

CHATHAM COUNTY PURCHASING DEPARTMENT
ADDENDUM NO. 2 TO BID # 17-0038-7
FOR: RALPH MARK GILBERT CIVIL RIGHTS MUSEUM – HVAC MODIFICATIONS AND
REROOF

PLEASE SEE THE FOLLOWING ADDITIONS, CLARIFICATIONS AND/OR
CHANGES:

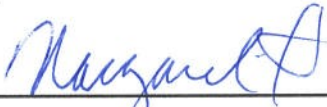
1. **CHANGE:** Remove and replace Table of Contents.
2. **ADDITION:** Architectural specifications were left out of the package. Addendum 2 includes Architectural Specifications as listed in Table of Contents along with report from Saussy Engineering in reference to a roof inspection.

THE BID OPENING REMAINS JUNE 8, 2017.

PROPOSER IS RESPONSIBLE FOR MAKING THE NECESSARY CHANGES.

May 25, 2017

DATE


MARGARET H. JOYNER
PURCHASING DIRECTOR
CHATHAM COUNTY

DOCUMENT 000110

TABLE OF CONTENTS

PROCUREMENT AND CONTRACTING DOCUMENTS GROUP

Document Title

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

SPECIFICATIONS GROUP

INTRODUCTORY INFORMATION

000101 Project Title Page
000110 Table of Contents
000115 Drawing List

ARCHITECTURAL SPECS

000150 Acceptance Certification
061053 Misc. Rough Carpentry
075419 PVC Roofing
092216 Non-Structural Metal Framing
092900 Gypsum Board

SAUSSY REPORT

MECHANICAL SPECS

230500 General
230510 Common Work Results for HVAC
230513 Common Motor Requirements for HVAC Equipment
230519 Meters and Gages for HVAC Piping
230523 General-Duty Valves for HVAC Piping
230529 Hangers and Supports for HVAC Piping and Equipment
230533 Heat Tracing for HVAC Piping
230548 Vibration and Seismic Controls for HVAC Piping and Equipment
230553 Identification for HVAC Piping and Equipment
230593 Testing, Adjusting, and Balancing for HVAC
230615 Electrical Heating Equipment
230700 HVAC Insulation
230900 DDC Instrumentation and Control for HVAC
232113 Hydronic Piping
232123 Hydronic Pumps
232213 Steam and Condensate Heating Piping
232923 Variable-Frequency Motor Controllers
233000 Air Distribution Systems
236423 Scroll Water Chillers
238219 Fan Coil Units

End of Section

SECTION 00 01 50 – ACCEPTANCE CERTIFICATION

- 1.1 Project: _____
- A. Project Address: _____
- B. Material and/or Product: _____
- C. Project Specification Section: _____
- 1.2 General Contractor:
- A. Company Name: _____
- B. Company Representative's Name _____:
- C. Signature and Date: _____
- 1.3 Subcontractor / Installer:
- A. Company Name: _____
- B. Company Representative's Name _____:
- C. Signature and Date: _____
- 1.4 Material and/or Product Manufacturer:
- A. Company Name: _____
- B. Company Representative's Name _____:
- C. Signature and Date: _____
- 1.5 I have fully examined and understand the drawings and specifications, (and the site conditions if necessary), which are relevant to this work. To the best of my ability and knowledge, I believe the material/products herein submitted are in full compliance with the drawings and specifications. Further, I have confirmed that the site conditions and the material/products herein submitted comply with requirements for installation tolerances, applicable codes, and other conditions affecting performance of this material/product and its incorporation into the work.
- 1.6 Attached are any conditions detrimental to the performance of this material/product and its incorporation into the work. Also attached are any requirements or provisions of the drawings and specifications which in my opinion are inconsistent, incompatible, or otherwise inappropriate for the performance of this material/product and its incorporation into the work. If there are no comments attached, or if this form is not submitted, then the General Contractor accepts responsibility for the statement in paragraph 1 above.

END OF SECTION 00 01 50

SECTION 06 1053 - MISCELLANEOUS ROUGH CARPENTRY**PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Framing with dimension lumber.
2. Rooftop equipment bases and support curbs.
3. Wood blocking, cants, and nailers.
4. Wood sleepers.

PART 2 - PRODUCTS**2.1 WOOD PRODUCTS, GENERAL**

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. Provide dressed lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWWA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches above the ground in crawl spaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 DIMENSION LUMBER FRAMING

- A. Non-Load-Bearing Interior Partitions: Construction or No. 2 grade of any species.
- B. Other Framing: No. 2 grade and any of the following species:
 1. Hem-fir (north); NLGA.
 2. Southern pine; SPIB.
 3. Douglas fir-larch; WCLIB or WWPA.
 4. Mixed southern pine; SPIB.
 5. Spruce-pine-fir; NLGA.
 6. Douglas fir-south; WWPA.
 7. Hem-fir; WCLIB or WWPA.
 8. Douglas fir-larch (north); NLGA.
 9. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 1. Blocking.
 2. Nailers.
 3. Rooftop equipment bases and support curbs.
 4. Cants.
 5. Furring.
 6. Grounds.
 7. Utility shelving.
- B. For items of dimension lumber size, provide Construction or No. 2 grade lumber of any species.

2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A or Type 304 stainless steel.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit.
- B. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- C. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Comply with AWP A M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- F. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 1. NES NER-272 for power-driven fasteners.
 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

3.2 SCOPE OF REPAIR

- A. After the existing roofing is removed, the contractor shall inspect the entire roof deck for damaged or rotten decking. The contractor shall also inspect the roof framing in the attic area. Then the contractor shall provide an inventory of material that needs replacement and coordinate a site meeting with the Owner and the Architect, prior to installation of new roofing.
- B. Where new lumber is to replace existing lumber: the new lumber shall match the size, thickness, spacing and strength of the existing lumber. Provide hardware, of type and quantity, to match existing conditions unless directed otherwise.
 1. See attached document, by Saussy Engineering, dated 12/30/14, for report on structural conditions.
- C. The Base Bid shall include the following quantities (and installation) of materials needing replacement:
 1. 2x4 studs 100 lf.
 2. 2x8 rafters 100 lf.
 3. 1x8 decking 200 lf.

- D. See Unit Prices form for proposed cost of additional materials.
- E. Materials for replacement shall be treated. Contractor shall verify exact size of material to be replaced (new to match existing). Quantity and size of material noted above is for bidding purposes only.

3.3 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 06 1053

SECTION 07 5419 - POLYVINYL-CHLORIDE (PVC) ROOFING**PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Mechanically fastened polyvinyl-chloride (PVC) roofing system.
2. Roof insulation.

1.2 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

1.3 INSTALLATION MEETINGS & INSPECTIONS

- A. Preinstallation Roofing Conference: Contractor to coordinate meeting at Project site. Those to attend: Roofing Manufacturer's Representative, Owner's Representative, Contractor, Roof Installer and Architect.
- B. Preinstallation, mid-term, and final inspection will be conducted by Manufacturer's certified inspector and be pre-scheduled to include the roofing installer, architect and owner representative.
- C. Owner may observe and document work in progress at any time and without notice

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Installer Qualifications.
- C. Acceptance Certification.
- D. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, etc, as specific to this project. Details shall be manufacturer's standard details, and, job specific details to address any unique conditions.
- E. Samples for Verification: Sheet roofing, of color required.
- F. Roof manufacturers pull test form, and results of pull tests.

1.5 INFORMATIONAL SUBMITTALS

- A. Research/Evaluation Reports: For components of roofing system, from ICC-ES.
- B. Sample Warranties: For manufacturer's special warranties.
- C. The manufacturer shall design and provide method of roof securement, in the field and at the perimeter, for the roof system (including roofing, recovery board and edge securement), based on wind speed parameters:
 - 1. 135 mph winds, 3 sec gusts, exposure category 'C', ultimate design wind speed. (135 mph defined by City of Savannah).
 - 2. Design shall be based on code requirements, including but not limited to the latest versions of ES-1, IBC, NRCA, SMACNA and ASCE 7.
- D. Manufacturer to provide stamped certification of ES-1 approved edge trim.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. A qualified firm that has been operating under the same company name for at least the last 5 years.
 - 2. A qualified firm that is a top tier installer that is currently approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
 - 3. The Installer shall be approved, authorized, or licensed by the roofing system manufacturer for a period of at least: the past five (5) consecutive years.
 - 4. The installer shall provide certificate of insurance, liability: \$1 million dollars.
 - 5. The Installer's Place of Business shall be located within the State of Georgia, not more than 150 miles from the Project Site.
 - 6. The Installer shall submit three (3) references of similar projects (type and size) that were completed within the last 5 years.
 - 7. Roofing contractor's foreman or supervisor must be trained and certified by roofing manufacturer for the specific type of roofing used on the project and must remain on site during installation.
- B. Existing Conditions:
 - 1. The Installer shall conduct work in a manner that does not damage the existing masonry walls and other existing conditions to remain.

2. The Installer shall visit the site and inspect the roof prior to submission of bid. No change orders shall be approved for existing conditions that are readily visible.
3. Roofing details provided in construction documents are provided by, and have been reviewed by the roof manufacturer. However these details are for reference only. After award of contract, the Installer shall re-inspect the existing, and hidden, conditions before start of work, and review those conditions with the manufacturer. Contractor shall submit all details, as recommended by manufacturer, for approval.

1.8 GENERAL REQUIREMENTS

1. All submittals, deviations from original specifications or value engineering changes shall be presented to owner's representative for approval prior to installation.
2. Shop drawings, standard details and installation shall be in compliance with roofing manufacturers recommendations to ensure warranties.
3. A roof plan is provided in the construction drawings for reference only. The quantity of work (materials, etc) shall be based on field (on site) measurements by the contractor, and shall not be based on scaled measurements of the drawings.
4. Roof edge securement shall comply with ES-1, IBC (latest version), NRCA and SMACNA (latest versions) and per ASCE 7 (latest version).
5. All installations must conform to applicable federal, state, and local codes.

1.9 WARRANTY

1. Warranty: "No Dollar Limit", from date of Substantial Completion.
 - a. Warranty period: 20 year (system).
 - b. Warranty shall include material and labor to ensure a weather tight condition at all penetrations, curbs, drains, internal drain hubs, metal flashings, etc, from edge to edge of the roof.
2. Warranty shall be provided by roof installer for two (2) years from the date of completion assuring that the roof system is free of leaks caused by poor workmanship.
3. Although the roof system shall be designed for high wind, the warranty shall cover wind speeds of 60 mph or less.

PART 2 - PRODUCTS**2.1 MANUFACTURERS**

- A. Source Limitations: Obtain all associated roofing components, including but not limited to: insulation, edge treatments, flashing, accessories, fasteners, etc, from the manufacturer of the roofing membrane.
- B. Sika Sarnafil, 60 mil, textured, S327 bareback, mechanically attached (over new 1/2" recovery board (per roof mfr) over existing solid wood deck), gray color (membrane and all flashing), textured product at all areas.
- C. Requests for substitution, subject to review and approval, shall meet these specifications.

2.2 PERFORMANCE REQUIREMENTS

- A. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
- B. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.
- C. Roofing System Design: Tested by a qualified testing agency to resist wind uplift pressures.
- D. Energy Star Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.

2.3 PVC ROOFING

- A. PVC Sheet: ASTM D 4434, Type III, internally reinforced.
 - 1. Thickness: 60 mil minimum thickness, no variation allowed, may be thicker than stipulated. Thickness excludes fleece back if provided. Thickness as required to achieve warranties.
 - 2. Exposed Face Color: light gray (energy star listed).

2.4 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.
 - 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.

- C. PVC-coated, heat-weldable sheet metal capable of being formed into a variety of shapes and profiles, 24 gauge, G90 galvanized metal sheet with a 20 mil membrane laminated on one side.
- D. Bonding Adhesive: Manufacturer's standard.
- E. Slip Sheet: (if required by manufacturer) manufacturer's standard, of thickness required for application.
- F. Walk way pads: as recommended by roof mfr: a polyester reinforced, 96 mil, weldable membrane with surface embossment similar to a chevron pattern. Used as a protection layer from rooftop traffic.
- G. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roofing to substrate, and acceptable to roofing system manufacturer.
- H. Miscellaneous Accessories: Provide termination bars, battens, pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, lap sealants, termination reglets, and other accessories.

2.5 ROOF INSULATION

- A. Insulation board to serve as a recovery board.
- B. 25 psi rigid polyisocyanurate insulation board.

2.6 INSULATION ACCESSORIES

- A. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

PART 3 - EXECUTION

3.1 ROOFING INSTALLATION, GENERAL

- A. Remove all existing roofing and flashing down to existing substrates (wood deck, masonry) inspect wood deck for rotten wood. Coordinate inspection with Architect and Owner.
 - 1. See spec sections "Misc Rough Carpentry" and "Unit Prices" for parameters on this work.
- B. Install roofing system according to roofing system manufacturer's written instructions. Installation shall conform to applicable federal, state and local codes.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

- D. Installer shall perform the work in such a manner that a weather-tight condition is reestablished at the end of every work day.

3.2 SAFETY

- A. All work shall be performed in a safe manner that protects people and property from damage. Work shall be performed in accordance with all applicable safety regulations including but not limited to OSHA safety standards.
- B. The contractor shall prepare a written safety plan, communicate the plan with all workers and site staff, and coordinate the plan with the schedule and the work.

3.3 INSULATION INSTALLATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Mechanically Fastened Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
 - 1. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.
- C. Install slip sheet over insulation and immediately beneath roofing.

3.4 MECHANICALLY FASTENED ROOFING INSTALLATION

- A. Mechanically fasten roofing over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing and allow to relax before retaining.
 - 1. Install sheet according to ASTM D 5082.
- B. Accurately align roofing, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- C. Mechanically fasten or adhere roofing securely at terminations, penetrations, and perimeter of roofing.
- D. Perform pull-tests as recommended by roofing manufacturer to confirm that the substrate will provide the required resistance to wind uplift. Use manufacturers standard pull test form.
- E. Apply roofing with side laps shingled with slope of roof deck where possible.
- F. In-Seam Attachment: Secure one edge of PVC sheet using fastening plates or metal battens centered within seam, and mechanically fasten PVC sheet to roof deck.
- G. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity.
2. Verify field strength of seams a minimum of twice daily, or as otherwise required by the roof manufacturer, and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roofing that do not comply with requirements.

3.5 FLASHING AND ACCESSORY INSTALLATION

- A. Remove existing flashing and prepare the surface for new flashing. Provide polyurethane slip sheet, or other product recommended by roofing manufacturer, to separate any remaining asphalt residue, or other deleterious mastics, from the new roofing and flashing products.
- B. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.
- C. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
- D. Flash penetrations, and inside and outside corners, with premanufactured flashings, provided by roofing manufacturer.
- E. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- F. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.
- G. All curbs and wall flashings shall be minimum 8" height from finished roof surface. Contractor shall inspect all roof equipment, then raise, install curb extensions, and reinstall with flashing as recommended by roof manufacturer.
- H. All flashings shall be installed in a manner to be accessible for future repairs. Wall terminations should be designed to accommodate future re-roofs
- I. Rooftop equipment penetrations (wires, refrigerant lines etc.) into building shall be exterior to the unit and installed through a pitch pan or other approved method as to be included in roof manufacturer's warranty. Contractor shall inspect all roof equipment, then rework/extend wires, refrigerant lines, etc to comply with notes above.
- J. All roof penetrations and curb details must be approved by roof manufacturer as to be included in warranty. Coordination of mechanical and roofing details & applications must occur to obtain proper seal of roof and ductwork. All curbs must be set level.

3.6 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.
- D. Roof shall be free of construction debris, clean and in a “new” condition as to achieve maximum reflectivity upon completion. Roof shall be washed (at contractor’s expense) if deemed necessary by owner upon completion.
- E. Contractor shall be held liable for roof damage caused by roofers or other trades during construction phase or post construction during the correction of non-compliant work. Owner reserves the right to reject entire *or* sections of roof due to physical damage, spills, and metal filings from saw cutting or unprofessional workmanship at Owner’s discretion. Owner reserves the right to reject poor workmanship or damage regardless of manufacturer’s acceptance for weather-tightness warranty

END OF SECTION 07 54 19

SECTION 09 2216 - NON-STRUCTURAL METAL FRAMING**PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Non-load-bearing steel framing systems for interior partitions.
2. Suspension systems for interior ceilings and soffits.

1.2 ACTION SUBMITTALS**A. Product Data:** For each type of product.**PART 2 - PRODUCTS****2.1 FRAMING SYSTEMS****A. Framing Members, General:** Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.

B. Studs and Runners: ASTM C 645.

1. Steel Studs and Runners:
 - a. Minimum Base-Metal Thickness: as required by performance requirements for horizontal deflection.
 - b. Depth: as indicated on Drawings.

2.2 INTERIOR SUSPENSION SYSTEMS**A. Tie Wire:** ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch diameter wire, or double strand of 0.048-inch diameter wire.**B. Hanger Attachments to Concrete:**

1. As recommended by manufacturer, not limited to the following two options:
2. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488/E 488M conducted by a qualified testing agency.

3. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.
- C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.

2.3 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754.
 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.
- C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- D. Install bracing at terminations in assemblies.

3.2 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.

1. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs. Install two studs at each jamb unless otherwise indicated.
 2. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
 3. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.
- E. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.3 INSTALLING SUSPENSION SYSTEMS

- A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- C. Suspend hangers from building structure as follows:
1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 4. Do not attach hangers to steel roof deck.
 5. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 6. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 7. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Seismic Bracing: Sway-brace suspension systems as recommended by manufacturer for seismic design Category C.
- E. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 09 2216

SECTION 09 2900 - GYPSUM BOARD**PART 1 - GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Interior gypsum board.

1.2 ACTION SUBMITTALS**A. Product Data:** For each type of product.**PART 2 - PRODUCTS****2.1 PERFORMANCE REQUIREMENTS**

- A. The scope of work does not include the creation or modification of any fire rated assemblies. The Contractor shall notify the Architect if there is a need to create or modify any fire rated assemblies.

2.2 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

- A. Type and thicknesses as indicated in construction drawings.
- B. Gypsum Wallboard: ASTM C 1396.
- C. Gypsum Ceiling Board: ASTM C 1396.
- D. Mold-Resistant Gypsum Board: ASTM C 1396. With moisture- and mold-resistant core and paper surfaces.
 1. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
 2. Install in toilet rooms.

2.4 TRIM ACCESSORIES**A. Interior Trim: ASTM C 1047.**

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet. Shapes as indicated on construction drawings, or otherwise recommended by manufacturer

2.5 JOINT TREATMENT MATERIALS**A. General: Comply with ASTM C 475.****B. Joint Tape:**

1. Interior Gypsum Board: Paper.

C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Use compound as recommended by manufacturer.

2.6 AUXILIARY MATERIALS**A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.****B. Steel Drill Screws: ASTM C 1002 unless otherwise indicated.****PART 3 - EXECUTION****3.1 APPLYING AND FINISHING PANELS****A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.****B. Comply with ASTM C 840.****C. For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.****D. Prefill open joints and damaged surface areas.****E. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.****F. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:**

1. Level 1: concealed areas.
2. Level 4: exposed areas.

3.2 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 09 2900



SAUSSY ENGINEERING

400 Johnny Mercer Boulevard, Suite E
P.O. Box 30597
Savannah, Georgia 31410

Phone: (912) 898-8255
Fax: (912) 898-1882

Page 1 of 4

December 30, 2014

Chatham County Facilities Maintenance and Operations
133 Montgomery Street, Rm 507
Savannah, GA 31401

Attn: Jerrell McRell
Superintendent

Re: Investigation at Civil Rights Museum
Project No. 14152

Dear Jerrell:

As requested, I reviewed several issues with you this morning at the above referenced location. The following documents our findings and discussions:

1. We reviewed an area in the roof framing at the northwest corner of the elevator where water has damaged the timber roof decking and a timber beam. See Photos 1, 2, and 3. It is our understanding that the building is to be reroofed which would include removal of all of the existing roofing down to the existing decking. At that time, the water damaged (rotted) roof decking at this location should be removed and replaced with pressure treated decking of equal size. Additionally, one side of a double member for approximately a 3' long section has been severely water damaged and should be removed and replaced. The new timber should be pressure treated and be of equal size as the original beam. It should be nailed to the adjacent remaining beam with a pair of 16d nails spaced 3" apart at 6" O.C. horizontally. Provide 2x4 studs at 12" O.C. below the double member to the attic level support below similar to the adjacent existing studs in order to provide additional support to the damaged member. Some shoring of existing beams which frame into the damaged member may be necessary and should be implemented during this correction.
2. We reviewed a location in the 3rd floor bathroom where it appears that the floor drain is weakly supported. We reviewed the framing from below at the second floor level at this location and observed that the problem may stem from inadequate support for the piping. There does not appear to be any damage to the framing in this area.
3. We recommended that during the reroofing operation any water damaged decking should be removed and replaced in addition to the area mentioned in item 1 above. The timber framing in any of these areas supporting this decking should be observed for any damage. If any damage is noted, it should be brought to our attention so that we may have an opportunity to review and make recommendations regarding said damage.
4. A condition was noted on the southeast side of the elevator shaft within the attic space where an existing timber beam which spans east-west has been severely notched at the lower section of the beam. We recommend that a double 2x4 stud be added on the east side of the beam at the face of the notch to provide additional strength to the beam. (Refer to Photo 4.)



SAUSSY ENGINEERING

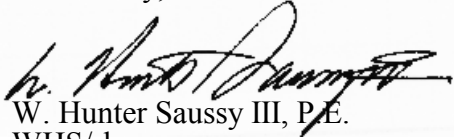
400 Johnny Mercer Boulevard, Suite E
P.O. Box 30597
Savannah, Georgia 31410

Phone: (912) 898-8255
Fax: (912) 898-1882

Page 2 of 4

It has been our pleasure to conduct this review and if we can be of any additional assistance, please do not hesitate to contact me.

Yours truly,



W. Hunter Saussy III, P.E.
WHS/rlm



SAUSSY ENGINEERING

400 Johnny Mercer Boulevard, Suite E
P.O. Box 30597
Savannah, Georgia 31410

Phone: (912) 898-8255
Fax: (912) 898-1882

Page 3 of 4



Photo 1



Photo 2



SAUSSY ENGINEERING

400 Johnny Mercer Boulevard, Suite E
P.O. Box 30597
Savannah, Georgia 31410

Phone: (912) 898-8255
Fax: (912) 898-1882

Page 4 of 4



Photo 3



Photo 4