DAG Architects

Addendum No.5

Addendum No. 5

Date: 04/14/2026

Project: Pam Bay Gymatorium

DAG Project #: 22019

1A-1 General

1. The following changes and/or additions to the plans and specifications are hereby made part of same and are incorporated in full as part of the Contract documents.
2. Please note that there is an existing single ply roof membrane over the existing exterior breezeway that will need to be removed prior to the installation of the new PVC roof membrane over a ½" protection board and tapered rigid roof insulation. Please include the demolition and removal in your base bid.
3. Material Safety Data Forms are required to be submitted by the Contractor when they are acquiring supplies that are identified as hazardous materials as required by th State of Florida. (See attached)

1A-2 Specifications

1. Revised Specification Section 07 54 19 – Polyvinyl Chloride (PVC) Roofing
2. Audio Visual Systems Specification
3. Please add / include the following to the front-end documents that were issued in Addendum no. 1: (See Attached)

- Drug Free Workplace Certification
- Public Entity Crimes Statement
- Labor and Material Payment Bond
- Performance Bond
- Building Permit
- Material Safety Data Form

1A-3 Drawings / Cut Sheets

1. Sheet A100.A Alternate Site Plan (showing extent of Construction Gates and Fencing (Price Accordingly)

1A-4 Answers & Clarifications to Bidder Questions & Comments

455 Harrison Avenue
Suite I
Panama City, Florida 32401
850.387.1671
AR0017640
DAGarchitects.com

1. Will Palm Bay be responsible for Temp. Water and Electric during Construction? Response: Palm Bay will pick this up.
2. The fall protection Membrane added to the roof insulation – does this need to be included throughout the lower are at the front as well? Detail A1/A312. Response: No. Only in the gym where it is exposed.
3. Please provide Intercom System Allowance. Response: See attached Project Proposal / Allowance of $42,550.00 for the Intercom System by JSC Systems dated April 14, 2026.
4. Please provide Security Cameras and Access Controls Allowance. Response: Please provide and allowance of $125,000.00 for 15 Security cameras and Access controls on 8 Gym doors.

AUDIO – VISUAL SYSTEMS

PART 1 GENERAL

1. RELATED SECTIONS

(A) The Drawings, General, Special and Supplementary Conditions of the Contract to the Work of this Section.

(B) All project construction documents correspond to this Section.

(C) The Specification Sections of other disciplines correspond to this Section, insofar as contractor coordination and the requirements for interconnection with the work of other contractors are required, and insofar as they apply.

(D) Division 16000 – Electrical Systems

2. SYSTEM DESCRIPTION

(A) Audio Reinforcement System consists of loudspeakers, digital audio processing platform, equipment cabinet, cabling, rigging materials, and wiring.

(B) The video system consists of a motorized, tab-tensioned screen, laser lamp projector, video processor, wireless appliance, controller, cabling, rigging materials and programming.

(C) The Stage Lighting system consist of LED spotlights and PAR fixtures, DMX splitter, cabling and DMX control console.

(D) Integration of any owner furnished equipment (OFE), furnishing and installation of specified products, as well as incidental equipment, hardware and cabling required providing complete and fully functional systems. Furnish, deliver, erect, and connect all the material and equipment described herein and in the drawings, and also all other incidental material and tools, transportation, etc. required to make work complete, in accordance with these plans and specifications, as required to leave the system in first class operating condition, excluding those items designated WORK BY OTHERS (WBO) or NOT IN CONTRACT (NIC).

(E) Verify dimensions and conditions at the job site prior to installation, and perform installation in accordance with these specifications, manufacturers' recommendations and all applicable code requirements.

(F) The AV systems include the following major items:

a) Digital audio, control processor and touch panel.
b) Loudspeakers and loudspeaker mounting or support hardware
c) Laser projector, motorized screen, control system, switcher
d) Equipment Racks, Cabinetry, and Furniture
e) Cables, Connectors, Plates, and Wiring
f) Preparation of submittal information
g) Installation in accordance with the contract documents, manufacturer's recommendations, and all applicable code requirements
h) Specific control system programming, training & support
i) Initial tests and adjustments, demonstration for approval, final adjustments and documentation

j) Instruction of operating personnel; provision of manuals
k) Maintenance services; warranty

(G) Provision of system testing, system documentation and instruction of Owner Personnel.

(H) Guarantees and Warranties.

3. REFERENCES

In addition to the references in Division 1, all requirements of the latest published edition, unless otherwise noted, including but not limited to the following, shall apply. In the event of conflict between cited or referenced standards, the more stringent shall govern.

a) National Electric Code (N.E.C).
b) Federal Communications Commission (F.C.C.) Rules and Regulations, Part 76.
c) Society of Cable Television Engineers (S.C.T.E.)
d) Society of Motion Picture and Television Engineers (S M P.T.E.)
e) American Society for Testing Materials (A.S.T.M.)
f) National Cable Television Association (N.C. T. A.)
g) Electronic Industries Association (E.I.A)
h) Telecommunications Industries Association (T. I.A.)
i) “Handbook for Riggers”, 1977 Revised Edition, Newberry, W. G., Calgary, Alberta Canada.
j) “Basic Principles for Suspended Loudspeaker Systems”, Technical Notes Volume 1, Number 14, JBL Professional.
k) Davis, Don and Carolyn, Audio system Engineering, Second Edition, Howard W. Sams and Co., Indianapolis, Indiana, 1986.
l) DOE Standard DOE-STD-1090-99 Hoisting and Rigging

4. SUBMITTALS

(A) Provide shop drawings and record drawings using the following scales:

a) Details – not less than 1/4”=1’-0”
b) Plans – not less than 1/8”=1’-0”

(B) Mark all submittal documents to show the project name, date, Architect, Contractor, Sub-Contractor, and this specification Section number.

(C) Make each specified submittal as a coordinated package complete with all information. Uncoordinated sets will be returned without review.

(D) Cable and Connector Submittal: Submit sample cable with connections and wire labels. Cable sample should be 18” in length. Submit cable/connector assemblies for each type of cable to be used on the project. Manufacturer’s cable jacket ID lettering must be included on the sample cable.

(E) Product Data: Submit manufacturer’s product data sheets for each item of equipment that will be provided as part of this contract. Provide a complete list of proposed equipment broken down by system. Provide a budget summary page listing price by system. Binders shall be 3-ring binders sized to handle materials plus 34% excess. All cut sheets shall be arranged by system type and then by specification number with tabbed dividers between sections. A

table of contents shall appear at the front of the binder.

(F) Submit heat load calculations showing how loads were derived if requested by Owner or Owners Representative.

(G) Custom Software Programming including Graphical User Interface (as required). Provide for approval at least three (3) weeks prior to system commissioning, electronic copies of all custom software. It is the Contractor's responsibility for all custom software programming for the systems they are controlling. Coordination with the Consultant is required for the development of this software.

(H) Provide Panel Fabrication Details including panel engraving schedule to Owner and Consultant prior to ordering panels.

(I) Any technical questions in regards to the proposal/systems shall be submitted in written form to the AV Consultants:

Walthall & Associates, Inc.
200 Swift Creek Drive; Suite G
Cantonment, FL 32533
Electronic mail: chuck@walthall.us
Telephone (850) 478-9002

5. QUALIFICATIONS

(A) Bidder shall be an A/V systems contractor, normally engaged in the full time business of A/V systems installation. Show proof that bidder has been in the communications system installation business for a period of no less than five years and has completed projects of similar size and scope. The Owner and/or Owner's representative reserves the right to reject any bids submitted by firms without sufficient experience in projects of this size, complexity, or any other terms the owner or owner's representative may deem relevant.

(B) No sub-contractor or contract employees will be permitted to perform the contractor's responsibilities as defined herein, unless specifically identified in the bid submission and approved by the Owner and/or Owner's representative. The contractor shall have sole responsibility for the satisfactory execution of the work, even though he may have sub-contracted a portion of the work, or had certain manufacturers install their own products.

(C) The Contractor shall provide resumes of the project coordinator (manager) and lead installer planned to be used for this project. This shall be presented at the presentation of proposal. The Contractor shall maintain the same project manager and lead installer throughout the course entire course of the project. If a personnel change is required the Contractor shall notify the Owner and/or Owner's representative and the General Contractor 30 calendar days prior to the change.

6. QUALITY ASSURANCE

(A) Review architectural, civil, structural, mechanical, electrical, and other project documents relative to this work.

(B) Verify all dimensions on the site.

(C) Coordinate the specified work with all other trades.

(D) Provide all items not indicated on the drawings or mentioned in the specifications that are necessary, required or appropriate for this work to realize complete, stable and safe operation.

(E) Review project documentation and continuously make known any conflicts discovered and provide all items necessary to complete this work to the satisfaction of the Owner and/or Owner's representative without additional expense. In all cases where a device or item or equipment is referred to in singular number or without quantity, each such reference shall apply to as many such devices or items as are required to complete the work.

(F) Provide additional support or positioning members as required for the proper installation and operation of equipment, materials and devices provided as part of this work as approved by the Owner and/or Owner's representative, without additional expense.

(G)Regularly examine all construction, and the work of others, which may affect the work to ensure proper conditions for the equipment and devices before their manufacture, fabrication or installation. Contractor shall be responsible for the proper fitting of the systems, equipment, materials, and devices provided as part of this work.

(H) Promptly notify the Owner and/or Owner's representative of any difficulties that may prevent proper coordination or timely completion of this work. Failure to do so shall constitute acceptance of construction as suitable in all ways to receive this work, except for defects that may develop in the work of others after its execution.

(I) The Systems Contractor shall maintain the same Project Coordinator (Manager) and Field Supervisor throughout the entire project. The Systems Contractor shall provide contact information to the client, AV Consultant, General Contractor and Electrical Contractor, for both parties prior to commencing on-site project work.

(J) Source Limitations: Obtain as many products as possible from a single manufacturer. Obtain each item as a completely newly manufactured unit, including necessary mounting hardware, manuals and accessories.

7. OWNER'S RIGHT TO USE EQUIPMENT

(A) The Owner reserves the right to use equipment, material and services provided as part of this work prior to final acceptance without incurring any obligation to:

a) Accept material and equipment or completed systems until all punch list work is completed and all systems are acceptable.

b) Pay additional cost or charge.

c) Commence the warranty period for any system or device provided as part of the work.

8. PERMITS AND INSPECTIONS

(A) Obtain all required permits and inspections.

(B) Furnish material and workmanship for this work in conformance with all code requirements

(C) Perform all tests required herein, or as may be reasonably required to demonstrate conformance with the specifications.

9. DELIVERY, STORAGE, AND HANDLING

(A) Store equipment and materials safely and securely inside at the job site in a manner that will not interfere with the work of other trades.

(B) Replace all damaged or defective work or material at no additional cost, prior to acceptance.

(C) Check, and if necessary, clean all systems, equipment, devices and components included in the work after acceptance and completion of the work of all other trades.

(D) Store materials in designated areas.

(E) Provide and maintain suitable barriers, guards, fences and signs wherever necessary for the safety of others relative to and/ or for the protection of this work.

(F) Protect all materials and equipment to prevent the entry or adhesion of concrete, plaster, unintended paint, or other damaging debris or materials.

10. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

(A) Submit shop drawings, product data and samples together in one package within thirty (30) days after award of the Contract and prior to ordering equipment.

(B) Submit catalog data sheets, neatly bound with title page, space for submittal stamps, and tabbed dividers between Sections. Provide a complete list of proposed equipment. Provide a summary of pricing broken down by system. Denote all substitutions.

(C) Submit rack layouts indicating the proposed arrangement of mounted equipment including junction boxes and locations of conduit penetrations.

(D) Submit construction details of all custom fabricated items and approved equipment modifications. Include complete parts lists, schematic diagrams, and all dimensions required for proper assembly.

(E) Submit finish schedule indicating proposed color selections and finishes for custom fabricated items, wall plates and custom labels.

(F) Submit mounting and support details for all items mounted overhead, including loudspeakers complete with parts lists and dimensions. Include a full plan view, front elevation and side elevation of each unique item with corresponding support structure and mounting hardware.

(G) Approval of shop drawings or submittal indicates only the acceptance of the manufacturer and quality. Specific requirements, arrangements, and quantities still must comply with the intent of the contract documents as interpreted by the Owner and/or Owner's representative unless specifically approved in writing.

(H) Submittals, which are incomplete, deviate significantly from the requirements of the Contract Documents, or contain numerous errors, will be returned without review for rework.

11. PROJECT RECORD DRAWINGS (As Built Drawings)

(A) Approved shop drawings, updated to accurately document the final conditions of the system installation. Legibly mark to record actual construction:

a) Field changes of dimension and detail.

b) Changes made by Revision Order, Directive or other modifications.

c) Details not in original contract drawings.

d) Any other miscellaneous items installed under this contract. At a minimum, the ends of each line should have the type of termination, coordinate and elevation indicated.

e) Layouts of system devices showing actual device locations.

f) Results of all Field Quality Control Tests in this Section.

12. OPERATION MANUALS

(A) Operation manuals shall include, but not limited to the following sections:

a) Table of Contents.

b) Typed description of system including key features and operational concepts (e.g. remote control features, switching functions, and mixing capabilities).

c) Setup diagrams and typed instructions for use in typical situations as directed by the Owner.

d) Small scale plans showing locations and circuit numbers for all system outlets and receptacles.

e) Single-line block diagrams showing all major components of the systems.

f) Manufacturer's operation manuals for user-operated equipment (tape decks, processors, communication equipment, etc.).

13. MAINTENANCE MANUALS

(A) Provide the owner any maintenance manuals that come packaged with equipment.

14. PROJECT CONDITIONS

(A) If project conditions indicate a need to vary from the Specifications or Drawings, notify the Owner and/or Owner's representative, make recommendations, and proceed with the necessary changes only after receipt of approval from the Owner and/or Owner's representative.

(B) All accessories provided by equipment manufacturer shall retain the property of the owner. Collect, inventory and present to owner after Acceptance Testing.

15. WARRANTY

(A) Provide a one (1) year System Warranty, and the following, at no additional cost to the Owner.

(B) Warranty shall contain the following:

a) Date, project title and number.

b) Contractor's name, address, telephone number and point of contact.

c) Title and number of each as-built document.

d) Signature of contractor, or its authorized representative.

e) Include the name of a contact person for service or maintenance and define the limits of the system warranty.

(C) During the System Warranty period, answer all service calls and requests for information within twenty-four (24) hours. Repair or replace faulty items and correct faulty workmanship on site within twenty-four (24) hours of all service calls.

(D) Conduct all warranty repairs and service at the job site unless in violation of manufacturer's warranty. In the latter event, provide substitute systems, equipment, and/or devices, acceptance to the Owner, for the duration of such off site repairs. Transport warranty materials, parts, and personnel to and from the job site at no additional cost.

(E) For products with manufacturer's warranties lasting more than one (1) year, register warranties in the Owner's name.

16. SUBSTITUTIONS

(A) Denote any substitutions for consideration by the Owner or Owner's representative.

18. BRAND NAMES AND ACCEPTABLE ALTERNATIVES

(B) The brand name(s) and model number(s) mentioned are used in this specification as a measure of quality and performance. Any brand or manufacture of acceptable or better quality and performance than that specified will be considered for acceptance by the Owner and/or Owner's representative at time of Bid. However, the Owner and/or Owner's representative reserves the right to reject and deny any substitution that it may, in it's sole discretion, deem unequal, and the findings in this regard shall be accepted by the bidder as final and binding.

19. OWNER FURNISHED EQUIPMENT (O.F.E.)

(A) Certain equipment may be identified as Owner Furnished (OFE or Existing). This Owner Furnished Equipment may presently be part of the Owner's system, or will be provided by the Owner, and will be delivered to the contractor's off-site construction facility, delivered to the contractor's on-site secured storage area, or installed on site by others, as appropriate, for incorporation into the system.

(B) Clean and inspect the OFE, and notify the Owner and/or Owner's representative of damage or defect and the extent of repair and/or adjustment required to bring the OFE to original specification. Service OFE only if directed by the Owner and/or Owner's representative under the arrangements of a separate contract.

(C) Connect, terminate and properly incorporate OFE into the proper system for its type. Reconnect any equipment disconnected for installation of new equipment. Verify proper operation and control functions as before removal.

20. INSURANCE

(A) Insure materials against theft, vandalism, damage due to the elements, fire, etc., to their full value. Materials and the flawless condition of materials shall remain the responsibility of the contractor until acceptance of the system by the Owner.

(B) Contractor shall be responsible for having in force the following insurance protection, this protection shall also be required for any subcontractors the Contractor may hire. Certificates of insurance shall be provided within five (5) calendar days upon request.

a) Workers Compensation Coverage for all workers

b) General, Automobile and Excess or Umbrella Liability Coverage

c) General Liability Coverage – Occurrence Form Required

d) Business Automobile Liability Coverage

21. WORK BY OTHERS (WBO, BY OTHERS) NOT IN CONTRACT (NIC)

(A) As noted on drawings and in project documentation

22. BEST VALUE ITEMIZED PROPOSAL

(A) As noted elsewhere, the AV contractor shall furnish items meeting or exceeding the specifications, items which are new and of the latest technology.

(B) Each item or system group of items shall be individually priced with the understanding **PALM BAY CHARTER SCHOOL** may select any single or any combination of items as required meeting any budget constraints. Where the contractor chooses, an alternate item or system may be proposed in addition to the items specified.

(C) Award will be based on best value to **PALM BAY CHARTER SCHOOL**, so proposers are required to attach literature as required, on each individual component proposed and may include with each a narrative explaining the merits of the component.

(D) In addition to above, the AV contractor shall include a narrative at the beginning of his proposal describing the Project Approach, personal experience and overall relative value to **PALM BAY CHARTER SCHOOL**. This narrative should not exceed two double-spaced typewritten pages and may include any other points the proposer wishes to include.

PART 2 PRODUCTS

1. GENERAL

(A) All equipment, except OFE, and materials shall be new, latest version at time of bid, and shall conform to applicable UL, CSA, or ANSI provisions. Re-manufactured or "B" stock equipment will not be accepted without prior written consent from the Owner and/or Owner's representative. Evidence of unauthorized re-manufactured, or "B" stock equipment on the project site will be deemed evidence of the contractor's Failure to Perform the Work. Take care during installation to prevent scratches, dents, chips or disfiguration.

(B) Regardless of the length or completeness of the descriptive paragraph herein, each device shall meet all of its published manufacturer's specifications. Verify performance as required.

(C) Asbestos Prohibition: No Asbestos containing materials shall be used under this section. The contractor shall insure that all materials incorporated in the project are Asbestos free unless specifically authorized in writing by the Owner and/or Owner's representative.

(D) All products listed below are listed for sole source information and establishment of the level of quality required by this project. Refer to the project drawings to establish quantities.

(E) Install all rack mounted equipment with black steel 10-32, button head machine screws with plastic cup washers protecting equipment panel. Do not over torque, round out, strip or mar screws.

(F) Provide and install an escutcheon ring around all pipes, poles and mounts that penetrate the ceiling. Color to be determined by owner.

(G) Some rack-mounted equipment may require shaft locks, covers, or removal of knobs; provide and install during Acceptance Testing

(H) Provide plastic permanent approved labels at the front and rear of all rack-mounted power amplification and signal processing equipment. Mount labels on the equipment rack or equipment chassis, and attach in a neat, plumb, and permanent manner. Embossed labels will not be accepted. Label equipment with schematic enumeration reference, and with descriptive information regarding its function or area it is serving. Similarly, provide permanent approved labels at the rear only of equipment mounted in furniture consoles.

(I) All engraving shall be 1/8" block lettering unless noted otherwise. On dark panels or pushbuttons, letters shall be white. Letters shall be black on stainless steel, brushed natural aluminum plates or light-colored push buttons.

(J) All accessories provided by equipment manufacturer shall retain the property of the owner. Collect, inventory and present to owner after Acceptance Testing.

(K) Per IEC-268 standard, all XLR connectors not mounted on equipment shall be wired pin 2 hot (high), pin 3 (low), and pin 1 screen (shield).

2. AUDIO SYSTEMS MATERIALS

(A) The materials or description of work in this section is typical for all systems in this section and all following specification sections.

(B) All equipment items required to provide a fully functional system may not be noted or depicted on the schematic diagrams. Confirm your quote includes all required equipment documented in the system drawings and any required equipment not listed or shown. Report any missing or required equipment to the Consultant prior to submitting your quote.

(C) Mounting Hardware exposed to the weather shall be aluminum, brass, and epoxy painted galvanized steel, or stainless steel. Apply corrosion inhibitor to all threaded fittings. AV Contractor can sub the control system programming, training and support from a certified programmer/company.

(D) AUDIO-VISUAL SYSTEM

Reference AV drawings for make, model and quantity of AV components. Notify AV Consultant of any discrepancies prior to submitting bids or shop drawings. Failure to notify does not constitute change order (add) approval.

Verify with system drawings, on-site inspection and requirements to provide a fully functional system(s).

Provide all materials, labor, training and miscellaneous equipment required.

Provide all display mounting devices; wall, ceiling, truss, etc. as required.

Provide proper lensing (T/W) as noted on the schematic and plan drawings to properly fill the screen with no less than 10% +/- tolerance.

Provide all industry standard patch bays, fiber trays, patch cords and fiber link cables as required.

Provide all required network, audio, video, POE, POE+ and control cables as required.

Provide all digital system programming and GUI control design.

3. CABLES AND CONTROL WIRING

(A) All electrical conductors installed under this contract, except where otherwise specified, shall be soft drawn annealed stranded copper having a conductivity of not less than 98% of pure copper and shall be Anaconda, Triangle, General or approved equal for power, and Alpha, Belden, or West Penn for low voltage. Cables in plenum rated ceilings outside conduit shall be similar to those listed above, except plenum rated.

(B) Homerun ALL Loudspeaker Cables, Reinforcement Loudspeaker Cables, Monitor and Foldback Loudspeaker Cables. Cables between loudspeakers interconnect junction boxes and racks to be at least No. 12 AWG jacketed pair equal to West Penn CL3 rated product or as shown on the AV drawings.

(C) Other Loudspeaker Cables to be at least No. 16 AWG jacketed pair equal to West Penn CL3 rated product or as shown on the AV drawings.

(D) Line Level and Microphone Level Cables to be at least No. 22 AWG shielded jacketed pair equal to West Penn CL3-452 or CL3-291 or as shown on the AV drawings.Multi-conductor High Resolution Video Cable shall be manufactured by Extron Electronics or West Penn CDT.

(E) Coaxial Cable for video and RF transport shall be RG-6 quad-shielded with a solid copper center conductor. Any other cable if installed shall be removed and replaced with approved cable at no additional expense to the owner.

(F) Low Voltage Control Cabling to be at least No.18AWG shielded CL3 rated cable, conductor count to be determined by application.

(G) All cables that are not in conduit and are run through plenum rated spaces shall be plenum rated cable of the gauge and conductor count required for the application.

4. ADD OPTIONS

(A) Provide pricing on the following add option for purchasing consideration by the Owner. Ensure pricing includes all necessary components, parts and labor to provide a fully functional system.

N/A

5. DELETE OPTIONS

(A) Provide pricing on the following delete options for purchasing consideration by the Owner. Ensure pricing includes all necessary components, parts and labor to provide a fully functional system.

a) DELETE OPTIONS are at Owner's discretion upon receipt of proposal.

6. FABRICATION

(A) Equipment Racks

a) Pre-assemble and test all racks before delivery to the job site, provide a written report on pre-assembly and test results to Owner/Owner's Representative.

b) Verify the depth of each rack prior to assembly to ensure that mounted equipment will fit completely inside with the front and rear door closed.

7. SOURCE QUALITY CONTROL TESTS

(A) Use the following test equipment meeting the following minimum specifications to perform the Source Quality Control Tests and Field Quality Control Tests. Furnish the same test equipment for the performance of Acceptance Testing.

a) Digital Multimeter

DC to 20 kHz bandwidth
300 V range, 100 mV resolution
10 megohms input impedance
Direct reading of dBm across 600-ohm load
DC resistance to .1 ohm
Dual Trace Oscilloscope *(if required or requested)*
100 MHz bandwidth
1 mV/CM sensitivity
Dual time base capability

b) Sine/Square Wave Generator

5 Hz to 5 kHz bandwidth
Output level of 0 dBm with less than .5% THD

c) Impedance Bridge

Range: 1 ohm to 1 megohm
Three test frequencies, minimum, ranging from 250 Hz to 4 kHz

d) Sound Level Meter

ANSI Type 2 with one-octave filter set

(B) Measurements

a) Measure and record impedances curves for each loudspeaker line entering rack at 1000 Hz.

b) Grounding System tests as described in the Technical Systems Specification.

8. MISCELLANEOUS CONNECTORS

(A) Certain connectors not identified in specific paragraphs, or indicated on the drawings, are specified by generic “type”. At all times, match connector types used in adjacent project areas, including existing audio, television and audiovisual systems.

a) D(*)F - Switchcraft D(*)F or Neutrik NC(*)F
b) D(*)M - Switchcraft D(*)M or Neutrik NC(*)MP
c) TRS-F - Switchcraft 121
d) TRS-M - Switchcraft 280 or Neutrik NP3C-BAG
e) TRS-FJ - Switchcraft 14B or Neutrik NJ3FP6C-BAG
f) S4FC - Neutrik NL4FC
g) S4MP - Neutrik NL4MP
h) BNC - Canare BCJ-R
i) BNCL - Canare BCP-S4
j) BNC-R - Canare BCJ-RU

PART 3 EXECUTION

1. INSTALLATION

(A) Verify existing conditions before starting work.

(B) Execute all work in accordance with Part 1.3 References in this guideline, and with all local and state codes, ordinances, and regulations.

(C) Install equipment according to manufacturer’s recommendations.

(D) Install all rack-mounted equipment with black steel 10-32, button head machine screws, using plastic cup washers to protect equipment panel.

(E) Rack mounted equipment shall be mounted into racks and fully wired and tested, before delivery to job site. *(Does not apply when racks are existing)*

(F) Install flat black blank panels in all unused rack positions. Use no larger then a two space panel.

(G) Ensure that levels and impedances are properly matched between components.

(H) Choose colors and finishes of all exposed and custom fabricated items and labels to blend in with the surroundings as approved by the Owner and/or Owner’s representative.

(I) Firmly and permanently attach electrical boxes, enclosures and permanent equipment to the building. Rigidly mounted equipment and devices shall be level, plumb and square.

a) Set “flush-mounted” units so that the face of the cover, bezel, or escutcheon is in the same plane as the surrounding finished surface.

b) Mount boxes, panels and trim so that there are no gaps, cracks, or obvious lines between the trim and the adjacent finished surface, and ready them to receive final finish, as applicable.

c) Provide access panels where needed to access boxes, panels and enclosures in walls or ceilings, as indicated and dimensioned on the shop drawings.

d) Finish panels to match the surrounding surfaces.

(J) Supports and mounts for equipment to be installed over public areas shall be permanently attached to suitable building structure adequate to support the equipment loads with a safety factor of at least five.

(K) Use attachment hardware with a minimum SAE Grade 5 load rating. Do not use formed eye-bolts or lag screws for support or connection of suspended equipment.

(L) Verify capacity of mounting methods used in the work and associated liabilities. All attachments, attachment points, reinforcement requirements, and hardware selection shall be executed in accordance with the references in PART 1.

2. GROUNDING, SHIELDING AND ISOLATING

(A) Mount and enclose all electrical and electronic equipment in metal enclosures, pedestals or equipment racks.

(B) All junction boxes shall be bonded to the building safety ground.

(C) Use EMT type conduit for all wiring outside of equipment racks except plenum rated wiring above a lay-in ceiling, and outdoor conduits and raceways, where separate insulated ground wiring shall be supplied.

(D) Use flexible conduits and PVC fittings to provide insulated connections of the building electrical raceways to equipment racks. Mount all equipment racks at the job site in a manner that provides electrical isolation from the building structure and electrical raceways.

(E) Electronics racks and cabinets shall be boned to the isolated ground technical power system only. Refer to Section 16770 for coordination and test with the Electrical Contractor.

(F) In the case where a metal equipment cabinet or rack is located on a suspended, concrete or bonded flooring system, the enclosure shall be placed on a Santoprene isolating mat with a minimum thickness of 3/32” and a Durometer of 80A,.

3. WIRING PRACTICES

(A) Where specific instructions are not given, perform all wiring in strict adherence to standard broadcast and sound engineering practices in accordance with the references listed in PART 1.

(B) Group all wiring into the following classifications by power level or signal type:

a) Microphone Level: less than -20 dBm.

b) Line Level Audio and DC Control Circuits: -20 dBm to +30 dBm.

c) Speaker Level: greater than +30 dBm.

d) AC Mains Power Circuits

(C) Separate wiring of differing classifications by at least six (6) inches, wherever possible. Wherever lines of differing classification must come closer together than six (6) inches, cross them perpendicular to each other.

(D) Neatly harness wires together within racks by power level classification using horizontal and vertical wiring supports as required. Rigidly support all wires within 6” of fixed connection points. Leave service loops of sufficient lengths to allow rack hinges or slides to fully extend to facilitate access to rear panel connectors from the front of each rack. Do not use self-adhesive anchor pads for support of cables.

(E) Observe consistent polarity throughout the audio systems as follows:

a) Use only balanced differential inputs throughout all audio systems unless otherwise noted.

b) Use approved transformers where directed to reduce objectionable system noise to acceptable levels.

(F) Exercise care in wiring to avoid damaging the cables and equipment. Use grommets around cutouts and knockouts where conduit or chase nipples are not installed. Use bushings where conduit terminal connections are exposed in or out of junction boxes.

(G) Cut off unused wire ends approximately one-half inch (1/2“) past the wire jacket. Fold them back over the jacket, and secure in place with heat-shrink tubing. In multi-conductor cables, preserve all unused conductors for future use. Failure to do so may result in replacement of cables at the contractor’s expense.

(H) Provide a minimum 6” service loop or enough cable to allow for three (3) subsequent terminations which ever is greater.

(I) All cable jacket exposed stripped ends shall be dressed with the appropriate sized heat shrink.

(J) All drain cables shall be protected from the jacket strip to the point of termination. Exposed bare wire is not acceptable.

(K) Make all connections using rosin-core solder in conjunction with approved mechanical connectors unless other is specified by manufacturer. Connect microphone, control, and line level wiring through approved connectors. Connect speaker level wiring using approved terminal barrier strips. Mount all terminal devices on a non-conductive (electrically) rigid surface. Provide 10% spare terminals at each location. Label each terminal with a unique number.

(L) Make all power amplifier output connections directly into amplifier binding posts, friction fit connectors are not acceptable. In the event the amplifier doesn’t have binding posts, and has barrier strip connections, crimp and solder the appropriate fork lug to the cable and torque screws to manufacturer’s specification.

(M) All fiber optic cable splicing shall utilize the fusion splice method. The maximum allowable loss per fusion splice shall be 0.5 dB.

4. LABELING

(A) Label products in a logical, legible, and permanent manner corresponding to the Drawings. Wording, format, style, color, and arrangement of text will be subject to the Owner and/or Owner’s representative’s approval. Submit samples and labeling schedule for approval. Labeling will be verified at final adjustment and equalization

(B) Label all wall plates for input, output, and control receptacles as well as connector mounting plates in all boxes using 1/8” engraved lettering filled with black or contrasting paint, as approved.

(C) Use engraved plastic labels similar to Lamicoid, squarely and permanently attached, to label the following:

a) Patch panel designation strips.

b) Front and back of all rack mounted equipment including controls

c) Barrier strips, terminals, transformers, switches, relays, volume controls, and similar devices.

(D) Label pushbutton switches with engraved lettering filled with contrasting color paint.

(E) Label all permanently installed wires on both ends with approved permanent clip-on type or sleeve type markers. Wrap-around adhesive labels will not be accepted unless completely covered with clear heat shrink tubing.

(F) Label all portable equipment with engraved block letters using initials and/or words. Label all portable cables similarly with printed heat-shrinkable tags located 12 inches from the male connector end. Verify lettering through the Owner and/or Owner's representative prior to engraving or printing.

(G) Label access panels and backboards with designations corresponding to the drawings. Where devices are concealed above access ceilings, provide permanent lamicoid labels, on the ceiling supports corresponding to the drawings in finishes and sizes approved by the Owner and/or Owner's representative.

5. FIELD QUALITY CONTROL TESTS

(A) Maintain a competent supervisor and supporting technical personnel, acceptable to the Owner and/or Owner's representative during the entire installation.

(B) Before connecting any equipment to AC power outlets, measure the AC voltages between hot, neutral, and ground and verify correct voltage and polarity of AC power. Equipment damaged by connecting to improperly wired outlets shall be replaced at no addition cost to the Owner.

(C) Upon completion of the system installation, it shall be the responsibility of the contractor to perform the necessary adjustments and balancing of all signals and amplifier gain, and other level controls to ensure proper system operation. The Owner shall physically inspect the system and/or Owner's representative to assure that all equipment is installed in a neat and workmanlike manner as called for by the plans and specifications.

(D) Determine the proper sequence of energizing systems to minimize the risk of damage.

(E) After successfully energizing the systems, make all preliminary adjustments and document the setting of all controls, parameters of all corrective networks, voltages at key system interconnection points, gains and losses, as applicable.

(F) Verify the performance parameters of the individual systems following established professional procedures, in addition to those specified herein.

(G) Measure and record impedance curves of all loudspeaker lines at amplifier rack terminal barrier strips prior to connecting to amplifier outputs.

(H) Apply a sine-wave sweep signal to each loudspeaker system, sweeping from 50 Hz to 5000 Hz at a sound pressure level which is 10 dB below the loudspeaker's rated electrical input power. Listen for rattles or objectionable noise and correct if apparent.

(I) Using a +4 dBm sine-wave input, set controls of each component to produce a +4 dBm sine-wave output. Under these conditions (unity gain), the presence of any waveform, distortion, interference signals, or oscillations shall be unacceptable.

(J) Check for proper polarity of ceiling mounted loudspeakers by applying music program or pink noise to each system and walking through the transition areas of coverage from one loudspeaker to the next. Transition should be smooth with no apparent shifting of source from one loudspeaker to the next.

(K) Drive each ceiling distributed loudspeaker system with one octave of pink noise centered at 1000 Hz at a sound pressure level which is at least 10 dB above the ambient noise. Adjust power amplifiers to provide uniform distribution of sound throughout the seating areas within a tolerance of ±3 dB. Use an ANSI Type 2 sound level meter set for slow meter damping to take readings at seated ear height.

(L) Individually drive each reinforcement loudspeaker with one octave of pink noise centered at 1000 Hz at a sound pressure level, which is at least 10 dB above the ambient noise. Adjust power amplifiers to provide an equal sound pressure level from each loudspeaker on its aiming axis in the seating area. Use an ANSI Type 2 sound level meter set for slow meter damping to take readings at seated ear height.

(M) Upon completion of initial tests and adjustments, notify the Owner and/or Owner's represen-

tative the system is ready for final equalization and acceptance testing.

6. TEST EQUIPMENT

(A) Provide the following test equipment on site during construction and available to the Owner and/or Owner's representative during final adjustment and acceptance testing:

a) Digital Multi-meter

b) 100 MHz Dual Trace Storage Oscilloscope

c) Video Test Pattern Generator *(XGA, Component, YC and Composite)*

d) Sine/Square Wave Generator

e) Impedance Bridge

f) Sound Level Meter - ANSI Type 2 with one-octave filter set

7. FINAL ADJUSTMENT AND EQUALIZATION

(A) Schedule a time for the Owner and/or Owner's representative to perform the Final Adjustment and Equalization. Notify the Owner and/or Owner's representative and Consultant at least twenty one (21) days in advance.

(B) Furnish project lead installer to assist the Owner and/or Owner's representative during the Final Adjustment and Equalization.

(C) Audio Systems acceptance tests shall employ an approved sound level meter, and spectrum analyzer and digital multi-meter to be provided by the contractor. Measurements shall be made at the combined output of the amplifiers and at selected locations throughout the facility.

(D) Video Systems acceptance tests shall employ and approved video test pattern generator, PC with min. XGA output and a 100MHz dual trace storage oscilloscope. Measurements shall be made at the point of signal origination and compared to signal at the display device. Minimum requirements at the display device shall be a rise time no greater then 7.5ns (5ns preferred) and amplitude of .7 volts.

(E) Record final settings on all equipment and submit with contract closeout documents.

8. CLEAN UP

(A) Remove all unnecessary tools and equipment, unused materials, packing materials, and debris from each area where Work has been completed on a daily basis unless designated for storage.

(B) Clean all areas around system equipment and be sure that the inside of each equipment rack is free of cut wire ends, solder splatters, and other debris.

9. DEMONSTRATIONS AND TRAINING

(A) Furnish a technician who is qualified to operate and maintain the systems specified in this Section to instruct Owner designated personnel regarding the design features and proper operation of the systems.

(B) If requested by the Owner, furnish the same technician/instructor during the first formal use of each system to further instruct and assist Owner personnel in system operation.

(C) Upon completion of the Work, the Owner and/or Owner's representative may elect to verify test data as part of the acceptance procedure. Provide personnel and equipment, at the convenience of the Owner and/or Owner's representative, to reasonably demonstrate system performance and to assist with such tests without additional cost to the Owner and/or Owner's representative.

10. FINAL PROCEDURES

(A) Perform any and all remedial work to correct inadequate performance or unacceptable conditions of, or relating to any of this work, as determined by the Owner and/or Owner's representative, at no additional expense to the Owner and/or Owner's representative.

(B) Furnish all portable and loose equipment to the Owner along with complete documentation of the materials presented. All portable equipment shall be presented in the original manufacturers packing, complete with all included instructions and miscellaneous manuals and documents.

(C) Test Reports and Certificates:

a) Document all acceptance testing, calibration and correction procedures described herein with the following information:

b) Parameters measured and their values, including values measured prior to calibration or correction, as applicable.

c) Parameters associated with calibration or corrective networks, components, or devices.

d) All software shall have certified backups and escrow provisions reviewed with the Owner and/or Owner's representative and equipment supplier.

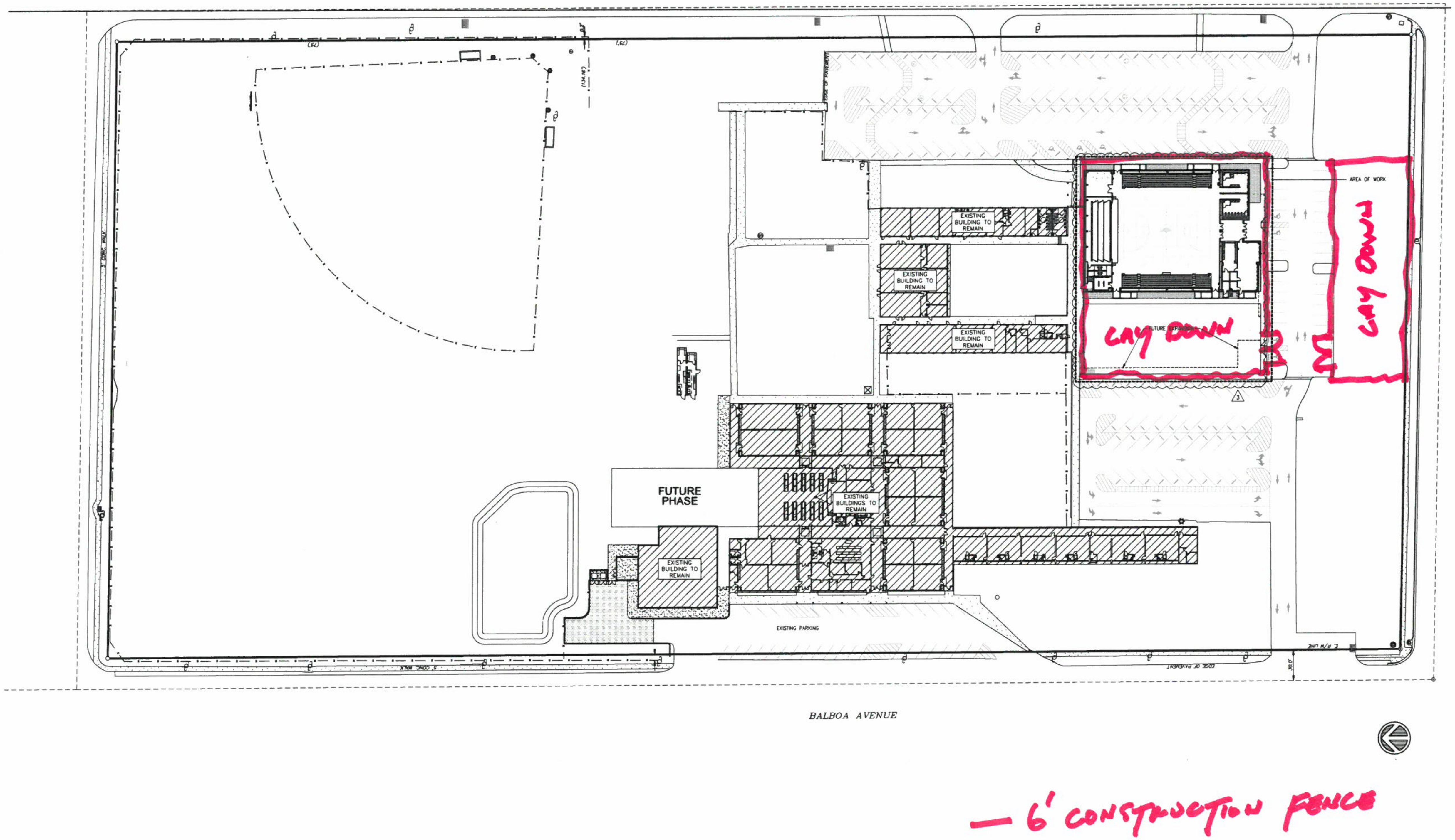
e) Provide all operational software, configuration files, source code, and final settings and adjustment, in Compact Disc format, sleeved in the final documentation binder. The configurations, and source code become the sole property of the owner at project completion

f) A list of all equipment, indicating manufacturer, model number, serial number and equipment location (rack/room number). Update following acceptance testing if modified.

(D) Present, review and clarify all materials to the Owner and/or Owner's representative and/or operating personnel and fully demonstrate the operation and maintenance of the systems, equipment, and devices specified herein.

(E) Check, inspect, and if necessary, adjust all systems, equipment, devices and components specified, at the Owner's convenience, approximately thirty (30) days after the Owner acceptance of this work.

END OF SECTION



A1	SITE PLAN
SCALE: 1" = 40'-0"	

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REVISIONS:

No.	Description	Date
3	ADDENDUM NO. 3	3/27/26

ALTERNATE SITE PLAN

PROJECT NUMBER	22019
DATED	01/31/2025

A100.A

SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Adhered polyvinyl-chloride (PVC) roofing system.

2. Roof insulation.
3. ½ inch (12.7 mm) Coverboard.

B. Related Requirements:

1. [**Section 061000 "Rough Carpentry"** for wood nailers, curbs, and blocking; and for wood-based, structural-use roof deck panels.
2. Section 070150.19 "Preparation for Re-Roofing" for re-cover board beneath new roofing.
3. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
4. Section 077129 "Manufactured Roof Expansion Joints" for proprietary manufactured roof expansion-joint assemblies.
5. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 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.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at **Project site**.

1. Meet with Architect, General Contractor, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.

3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Product Test Reports: For roof materials, documentation indicating that roof materials comply with Solar Reflectance Index requirements.
2. Product Data: For adhesives and sealants, indicating VOC content.
3. Laboratory Test Reports: For adhesives and sealants, indicating compliance with requirements for low-emitting materials.
4. Sourcing of Raw Materials: Corporate sustainability report for each manufacturer.

B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, including:

1. Layout and thickness of insulation.
2. Base flashings and membrane termination details.
3. Flashing details at penetrations.
4. Tapered insulation, including slopes.
5. Tie-in with adjoining roof.

C. Samples for Verification: For the following products:

1. Roof membrane and flashings, of color required.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Manufacturer Certificates: Submit copy of FM Approvals' "RoofNav" listing for insulation and roof system component fasteners.

C. Product Test Reports: For components of roofing system, for tests performed by manufacturer and witnessed by a qualified testing agency.

D. Research/Evaluation Reports: For components of roofing system, from ICC-ES.

E. Field quality-control reports.

F. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

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

B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is **FM Global approved** for roofing system identical to that used for this Project.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

A. Manufacturer's System Guarantee: Provide manufacturer's standard system guarantee with single-source coverage and no monetary limitation, where manufacturer agrees to repair or

replace components in roofing system that cause a leak due to failure in materials and workmanship.

1. Warranty Period: **20** years from date of Substantial Completion.

B. Standard Guarantee: Provide manufacturer's standard guarantee with single-source edge-to-edge coverage and no monetary limitation, where manufacturer agrees to repair or replace components in roofing system that cause leak due to a failure in materials or workmanship.

1. Guarantee Duration: **20** years from date of Substantial Completion.

C. Reflectivity Limited Warranty: Provide limited warranty to original building Owner, that white roof membrane will meet or exceed the initial and "aged" ENERGY STAR reflectivity requirements for low slope roofing membranes (60 percent initial, 50 percent aged) when installed and maintained in accordance with manufacturer's written requirements. The aged reflectivity shall meet or exceed requirements when measured after cleaning the membrane in accordance with manufacturer's written instructions.

D. Material Warranty: Provide manufacturer’s standard prorated material warranty, where manufacturer agrees to repair or replace portion of roofing materials that have resulted in a leak due to manufacturing defect or defects caused by ordinary wear and tear.

1. Warranty Period: **20** from date of Substantial Completion.

2. Windspeed warranty 120 mph while meeting intent of uplift of a 170 mph.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Wind-Uplift Resistance: Design roofing system to resist the following wind-uplift pressures when tested according to FM Approvals 4474, UL 580, or UL 1897:

1. Zones – Refer to structural drawings for roof zones. (See S001, 01/31/25)

D. FM Approvals' "RoofNav" Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450, and shall be listed in FM Approvals' "RoofNav." Identify materials with FM Approvals Certification markings.

1. Fire/Windstorm Classification: **Class 1A-120**.

E. Solar Reflectance Index (SRI): Three-year-aged SRI, not less than **64** or initial SRI not less than **82** when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.

F. Exterior Fire-Test Exposure: UL 790, **Class A**; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

2.2 PVC ROOFING

A. PVC Sheet: ASTM D 4434/D 4434M, Type II, fiberglass reinforced membrane.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Sika Sarnafil 60 mil minimum PVC membrane or a comparable product by one of the following:

Contact for Sika Sarnafil:
Mike Tate, Technical Sales Representative
Mobile: (850) 528-6442
E-mail: tate.mike@us.sika.com

a. Seaman Corporation – Fibertite 60 mil minimum

b. Duralast 60 mil minimum

2. Thickness: **60 mils (1.5 mm), minimum while no nominal sheets will be allowed.**
3. Exposed Face Color: **White**.

2.3 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.

1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
2. Adhesives and sealants shall comply with the following limits for VOC content:

a. Gypsum Board and Panel Adhesives: 50 g/L.
b. Multipurpose Construction Adhesives: 70 g/L.
c. Fiberglass Adhesives: 80 g/L.
d. Contact Adhesives: 80 g/L.
e. PVC Welding Compounds: 510 g/L.
f. Other Adhesives: 250 g/L.
g. Single-Ply Roof Membrane Sealants: 450 g/L.
h. Nonmembrane Roof Sealants: 300 g/L.

B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.

C. Bonding Adhesive: Manufacturer's standard **, water based**. Sika Roofing 2121 waterbased adhesive for membrane attachment. Sika Roofing 2170 solvent based adhesive for flashing details

D. Sheet Flashing: Manufacturer's standard unreinforced PVC sheet flashing, **60 mils** thick, minimum, of same color as PVC sheet.

E. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

F. Roof Vents: As recommended by roof membrane manufacturer.

1. Size: Not less than 4-inch (100-mm) diameter.

G. Metal Termination Bars: Manufacturer's standard, predrilled Sarnastop with anchors.

1. Fasteners: OMG or Trufast Number 14 screw for termination

H. 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.

I. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.4 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured[**or approved**] by PVC roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated[**and that produce FM Global-approved roof insulation**].

B. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of **1/4 inch per 12 inches (1:48)** unless otherwise indicated.

C. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain or edge. Fabricate to slopes indicated.

2.5 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with roofing.

B. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:

1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive. Two part urethane adhesive Sarnacol AD or OM.

C. Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, **½ inch (12.7 mm)** thick.

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

a. Georgia-Pacific Building Products.

b. United States Gypsum Company.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:

1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
3. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
4. Verify that concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity is not more than **75** percent, or as recommended by roofing system manufacturer, when tested according to ASTM F 2170.

a. Test Frequency: One test probe per each [**1000 sq. ft. (93 sq. m)**] <**Insert area**>, or portion thereof, of roof deck, with not less than three tests probes.
b. Submit test reports within 24 hours after performing tests.

5. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.
6. Verify that joints in precast concrete roof decks have been grouted flush with top of concrete.
7. Verify that minimum curing period recommended by roofing system manufacturer for lightweight insulating concrete roof decks has passed.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 ROOFING INSTALLATION, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' "RoofNav" assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

B. 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.

C. Install roofing and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition **and to not void warranty for existing roofing system**.

3.4 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. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Installation over Concrete Decks:

1. Install base layer of insulation with **joints staggered not less than 24 inches (610 mm) in adjacent rows**. Adhered Insulation boards dimensions can not be more than a 4’ x 4’.

    a. Where installing twenty psi organic facer ISO direct to concrete and ½ inch Gyp board.
    b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    c. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.

    d. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
    e. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
    f. Adhere base layer of insulation to **concrete roof deck** according to FM Approvals' "RoofNav" assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

1) Set insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place. Achieve a ¼ per inch slope with tapered.

2. Install upper layers of insulation **and tapered insulation** with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.

a. Staggered end joints within each layer not less than 24 inches (305 mm) in adjacent rows.
b. Install with long joints continuous and with end joints staggered not less than 12 inches (305 mm) in adjacent rows.
c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
d. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.

e. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
f. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
g. Adhere with Sarnacol AD or OM urethane adhesive each layer of insulation to substrate using adhesive according to FM Approvals' "RoofNav" assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:
1) Set each layer of insulation and gyp board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

3.5 ADHERED ROOFING INSTALLATION

A. Adhere roofing over area to receive roofing according to roofing system manufacturer's written instructions.

B. Start installation of roofing in presence of roofing system manufacturer's technical personnel.

C. Accurately align roofing, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

D. Bonding Adhesive: Apply to substrate and underside of roofing at rate required by manufacturer before installing roofing. Do not apply to splice area of roofing.

E. In addition to adhering, mechanically fasten roofing securely at terminations, penetrations, and perimeter of roofing.

F. 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. Apply lap sealant to seal cut edges of sheet.

2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roofing that do not comply with requirements.

3.6 BASE FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rateDo not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. 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.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.7 FIELD QUALITY CONTROL

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

B. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

C. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.8 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.

3.9 ROOFING INSTALLER'S WARRANTY

A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner: <**Insert name of Owner**>.
2. Address: <**Insert address**>.
3. Building Name/Type: <**Insert information**>.
4. Address: <**Insert address**>.
5. Area of Work: <**Insert information**>.
6. Acceptance Date: _____.
7. Warranty Period: <**Insert time**>.
8. Expiration Date: _____.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:

   a. lightning;
   b. peak gust wind speed exceeding <**120 mph (m/sec)**>;
   c. fire;
   d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
   e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
   f. vapor condensation on bottom of roofing; and
   g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.

2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent

said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

END OF SECTION 075419