout the Specifications are intended to set the intent and to describe the major work only. Such descriptions are not to be taken as limiting the work required under any of the alternates, and all work required to carry out the intent of each of the accepted Alternates shall be done without cost additional to that agreed upon as the alternate price.

1.2 REQUIREMENTS

- A. Submit Alternates with full description of the proposed alternate and the effect on adjacent or related components.
- B. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. Accepted alternates will be identified in the Owner-Contractor Agreement.
- C. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.3 SELECTION AND AWARD OF ALTERNATES

- A. Indicate variation of Bid Price for Alternates described below and list where provided for Bid Form or any supplement to it, which requests a difference in Contract Price by adding to or deducting from the base bid price.
- B. Bid may be evaluated on base bid price. After determination of preferred bidder, consideration will be given to adjustments to Bid Price by alternates.

1.4 SCHEDULE OF ALTERNATES

- A. ADD ALTERNATE 1 Stainless steel doors and frames.
 - 1. Base Bid: Provide Fiberglass doors and frames per the Drawings and Specification Section 081613.
 - 2. **Add Alternate No. 1a**: Provide stainless steel doors and frames per the Drawings and Specification Section 081119.
 - 3. **Add Alternate No. 1b**: Provide stainless lead-lined steel doors and frames in lieu of hollow metal doors/frames. Refer to Specification Section 134900.
 - 4. Add Alternate No. 2: Provide Electrical Support for Lodox X-Ray Equipment

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 042000 UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Face brick assemblies for:
 - 1. Brick masonry veneer construction for exterior walls.
 - 2. Miscellaneous walll caps (at Porte cochere, and guardrail at entrance) both clad in Brick Veneer): Cold Spring Black with flamed, thermal finish.
 - 3. Base flashing and accessories.
 - 4. CMU back-up at brick porte-cochere.
 - 5. Thru-wall flashing.

1.2 RELATED REQUIREMENTS

A. Sealants and Sealant Installation: Section 07 92 00, JOINT SEALANTS.

1.3 APPLICABLE PUBLICATIONS

- A. Comply with references to extent specified in this section.
- B. ASTM International (ASTM):
 - 1. A951/A951M-14 Steel Wire for Masonry Joint Reinforcement.
 - 2. C34-13 Structural Clay Load-Bearing Wall tile.
 - 3. C56-13 Structural Clay Nonloadbearing Tile.
 - 4. C62-13a Building Brick (Solid Masonry Units Made from Clay or Shale).
 - 5. C67-14 Sampling and Testing Brick and Structural Clay Tile.
 - 6. C126-15 Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.
 - 7. C216-15 Facing Brick (Solid Masonry Units Made From Clay or Shale).
 - 8. C612-14 Mineral Fiber Block and Board Thermal Insulation.
 - 9. C744-14 Prefaced Concrete and Calcium Silicate Masonry Units.
 - 10. D1056-14 Flexible Cellular Materials Sponge or Expanded Rubber.
 - 11. D2240-05(2010) Rubber Property-Durometer Hardness.
 - 12. F1667-15 Driven Fasteners: Nails, Spikes, and Staples.
- C. American Welding Society (AWS):
 - 1. D1.4/D1.4M-11 Structural Welding Code Reinforcing Steel.
- D. Brick Industry Association (BIA):
 - 1. TN 11B-88 Guide Specifications for Brick Masonry, Part 3.
- E. Federal Specifications (Fed. Spec.):
 - 1. FF-S-107C(2) Screws, Tapping and Drive.

1.4 SUBMITTALS

- A. Submittal Procedures per Section 013000:
- B. Submittal Drawings:
 - Fabrication, bending, and placement of reinforcing bars. Comply with ACI 315. Show bar schedules, diagrams of bent bars, stirrup spacing, lateral ties and other arrangements and assemblies.
 - 2. Special masonry shapes, profiles, and placement.
 - 3. Masonry units for typical window and door openings, and, for special conditions as affected by structural conditions.
- C. Manufacturer's Literature and Data:
 - Description of each product.
 - 2. Installation instructions.
- D. Samples:

- 1. Face brick: Sample panel, 200 mm by 400 mm (8 inches by 16 inches,) showing full color range and texture of bricks, bond, and proposed mortar joints.
- 2. Anchors and Ties: Each type.
- 3. Joint Reinforcing: 1200 mm (48 inches) long each type.
- E. Sustainable Construction Submittals:
 - Recycled Content: Identify post-consumer and pre-consumer recycled content percentage by weight.
- F. Test reports: Certify products comply with specifications.
 - 1. Ceramic glazed facing brick.
- G. Certificates: Certify products comply with specifications.
 - Face brick.
- H. Delegated Design Drawings and Calculations: Signed and sealed by responsible design professional registered in the State of Maine.

PART 2 - PRODUCTS

2.1 SYSTEM PERFORMANCE

A. Delegated Design: Prepare submittal documents including design calculations and drawings signed and sealed by registered design professional, licensed in the State of Maine.

2.2 MANUFACTURERS

- A. Basis of Design: Morin Brick Co., https://www.morinbrick.com.
- B. Belden Brick; www.beldenbrick.com.
- C. Endicott Clay Products Co; www.endicott.com.
- D. General Shale Brick: www.generalshale.com/#sle.
- E. Meridian Brick LLC; ____: www.meridianbrick.com/#sle.
- F. Approved equal.
 - 1. Substitutions: See section 016200 Product Substitutions.

2.3 BRICK UNITS

- A. Facing brick: ASTM C 216, Type FBS Grade SW.
 - 1. Brick size: "Modular", 3-1/2 to 3-5/8 inches thick by 2-1/4 inches high by 7-1/2 to 7-5/8 inches long.
 - 2. Brick style/color: Brownstone Blended Waterstruck Smooth Modular face brick with tinted mortar, (dark, graphite gray).
 - 3. Provide corners with two faces to match general brick wall finish.
 - 4. Provide special shapes as indicated on Drawings and for applications where forms, size or finish cannot be produced from standard shapes.

B. Concrete masonry units:

- 1. Manufacturers:
 - a. Foster-Southeastern, Inc., Holbrook, MA.
 - b. Adolf Jandris and Sons, Inc.; Gardner, MA.
 - c. Anchor Concrete Products, Inc.; Brick, NJ.
 - d. Trendstone, Trenwyth Industries, Inc.; Emigsville, PA.
 - e. Medway Block Company, Inc., Medway MA.
 - f. Park Avenue Cement Block Co.. Cranston Rl.
 - g. The Concrete Products Group; Spec-Brik: www.concreteproductsgroup.com/#sle.
 - h. Approved equal.
- 2. Load-Bearing Units: ASTM C90, normal weight.
- 3. Hollow block, as indicated.
- 4. Pattern: Vertical single score.

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4. Provide special shapes as indicated on Drawings and for applications where forms, size or finish cannot be produced from standard shapes.

2.4 ANCHORS, TIES, AND REINFORCEMENT

- A. Steel Reinforcing Bars: ASTM A615/A615M; Grade 60, deformed bars.
- B. Joint Reinforcement:
 - 1. Form from wire complying with ASTM A951/A951M.
 - 2. Hot dipped galvanized after fabrication.
 - 3. Width of joint reinforcement 40 mm (1.6 inches) less than nominal thickness of masonry wall or partition.
 - 4. Cross wires welded to longitudinal wires.
 - 5. Joint reinforcement minimum 3000 mm (10 feet) long, factory cut.
 - 6. Joint reinforcement with crimp formed drip is not acceptable.
 - 7. Maximum spacing of cross wires 400 mm (16 inch) to longitudinal wires.
 - 8. Ladder Design:
 - a. Longitudinal wires deformed 5 mm (0.20 inch) diameter wire/.
 - b. Cross wires 4 mm (0.16 inch) diameter.
 - c. Trussed Design:
 - 1) Longitudinal and cross wires minimum 4 mm (0.16 inch nominal) diameter.
 - 2) Longitudinal wires deformed.
- C. Adjustable Veneer Anchor for Framed Walls:
 - Two piece, adjustable anchor and tie.
 - 2. Anchor and tie may be either loop or angle type; provide only one type throughout.
 - 3. Loop Type:
 - a. Anchor: Screw-on galvanized steel anchor strap 2.75 mm (0.11 inch) by 19 mm (3/4 inch) wide by 225 mm (9 inches) long, with 9 mm (0.35 inch) offset and 100 mm (4 inch) adjustment. Provide 5 mm (0.20 inch) hole at each end for fasteners.
 - b. Ties: Triangular tie, fabricated of 5 mm (0.20 inch) diameter galvanized cold drawn steel wire. Ties long enough to engage anchor and be embedded minimum 50 mm (2 inches) into bed joint of masonry veneer.

D. Angle Type:

- 1. Anchor: Minimum 2 mm (16 gage) thick galvanized steel angle shaped anchor strap. Provide hole in vertical leg for fastener. Provide hole near end of outstanding leg to suit upstanding portion of tie.
- Tie: Fabricate from 5 mm (0.20 inch) diameter galvanized cold drawn steel wire. Form "L" shape to be embedded minimum 50 mm (2 inches) into the bed joint of masonry veneer and provide upstanding leg to fit through hole in anchor and be long enough to allow 50 mm (2 inches) of vertical adjustment.

E. Dovetail Anchors:

- 1. Corrugated steel dovetail anchors formed of 1.5 mm (0.06 inch) thick by 25 mm (1 inch) wide galvanized steel, 90 mm (3-1/2 inches) long where used to anchor 100 mm (4 inch) nominal thick masonry units, 140 mm (5-1/2 inches) long for masonry units more than 100 mm (4 inches) thick.
 - a. Form dovetail anchor slots from 0.6 mm (0.02 inch) thick galvanized steel (with felt or fiber filler).

F. Individual Ties:

- 1. Adjustable Cavity Wall Ties:
 - a. Adjustable wall ties may be furnished at Contractor's option.
 - b. Two piece type permitting up to 40 mm (1-1/2 inch) adjustment.
 - c. Form ties from 5 mm (3/16 inch) diameter galvanized steel wire.
 - d. Form one piece to rectangular shape 105 mm (4-1/8 inches) wide by length required to extend into bed joint 50 mm (2 inches).

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- e. Form other piece to 75 mm (3 inch) long by 75 mm (3 inch) wide shape, having 75 mm (3 inch) long bent section for engaging 105 mm (4-1/8 inch) wide piece to form adjustable connection.
- G. Wall Ties, (Mesh or Wire):
 - Mesh wall ties formed of ASTM A1064/A1064M, W0.5, 2 mm, (0.08 inch) galvanized steel wire 13 mm by 13 mm (1/2 inch by 1/2 inch) mesh, 75 mm (3 inches) wide by 200 mm (8 inches) long.
 - 2. Rectangular wire wall ties formed of W1.4, 3 mm, (0.12 inch) galvanized steel wire 50 mm (2 inches) wide by 200 mm (8 inches) long.
- H. Adjustable Steel Column Anchor:
 - 1. Two piece anchor consisting of a 6 mm (1/4 inch) diameter steel rod to be welded to steel with offset ends, rod to permit 100 mm (4 inch) vertical adjustment of wire anchor.
 - 2. Triangular shaped wire anchor 100 mm (4 inches) wide formed from 5 (3/16 inch) diameter galvanized wire, to extend minimum 75 mm (3 inches) into joints of masonry.
- I. Adjustable Steel Beam Anchor:
 - 1. Z or C type steel strap, 30 mm (1 1/4 inches) wide, 3 mm (1/8 inch) thick.
 - 2. Flange hook minimum 38 mm (1 1/2 inches) long.
 - 3. Length to embed in masonry minimum 50 mm (2 inches) in 100 mm (4 inch) nominal thick masonry and 100 mm (4 inches) in thicker masonry.
 - 4. Bend masonry end minimum 40 mm (1 1/2 inches).

2.5 ACCESSORIES

- A. Weeps:
 - 1. Weep Hole Wicks: Glass fiber ropes, 10 mm (3/8 inch) minimum diameter, 300 mm (12 inches) long.
 - 2. Weep Tubing: Round, polyethylene, 9 mm (3/8 inch) diameter, 100 mm (4 inches) long.
 - Weep Hole: Flexible PVC louvered configuration with rectangular closure strip at top.
- B. Cavity Drain Material: Open mesh polyester sheets or strips to prevent mortar droppings from clogging the cavity.
- C. Preformed Compressible Joint Filler:
 - 1. Thickness and depth to fill joint.
 - 2. Closed Cell Neoprene: ASTM D1056, Type 2, Class A, Grade 1, B2F1.
 - 3. Non-Combustible Type: ASTM C612, Type 5, Max. Temp.1800 degrees F.
- D. Box Board:
 - 1. Mineral Fiber Board: ASTM C612, Type 1.
 - 2. 25 mm (1 inch) thickness.
 - 3. Other spacing material having similar characteristics is acceptable subject to Contracting Officer's Representative's approval.
- E. Masonry Cleaner:
 - 1. Detergent type cleaner selected for each type masonry.
 - 2. Acid cleaners are not acceptable.
 - 3. Use soapless type specially prepared for cleaning brick masonry as appropriate.
- F. Fasteners:
 - 1. Masonry Nails: ASTM F1667, Type I, Style 17, 19 mm (3/4 inch) minimum length.
 - 2. Screws: FS-FF-S-107, Type A, AB, SF thread forming or cutting.
- G. Welding Materials: AWS D1.4/D1.4M, type to suit application.
- H. Membrane Non-Asphaltic Flashing Materials:
 - 1. Composite Polymer Flashings Self-Adhering: Composite polyethylene; 40 mil (1mm) thick with pressure-sensitive adhesive and release paper.
 - 2. Manufacturers:

- a. Hohmann & Barnard, Inc; Textroflash: www.h-b.com.
- b. York Manufacturing, Inc; Wicked Good Flashing: www.yorkmfg.com.
- c. Approved equal.
- I. Base flashing:
 - 1. Pre-finished flashing.
 - 2. Gauge: 26 minimum.
 - 3. Color: Dark bronze.
 - 4. ASTM B 221 Specification for Aluminum Extrusions.

PART 3 - EXECUTION

- 3.1 INSTALLATION GENERAL
 - A. Install products according to manufacturer's instructions // and approved submittal drawings //.
 - When manufacturer's instructions deviate from specifications, submit proposed resolution for Contracting Officer's Representative consideration.
 - B. Keep finish work free from mortar smears or spatters, and leave neat and clean.
 - C. Wall Openings:
 - 1. Fill hollow metal frames built into masonry walls and partitions solid with mortar as laying of masonry progresses.
 - 2. When items are not available when walls are built, prepare openings for subsequent installation.
 - D. Tooling Joints:
 - 1. Do not tool until mortar has stiffened enough to retain thumb print when thumb is pressed against mortar.
 - 2. Tool while mortar is soft enough to be compressed into joints and not raked out.
 - 3. Finish joints in exterior face masonry work with jointing tool, and provide smooth, water-tight concave joint unless specified otherwise.
 - 4. Tool Exposed interior joints in finish work concave unless specified otherwise.

E. Lintels:

- 1. Lintels are not required for openings less than 1000 mm (40 inches) wide that have hollow metal frames.
- 2. Use steel lintels, for openings greater than 1600 m (63 inches) wide, brick masonry openings, and elevator openings unless shown otherwise.
- Doors having overhead concealed door closers require steel lintel, and pocket for closer box.
- 4. Lintel Bearing Length: Minimum 100 mm (4 inches) at both ends.
- Build masonry openings or arches over wood or metal centering and supports when steel lintels are not used.
- F. Use minimum 100 mm (4 inches) nominal thick masonry for fireproofing steel columns unless indicated otherwise.
- G. Before connecting new masonry with previously laid masonry, remove loosened masonry or mortar, and clean and wet work in place as specified under wetting.
- H. Structural Steel Encased in Masonry:
 - 1. Where structural steel is encased in masonry and voids between steel and masonry are filled with mortar, provide minimum 25 mm (1 inch) mortar free expansion space between masonry and steel by applying box board material to steel before masonry is laid.
 - 2. Do not install spacing material where steel is bearing on masonry or masonry is bearing on steel.
- I. Wetting and Wetting Test:
 - 1. Test and wet brick and clay tile according to BIA TN 11B.

- J. Temporary Formwork: Provide formwork and shores as required for temporary support of reinforced masonry elements.
- K. Construct formwork to conform to shape, line and dimensions indicated on drawings. Make sufficiently tight to prevent mortar, grout, or concrete leakage. Brace, tie and support formwork as required to maintain position and shape during construction and curing of reinforced masonry.
- L. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other reasonable temporary construction loads.
- M. Minimum Curing Times Before Removing Shores and Forms:
 - Girders and Beams: 10 days.
 - 2. Slabs: 7 days.
 - 3. Reinforced Masonry Soffits: 7 days.

3.2 INSTALLATION - ANCHORAGE

- A. Veneer to Framed Walls:
 - Install adjustable veneer anchors.
 - 2. Fasten anchor to stud through sheathing with self-drilling and tapping screw, one at both ends of loop type anchor.
 - 3. Space anchors maximum 400 mm (16 inches) on center vertically at each stud.
- B. Anchorage to Steel Beams or Columns:
 - 1. Use adjustable beam anchors on each flange.
 - 2. At columns weld steel rod to steel columns at 300 mm (12 inch) intervals, and place wire ties in masonry courses at 400 mm (16 inches) maximum vertically.

3.3 INSTALLATION - REINFORCEMENT

- A. Joint Reinforcement:
 - 1. Locate joint reinforcement in mortar joints at 400 mm (16 inch) maximum vertical intervals.
 - Additional joint reinforcement is required in mortar joints at both 200 mm (8 inches) and 400 (16 inches) above and below windows, doors, louvers and similar openings in masonry.
- B. Steel Reinforcing Bars:
 - 1. Install reinforcing bars in cells of hollow masonry units where required for vertical reinforcement and in bond beam units for horizontal reinforcement. Install in wall cavities of reinforced masonry walls where indicated on drawings.
 - 2. Stack Bond:
 - a. Locate additional joint reinforcement in vertical and horizontal joints as indicated on drawings.
 - b. Anchor vertical reinforcement into foundation or wall or bond beam below.
 - c. Provide temporary bracing for walls over 8 feet tall until permanent horizontal bracing is completed.

3.4 INSTALLATION - BRICK EXPANSION JOINTS

- A. Provide brick expansion joint (EJ) where indicated on drawings.
- B. Keep joint free of mortar and other debris.
- C. Joints Occur In Masonry Walls:
 - 1. Install preformed compressible joint filler in brick wythe.
- D. Interrupt joint reinforcement at expansion joints.
- E. Fill opening in exposed face of expansion joints with sealant as specified in Section 079200, JOINT SEALANTS.

3.5 INSTALLATION - BUILDING EXPANSION AND SEISMIC JOINTS

A. Keep expansion and seismic joints open and free of mortar. Remove mortar and other debris.

- B. Install non-combustible, compressible type joint filler to fill space completely except where sealant is shown on joints in exposed finish work.
- C. Fill opening in exposed face of expansion and seismic joints with sealant as specified in Section 079200, JOINT SEALANTS.

3.6 INSTALLATION - ISOLATION JOINT

- A. Where full height walls and partitions lie parallel or perpendicular to and under structural beams and shelf angles, provide minimum 9 mm (3/8 inch) separation between walls and partitions and bottom of beams and shelf angles.
- B. Insert continuous full width strip of non-combustible type compressible joint filler.
- C. Fill opening in exposed face of isolation joints with sealant as specified in Section 07 92 00, JOINT SEALANTS.

3.7 INSTALLATION - BRICKWORK

- A. Lay clay brick according to BIA TN 11B.
- B. Laying:
 - 1. Match bond of existing building on alterations and additions..
 - 2. Maintain bond pattern throughout.
 - 3. Do not use brick smaller than half-brick at any angle, corner, break, and jamb.
 - 4. Where length of cut brick is greater than one half length, maintain vertical joint location.
 - 5. Lay exposed brickwork joints symmetrical about center lines of openings.
 - 6. Do not structurally bond multi-wythe brick walls, unless indicated on drawings.
 - 7. Before starting work, lay facing brick on foundation wall and adjust bond to openings, angles, and corners.
 - 8. Lay brick for sills with wash and drip.
 - 9. Build solid brickwork as required for anchorage of items.

C. Joints:

- 1. Exterior And Interior Joint Widths: Lay for three equal joints in 200 mm (8 inches) vertically, unless shown otherwise.
- 2. Rake joints for pointing with colored mortar when colored mortar is not full depth.
- 3. Arches:
 - a. Flat arches (jack arches) lay with camber of 1 in 200 (1/16 inch per foot) of span.
 - b. Face radial arches with radial brick with center line of joints on radial lines.
 - c. Form Radial joints of equal width.
 - d. Bond arches into backing with metal ties in every other joint.

D. Weep Holes:

- 1. Install weep holes at 600 mm (24 inches) on center in bottom of vertical joints of exterior masonry veneer or cavity wall facing over foundations, bond beams, and other water stops in wall.
- 2. Form weep holes using wicks made of mineral fiber insulation strips turned up 200 mm (8 inches) in cavity. Anchor top of strip to backup to securely hold in place.
- 3. Install sand or pea gravel in cavity approximately 75 mm (3 inches) high between weep holes.

E. Cavity Walls:

- 1. Keep air space clean of mortar accumulations and debris.
- 2. Lay the interior wythe of the masonry wall full height where // dampproofing // air barrier // is required on cavity face. Coordinate to install // dampproofing // air barrier // before laying outer wythe.
- 3. Veneer Framed Walls:
 - a. Build with 100 mm (4 inches) of face brick over sheathed stud wall with air space.
 - b. Keep air space clean of mortar accumulations and debris.

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3.8 POINTING

- A. Fill joints with pointing mortar using rubber float trowel to apply mortar solidly into raked joints.
- B. Wipe off excess mortar from joints of glazed masonry units with dry cloth.
- C. Tool exposed joints to smooth concave joint.
- D. At joints with existing work, match existing joint.

3.9 GROUTING

A. Preparation:

- 1. Clean grout space of mortar droppings before placing grout.
- Close cleanouts.
- 3. Install vertical solid masonry dams across grout space for full height of wall at intervals of maximum 9000 mm (30 feet). Do not bond dam units into wythes as masonry headers.
- 4. Verify reinforcing bars are installed as indicated on drawings.

B. Placing:

- 1. Place grout in grout space in lifts as specified.
- 2. Consolidate each grout lift after free water has disappeared but before plasticity is lost.
- 3. Do not slush with mortar or use mortar with grout.
- 4. Interruptions:
 - a. When grouting must be stopped for more than an hour, top off grout 40 mm (1-1/2 inches) below top of last masonry course.
 - b. Grout from dam to dam on high lift method.
 - c. Longitudinal run of masonry may be stopped off only by raking back one-half masonry unit length in each course and stopping grout 100 mm (4 inches) back of rake on low lift method.

C. Low Lift Method:

- 1. Construct masonry to 1.5 m (5 feet) maximum height before grouting.
- 2. Grout in one continuous operation and consolidate grout by mechanical vibration and reconsolidate after initial water loss and settlement has occurred.

D High Lift Method

- 1. Do not pour grout until masonry wall has cured minimum of 4 hours.
- 2. Place grout in 1.5 m (5 feet) maximum lifts.
- Exception:
 - a. Where following conditions are met, place grout in 3.86 m (12.67 feet) maximum lifts.
 - b. Masonry has cured minimum of 4 hours.
 - c. Grout slump is maintained between 250 and 275 mm (10 and 11 inches).
 - d. No intermediate reinforced bond beams are placed between top and bottom of grout lift
 - e. When vibrating succeeding lifts, extend vibrator 300 to 450 mm (12 to 18 inches) into preceding lift.

3.10 PLACING REINFORCEMENT

- A. General: Clean reinforcement of loose rust, mill scale, earth, ice or other materials which will reduce bond to mortar or grout. Do not use reinforcement bars with kinks or bends not shown on drawings or approved submittal drawings, or bars with reduced cross-section due to excessive rusting or other causes.
- B. Position reinforcement accurately at spacing indicated on drawings. Support and secure vertical bars against displacement. Install horizontal reinforcement as masonry work progresses. Where vertical bars are shown in close proximity, provide clear distance between bars of minimum one bar diameter or 25 mm (1 inch), whichever is greater.
- C. For columns, piers and pilasters, maintain clear distance between vertical bars as indicated on drawings, minimum 1.5 bar diameters or 38 mm (1-1/2 inches), whichever is greater. Provide lateral ties as indicated on drawings.

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- D. Splice reinforcement bars only where indicated on drawings, unless approved by Contracting Officer's Representative. Provide lapped splices. In splicing vertical bars or attaching to dowels, lap ends, place in contact and wire tie.
- E. Provide minimum lap as indicated on approved submittal drawings, or if not indicated, minimum 48 bar diameters.
- F. Embed metal ties in mortar joints as work progresses, with minimum mortar cover of 15 mm (5/8 inch) on exterior face of walls and 13 mm (1/2 inch) at other locations.
- G. Embed prefabricated horizontal joint reinforcement as work progresses, with minimum cover of 15 mm (5/8 inch) on exterior face of walls and 13 mm (1/2 inch) at other locations. Lap joint reinforcement minimum 150 mm (6 inches) at ends. Use prefabricated "L" and "T" sections to provide continuity at corners and intersections. Cut and bend joint reinforcement for continuity at returns, offsets, column fireproofing, pipe enclosures and other special conditions.
- H. Anchoring: Anchor reinforced masonry work to supporting structure as indicated on drawings.
- I. Anchor reinforced masonry walls at intersections with non-reinforced masonry.

END OF SECTION

SECTION 095100 ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Furnish and install the following:
 - Suspended acoustical tile ceiling including suspension system and associated edge moldings.
 - 2. Exterior metal ceiling

1.2 SUBMITTALS

- A. Information and Review Submittals: Submit the following under provisions of Section 013000 ADMINISTRATIVE REQUIREMENTS:
 - 1. Product Data: Manufacturer's product data sheets, specifications, performance data, physical properties for each item furnished hereunder.
 - 2. Shop Drawings:
 - 1/4 inch scale plans of each room or space; indicate grid layout and related dimensioning, junctions with other work or ceiling finishes, interrelation of mechanical and electrical items related to the system.
 - b. All drawings bearing dimensions of actual measurements taken at the project.
 - c. Large scale installation details of special conditions.
 - 3. Verification Samples:
 - a. 12 by 12 inch samples of acoustical units, illustrating material and finish.
 - b. 12 by 12 inch samples of existing acoustical units for comparison with supplied materials.
 - c. 12 inch long samples of suspension system components including main runners, cross runner and edge trim.
 - d. 12 inch long samples of existing exposed spline suspension system components including runners and edge trim for comparison with supplied materials.
- B. Closeout Submittals: Submit the following under provisions of Section 017800 CLOSEOUT SUBMITTALS.
 - 1. Bonds and Warranty Documentation:
 - Manufacturer's Warranties and guarantees as specified elsewhere herein this Section.
- C. Maintenance Material Submittals: Submit the following under provisions of Section 017800 -CLOSEOUT SUBMITTALS. Clearly label and package extra materials securely to prevent damage.
 - 1. Provide to the Owner, extra ceiling panels: 5 percent of each type installed.
 - 2. Provide to the Owner, extra suspension components: 5 percent of each type installed.
 - Provide to the Owner, all extra salvaged ceiling panel and suspension components which have not been utilized in the Work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Specified Manufacturer: To establish a standard of quality, design and function desired, Drawings and specifications have been based on products specified in the following Articles. No substitutions will be accepted.
 - Acoustic Tiles/Panels:
 - a. Basis of Design: Armstrong World Industries, Inc: www.armstrong.com.
 - b. Approved equal.
 - 1) Refer to Section 016200 for Product Substitution requirements.
 - 2. Suspension Systems:
 - a. Basis of Design: Armstrong World Industries, Inc: www.armstrong.com.

- b. Approved equal.
 - 1) Refer to Section 016200 for Product Substitution requirements.

2.2 DESCRIPTION

A. General Description: Manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectance as indicated.

2.3 ACOUSTICAL UNITS

- A. Acoustical Tile Type (**ACT-1**): Painted mineral fiber, Armstrong "ULTIMA High NRC"OPTIMA Lay-In Ceiling #3256, ASTM Type: IV, Form: 2, Pattern: E, consisting of the following physical characteristics:
 - 1. Size: 48 inches by 48 inches by 3/4 1 inches.
 - 2. Edge: Beveled Tegular 9/16 inch.
 - 3. Acoustics: 0.75 NRC/ 35 CAC. .95 NRC / 26 CAC
 - 4. Fire Performance: Class A (UL).
 - 5. Light Reflectance: 88%.
 - 6. Weight: 1.05 PF2.
 - 7. Texture: Fine.
 - 8. Grid System: Prelude XL 15/16 inch Exposed Tee Grid.
- B. Acoustical Tile Type (ACT-2): Painted mineral fiber, Armstrong "ULTIMA High NRC" Lay-In Ceiling #3256-1942HRC ASTM Type: IV, Form: 2, Pattern: E, consisting of the following physical characteristics:
 - 1. Size: 24 inches by 24 inches by 3/4 inches.
 - 2. Edge: Beveled Tegular 9/16 inch.
 - 3. Acoustics: 0.75 NRC/ 35 CAC.
 - 4. Fire Performance: Class A (UL).
 - 5. Light Reflectance: 88%.
 - 6. Weight: 1.05 PF2.
 - 7. Texture: Fine.
 - 8. Grid System: Prelude XL 15/16 inch Exposed Tee Grid.
- C. Acoustical Tile Type (**ACT-3**): Painted mineral fiber, Armstrong Clean Room VL 868, OPTIMA Healthzone 3214PB [ASTM Type: IV, Form: 2, Pattern: E], consisting of the following physical characteristics:
 - 1. Size: 24 by 24 inches.
 - 2. Edge: Square Tegular 15/16 inch.
 - 3. Color: White.
 - 4. Light Reflectance: 80 86 percent, determined in accordance with ASTM E1264.
 - 5. Ceiling Attenuation Class (CAC): 40, 29 determined in accordance with ASTM E1264.
 - 6. Suspension System: 15/16 inch Co-Extruded Clean Room.
- D. Exterior Metal Ceiling (**XCT-1**): ARMSTRONG / METALWORKS LINEAR SYNCHRO, consisting o the following physical characteristics:
 - a. Surface Texture: Smooth
 - b. Composition: Electrogalvanized Steel 0.028"
 - c. Color:(Effects Sesame (Effects
 - d. Size: (6IN) x 96IN
 - e. Edge Profile: Linear
 - f. Perforation Option: (Unperforated-M1) g. Noise Reduction Coefficient(NRC): 0.70

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h. Ceiling Attenuation Class (CAC): N/A

i. Sabin: N/A

j. Articulation Class (AC): N/A

k. Flame Spread: ASTM E 1264; Class A (FM) I. Light Reflectance White Panel: 0.83 m. Dimensional Stability: Standard

2.4 SUSPENSION SYSTEM(S)

A. For failed existing gris deemed necessary to replace.

- 1. The suspension system shall support the ceiling assembly shown on the drawings and specified herein, with a maximum deflection of 1/360 of the span, in accordance with ASTM C 635.
- 2. Provide ceiling clips and inserts to receive hangers, type as recommended by suspension system manufacturer, sizes for pull-out resistance of not less than five (5) times the hanger design load, as indicated in ASTM C 635.
- 3. Suspension systems shall conform to ASTM C 635, intermediate duty.
- 4. Provide manufacturer's standard wall moldings with off-white baked enamel finish to match suspension systems. For circular penetrations of ceilings, provide edge moldings fabricated to diameter required to fit penetration exactly.

2.5 ACCESSORIES

- A. Drywall Grid: Armstrong, product as selected by Architect or as shown on the Drawings.
- B. Edge moldings: Standard edge trim: Grid system manufacturer's standard L-shape edge trim compatible with exposed grid system and color matched.
- C. Retention clips:
 - 1. Armstrong product number "0414," or approved equal.
- D. Sealant as specified in Section 079200 JOINT SEALANTS:
 - 1. Joint Sealer Type AP, (Acrylic painters caulk).
 - 2. Joint Sealer Type SP, (Silicone, Paintable all purpose).
- E. Hanger Wire: 12 gauge, 0.08 inch (2 mm) galvanized steel wire.
- F. Perimeter Moldings: Same metal and finish as grid.
- G. Axiom Perimeter Trim AX6STR

PART 3 - EXECUTION

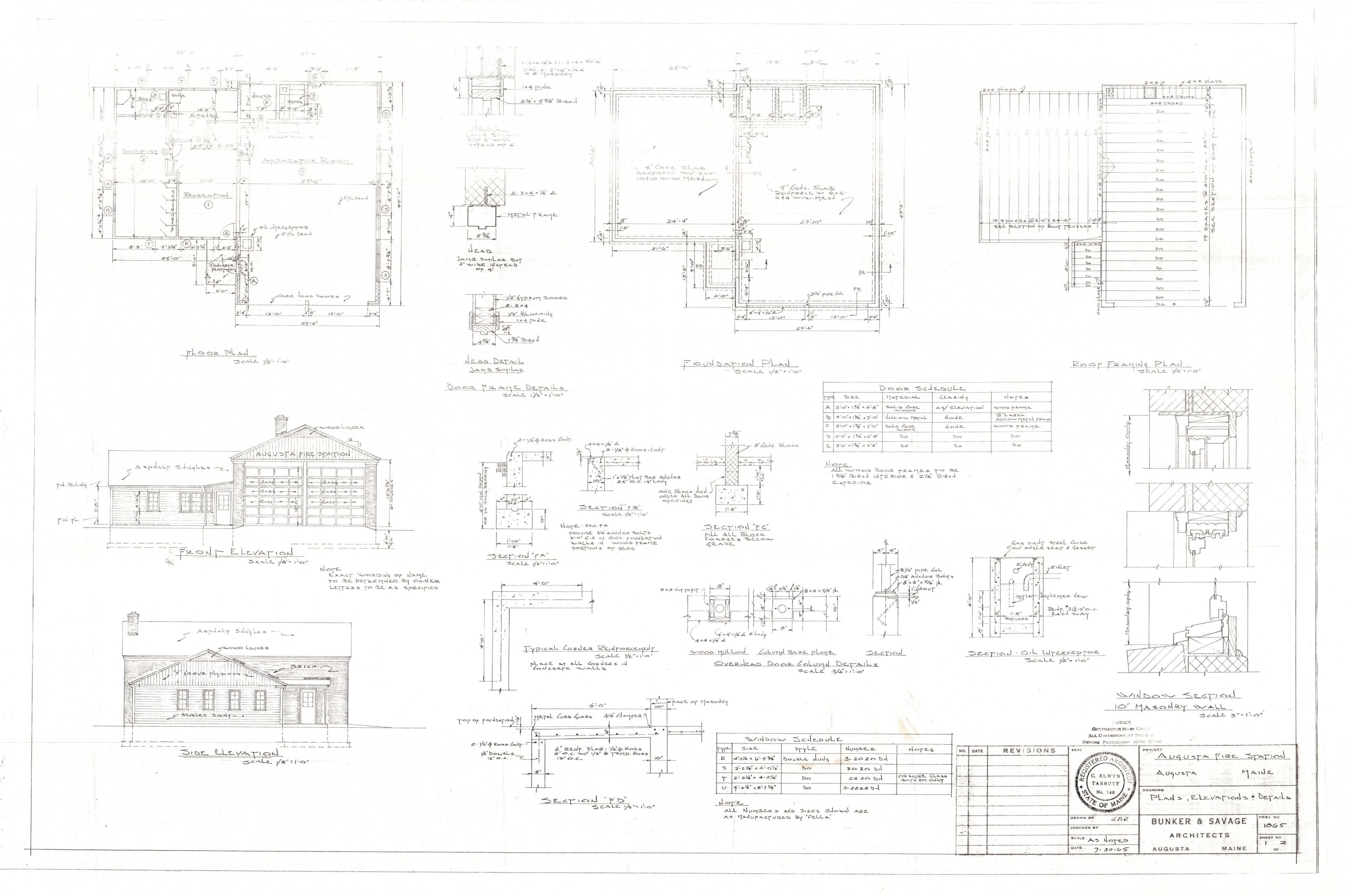
3.1 INSTALLATION

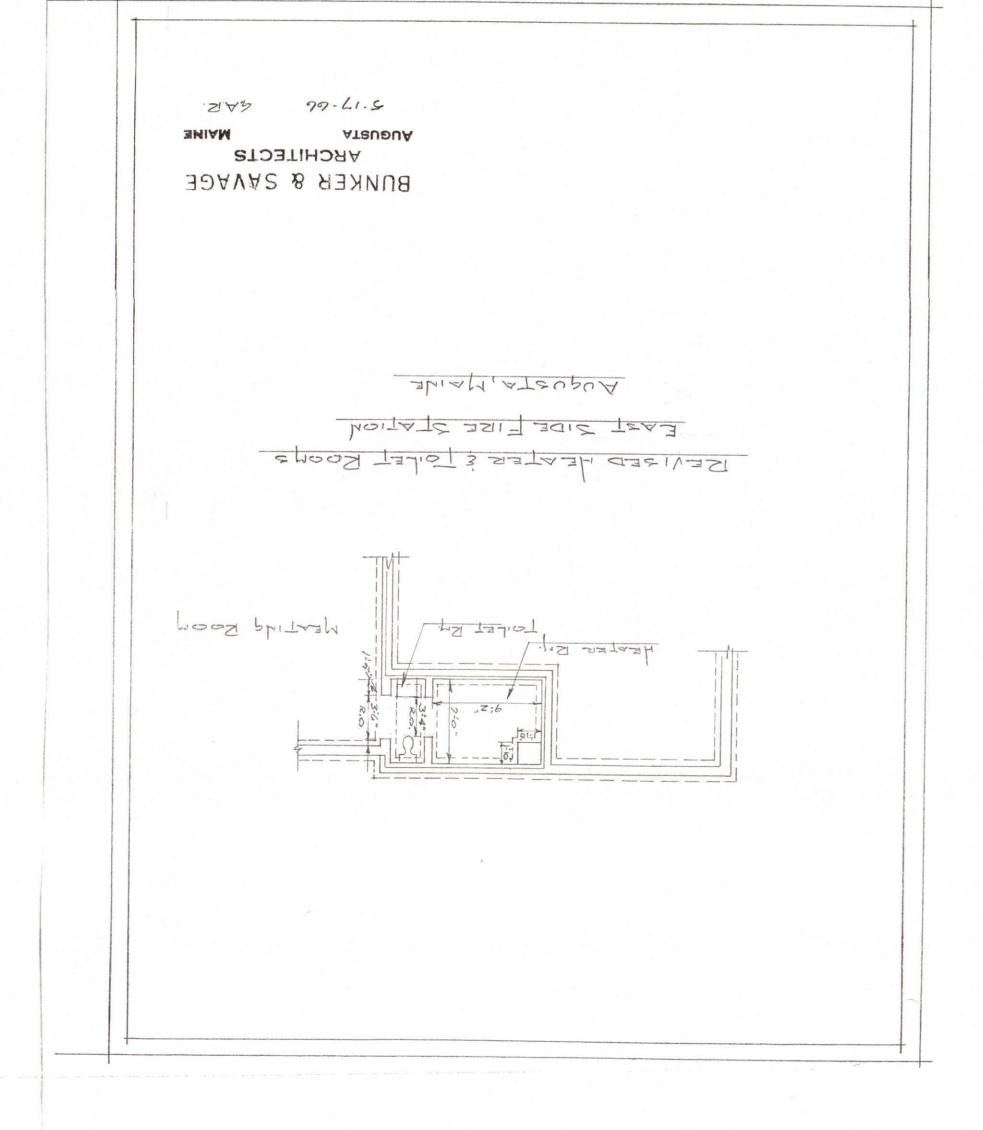
- A. Locate system on room axis, leaving equal sized border units of not less than one-half tile width.
- B. Install all components of the suspended grid systems in accordance with the manufacturer's instructions, the approved shop drawings, conforming to ASTM C-636 requirements. Ensure a deflection not to exceed 1/360 span of 48-inch simple span.
- C. Install specified edge moldings wherever ceilings intersect a wall or partition surface, and around all items having any dimension of 4 inches or more which penetrate the ceilings, including circular penetrations. Set moldings absolutely level, using as long lengths as practicable, and secure with fasteners recommended by manufacturer for the type of substrate.
 - Sealant Bed: Apply continuous ribbon of acoustical sealant (type AA specified under Section 079200 - JOINT SEALANTS), concealed on back of vertical leg before installing moldings.
 - 2. Screw-attach moldings to substrate at intervals not over 16 inches on center. and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12'-0". Miter corners accurately and connect securely.

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- D. Install hanger attachments to overhead construction in accordance with the approved shop drawings, spacing the attachments not more than 48 inches on centers over location of each main tee member.
 - Aluminum Suspension Systems: Provide hangers spaced not more than 30 inches on center in each direction and not more than 8 inches from ends
 - 2. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers to span the extra distance.
 - 3. Install hanger wire to attachments with triple twists.
- E. Install main tees parallel to the long dimension of each area, spacing the tees 48 inches on centers. Secure the bottom of hanger wires through slots in the main tee members and tie with triple twists. Level the main tees as the work progresses.
- F. Uniformly space the cross tees at 24 inches on centers, and secure the cross tees into the main tees as recommended by the system manufacturer.
- G. Fit acoustical ceiling tile units in place, free from damaged edges or other defects detrimental to appearance and function. Install acoustical ceiling tile level, in uniform plane, and free from twist, warp or dents.
 - 1. Field cut tegular type tile with a tegular reveal at all edge conditions.
 - 2. Where required by governmental agencies having jurisdiction, install retention clips, provide two clips per ceiling panel installed on opposite sides of panel.

END OF SECTION





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