PROJECT MANUAL

PORTIONS OF THESE ARCHITECTURAL AND ENGINEERING DRAWINGS CONTAIN OPERATIONAL SPECIFICS OF SECURITY INFRASTRUCTURE AND SYSTEMS WHICH ARE *CONFIDENTIAL* AND SHOULD NOT BE PUBLICLY DISCLOSED AS PERMITTED BY C.G.S. § 1 - 210.

ANTINOZZI ASSOCIATES
ARCHITECTURE + INTERIORS

22067

SHERMAN SCHOOL RENOVATION PROJECT /
SHERMAN SCHOOL CENTRAL ADMINISTRATION PROJECT

State Project No. 127-0009RNV /
State Project No. 127-0010BE/RNV
2 Route 37 East
Sherman, Connecticut

June 16 2026
PROJECT MANUAL

TECHNOLOGY

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DOCUMENT 001113 - ADVERTISEMENT FOR BIDS

1.1 PROJECT INFORMATION

A. Notice to Bidders: Qualified Bidders to submit bids for Project as described in this Document and in accordance with the Instructions to Bidders.

B. Project Identification: Sherman School Renovation Project / Sherman Central Office Project.

1. Project Location: Sherman School, 2 Route 37 East, Sherman, Connecticut 06478.

C. Owner: Town of Sherman / Sherman Board of Education.

1. Owner's Representatives:

a. Kerry Merkel, Chairperson, Sherman School Building Committee.
b. Tim Laughlin, Sherman Board of Education.
c. Jake Siciliano, Technology Director

D. Architect: Antinozzi Associated, PC.

E. Technology Consultant: D'Agostino & Associates.

F. Construction Manager: Newfield Construction.

G. Project Description: Project consists of Technology for the Sherman School Renovation project and the Sherman Central Offices.

H. Construction Contract: Bids will be received for applicable sections of the Contract Drawings and Project Manual for the following Work:

1. Technology items listed under Section 003040 "Category Bid Summary, Technology".

1.2 BID SUBMITTAL AND OPENING

A. Bid Submittal, Printed: Owner will receive sealed Lump Sum bids until the Bid time and date at the location indicated below. Owner will consider bids prepared in compliance with the Instructions to Bidders and delivered as follows:

1. Bid Due Date: **September 21, 2026**.
2. Bid Time: **2:00 p.m.**, local time.
3. Location: Sherman School Temporary Main Office, 2 CT 37 East, Sherman, Connecticut, 06478.
4. Bids will be thereafter publicly opened and read aloud.

1.3 REQEUSTS FOR INFORMATION

A. Bidders may submit questions regarding the request for proposal to Jake Siciliano, Technology Director, by email at mail at sicilianoj@shermanschool.com. The Request for Information (RFI) period ends on Friday, **September 14, 2026** at2:00pm.

1.4 BID SECURITY

A. Submit bid security with each Bid in the stipulated form and in the amount identified in the Instructions to Bidders.

1.5 BIDDING DOCUMENTS

A. Bidding Documents, Electronic: Electronic versions of Bidding Documents can be obtained at https://www.drivehq.com/file/df.aspx/publish/architects/22067_Sherman-School_Tech after **August 24, 2026**. Addenda will be posted at this file sharing site.

B. Bidders are encouraged to register to receive email notifications regarding Bidding Documents. To register, submit contact name, company name, email address and daytime telephone number to MLoSasso@Antinozzi.com by email.

1.6 TIME OF COMPLETION

A. By submitting a Bid, Bidder represents that Bidder will begin the Work on receipt of the Notice to Proceed and will complete the Work within the Contract Time indicated in the Bidding Documents.

1.7 BIDDER'S QUALIFICATIONS

A. Licenses: Bidders must be properly licensed under the laws governing their respective trades.

B. Insurance and Bonds: A Performance Bond, separate Labor and Material Payment Bond, and insurance in a form acceptable to Owner will be required of the successful Bidder.

C. Vendor's Qualification Statement: A completed Section 004110, "Statement of Vendor Qualifications," with all exhibits is required to be submitted with the Bid.

1.8 NOTIFICATION

A. This Advertisement for Bids document is issued by Andrea Maloney. Treasure, Town of Sherman.

END OF DOCUMENT 001113

LEGAL NOTICE – ADVERTISEMENT FOR BID

TOWN OF SHERMAN
Request for Proposal

SHERMAN SCHOOL RENOVATION / SHERMAN SCHOOL CENTRAL ADMINISTRATION: TECHNOLOGY

RFP #2026-03

The Town of Sherman (hereafter referred to as "the Town") is soliciting a Request for Proposals for Technology at the renovated Sherman School, and Sherman School Central Administration Offices located at 2 Route 37 East in Sherman, CT. **For more information, see the full RFP and drawings on our Town website:** https://www.shermanct.gov/bids-rfps.

Responses to this RFP shall be submitted to Jake Siciliano, Technology Director, Sherman School, Temporary Main Office, 2 CT 37 East, Sherman, CT 06478. Bids are due not later than September 21, 2026**,** at 2:00pm. **Bidders are required to submit one (1) original with two (2) copies of their proposal with the required bid forms, in a sealed envelope, clearly marked: RFP# 2026-03 Sherman School Technology.**

No oral, telephonic, emailed, or faxed responses shall be considered. No oral, telephonic, emailed, or faxed corrections, deletions, or additions to any response shall be accepted. The Town reserves the right to reject any or all responses, and to waive any or all formalities in connection with this request. Any proposals received after the above scheduled due date and time shall not be accepted or considered but rejected. The Town reserves the right to reject any or all proposals if it deems such to be in the best interest of the Town of Sherman. Questions regarding this Request for Proposal should be directed to Andrea Maloney, Treasurer, by e-mail at amaloney@shermanct.gov. The Request for Information (RFI) period ends on Monday, **September 14, 2026** at2:00pm.

- **WALK THROUGH:** There is no walkthrough required nor scheduled.
- **RFI PERIOD ENDS:** Monday, **September 14,** 2026 at 2:00pm
- **BID CLOSING DATE:** Monday, **September 21,** 2026, at 2:00pm

Andrea Maloney

Treasurer

DOCUMENT 002113 - INSTRUCTIONS TO BIDDERS

1.1 INSTRUCTIONS TO BIDDERS

A. AIA Document A751-2019, "Invitation and Instructions to Vendors for Quotations for Technology," is hereby incorporated into the Bidding Documents by reference.

1. A copy of A751-2019, "Invitation and Instructions to Vendors for Quotations for Technology," with Project-specific edits is bound in this Project Manual.
2. Document 002213 "Supplementary Instructions to Bidders" is bound in this Project Manual.

END OF DOCUMENT 002113

AIA® Document A751™ – 2019

Invitation and Instructions to Vendors for Quotations for Furniture, Furnishings, and Equipment (FF&E)

ADDITIONS AND DELETIONS:
The author of this document may have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

INVITATION FOR QUOTATION

The Owner requests a Quotation for the following Project:
(Include a detailed description and location of the Project.)

Sherman School RenovationProject /
Sherman School Central Administration
Project

2 CT 37 East
Sherman, Connecticut 06784

The Owner:
(Name, legal status, and address)

Town of Sherman / Sherman Board of Education
9 Route 39 North, Sherman, Connecticut 06784

The Architect:
(Name, legal status, and address)

Antinozzi Associates, PC
271 Fairfield Avenue, Bridgeport, Connecticut 06604

Issuing Party and Contact Information
For questions or more information regarding this Invitation and Instructions to Vendors for Quotations, please contact:
(Indicate name of Issuing Party, name of contact for inquiries, and contact information.)

Technology Director: Jake Siciliano; sicilianoj@shermanschool.com
Technology Consultant: Marc D'Agostino; marcd@da-technology.com

Quotations are due on or before:
(Indicate the time, day, month, and year)

2:00 PM, September 21, 2026. Quotations shall be promptly opened and read aloud at 2:15 PM on the date of submission.

Quotations shall be submitted as indicated below:
(Indicate how, such as by website, host site/platform, address for paper copy, or other method Prospective Vendors shall submit their Quotation.)

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One original paper copy and two printed paper copies shall be delivered to the attention of Mr. Jake Siciliano, Technology Director, at the following address:

Mallory Town HallSherman School, Temporary Main Office
9 Route2 CT 37 East, Sherman, Connecticut 06784

Please refer to the attached Instructions to Vendors for Quotations for information about (1) how to receive Quotation Documents, (2) procedures for submitting a Quotation, (3) consideration of Quotations, and (4) Proposed Contract Documents for the Project.

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INSTRUCTIONS TO VENDORS FOR QUOTATION

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ARTICLE 1 DEFINITIONS

§ 1.1 Quotation Documents include the Quotation Requirements and the Proposed Contract Documents. The Quotation Requirements consist of this Invitation and Instructions to Vendors for Quotations, any quotation forms and supplementary instructions identified therein, and Addenda. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Vendor and that Agreement's Exhibits, Drawings, Specifications, all Addenda, and all other documents enumerated in Article 7 of these Instructions.

§ 1.2 Definitions set forth in A151-2019, Standard Form of Agreement between Owner and Vendor for Technology, or in other Proposed Contract Documents, apply to the Quotation Documents.

§ 1.3 The term "technology" is expressed as technology throughout this Invitation and Instructions to Vendors for Quotation.

§ 1.4 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Quotation Documents.

§ 1.5 A Quotation is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Quotation Documents. The Work means the all of the Vendor's performance obligations as set forth in the Proposed Contract Documents.

§ 1.6 The Base Quotation is the sum stated in the Quotation for which the Prospective Vendor offers to perform the Work described in the Quotation Documents, to which Work may be added or deleted by sums stated in Alternate Quotations.

§ 1.7 An Alternate Quotation (or Alternate) is an amount stated in the Quotation to be added to or deducted from, or that does not change, the Base Quotation if the corresponding change in the Work, as described in the Quotation Documents, is accepted.

§ 1.8 A Unit Price is an amount stated in the Quotation as a price per unit for FF&E, or a portion of the Work, as described in the Quotation Documents.

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§ 1.9 The Prospective Vendor is the party who is invited to submit a quotation pursuant to this Invitation and Instructions to Vendors for Quotations.

§ 1.10 Bid Security: Vendors must provide a bid bond representing five percent (5%) of the Vendor's total bid amount. [Addendum No. 2].

ARTICLE 2 PROSPECTIVE VENDOR'S REPRESENTATIONS

§ 2.1 By submitting a Quotation, the Prospective Vendor represents that:

- **.1** the Prospective Vendor has read and understands the Quotation Documents;
- **.2** the Prospective Vendor understands how the Quotation Documents relate to other portions of the Project, if any, being quoted concurrently, or presently under contract;
- **.3** the Quotation complies with the Quotation Documents;
- **.4** the Prospective Vendor has visited the Project premises, if required in the Quotation Requirements, and correlated the Prospective Vendor's observations with requirements of the Quotation Documents;
- **.5** the Quotation is based upon the FF&E required by the Quotation Documents without exception; and
- **.6** the Prospective Vendor has read and understands the provisions for liquidated damages, if any, set forth in the Proposed Contract Documents.

§ 2.2 PreBidder Prequalification: School construction projects receiving state grant assistance are subject to Chapter 60, CGS § 4b-91(a). Under this statute, any contract estimated to cost over $1,000,000 must be awarded to a bidder prequalified pursuant to CGS § 4a-100. If a trade package is estimated under $1,000,000, but the actual bid exceeds $1,000,000, the trade contractor must be prequalified with DAS in order to perform work on the project. It is the actual contracted value, not the initial estimate, that determines whether the bidder prequalification is required under the law.

ARTICLE 3 QUOTATION DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Prospective Vendors shall obtain complete Quotation Documents, as indicated below, from the Issuing Party designated in this Invitation and Instructions to Vendors for Quotation.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Prospective Vendors shall obtain Quotation Documents.)

Electronic copies of Quotation Documents can be obtained through the file sharing website, DriveHQ at the link provided in the Advertisement for Bid – Legal Notice.

Note that hard copies of Quotation Documents will not be provided.

§ 3.1.2 Quotation Documents will not be issued directly to sub-vendors or suppliers unless specifically offered in this Invitation and Instructions to Vendors for Quotations, or in supplementary instructions to Prospective Vendors.

§ 3.1.3 Prospective Vendors shall use complete Quotation Documents in preparing Quotations. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Quotation Documents.

§ 3.1.4 The Quotation Documents will be available for the sole purpose of obtaining Quotations on the Work. No license or grant of use is conferred by distribution of the Quotation Documents.

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§ 3.2 Modification or Interpretation of Quotation Documents

§ 3.2.1 The Prospective Vendor shall carefully study the Quotation Documents, shall examine the Project premises if required by the Quotation Requirements, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered, and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Quotation Documents shall be submitted by the Prospective Vendor in writing and shall be received by the Architect at least seven days prior to the date for receipt of Quotations.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Prospective Vendors shall submit requests for clarification and interpretation.)

Submit request for clarification or interpretation via electronic mail to the Architect at MLoSasso@Antinozzi.com.

§ 3.2.3 Modifications and interpretations of the Quotation Documents shall be made by Addendum. Modifications and interpretations of the Quotation Documents made in any other manner shall not be binding, and Prospective Vendors shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 Substitutions to FF&E identified in the Quotation Documents shall be as follows:
(Check the appropriate box.)

[X] The Prospective Vendor may propose substitutions subject to the process, limitations, and requirements in Section 3.3.2

[ ] The Prospective Vendor may not propose substitutions

If the Owner does not make a selection regarding substitutions, the Prospective Vendor may propose substitutions, subject to the process, limitations, and requirements in Section 3.3.2.

§ 3.3.2 Substitution Process

§ 3.3.2.1 The FF&E described in the Quotation Documents establish a standard of required function, dimension, appearance, performance, and quality to be met by any proposed substitution.

§ 3.3.2.2 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Quotations. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in section 3.2.2.

§ 3.3.2.3 Prospective Vendors shall submit substitution requests on a substitution request form included under Section 002600 “Procurement Substitution Procedures” in the Quotation Documents.

§ 3.3.2.5 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect’s decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.2.6 If the Architect approves a proposed substitution prior to receipt of Quotations, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Prospective Vendors shall not rely upon them.

§ 3.3.2.7 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

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§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Prospective Vendors known by the Issuing Party to have received complete Quotation Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

Prospective Vendors are encouraged to register their contact information, including: company name, contact name, email address and daytime telephone number, with the Architect when obtaining access to Quotation Documents.

§ 3.4.2 Addenda will be available where Quotation Documents are on file. Electronic versions of addenda will be posted to the file sharing website, DriveHQ where Quotation Documents are obtained.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Quotations, except an Addendum withdrawing the request for Quotations or one which includes postponement of the date for receipt of Quotations.

§ 3.4.4 Prior to submitting a Quotation, each Prospective Vendor shall ascertain that the Prospective Vendor has received all Addenda issued, and the Prospective Vendor shall acknowledge their receipt in the Quotation.

ARTICLE 4 QUOTATION PROCEDURES

§ 4.1 Preparation of Quotations

§ 4.1.1 Quotations shall be submitted on the forms included with or identified in the Quotation Documents.

§ 4.1.2 All blanks on the Quotation form shall be legibly executed. Paper Quotation forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the Quotation form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper Quotation forms must be initialed by the signer of the Quotation.

§ 4.1.5 All requested Alternates shall be included in the Quotation. If no change in the Base Quotation is required, enter “No Change” or as otherwise required by the Quotation form.

§ 4.1.6 The Prospective Vendor shall make no stipulations on the Quotation form, nor qualify the Quotation in any manner, except, where two or more Quotations for separately designated portions of the Work have been requested, the Prospective Vendor may state the Prospective Vendor’s refusal to accept award of less than the combination of Quotations stipulated by the Prospective Vendor.

§ 4.1.7 Each copy of the Quotation shall state the legal name and legal status of the Prospective Vendor. As part of the documentation submitted with the Quotation, the Prospective Vendor shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Quotation shall be signed by the person or persons legally authorized to bind the Prospective Vendor to a contract. A Quotation by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Quotation submitted by an agent shall have a current power of attorney attached, certifying the agent’s authority to bind the Prospective Vendor.

§ 4.1.8 A Prospective Vendor shall incur all costs associated with the preparation of its Quotation.

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§ 4.2 Submission of Quotations

§ 4.2.1 A Prospective Vendor shall submit its Quotation as indicated in the Invitation for Quotation.

§ 4.2.2 Paper copies of the Quotation and any other documents required to be submitted with the Quotation shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Quotations and shall be identified with the Project name, the Prospective Vendor's name and address, and, if applicable, the designated portion of the Work for which the Quotation is submitted. If the Quotation is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED QUOTATION ENCLOSED" on the face thereof.

§ 4.2.3 Quotations shall be submitted by the date and time and at the place indicated in the Invitation for Quotation. Quotations submitted after the date and time for receipt of Quotations, or at an incorrect place, will not be accepted.

§ 4.2.4 The Prospective Vendor shall assume full responsibility for timely delivery or submission of Quotations.

§ 4.2.5 A Quotation submitted by any method other than as provided in this section 4.2 will not be accepted.

§ 4.3 Modification or Withdrawal of Quotation

§ 4.3.1 Prior to the date and time designated for receipt of Quotations, a Prospective Vendor may withdraw and replace a Quotation, or withdraw its Quotation entirely, by notice to the party designated to receive the Quotations. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Quotations. The receiving party shall verify that replaced or withdrawn Quotations are removed from the other submitted Quotations and not considered. Notice of submission of a replacement Quotation or withdrawal of a Quotation shall be worded so as not to reveal the amount of the original Quotation.

§ 4.3.2 Withdrawn Quotations may be resubmitted up to the date and time designated for the receipt of Quotations in the same format as that established in Section 4.2, provided they fully conform with this Invitation and Instructions to Vendors for Quotations.

§ 4.3.3 After the date and time designated for receipt of Quotations, a Prospective Vendor who discovers that it made a clerical error in its Quotation shall notify the Architect of such error within two business days of the date and time designated for receipt of Quotations, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Quotation. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Quotation shall be withdrawn and not resubmitted.

ARTICLE 5 CONSIDERATION OF QUOTATIONS

§ 5.1 Opening of Quotations

If stipulated in this Invitation and Instructions to Vendors for Quotations, or when otherwise required by law, Quotations properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Quotations may be made available to Prospective Vendors.

§ 5.2 Rejection of Quotations

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Quotations.

§ 5.3 Acceptance of Quotation (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Prospective Vendor, provided the Quotation has been submitted in accordance with the requirements of the Quotation Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Quotation received and to accept the Quotation which, in the Owner's judgment, is in the Owner's best interests.

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§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Quotation Documents, and to determine the lowest responsive and responsible Prospective Vendor on the basis of the sum of the Base Quotation and Alternates accepted.

§ 5.3.3 As a condition of award, Vendors must certify to Sherman School that procurement, delivery, installation, and activation of specified products and equipment included under the Vendor's scope of work can be achieved within the Sherman School's established schedule before the resumption of classes for the second semester of the 2026-2027 school year.

ARTICLE 6 POST-QUOTATION INFORMATION

§ 6.1 Submittals

§ 6.1.1 After notification of selection for the award of the Contract, the Prospective Vendor shall, as soon as practicable or as stipulated in the Quotation Documents, submit in writing to the Owner through the Architect and Technology Consultant:

.1 a designation of the Work to be performed with the Prospective Vendor's own forces;

.2 names of persons or entities proposed for the principal portions of the Work.

§ 6.1.2 The Prospective Vendor will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Quotation Documents.

§ 6.1.3 Prior to the execution of the Contract, the Architect will notify the Prospective Vendor if either the Owner or Architect and Technology Consultant, after due investigation, has reasonable objection to a person or entity proposed by the Prospective Vendor. If the Owner or Architect has reasonable objection to a proposed person or entity, the Prospective Vendor may, at the Prospective Vendor's option, withdraw the Quotation or submit an acceptable substitute person or entity. The Prospective Vendor may also submit any required adjustment in the Base Quotation or Alternate Quotation to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted Quotation price or disqualify the Prospective Vendor.

§ 6.1.4 Persons and entities proposed by the Prospective Vendor and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 7.1 Copies of the Proposed Contract Documents have been made available to the Prospective Vendor and consist of the following documents:

.1 AIA Document A151™–2019, Standard-Form of Agreement Between Owner and Vendor for Technology, unless otherwise stated below.
(If an agreement other than A151-2019 is to be used, insert the complete AIA Document number, including year, and Document title.)

.3 Drawings: Refer to the Drawing index included in the Quotation Documents Project Manual, Table of Contents.

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.4 Specifications: Refer to the Table of Contents included in the Quotation Documents Project Manual.

.5 Addenda:

Number	Date	Pages

.6 Other documents listed below:
(List here any additional documents, such as a Sustainability Plan, that are intended to form part of the Proposed Contract Documents.)

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DOCUMENT 002600 - PROCUREMENT SUBSTITUTION PROCEDURES

1.1 DEFINITIONS

A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids in accordance with Instructions to Bidders.

B. Procurement Prior Approval Requests: Requests for approval of products or manufacturers from those required by the Contract Documents as defined by product selection procedures in Section 016000 "Product Requirements."

1. Procurement prior approval is required when products or manufacturers are listed in specifications under "Sole Product," "Sole Manufacturer," "Limited List of Products," or "Limited List of Manufacturers" introductory paragraphs.
2. Procurement prior approval is not required when products or manufacturers are listed in specifications under "Non-Limited List of Products" or "Non-Limited List of Manufacturers" introductory paragraphs.
3. Where use of "Sole Product," "Sole Manufacturer," "Limited List of Products," or "Limited List of Manufacturers" introductory paragraphs is not allowed by statute, procurement prior approval request is not required.

C. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See the General Conditions and Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.3 PROCUREMENT SUBSTITUTIONS

A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.

B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:

1. Extensive revisions to the Contract Documents are not required.

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2. Proposed changes are in keeping with general intent of the Contract Documents, including level of quality of the Work represented by requirements therein.
3. Request is fully documented and properly submitted.

1.4 SUBMITTALS

A. Procurement Substitution Request: Submit to Architect. Procurement Substitution Request must be made in writing by prime Vendor preparing quotation only in compliance with the following requirements:

1. Requests for substitution of materials and equipment will be considered if received no later than 10 days prior to date of bid opening.
2. Submittal Format, Electronic: Submit Procurement Substitution Request, using format provided on Project web-based bidding management software site.

   a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and Drawing numbers.
   b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:

      1) List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
      2) Product data, including drawings and descriptions of products and fabrication and installation procedures.
      3) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
      4) Copies of current, independent third-party test data of salient product or system characteristics.
      5) Samples where applicable or when requested by Architect.
      6) Detailed comparison of significant qualities of proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
      7) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
      8) Research reports, where applicable, evidencing compliance with building code in effect for Project, from ICC-ES.
      9) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate proposed substitute.

   c. Provide certification by manufacturer that proposed substitute is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to product or equipment specified in the application indicated.

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d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of substitute to perform as represented in the Procurement Substitution Request.

B. Architect's Action:

1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all Bidders of acceptance of proposed substitute by means of an Addendum to the Procurement and Contracting Documents.

C. Architect's approval of substitute during bidding does not relieve Contractor of the responsibility to submit required Shop Drawings and to comply with all other requirements of the Contract Documents.

END OF DOCUMENT 002600

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SECTION 002610 - SUBSTITUTION REQUEST FORM

VENDOR NAME: _____

Vendor must include delivery and installation of furniture in accordance with the Contract Documents and Specifications, including all supervision, labor, services and equipment necessary for the completion of the work. Vendors (both State Contract and Bidders) are required to meet the specifications in the Project Manual. Refer to Construction Schedule for start and end dates.

Vendor Certifies:

1. One substitution for consideration. If multiple options are submitted, the lowest cost item will be the only item reviewed.
2. Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
3. Same warranty will be furnished for proposed substitution as for specified product.
4. Same maintenance service and source of replacement parts, as applicable, is available.
5. Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
6. Proposed substitution does not require changes to building design, detailing or construction costs caused by the substitution.
7. Proposed substitution is considered and equal as it relates to aesthetic design intent.

ITEM #: _____

ITEM NAME: _____

MANUFACTURER: _____

MODEL #: _____

DIMENSIONS: _____

FEATURES: _____

UNIT COST: _____

TOTAL COST: _____

NOTES: _____

ATTACHING A CUT SHEET IS ACCEPTABLE IF IMAGE CANNOT FIT INTO SPACE BELOW. WEBSITE LINKS, FULL CATALOGUES OR PRICE BOOKS WILL NOT BE ACCEPTABLE.

IMAGE:

SECTION 003010 – FORMS OF QUOTATION

PART 1 - GENERAL

1.1 RESPONSE FORM

Vendor Name -		
Address -		
Phone -	**Fax -**	**Email -**
Manager -		**Fed ID#**

A. The undersigned hereby declares that he has or they have carefully examined the plans, specifications and project site and has satisfied himself as to all the quantities and conditions, and understands that in signing this proposal he waives all right to plead any misunderstanding regarding the same.

B. The undersigned further understands and agrees that he will furnish and provide all the necessary material, machinery, implements, tools, labor, services, and other items of whatever nature, and to do and perform all the work necessary under the aforesaid conditions, to carry out the contract and to accept in full compensation therefore the amount of the contract as agreed to by the Vendor and the Town.

C. The undersigned further agrees, in case of variations of quantities from those shown or specified, the following unit prices will be used in adjusting the Contract price. If quantities are authorized by the Town, the following amount will be added to the contract as required. Unless otherwise noted, each UNIT PRICE shall include all equipment, tools, labor, permits, fees, etc., incidental to the installation and completion of the work involved.

D. It is further understood and agreed that all the information included in, and attached to, or required by the Invitation for Quotation shall become public record upon delivery to the Town.

E. The following unit prices shall apply to this project: Sherman School Renovation Project / Sherman School Central Administration Project, Technology project.

Total Lump Sum Bid	$
Total Lump Sum Bid in Words	
BIDDERS MUST COMPLETE AND ATTACH APPLICABLE BID FORM(S) FOR TECHNOLOGY FOR BIDS TO BE CONSIDERED	

PROJECT:	**Sherman School Renovation Project / Sherman School Central Administration Project Technology**
VENDOR NAME:	

Bid Security in the form of a (check one) is attached.		Bond		Certified Check
Cost for performance bond <u>included in lump sum</u>	$		per thousand dollars	
Insurance Agency Name -			Tel.-	
Agency Address -				

Submitted by:

Print Name of Authorized Agent of Company	
Signature of Authorized Agent of Company	
Date	

The above signatory acknowledges receipt of the following addenda issued during the bidding period and understands that they are a part of the bidding documents (if applicable):

Addendum #		Dated		Addendum #		Dated	
Addendum #		Dated		Addendum #		Dated	
Addendum #		Dated		Addendum #		Dated	
Addendum #		Dated		Addendum #		Dated	

1.2 TOWN OF SHERMAN VENDOR RECORDS

A. If you have not done business with the Town of Sherman as a Vendor, your business information needs updating or your Vendor record has not been updated over three (3) years. Please complete and include the latest Internal Revenue Service (IRS) W-9 Form with your submission. Here is the URL to the IRS website: https://www.irs.gov/forms-pubs/about-form-w-9.

1.3 INSURANCE

Insurance Agency Name:	**Tel:**
Agency Address:	**Email:**

1.4 NON-COLLUSIVE BIDDING CERTIFICATION

A. By submission of this bid each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

1. The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

2. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to the opening, directly or indirectly, to any other bidder or to any competitor; and

3. No attempt has been made or will be made by the bidder to induce any other person, partnership, or corporation to submit or not to submit a bid for the purpose of restricting com-petition. The foregoing statement subscribed by the bidder and affirmed by such bidder as true under the penalties of perjury and is made pursuant to the applicable section of the General Laws of the State of Connecticut as most recently amended.

1.5 OTHER REQUIREMENTS

A. It is understood that the Owner reserves the right to accept or reject any and all bids that the Owner deems to be in his best interest.

B. Upon notification of acceptance of this proposal, the undersigned agrees to execute a contract in the form as stated within these contract documents for the amount stated.

C. Prices quoted shall be guaranteed for one hundred twenty (120) days after date of proposal. If written notice of award is received within one hundred twenty (120) calendar days after the opening of bids, the undersigned agrees to execute said contract and furnish to the Owner within ten (l0) days after receipt of said notice of award, the executed Contract, together with the Performance Bond, Labor and Material. Individual bids must be sent in separately sealed envelopes with accompanying bid security for each bid package. **If submitting a combination bid, the combination bid must be sent separately from the individual bid packages in a separately sealed envelope marked as such, with accompanying bid security.**

D. Bonds and Insurance Certificates required herein.

E. The undersigned agrees that the Bid Security payable to Owner accompanying this proposal is left in escrow with the Owner; that its amount is the measure of liquidated damages which the Owner will sustain by the failure of the undersigned to execute and deliver the above-named Bonds and Contract; and that if the undersigned defaults in furnishing said bonds or in executing and delivering said Contract within ten (l0) days of written notification of award of the Contract to him/her, then said Security shall be payable to the Owner for its own account; but if this proposal is not accepted within said one hundred twenty (120) days of the time set for submission of bids, or if the undersigned executes and delivers said bonds and Contract, the Bid Security shall be returned to the undersigned.

F. The undersigned hereby certifies that they are able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work.

G. By submission of this proposal, the undersigned acknowledges that they have visited the site, informed themselves of the existing conditions, and have included in the proposal a sum to cover the costs of all items in the contracts.

H. By submission of this proposal, the undersigned acknowledges that they have read the job narrative and schedule requirements and agrees to provide sufficient staff and organization and to select subcontractors and suppliers to comply with the requirements for submittals, delivery dates, work periods, and completion dates as specified

Respectfully submitted,

By: _____

Title: _____

Business Name: _____

Address: _____

Telephone Number & Fax Number: _____

E-MAIL: _____
(required)

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 003010

SECTION 003040 – CATEGORY BID SUMMARY - TECHNOLOGY

PART 1 - GENERAL

1.1 CATEGORY BID SUMMARY – TECHNOLOGY

	CATEGORY	PROCUREMENT	TOTAL COST
TE-02	Patch Chords [Addendum No. 1]	Public Bid	
TE-03	Phone System	Sole Source – Direct to CCi Voice	
TE-04	UPS's and PDU's	Public Bid	
TE-05	3D Printers & Monitors	Public Bid	
TE-07	Audio Visual Systems	Public Bid	
TE-08	Security	Sole Source	
TE-09	Charging Carts	Public Bid	
	TOTAL		

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 003040

SHERMAN SCHOOL & CENTRAL ADMINISTRATION
2 ROUTE 37 EAST, SHERMAN, CT

State Project #127-0009 RNV & 127-0010 BE/RNV - PHASE 3 of 3
Date: 06/16/2026

Category TE-02 Patch Cords

Public Bid

Specification: 27 2120.15
SHERMAN SCHOOL

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY	UNIT PRICE	TOTAL	ELIGIBLE	INELIGIBLE
1	PatchBox	PONE30UTPBK	PATCHBOX.ONE 30RU CAT.6A UTP BLACK FRAME 24 x 1.8M CASSETTES & 6 PATCHCATCH & 2	30	$	$	$	$0.00
2	PatchBox	CONE30OM411	PATCHBOX.ONE 30RU OM4 CASSETTE LC-LC 1.8M	2	$	$	$	$0.00
3	PatchBox	PONEIDLABEL	Patchbox.one / ID-Labels	6	$	$	$	$0.00
4			Installation	1	$	$	$	$0.00
5				TOTAL		$	$	$0.00

SHERMAN SCHOOL & CENTRAL ADMINISTRATION
2 ROUTE 37 EAST, SHERMAN, CT

State Project #127-0009 RNV & 127-0010 BE/RNV - PHASE 3 of 3
Date: 06/16/2026

Category TE-03 Phone System

Sole Source

Specification: 27 3000

SHERMAN SCHOOL

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY	UNIT PRICE	TOTAL	ELIGIBLE	INELIGIBLE
1	Handsets							
2	Sangoma	P325	6 LCD LCD labeled buttons, HD Voice, Gigabit computer pass-through, 1 x USB port, 4.3" (diagonal), 480x272 pixel Color Display, IPS - Wall Phone - PHW	13		$	$	$0.00
3	Sangoma	P3xx	Wall Mount Kit	13		$	$	$0.00
4	Sangoma	P330	12 LCD labeled buttons, HD Voice, Gigabit computer pass-through, 2 x USB, WiFi capable, 4.3" Color Display - Administration Desk Phone 7821 - PHA	18		$	$	$0.00
5	Sangoma	P325	6 LCD LCD labeled buttons, HD Voice, Gigabit computer pass-through, 1 x USB port, 4.3" (diagonal), 480x272 pixel Color Display, IPS - Desk Phone - PHB	31		$	$	$0.00
6	Yealink	CP965	5 " Color Screen Display, 20' Range, Full-duplex speakerphone, 10/100 pass-through - Conference Room Phone - PHC	2		$	$	$0.00
7			Installation	1		$	$	$0.00
8						$	$	$0.00

SHERMAN CENTRAL ADMINISTRATION

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY	UNIT PRICE	TOTAL	ELIGIBLE	INELIGIBLE
1	Handsets							
2	Sangoma	P325	6 LCD LCD labeled buttons, HD Voice, Gigabit computer pass-through, 1 x USB port, 4.3" (diagonal), 480x272 pixel Color Display, IPS - Wall Phone - PHW	0		$	$	$0.00
3	Sangoma	P3xx	Wall Mount Kit	0		$	$	$0.00
4	Sangoma	P330	12 LCD labeled buttons, HD Voice, Gigabit computer pass-through, 2 x USB, WiFi capable, 4.3" Color Display - Administration Desk Phone 7821 - PHA	3		$	$	$0.00
5	Sangoma	P325	6 LCD LCD labeled buttons, HD Voice, Gigabit computer pass-through, 1 x USB port, 4.3" (diagonal), 480x272 pixel Color Display, IPS - Desk Phone - PHB	0		$	$	$0.00
6	Yealink	CP965	5 " Color Screen Display, 20' Range, Full-duplex speakerphone, 10/100 pass-through - Conference Room Phone - PHC	0		$	$	$0.00
7			Installation and Configuration for above	1		$	$	$0.00
8						$	$	$0.00

SHERMAN SCHOOL & CENTRAL ADMINISTRATION
2 ROUTE 37 EAST, SHERMAN, CT

State Project #127-0009 RNV & 127-0010 BE/RNV - PHASE 3 of 3
Date: 06/16/2026

PUBLIC BID

Category TE-04 UPS's & PDU's
Specification: 28 0507.23
SHERMAN SCHOOL

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY	UNIT PRICE	TOTAL	ELIGIBLE	INELIGIBLE
1	Eaton	9PX6KG2	Eaton 9PX G2 6kVA 5.4kW 208V Online UPS L6-30P or HW Input 2 L6-20R, 2 L6-30R, HW Output, Cybersecure Network Card 3U	3	$	$	$	$0.00
2	Eaton	9PXTFMR5G2	APC Smart-UPS On-Line, 5kVA, Rackmount 5U, 208V, 12x 5-20R+2x L6-20R+1x L6-30R NEMA, Network Card+SmartSlot, W/ rail kit, W/ transformer 208V to 120V	1	$	$	$	$0.00
3	Eaton	PDUMV30HV	Tripp Lite Series PDU Metered 208V / 240V 30A 6 C19 24; C13 L6-30P Vertical 0URM - vertical rackmount - power	4	$	$	$	$0.00
4	Eaton	EMPDT1H1C2	Temperature & Humidity Sensor	2	$	$	$	$0.00
5			Installation, Coordination with Trades, & Startup A/R	1	$	$	$	$0.00
6					TOTAL	$	$	$0.00

SHERMAN SCHOOL & CENTRAL ADMINISTRATION
2 ROUTE 37 EAST, SHERMAN, CT

State Project #127-0009 RNV & 127-0010 BE/RNV - PHASE 3 of 3
Date: 06/16/2026
Specification: 27 2400

Category TE-05 3D Printers and Monitors

Public Bid

SHERMAN SCHOOL

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY	UNIT PRICE	TOTAL	ELIGIBLE	INELIGIBLE
1	Bambu	Specify	Bambu Lab H2D Pro - 3D printer	2	$	$	$	$0.00
2	Dell	DELL-U3225QE	Dell UltraSharp U3225QE - LED monitor - 4K - 32" - HDR	17	$	$	$	$0.00
3	Dell	DELL-U2725QE	Dell UltraSharp U2725QE - LED monitor - 4K - 27" - HDR	17	$	$	$	$0.00
4	Apple	Specify	Magic Keyboard with Numeric Keypad - US English	34	$	$	$	$0.00
5				TOTAL		$	$	$0.00

SHERMAN SCHOOL & CENTRAL ADMINISTRATION
2 ROUTE 37 EAST, SHERMAN, CT

State Project #127-0009 RNV & 127-0010 BE/RNV - PHASE 3 of 3
Date: 06/16/2026

PUBLIC BID

Category TE-07 Audio Visual Systems
Specification: 27 4116.51
SHERMAN SCHOOL

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY	UNIT PRICE	TOTAL	ELIGIBLE	INELIGIBLE
1	SMART	MX265-V5	65" SMART Board MX065-V5 interactive display with IQ	6	$	$	$	$0.00
2	SMART	MX275-V5	75" SMART Board MX075-V5 interactive display with IQ	16	$	$	$	$0.00
3	SMART	MX286-V5	86" SMART Board MX085-V5 interactive display with IQ	12	$	$	$	$0.00
4	SMART	WM-SBID-200	SMART Wall Mount for SMART MX series interactive displays	34	$	$	$	$0.00
5	SMART	Specify	SMART Document Camera	32	$	$	$	$0.00
6	SMART	SWC-120UHD	SMART Ultra HD Camera 120	34	$	$	$	$0.00
7	Lu Uno		Interactive Gym Wall Audio System w/1-Year Subscription	1	$	$	$	$0.00
8			Installation	1	$	$	$	$0.00
9					AV System TOTAL	$	$	$0.00

SHERMAN SCHOOL & CENTRAL ADMINISTRATION
2 ROUTE 37 EAST, SHERMAN, CT

State Project #127-0009 RNV & 127-0010 BE/RNV - PHASE 3 of 3
Date: 06/16/2026
Specification: 28 1320

Category TE-08 Security

Sole Source

SHERMAN SCHOOL

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY	UNIT PRICE	TOTAL	ELIGIBLE	INELIGIBLE
1	Centegix		CENTEGIX Gateway Cabling & Installation	1	$	$	$	$0.00
2	Centegix		Implementation	1	$	$	$	$0.00
3	Centegix		Safety Blueprint Remote Installation	1	$	$	$	$0.00
4	Centegix		Safety Platform Installation	1	$	$	$	$0.00
5	Annual Services							
6			Safety Platform (CrisisAlert, Safety Blueprint, Visitor Management)	1	$	$	$	$0.00
7			Wireless Backup Data	1	$	$	$	$0.00
8				TOTAL		$	$	$0.00

SHERMAN SCHOOL & CENTRAL ADMINISTRATION
2 ROUTE 37 EAST, SHERMAN, CT

State Project #127-0009 RNV & 127-0010 BE/RNV - PHASE 3 of 3
Date: 06/16/2026
Specification: 28 2700

Category TE-09 Charging Carts

Public Bid

SHERMAN SCHOOL

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY	UNIT PRICE	TOTAL	ELIGIBLE	INELIGIBLE
1	Ergotron	YES24-CHR-1	Charging Cart	15	$	$	$	$0.00
2			Installation of Cart	15	$	$	$	$0.00
3				TOTAL		$	$	$0.00

SECTION 003041 – CATEGORY QUOTATION SUMMARY - TECHNOLOGY

PART 1 - GENERAL

1.1 CATEGORY QUOTATION SUMMARY – TECHNOLOGY

	CATEGORY	PROCUREMENT	TOTAL COST
TE-01	Extreme LAN Network Switches & WI-FI	DAS State Contract	
TE-06	Server & Firewall	DAS State Contract	
	TOTAL		

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 003041

SHERMAN SCHOOL & CENTRAL ADMINISTRATION
2 ROUTE 37 EAST, SHERMAN, CT

State Project #127-0009 RNV & 127-0010 BE/RNV - PHASE 3 of 3
Date: 06/16/2026

Category TE-01 LAN Network Switches & Wi-Fi

State DAS Contract #93ITZ0022MB

Specification: 27 2100
SHERMAN SCHOOL

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY	UNIT PRICE	TOTAL	ELIGIBLE	INELIGIBLE
1	SWITCH GEAR							
2	EXTREME	20G-DACP-SFPDDZ5M	SFPDD TO SFPDD 20G DAC 0.5M	15	$	$	$	$0.00
3	EXTREME	100G-DACP-QSFPZ5M	100G Passive DAC QSFP28 0.5m	2	$	$	$	$0.00
4	EXTREME	10106	PWR CORD,NEMA,10A,C14,C13,ST	34	$	$	$	$0.00
6	EXTREME	XN-ACPWR-1200W-FB	1200W AC PSU FB	15	$	$	$	$0.00
7	EXTREME	XN-ACPWR-350W-FB	350W AC PSU FB	4	$	$	$	$0.00
8	EXTREME	USK12-STD-B-S-C-EW	USK12 EP1 STD NET EW Tier B per YR	15	$	$	$	$0.00
9	EXTREME	USK12-STD-C-S-C-EW	USK12 EP1 STD NET EW Tier C per YR	2	$	$	$	$0.00
10	EXTREME	5420F-16 W-32P-4XE	5420F 16port 802.3bt 90w & 32 PoE+	15	$	$	$	$0.00
11	EXTREME	5520-24X	5520 24port Fiber Switch	2	$	$	$	$0.00
12	EXTREME	10301	SR SFP+ module	60	$	$	$	$0.00
13	EXTREME	PS-ESU-REMOTE	Remote (ESU) Extreme Service Unit	5	$	$	$	$0.00
14	WI-FI							
15	EXTREME	AP4020-WW	AP4020-WW Wi-Fi 7 Indoor Access Point	64	$	$	$	$0.00
16	EXTREME	AP4060X-WW	AP4060X-WW Wi-Fi 7 Weatherized AP	6	$	$	$	$0.00
17	EXTREME	AIO-TS06360-N	5dBi and 6dBi Outdoor Dipole Tri-band	30	$	$	$	$0.00
18	EXTREME	USK12-STD-A-S-C-EW	USK12 EP1 STD NET EW Tier A per YR	70	$	$	$	$0.00
19	EXTREME	PS-ESU-REMOTE	Remote (ESU) Extreme Service Unit	5	$	$	$	$0.00
20				TOTAL		$	$	$0.00

SHERMAN SCHOOL & CENTRAL ADMINISTRATION
2 ROUTE 37 EAST, SHERMAN, CT

State Project #127-0009 RNV & 127-0010 BE/RNV - PHASE 3 of 3
Date: 06/16/2026
Specification: 27 2113

Category TE-06 Server & Firewall

State DAS #23PSX0163

SHERMAN SCHOOL

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY	UNIT PRICE	TOTAL	ELIGIBLE	INELIGIBLE
1	HPE	P83291-005	HPE ProLiant DL360 Gen11 Rack Server - Intel Xeon Gold 5416S 2 GHz - 64GB - SSD 2 x 480GB - 2 x 1000W	1		$	$	$0.00
2	Fortinet	FG-100F-BDL-950-36	FortiGate 100F - security appliance - with FortiCare 24X7 Comprehensive Support	1		$	$	$0.00
3	StarTech	RKCONS1708K	8 Port Rackmount KVM Console w/ Cables - Integrated KVM Switch w/ 17" LCD - 1U LCD KVM Drawer 50000	2		$	$	$0.00
4				TOTAL		$	$	$0.00

SECTION 003113 – PROJECT SCHEDULE

1.1 PROJECT SCHEDULE

A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. Attached Construction Manager schedule is made available for Bidders' convenience and information, but do not affect Contract Time requirements.

B. Project Milestones:

1. Installation start date: November 2, 2026.

   a. This is the date established by the Construction Manager based on the overall construction schedule.

2. Phase 1 Completion date: No later than November 30, 2026. Completion of Technology work must be complete prior to occupant move in before the start of the January 2027 school semester.

3. Phase 2 Installation start date: August 6, 2027.

4. Phase 2 Completion date: No later than August 20, 2027.

C. Project schedule including design and construction milestones and Owner's occupancy requirements is available for viewing as appended to this Document.

D. Related Requirements:

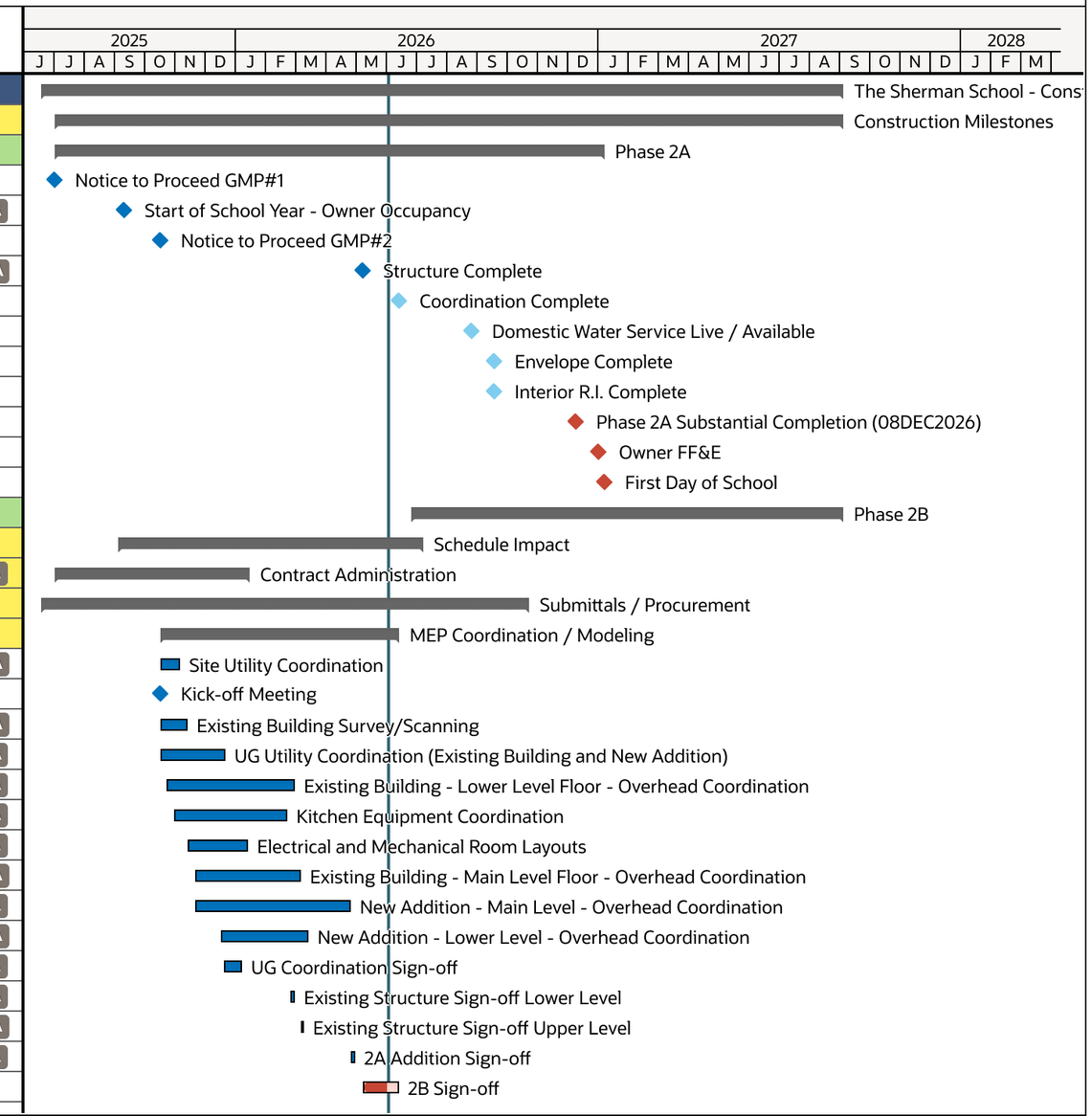
1. Section 011000 "Summary" for coordination with occupants' requirements.

END OF SECTION 003113

The Sherman School - Construction Schedule

Data Date: 01-Jun-26

	ID	Name	Start	Finish
1	The Sherman School - Constr...	The Sherman School - Construction Schedule	16-Jun-25 A	02-Sep-27
2	Construction Milestones	Construction Milestones	30-Jun-25 A	02-Sep-27
3	Phase 2A	Phase 2A	30-Jun-25 A	06-Jan-27
4	MA100	Notice to Proceed GMP#1	30-Jun-25 A	
5	MA110	Start of School Year - Owner Occupancy		08-Sep-25 A
6	MA120	Notice to Proceed GMP#2	16-Oct-25 A	
7	MA140	Structure Complete		06-May-26 A
8	MA130	Coordination Complete		12-Jun-26
9	MA150	Domestic Water Service Live / Available		25-Aug-26
10	MA160	Envelope Complete		16-Sep-26
11	MA170	Interior R.I. Complete		16-Sep-26
12	MA190	Phase 2A Substantial Completion (08DEC2026)		08-Dec-26
13	MA180	Owner FF&E		30-Dec-26
14	MA200	First Day of School	06-Jan-27 C	
15	Phase 2B	Phase 2B	24-Jun-26	02-Sep-27
16	Schedule Impact	Schedule Impact	03-Sep-25 A	06-Jul-26
17	Contract Administration	Contract Administration	30-Jun-25 A	14-Jan-26 A
18	Submittals / Procurement	Submittals / Procurement	16-Jun-25 A	21-Oct-26
19	MEP Coordination / Modeling	MEP Coordination / Modeling	15-Oct-25 A	12-Jun-26
20	CM160	Site Utility Coordination	15-Oct-25 A	04-Nov-25 A
21	CM110	Kick-off Meeting	15-Oct-25 A	
22	CM100	Existing Building Survey/Scanning	16-Oct-25 A	12-Nov-25 A
23	CM170	UG Utility Coordination (Existing Building and New Addition)	16-Oct-25 A	19-Dec-25 A
24	CM120	Existing Building - Lower Level Floor - Overhead Coordination	22-Oct-25 A	26-Feb-26 A
25	CM200	Kitchen Equipment Coordination	29-Oct-25 A	20-Feb-26 A
26	CM130	Electrical and Mechanical Room Layouts	12-Nov-25 A	12-Jan-26 A
27	CM140	Existing Building - Main Level Floor - Overhead Coordination	19-Nov-25 A	04-Mar-26 A
28	CM150	New Addition - Main Level - Overhead Coordination	19-Nov-25 A	24-Apr-26 A
29	CM180	New Addition - Lower Level - Overhead Coordination	16-Dec-25 A	13-Mar-26 A
30	CM190	UG Coordination Sign-off	19-Dec-25 A	05-Jan-26 A
31	CM240	Existing Structure Sign-off Lower Level	23-Feb-26 A	26-Feb-26 A
32	CM220	Existing Structure Sign-off Upper Level	04-Mar-26 A	06-Mar-26 A
33	CM210	2A Addition Sign-off	24-Apr-26 A	29-Apr-26 A
34	CM230	2B Sign-off	06-May-26 A	12-Jun-26



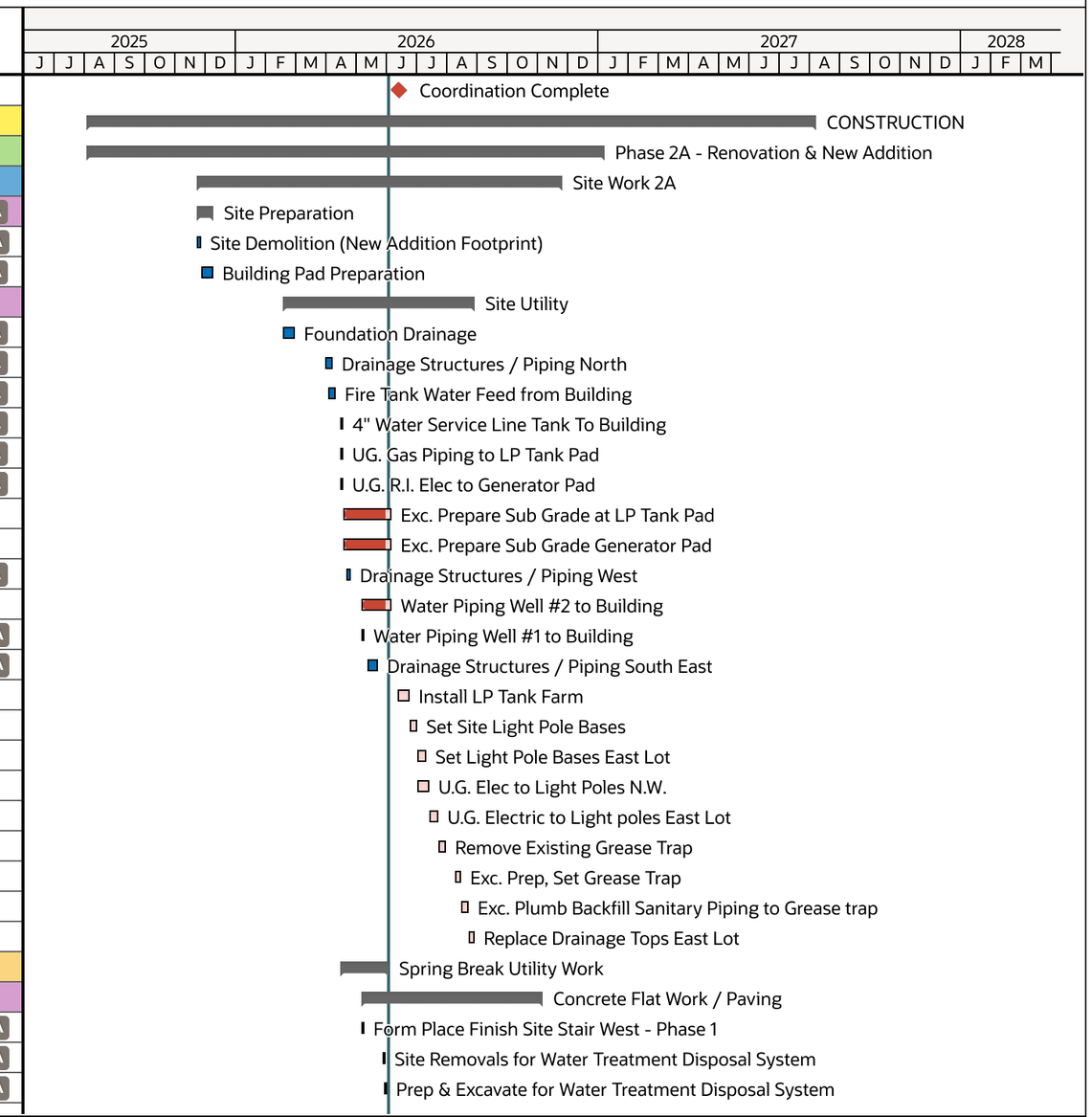
Current
Progress
Critical
Milestones
Summary

Project ID: 24-014
Prepared By: Ben Chasse
06-Jun-26 10:25 a.m.
01-Jun-26

The Sherman School - Construction Schedule

Data Date: 01-Jun-26

	ID	Name	Start	Finish
35	CM250	Coordination Complete		12-Jun-26
36	CONSTRUCTION	CONSTRUCTION	01-Aug-25 A	06-Aug-27
37	Phase 2A - Renovation & ...	Phase 2A - Renovation & New Addition	01-Aug-25 A	06-Jan-27
38	Site Work 2A	Site Work 2A	21-Nov-25 A	24-Nov-26
39	Site Preparation	Site Preparation	21-Nov-25 A	08-Dec-25 A
40	S1000	Site Demolition (New Addition Footprint)	21-Nov-25 A	25-Nov-25 A
41	S1010	Building Pad Preparation	26-Nov-25 A	08-Dec-25 A
42	Site Utility	Site Utility	16-Feb-26 A	28-Aug-26
43	S1090	Foundation Drainage	16-Feb-26 A	27-Feb-26 A
44	S1030	Drainage Structures / Piping North	30-Mar-26 A	06-Apr-26 A
45	S1040	Fire Tank Water Feed from Building	01-Apr-26 A	08-Apr-26 A
46	S1020	4" Water Service Line Tank To Building	13-Apr-26 A	16-Apr-26 A
47	S1140	UG. Gas Piping to LP Tank Pad	14-Apr-26 A	15-Apr-26 A
48	S1150	U.G. R.I. Elec to Generator Pad	14-Apr-26 A	15-Apr-26 A
49	S1110	Exc. Prepare Sub Grade at LP Tank Pad	16-Apr-26 A	04-Jun-26
50	S1130	Exc. Prepare Sub Grade Generator Pad	16-Apr-26 A	04-Jun-26
51	S1070	Drainage Structures / Piping West	20-Apr-26 A	24-Apr-26 A
52	S1050	Water Piping Well #2 to Building	04-May-26 A	04-Jun-26
53	S1080	Water Piping Well #1 to Building	04-May-26 A	08-May-26 A
54	S1060	Drainage Structures / Piping South East	11-May-26 A	22-May-26 A
55	S1170	Install LP Tank Farm	11-Jun-26	22-Jun-26
56	S1180	Set Site Light Pole Bases	22-Jun-26	30-Jun-26
57	S1190	Set Light Pole Bases East Lot	30-Jun-26	09-Jul-26
58	S1200	U.G. Elec to Light Poles N.W.	30-Jun-26	13-Jul-26
59	S1210	U.G. Electric to Light poles East Lot	13-Jul-26	22-Jul-26
60	A2100	Remove Existing Grease Trap	22-Jul-26	29-Jul-26
61	S1120	Exc. Prep, Set Grease Trap	07-Aug-26	14-Aug-26
62	S1160	Exc. Plumb Backfill Sanitary Piping to Grease trap	14-Aug-26	21-Aug-26
63	S1100	Replace Drainage Tops East Lot	21-Aug-26	28-Aug-26
64	Spring Break Utility Work	Spring Break Utility Work	14-Apr-26 A	01-Jun-26
65	Concrete Flat Work / Pa...	Concrete Flat Work / Paving	04-May-26 A	04-Nov-26
66	S1240	Form Place Finish Site Stair West - Phase 1	04-May-26 A	07-May-26 A
67	S1515	Site Removals for Water Treatment Disposal System	26-May-26 A	26-May-26 A
68	S1525	Prep & Excavate for Water Treatment Disposal System	27-May-26 A	28-May-26 A



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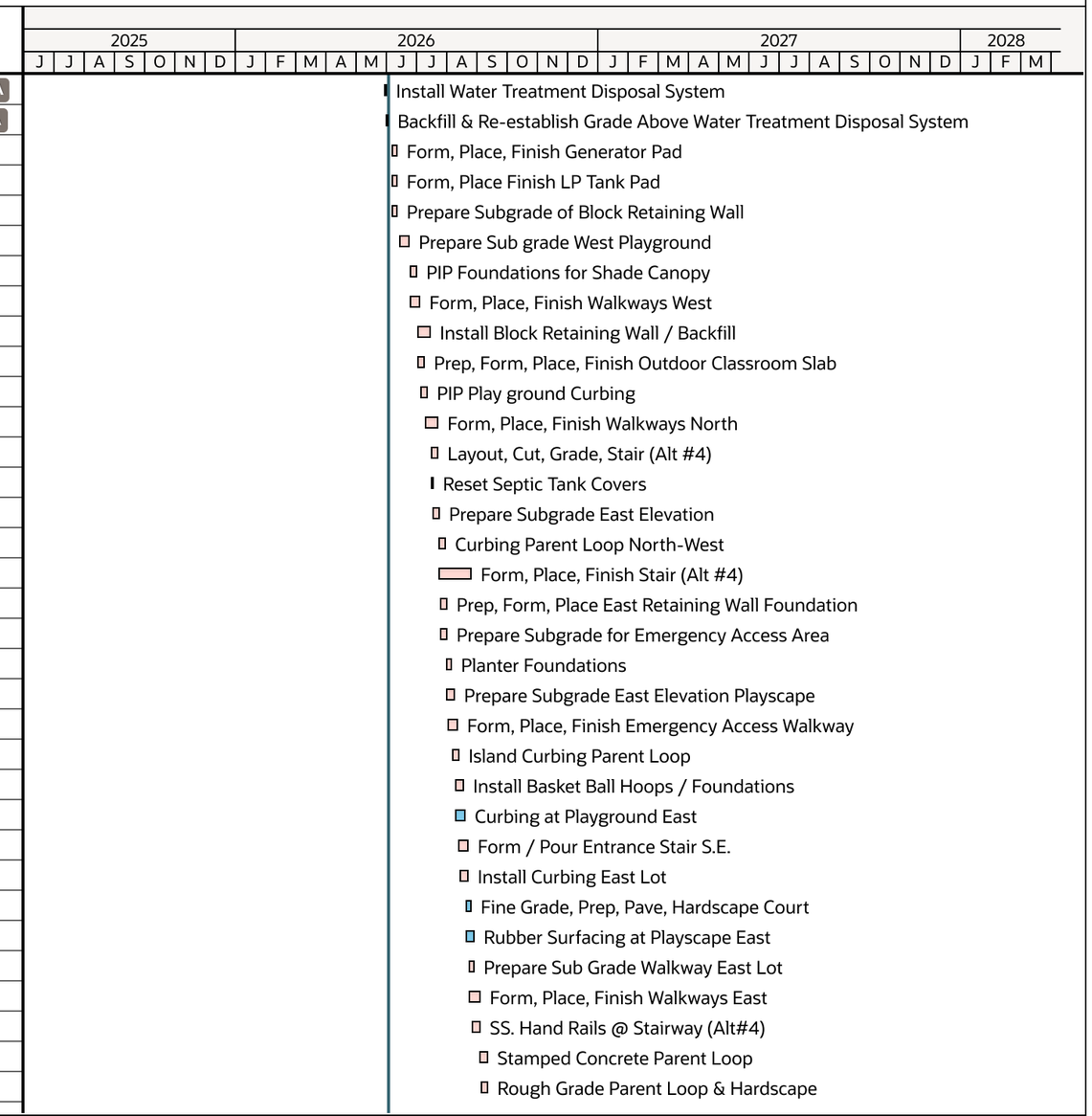
The Sherman School - Construction Schedule

Data Date: 01-Jun-26

	ID	Name	Start	Finish
69	S1535	Install Water Treatment Disposal System	28-May-26 A	29-May-26 A
70	S1545	Backfill & Re-establish Grade Above Water Treatment Disposal System	29-May-26 A	01-Jun-26 A
71	S1290	Form, Place, Finish Generator Pad	05-Jun-26	10-Jun-26
72	S1300	Form, Place Finish LP Tank Pad	05-Jun-26	10-Jun-26
73	S1250	Prepare Subgrade of Block Retaining Wall	05-Jun-26	10-Jun-26
74	S1330	Prepare Sub grade West Playground	12-Jun-26	22-Jun-26
75	S1230	PIP Foundations for Shade Canopy	22-Jun-26	30-Jun-26
76	S1340	Form, Place, Finish Walkways West	22-Jun-26	02-Jul-26
77	S1260	Install Block Retaining Wall / Backfill	29-Jun-26	13-Jul-26
78	S1270	Prep, Form, Place, Finish Outdoor Classroom Slab	30-Jun-26	07-Jul-26
79	S1380	PIP Play ground Curbing	02-Jul-26	10-Jul-26
80	S1310	Form, Place, Finish Walkways North	07-Jul-26	21-Jul-26
81	X8110	Layout, Cut, Grade, Stair (Alt #4)	13-Jul-26	21-Jul-26
82	S1265	Reset Septic Tank Covers	13-Jul-26	15-Jul-26
83	S1220	Prepare Subgrade East Elevation	15-Jul-26	23-Jul-26
84	S1350	Curbing Parent Loop North-West	21-Jul-26	29-Jul-26
85	X9910	Form, Place, Finish Stair (Alt #4)	21-Jul-26	25-Aug-26
86	S1280	Prep, Form, Place East Retaining Wall Foundation	23-Jul-26	31-Jul-26
87	X8060	Prepare Subgrade for Emergency Access Area	23-Jul-26	30-Jul-26
88	S1370	Planter Foundations	29-Jul-26	05-Aug-26
89	X8070	Prepare Subgrade East Elevation Playscape	29-Jul-26	07-Aug-26
90	X8240	Form, Place, Finish Emergency Access Walkway	30-Jul-26	11-Aug-26
91	S1390	Island Curbing Parent Loop	05-Aug-26	12-Aug-26
92	X8100	Install Basket Ball Hoops / Foundations	07-Aug-26	17-Aug-26
93	X8190	Curbing at Playground East	07-Aug-26	18-Aug-26
94	X8270	Form / Pour Entrance Stair S.E.	11-Aug-26	21-Aug-26
95	S1410	Install Curbing East Lot	12-Aug-26	21-Aug-26
96	X8220	Fine Grade, Prep, Pave, Hardscape Court	18-Aug-26	25-Aug-26
97	X8330	Rubber Surfacing at Playscape East	18-Aug-26	28-Aug-26
98	S1360	Prepare Sub Grade Walkway East Lot	21-Aug-26	28-Aug-26
99	S1320	Form, Place, Finish Walkways East	21-Aug-26	02-Sep-26
100	X8360	SS. Hand Rails @ Stairway (Alt#4)	25-Aug-26	03-Sep-26
101	S1450	Stamped Concrete Parent Loop	01-Sep-26	10-Sep-26
102	S1420	Rough Grade Parent Loop & Hardscape	02-Sep-26	10-Sep-26



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The Sherman School - Construction Schedule

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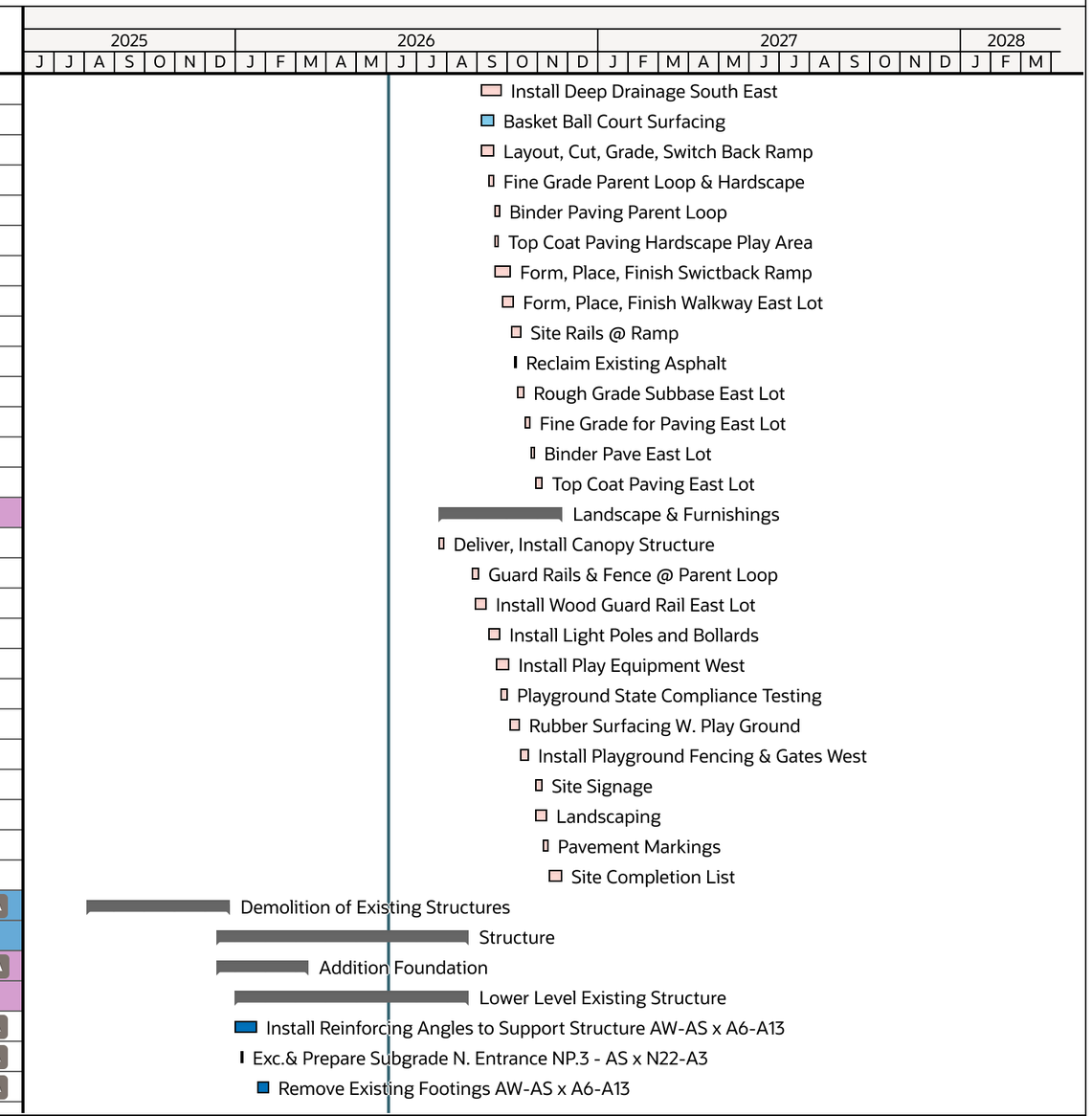
	ID	Name	Start	Finish
103	X8140	Install Deep Drainage South East	02-Sep-26	24-Sep-26
104	X8350	Basket Ball Court Surfacing	03-Sep-26	16-Sep-26
105	X8080	Layout, Cut, Grade, Switch Back Ramp	03-Sep-26	16-Sep-26
106	S1440	Fine Grade Parent Loop & Hardscape	10-Sep-26	16-Sep-26
107	S1470	Binder Paving Parent Loop	16-Sep-26	22-Sep-26
108	S1480	Top Coat Paving Hardscape Play Area	16-Sep-26	21-Sep-26
109	X8210	Form, Place, Finish Swictback Ramp	16-Sep-26	02-Oct-26
110	S1400	Form, Place, Finish Walkway East Lot	24-Sep-26	06-Oct-26
111	X8340	Site Rails @ Ramp	02-Oct-26	13-Oct-26
112	S1430	Reclaim Existing Asphalt	06-Oct-26	09-Oct-26
113	S1460	Rough Grade Subbase East Lot	09-Oct-26	16-Oct-26
114	S1490	Fine Grade for Paving East Lot	16-Oct-26	23-Oct-26
115	S1500	Binder Pave East Lot	23-Oct-26	28-Oct-26
116	S1510	Top Coat Paving East Lot	28-Oct-26	04-Nov-26
117	Landscape & Furnishings	Landscape & Furnishings	21-Jul-26	24-Nov-26
118	S1520	Deliver, Install Canopy Structure	21-Jul-26	28-Jul-26
119	S1550	Guard Rails & Fence @ Parent Loop	25-Aug-26	01-Sep-26
120	S1530	Install Wood Guard Rail East Lot	28-Aug-26	09-Sep-26
121	S1570	Install Light Poles and Bollards	10-Sep-26	22-Sep-26
122	S1540	Install Play Equipment West	17-Sep-26	01-Oct-26
123	S1590	Playground State Compliance Testing	22-Sep-26	29-Sep-26
124	S1560	Rubber Surfacing W. Play Ground	01-Oct-26	12-Oct-26
125	S1580	Install Playground Fencing & Gates West	12-Oct-26	21-Oct-26
126	S1600	Site Signage	28-Oct-26	04-Nov-26
127	S1610	Landscaping	28-Oct-26	09-Nov-26
128	S1620	Pavement Markings	04-Nov-26	10-Nov-26
129	S1630	Site Completion List	10-Nov-26	24-Nov-26
130	Demolition of Existing Str…	Demolition of Existing Structures	01-Aug-25 A	24-Dec-25 A
131	Structure	Structure	11-Dec-25 A	21-Aug-26
132	Addition Foundation	Addition Foundation	11-Dec-25 A	13-Mar-26 A
133	Lower Level Existing Str…	Lower Level Existing Structure	29-Dec-25 A	21-Aug-26
134	X1230	Install Reinforcing Angles to Support Structure AW-AS x A6-A13	29-Dec-25 A	21-Jan-26 A
135	X1240	Exc.& Prepare Subgrade N. Entrance NP.3 - AS x N22-A3	05-Jan-26 A	07-Jan-26 A
136	X1250	Remove Existing Footings AW-AS x A6-A13	21-Jan-26 A	03-Feb-26 A



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Current
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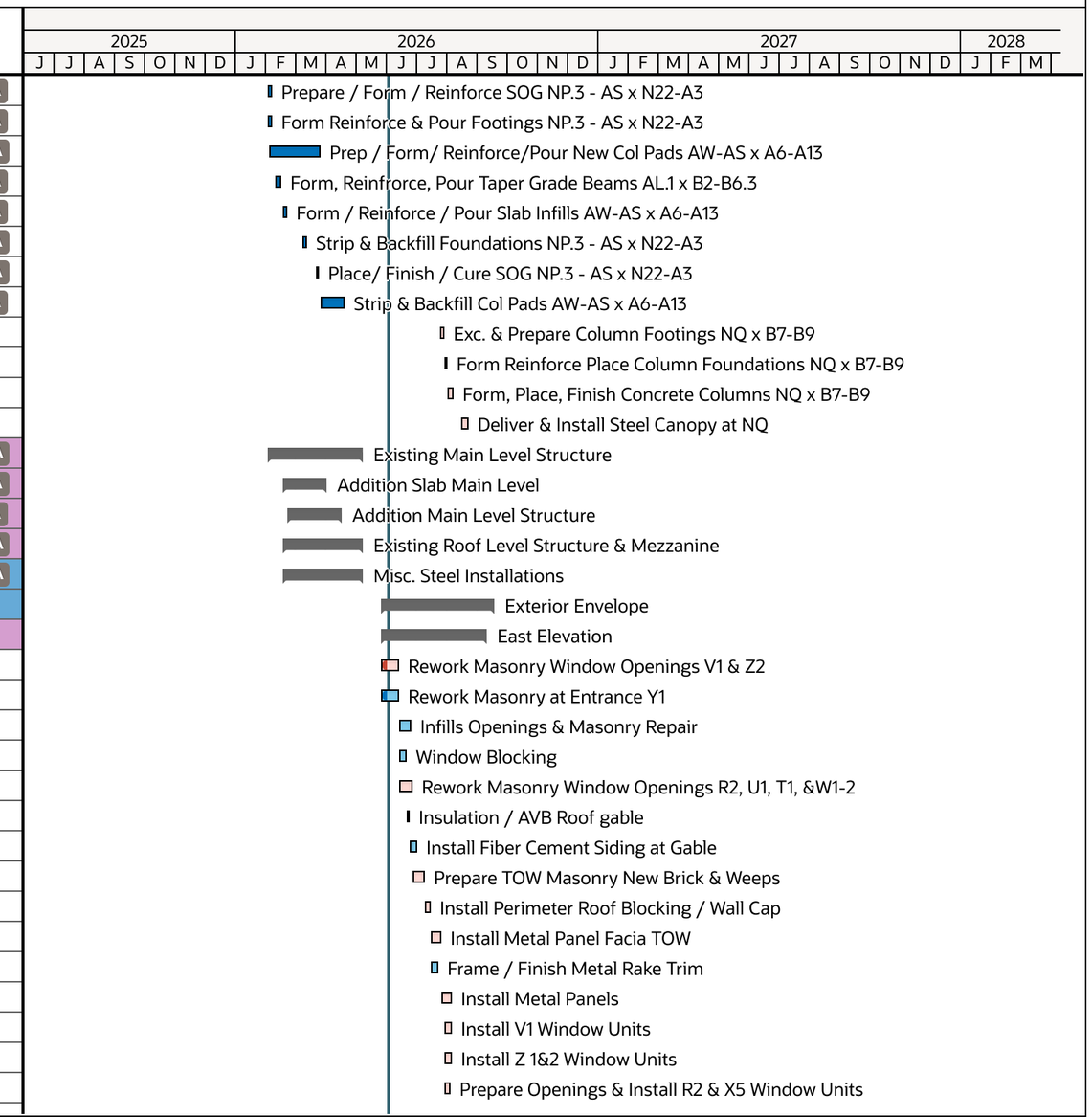
The Sherman School - Construction Schedule

Data Date: 01-Jun-26

	ID	Name	Start	Finish
137	X1310	Prepare / Form / Reinforce SOG NP.3 - AS x N22-A3	02-Feb-26 A	05-Feb-26 A
138	X1260	Form Reinforce & Pour Footings NP.3 - AS x N22-A3	02-Feb-26 A	05-Feb-26 A
139	X1300	Prep / Form/ Reinforce/Pour New Col Pads AW-AS x A6-A13	03-Feb-26 A	25-Mar-26 A
140	X1320	Form, Reinfrorce, Pour Taper Grade Beams AL.1 x B2-B6.3	09-Feb-26 A	13-Feb-26 A
141	X1350	Form / Reinforce / Pour Slab Infills AW-AS x A6-A13	16-Feb-26 A	19-Feb-26 A
142	X1290	Strip & Backfill Foundations NP.3 - AS x N22-A3	06-Mar-26 A	10-Mar-26 A
143	X1330	Place/ Finish / Cure SOG NP.3 - AS x N22-A3	20-Mar-26 A	20-Mar-26 A
144	X1340	Strip & Backfill Col Pads AW-AS x A6-A13	25-Mar-26 A	17-Apr-26 A
145	X9040	Exc. & Prepare Column Footings NQ x B7-B9	23-Jul-26	28-Jul-26
146	X9070	Form Reinforce Place Column Foundations NQ x B7-B9	28-Jul-26	30-Jul-26
147	X9090	Form, Place, Finish Concrete Columns NQ x B7-B9	30-Jul-26	05-Aug-26
148	X9095	Deliver & Install Steel Canopy at NQ	14-Aug-26	21-Aug-26
149	Existing Main Level Stru...	Existing Main Level Structure	02-Feb-26 A	06-May-26 A
150	Addition Slab Main Level	Addition Slab Main Level	16-Feb-26 A	31-Mar-26 A
151	Addition Main Level Str...	Addition Main Level Structure	19-Feb-26 A	15-Apr-26 A
152	Existing Roof Level Stru...	Existing Roof Level Structure & Mezzanine	16-Feb-26 A	06-May-26 A
153	Misc. Steel Installations	Misc. Steel Installations	16-Feb-26 A	05-May-26 A
154	Exterior Envelope	Exterior Envelope	25-May-26 A	16-Sep-26
155	East Elevation	East Elevation	25-May-26 A	08-Sep-26
156	X1800	Rework Masonry Window Openings V1 & Z2	25-May-26 A	12-Jun-26
157	X1810	Rework Masonry at Entrance Y1	25-May-26 A	12-Jun-26
158	X1820	Infills Openings & Masonry Repair	12-Jun-26	24-Jun-26
159	X1830	Window Blocking	12-Jun-26	19-Jun-26
160	X1840	Rework Masonry Window Openings R2, U1, T1, &W1-2	12-Jun-26	26-Jun-26
161	X1870	Insulation / AVB Roof gable	19-Jun-26	23-Jun-26
162	X1880	Install Fiber Cement Siding at Gable	23-Jun-26	30-Jun-26
163	X1900	Prepare TOW Masonry New Brick & Weeps	26-Jun-26	07-Jul-26
164	X1920	Install Perimeter Roof Blocking / Wall Cap	07-Jul-26	14-Jul-26
165	X1930	Install Metal Panel Facia TOW	14-Jul-26	24-Jul-26
166	X1940	Frame / Finish Metal Rake Trim	14-Jul-26	21-Jul-26
167	X1950	Install Metal Panels	24-Jul-26	05-Aug-26
168	X1850	Install V1 Window Units	27-Jul-26	04-Aug-26
169	X1860	Install Z 1&2 Window Units	27-Jul-26	04-Aug-26
170	X1890	Prepare Openings & Install R2 & X5 Window Units	27-Jul-26	03-Aug-26



Current
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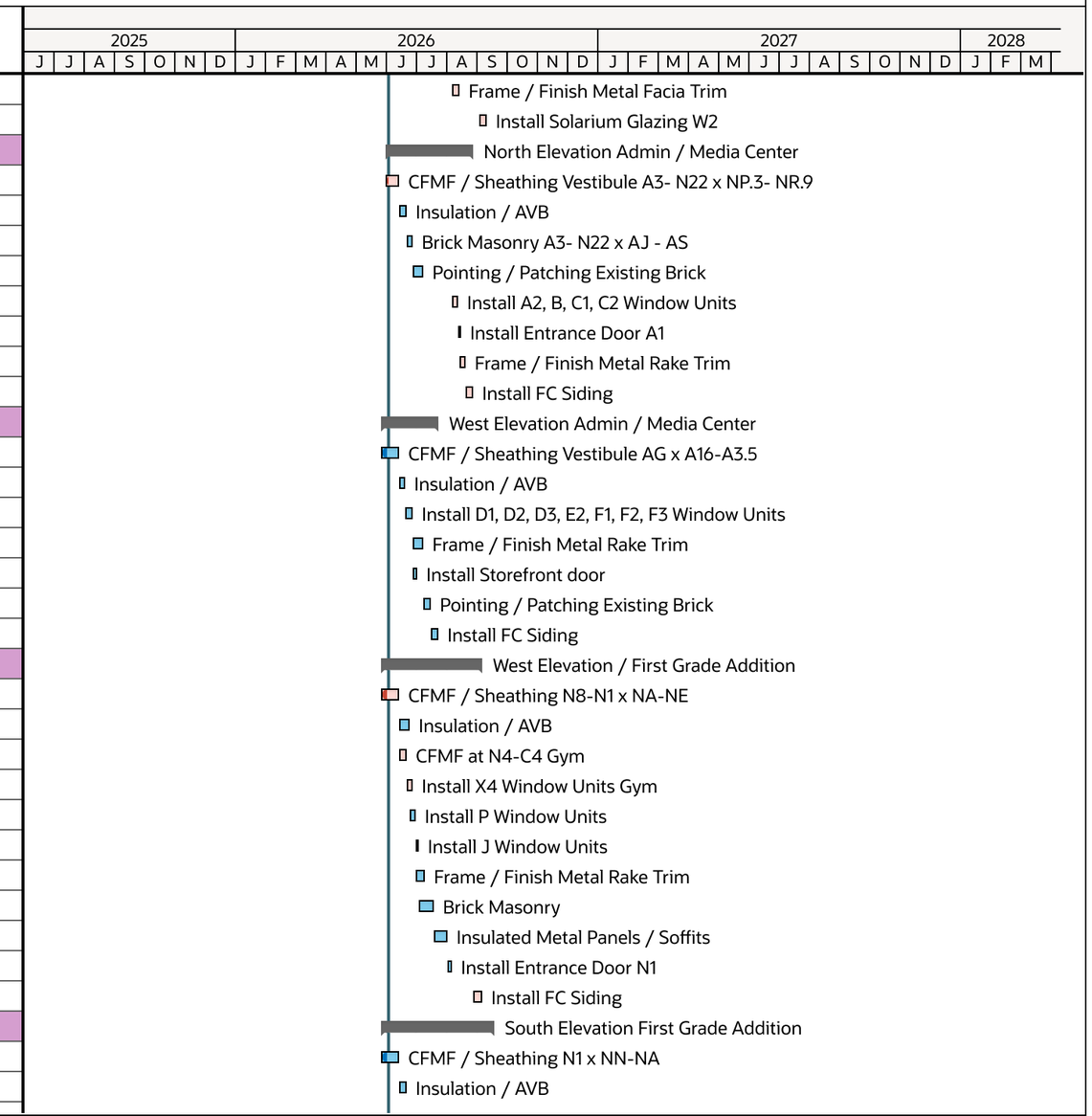
Project ID: 24-014
Prepared By: Ben Chasse
06-Jun-26 10:25 a.m.
01-Jun-26

The Sherman School - Construction Schedule

Data Date: 01-Jun-26

	ID	Name	Start	Finish
171	X1960	Frame / Finish Metal Facia Trim	05-Aug-26	12-Aug-26
172	X1910	Install Solarium Glazing W2	01-Sep-26	08-Sep-26
173	North Elevation Admin ...	North Elevation Admin / Media Center	29-May-26 A	26-Aug-26
174	X1970	CFMF / Sheathing Vestibule A3- N22 x NP.3- NR.9	29-May-26 A	12-Jun-26
175	X1980	Insulation / AVB	12-Jun-26	19-Jun-26
176	X1990	Brick Masonry A3- N22 x AJ - AS	19-Jun-26	26-Jun-26
177	X2010	Pointing / Patching Existing Brick	26-Jun-26	06-Jul-26
178	X2000	Install A2, B, C1, C2 Window Units	04-Aug-26	11-Aug-26
179	X2020	Install Entrance Door A1	11-Aug-26	14-Aug-26
180	X2030	Frame / Finish Metal Rake Trim	12-Aug-26	19-Aug-26
181	X2040	Install FC Siding	19-Aug-26	26-Aug-26
182	West Elevation Admin / ...	West Elevation Admin / Media Center	25-May-26 A	21-Jul-26
183	X2050	CFMF / Sheathing Vestibule AG x A16-A3.5	25-May-26 A	12-Jun-26
184	X2060	Insulation / AVB	12-Jun-26	18-Jun-26
185	X2070	Install D1, D2, D3, E2, F1, F2, F3 Window Units	18-Jun-26	25-Jun-26
186	X2090	Frame / Finish Metal Rake Trim	25-Jun-26	06-Jul-26
187	X2080	Install Storefront door	25-Jun-26	30-Jun-26
188	X2100	Pointing / Patching Existing Brick	06-Jul-26	14-Jul-26
189	X2110	Install FC Siding	14-Jul-26	21-Jul-26
190	West Elevation / First Gr...	West Elevation / First Grade Addition	25-May-26 A	04-Sep-26
191	X2120	CFMF / Sheathing N8-N1 x NA-NE	25-May-26 A	12-Jun-26
192	X2140	Insulation / AVB	12-Jun-26	22-Jun-26
193	X2130	CFMF at N4-C4 Gym	12-Jun-26	19-Jun-26
194	X2150	Install X4 Window Units Gym	19-Jun-26	26-Jun-26
195	X2160	Install P Window Units	22-Jun-26	29-Jun-26
196	X2170	Install J Window Units	29-Jun-26	02-Jul-26
197	X2180	Frame / Finish Metal Rake Trim	29-Jun-26	08-Jul-26
198	X2190	Brick Masonry	02-Jul-26	17-Jul-26
199	X2200	Insulated Metal Panels / Soffits	17-Jul-26	31-Jul-26
200	X2220	Install Entrance Door N1	31-Jul-26	05-Aug-26
201	X2210	Install FC Siding	26-Aug-26	04-Sep-26
202	South Elevation First Gr...	South Elevation First Grade Addition	25-May-26 A	16-Sep-26
203	X2230	CFMF / Sheathing N1 x NN-NA	25-May-26 A	12-Jun-26
204	X2240	Insulation / AVB	12-Jun-26	19-Jun-26



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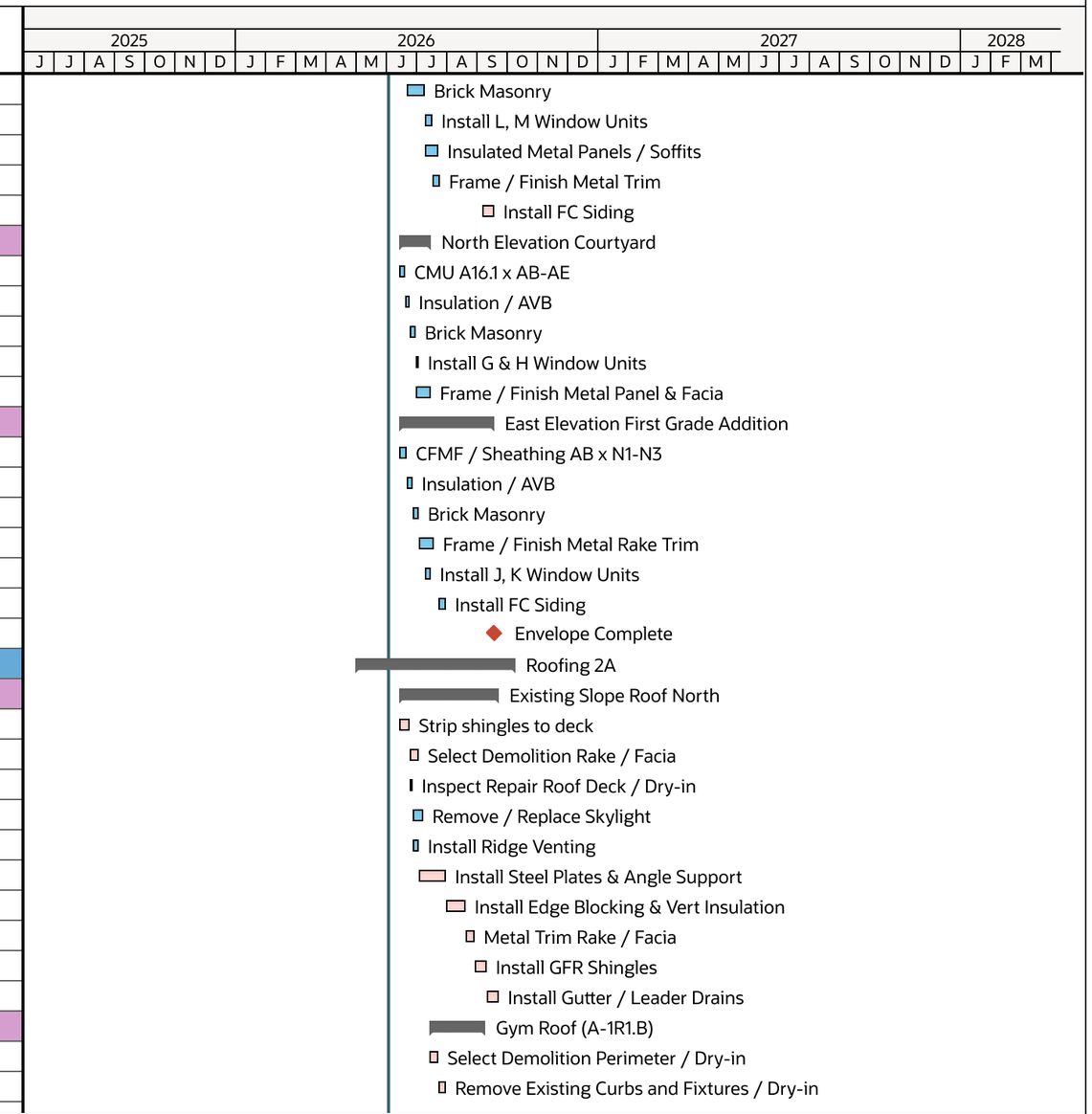
	ID	Name	Start	Finish
205	X2250	Brick Masonry	19-Jun-26	08-Jul-26
206	X2260	Install L, M Window Units	08-Jul-26	15-Jul-26
207	X2270	Insulated Metal Panels / Soffits	08-Jul-26	22-Jul-26
208	X2280	Frame / Finish Metal Trim	15-Jul-26	23-Jul-26
209	X2290	Install FC Siding	04-Sep-26	16-Sep-26
210	North Elevation Courtyard	North Elevation Courtyard	12-Jun-26	14-Jul-26
211	X2300	CMU A16.1 x AB-AE	12-Jun-26	18-Jun-26
212	X2310	Insulation / AVB	18-Jun-26	23-Jun-26
213	X2320	Brick Masonry	23-Jun-26	29-Jun-26
214	X2330	Install G & H Window Units	29-Jun-26	02-Jul-26
215	X2340	Frame / Finish Metal Panel & Facia	29-Jun-26	14-Jul-26
216	East Elevation First Grad...	East Elevation First Grade Addition	12-Jun-26	16-Sep-26
217	X2350	CFMF / Sheathing AB x N1-N3	12-Jun-26	19-Jun-26
218	X2360	Insulation / AVB	19-Jun-26	25-Jun-26
219	X2370	Brick Masonry	25-Jun-26	02-Jul-26
220	X2390	Frame / Finish Metal Rake Trim	02-Jul-26	17-Jul-26
221	X2380	Install J, K Window Units	07-Jul-26	13-Jul-26
222	X2400	Install FC Siding	21-Jul-26	30-Jul-26
223	X2410	Envelope Complete		16-Sep-26
224	Roofing 2A	Roofing 2A	28-Apr-26 A	08-Oct-26
225	Existing Slope Roof North	Existing Slope Roof North	12-Jun-26	21-Sep-26
226	X3000	Strip shingles to deck	12-Jun-26	22-Jun-26
227	X3010	Select Demolition Rake / Facia	22-Jun-26	02-Jul-26
228	X3020	Inspect Repair Roof Deck / Dry-in	22-Jun-26	26-Jun-26
229	X3030	Remove / Replace Skylight	26-Jun-26	06-Jul-26
230	X3040	Install Ridge Venting	26-Jun-26	02-Jul-26
231	X3050	Install Steel Plates & Angle Support	02-Jul-26	29-Jul-26
232	X3060	Install Edge Blocking & Vert Insulation	29-Jul-26	19-Aug-26
233	X3070	Metal Trim Rake / Facia	19-Aug-26	28-Aug-26
234	X3080	Install GFR Shingles	28-Aug-26	09-Sep-26
235	X3090	Install Gutter / Leader Drains	09-Sep-26	21-Sep-26
236	Gym Roof (A-1R1.B)	Gym Roof (A-1R1.B)	13-Jul-26	08-Sep-26
237	X3100	Select Demolition Perimeter / Dry-in	13-Jul-26	22-Jul-26
238	X3110	Remove Existing Curbs and Fixtures / Dry-in	22-Jul-26	29-Jul-26



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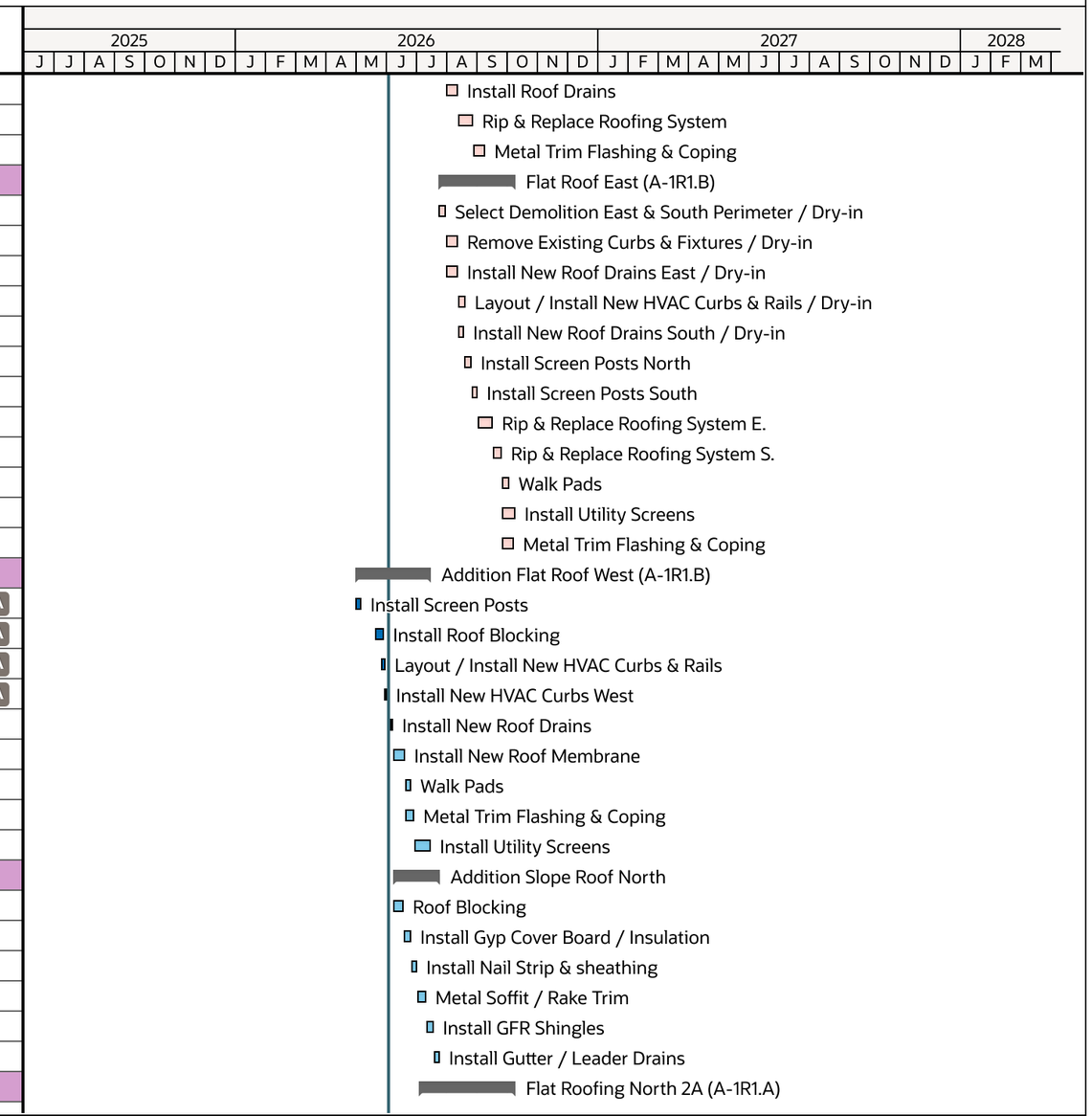
	ID	Name	Start	Finish
239	X3120	Install Roof Drains	29-Jul-26	10-Aug-26
240	X3130	Rip & Replace Roofing System	10-Aug-26	26-Aug-26
241	X3140	Metal Trim Flashing & Coping	26-Aug-26	08-Sep-26
242	Flat Roof East (A-1R1.B)	Flat Roof East (A-1R1.B)	22-Jul-26	08-Oct-26
243	X3150	Select Demolition East & South Perimeter / Dry-in	22-Jul-26	30-Jul-26
244	X3160	Remove Existing Curbs & Fixtures / Dry-in	30-Jul-26	10-Aug-26
245	X3180	Install New Roof Drains East / Dry-in	30-Jul-26	10-Aug-26
246	X3170	Layout / Install New HVAC Curbs & Rails / Dry-in	10-Aug-26	19-Aug-26
247	X3190	Install New Roof Drains South / Dry-in	10-Aug-26	17-Aug-26
248	X3200	Install Screen Posts North	17-Aug-26	24-Aug-26
249	X3210	Install Screen Posts South	24-Aug-26	31-Aug-26
250	X3220	Rip & Replace Roofing System E.	31-Aug-26	15-Sep-26
251	X3230	Rip & Replace Roofing System S.	15-Sep-26	24-Sep-26
252	X3260	Walk Pads	24-Sep-26	01-Oct-26
253	X3240	Install Utility Screens	24-Sep-26	08-Oct-26
254	X3250	Metal Trim Flashing & Coping	24-Sep-26	06-Oct-26
255	Addition Flat Roof West ...	Addition Flat Roof West (A-1R1.B)	28-Apr-26 A	13-Jul-26
256	X3300	Install Screen Posts	28-Apr-26 A	04-May-26 A
257	X3310	Install Roof Blocking	18-May-26 A	28-May-26 A
258	X3280	Layout / Install New HVAC Curbs & Rails	25-May-26 A	29-May-26 A
259	X3270	Install New HVAC Curbs West	28-May-26 A	29-May-26 A
260	X3290	Install New Roof Drains	02-Jun-26 A	05-Jun-26
261	X3320	Install New Roof Membrane	05-Jun-26	17-Jun-26
262	X3350	Walk Pads	17-Jun-26	24-Jun-26
263	X3330	Metal Trim Flashing & Coping	17-Jun-26	26-Jun-26
264	X3340	Install Utility Screens	26-Jun-26	13-Jul-26
265	Addition Slope Roof North	Addition Slope Roof North	05-Jun-26	23-Jul-26
266	X3360	Roof Blocking	05-Jun-26	16-Jun-26
267	X3370	Install Gyp Cover Board / Insulation	16-Jun-26	23-Jun-26
268	X3380	Install Nail Strip & sheathing	23-Jun-26	30-Jun-26
269	X3390	Metal Soffit / Rake Trim	30-Jun-26	09-Jul-26
270	X3400	Install GFR Shingles	09-Jul-26	16-Jul-26
271	X3410	Install Gutter / Leader Drains	16-Jul-26	23-Jul-26
272	Flat Roofing North 2A (...	Flat Roofing North 2A (A-1R1.A)	02-Jul-26	08-Oct-26



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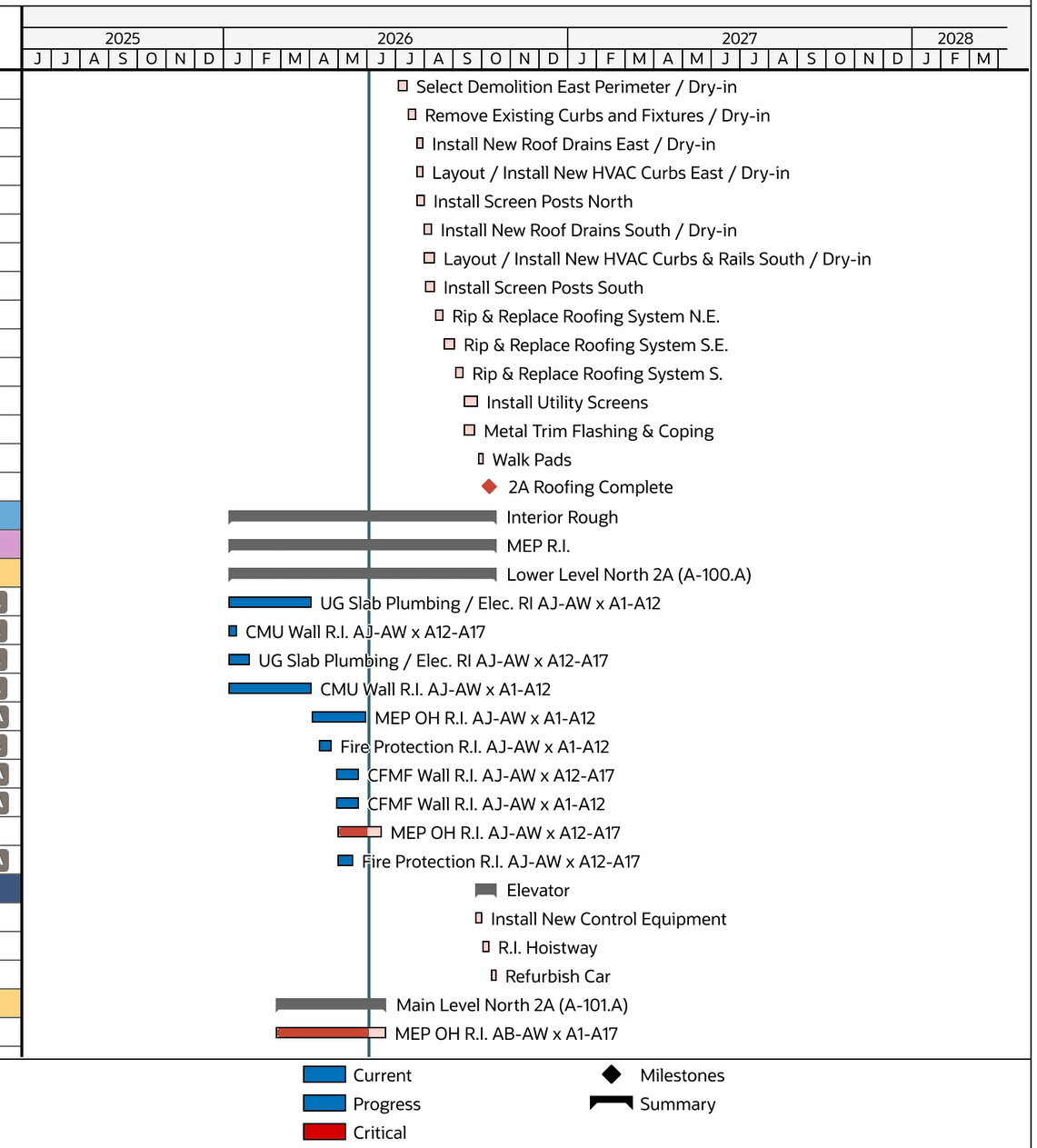
	ID	Name	Start	Finish
273	X3420	Select Demolition East Perimeter / Dry-in	02-Jul-26	13-Jul-26
274	X3430	Remove Existing Curbs and Fixtures / Dry-in	13-Jul-26	22-Jul-26
275	X3460	Install New Roof Drains East / Dry-in	22-Jul-26	29-Jul-26
276	X3440	Layout / Install New HVAC Curbs East / Dry-in	22-Jul-26	30-Jul-26
277	X3480	Install Screen Posts North	22-Jul-26	31-Jul-26
278	X3470	Install New Roof Drains South / Dry-in	29-Jul-26	07-Aug-26
279	X3450	Layout / Install New HVAC Curbs & Rails South / Dry-in	30-Jul-26	10-Aug-26
280	X3490	Install Screen Posts South	31-Jul-26	10-Aug-26
281	X3500	Rip & Replace Roofing System N.E.	10-Aug-26	20-Aug-26
282	X3510	Rip & Replace Roofing System S.E.	20-Aug-26	01-Sep-26
283	X3520	Rip & Replace Roofing System S.	01-Sep-26	11-Sep-26
284	X3530	Install Utility Screens	11-Sep-26	25-Sep-26
285	X3540	Metal Trim Flashing & Coping	11-Sep-26	23-Sep-26
286	X3550	Walk Pads	25-Sep-26	02-Oct-26
287	X3560	2A Roofing Complete		08-Oct-26
288	Interior Rough	Interior Rough	05-Jan-26 A	15-Oct-26
289	MEP R.I.	MEP R.I.	05-Jan-26 A	15-Oct-26
290	Lower Level North 2A (...	Lower Level North 2A (A-100.A)	05-Jan-26 A	15-Oct-26
291	X4010	UG Slab Plumbing / Elec. RI AJ-AW x A1-A12	05-Jan-26 A	02-Apr-26 A
292	X4040	CMU Wall R.I. AJ-AW x A12-A17	05-Jan-26 A	14-Jan-26 A
293	X4020	UG Slab Plumbing / Elec. RI AJ-AW x A12-A17	05-Jan-26 A	28-Jan-26 A
294	X4030	CMU Wall R.I. AJ-AW x A1-A12	05-Jan-26 A	02-Apr-26 A
295	X4000	MEP OH R.I. AJ-AW x A1-A12	02-Apr-26 A	29-May-26 A
296	X4015	Fire Protection R.I. AJ-AW x A1-A12	09-Apr-26 A	22-Apr-26 A
297	X4070	CFMF Wall R.I. AJ-AW x A12-A17	27-Apr-26 A	22-May-26 A
298	X4060	CFMF Wall R.I. AJ-AW x A1-A12	27-Apr-26 A	22-May-26 A
299	X4050	MEP OH R.I. AJ-AW x A12-A17	29-Apr-26 A	15-Jun-26
300	X4055	Fire Protection R.I. AJ-AW x A12-A17	29-Apr-26 A	15-May-26 A
301	Elevator	Elevator	23-Sep-26	15-Oct-26
302	X4090	Install New Control Equipment	23-Sep-26	29-Sep-26
303	X4100	R.I. Hoistway	30-Sep-26	08-Oct-26
304	X4110	Refurbish Car	09-Oct-26	15-Oct-26
305	Main Level North 2A (...	Main Level North 2A (A-101.A)	23-Feb-26 A	19-Jun-26
306	X4120	MEP OH R.I. AB-AW x A1-A17	23-Feb-26 A	19-Jun-26



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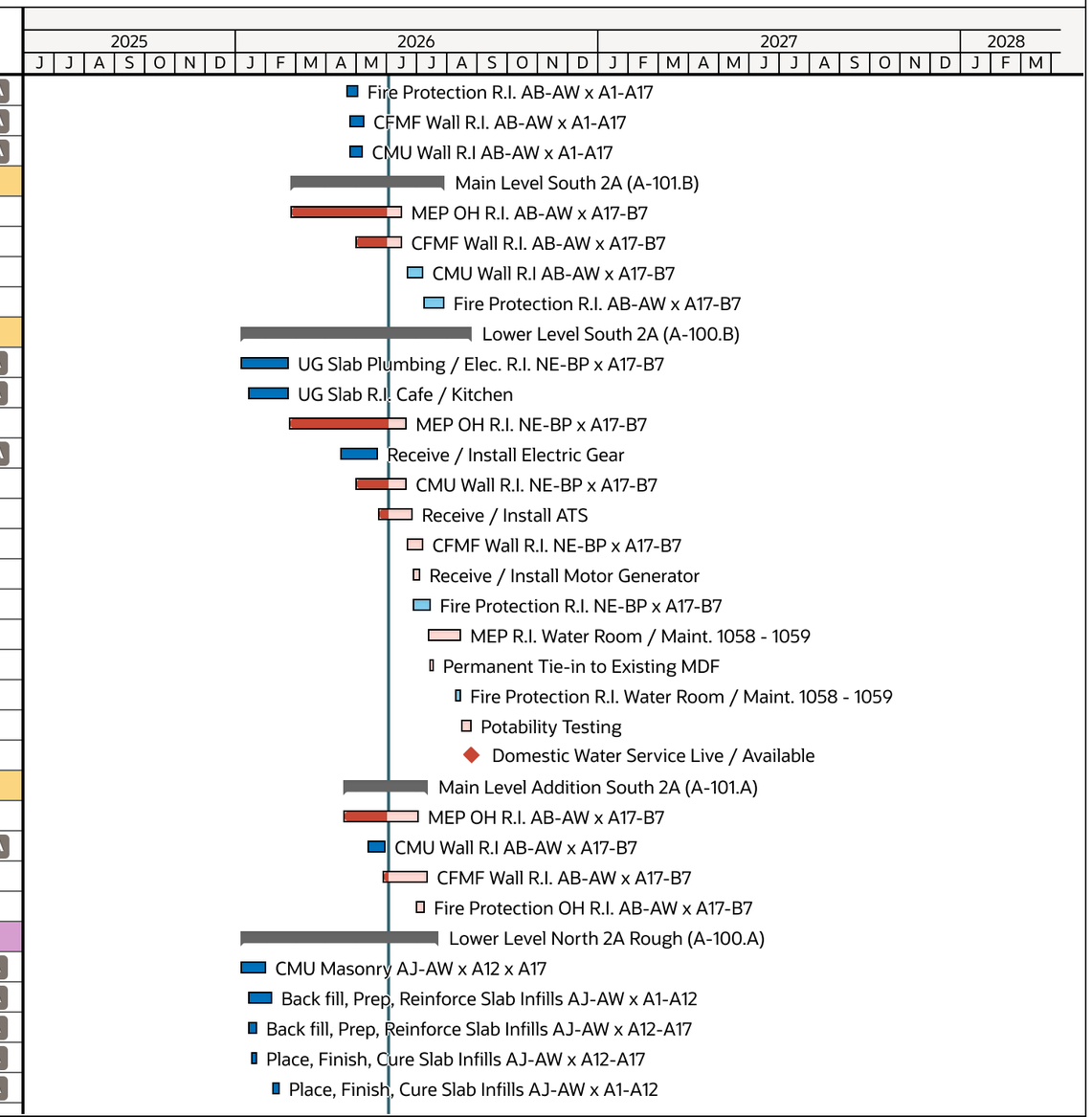
	ID	Name	Start	Finish
307	X4125	Fire Protection R.I. AB-AW x A1-A17	20-Apr-26 A	01-May-26 A
308	X4140	CFMF Wall R.I. AB-AW x A1-A17	23-Apr-26 A	08-May-26 A
309	X4130	CMU Wall R.I AB-AW x A1-A17	23-Apr-26 A	06-May-26 A
310	Main Level South 2A (...	Main Level South 2A (A-101.B)	23-Feb-26 A	27-Jul-26
311	X4150	MEP OH R.I. AB-AW x A17-B7	23-Feb-26 A	15-Jun-26
312	X4170	CFMF Wall R.I. AB-AW x A17-B7	28-Apr-26 A	15-Jun-26
313	X4160	CMU Wall R.I AB-AW x A17-B7	19-Jun-26	06-Jul-26
314	X4155	Fire Protection R.I. AB-AW x A17-B7	06-Jul-26	27-Jul-26
315	Lower Level South 2A (...	Lower Level South 2A (A-100.B)	05-Jan-26 A	25-Aug-26
316	X4180	UG Slab Plumbing / Elec. R.I. NE-BP x A17-B7	05-Jan-26 A	20-Feb-26 A
317	X4190	UG Slab R.I. Cafe / Kitchen	12-Jan-26 A	20-Feb-26 A
318	X4200	MEP OH R.I. NE-BP x A17-B7	20-Feb-26 A	19-Jun-26
319	X4210	Receive / Install Electric Gear	13-Apr-26 A	21-May-26 A
320	X4220	CMU Wall R.I. NE-BP x A17-B7	28-Apr-26 A	19-Jun-26
321	X4250	Receive / Install ATS	22-May-26 A	25-Jun-26
322	X4230	CFMF Wall R.I. NE-BP x A17-B7	19-Jun-26	06-Jul-26
323	X4270	Receive / Install Motor Generator	26-Jun-26	02-Jul-26
324	X4215	Fire Protection R.I. NE-BP x A17-B7	26-Jun-26	13-Jul-26
325	X4260	MEP R.I. Water Room / Maint. 1058 - 1059	10-Jul-26	14-Aug-26
326	X4240	Permanent Tie-in to Existing MDF	13-Jul-26	17-Jul-26
327	X4275	Fire Protection R.I. Water Room / Maint. 1058 - 1059	07-Aug-26	14-Aug-26
328	X4280	Potability Testing	14-Aug-26	25-Aug-26
329	X4290	Domestic Water Service Live / Available		25-Aug-26
330	Main Level Addition So...	Main Level Addition South 2A (A-101.A)	16-Apr-26 A	10-Jul-26
331	X4300	MEP OH R.I. AB-AW x A17-B7	16-Apr-26 A	01-Jul-26
332	X4310	CMU Wall R.I AB-AW x A17-B7	11-May-26 A	29-May-26 A
333	X4320	CFMF Wall R.I. AB-AW x A17-B7	26-May-26 A	10-Jul-26
334	X4305	Fire Protection OH R.I. AB-AW x A17-B7	29-Jun-26	08-Jul-26
335	Lower Level North 2A R...	Lower Level North 2A Rough (A-100.A)	05-Jan-26 A	21-Jul-26
336	X4420	CMU Masonry AJ-AW x A12 x A17	05-Jan-26 A	30-Jan-26 A
337	X4330	Back fill, Prep, Reinforce Slab Infills AJ-AW x A1-A12	12-Jan-26 A	06-Feb-26 A
338	X4340	Back fill, Prep, Reinforce Slab Infills AJ-AW x A12-A17	12-Jan-26 A	21-Jan-26 A
339	X4350	Place, Finish, Cure Slab Infills AJ-AW x A12-A17	16-Jan-26 A	22-Jan-26 A
340	X4360	Place, Finish, Cure Slab Infills AJ-AW x A1-A12	06-Feb-26 A	12-Feb-26 A



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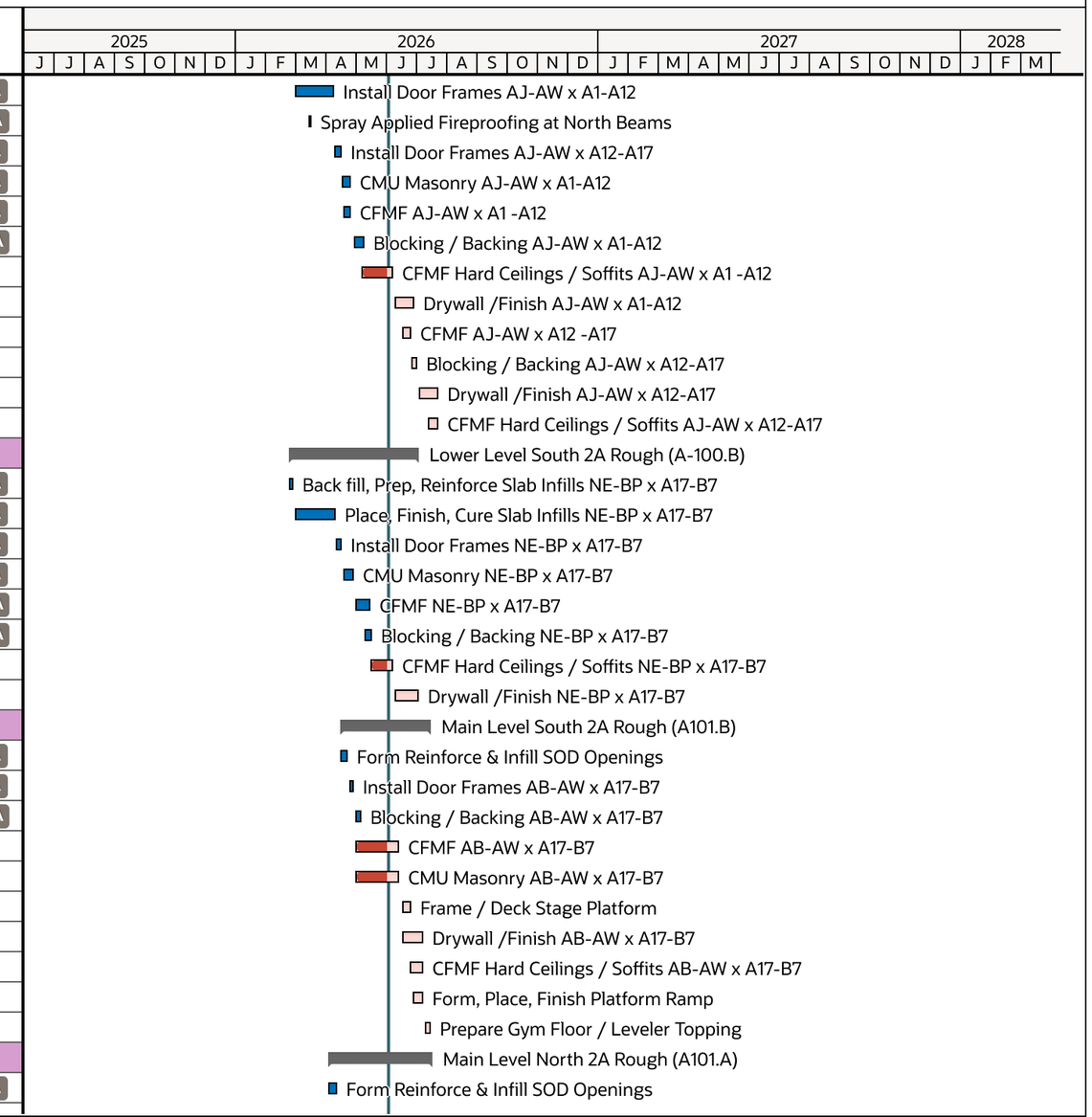
	ID	Name	Start	Finish
341	X4370	Install Door Frames AJ-AW x A1-A12	26-Feb-26 A	07-Apr-26 A
342	X4365	Spray Applied Fireproofing at North Beams	12-Mar-26 A	12-Mar-26 A
343	X4380	Install Door Frames AJ-AW x A12-A17	08-Apr-26 A	14-Apr-26 A
344	X4410	CMU Masonry AJ-AW x A1-A12	15-Apr-26 A	24-Apr-26 A
345	X4390	CFMF AJ-AW x A1 -A12	16-Apr-26 A	24-Apr-26 A
346	X4400	Blocking / Backing AJ-AW x A1-A12	27-Apr-26 A	08-May-26 A
347	X4450	CFMF Hard Ceilings / Soffits AJ-AW x A1 -A12	04-May-26 A	05-Jun-26
348	X4430	Drywall /Finish AJ-AW x A1-A12	08-Jun-26	26-Jun-26
349	X4440	CFMF AJ-AW x A12 -A17	15-Jun-26	23-Jun-26
350	X4460	Blocking / Backing AJ-AW x A12-A17	24-Jun-26	30-Jun-26
351	X4470	Drywall /Finish AJ-AW x A12-A17	01-Jul-26	21-Jul-26
352	X4480	CFMF Hard Ceilings / Soffits AJ-AW x A12-A17	10-Jul-26	21-Jul-26
353	Lower Level South 2A R...	Lower Level South 2A Rough (A-100.B)	20-Feb-26 A	01-Jul-26
354	X4490	Back fill, Prep, Reinforce Slab Infills NE-BP x A17-B7	20-Feb-26 A	25-Feb-26 A
355	X4500	Place, Finish, Cure Slab Infills NE-BP x A17-B7	26-Feb-26 A	08-Apr-26 A
356	X4510	Install Door Frames NE-BP x A17-B7	09-Apr-26 A	15-Apr-26 A
357	X4520	CMU Masonry NE-BP x A17-B7	16-Apr-26 A	27-Apr-26 A
358	X4530	CFMF NE-BP x A17-B7	28-Apr-26 A	13-May-26 A
359	X4540	Blocking / Backing NE-BP x A17-B7	07-May-26 A	15-May-26 A
360	X4560	CFMF Hard Ceilings / Soffits NE-BP x A17-B7	14-May-26 A	05-Jun-26
361	X4550	Drywall /Finish NE-BP x A17-B7	08-Jun-26	01-Jul-26
362	Main Level South 2A Ro...	Main Level South 2A Rough (A101.B)	13-Apr-26 A	14-Jul-26
363	X4570	Form Reinforce & Infill SOD Openings	13-Apr-26 A	21-Apr-26 A
364	X4580	Install Door Frames AB-AW x A17-B7	22-Apr-26 A	27-Apr-26 A
365	X4610	Blocking / Backing AB-AW x A17-B7	28-Apr-26 A	04-May-26 A
366	X4590	CFMF AB-AW x A17-B7	28-Apr-26 A	12-Jun-26
367	X4600	CMU Masonry AB-AW x A17-B7	28-Apr-26 A	12-Jun-26
368	X4630	Frame / Deck Stage Platform	15-Jun-26	24-Jun-26
369	X4620	Drywall /Finish AB-AW x A17-B7	15-Jun-26	06-Jul-26
370	X4640	CFMF Hard Ceilings / Soffits AB-AW x A17-B7	23-Jun-26	06-Jul-26
371	X4650	Form, Place, Finish Platform Ramp	25-Jun-26	06-Jul-26
372	X4660	Prepare Gym Floor / Leveler Topping	07-Jul-26	14-Jul-26
373	Main Level North 2A Ro...	Main Level North 2A Rough (A101.A)	02-Apr-26 A	16-Jul-26
374	X4670	Form Reinforce & Infill SOD Openings	02-Apr-26 A	10-Apr-26 A



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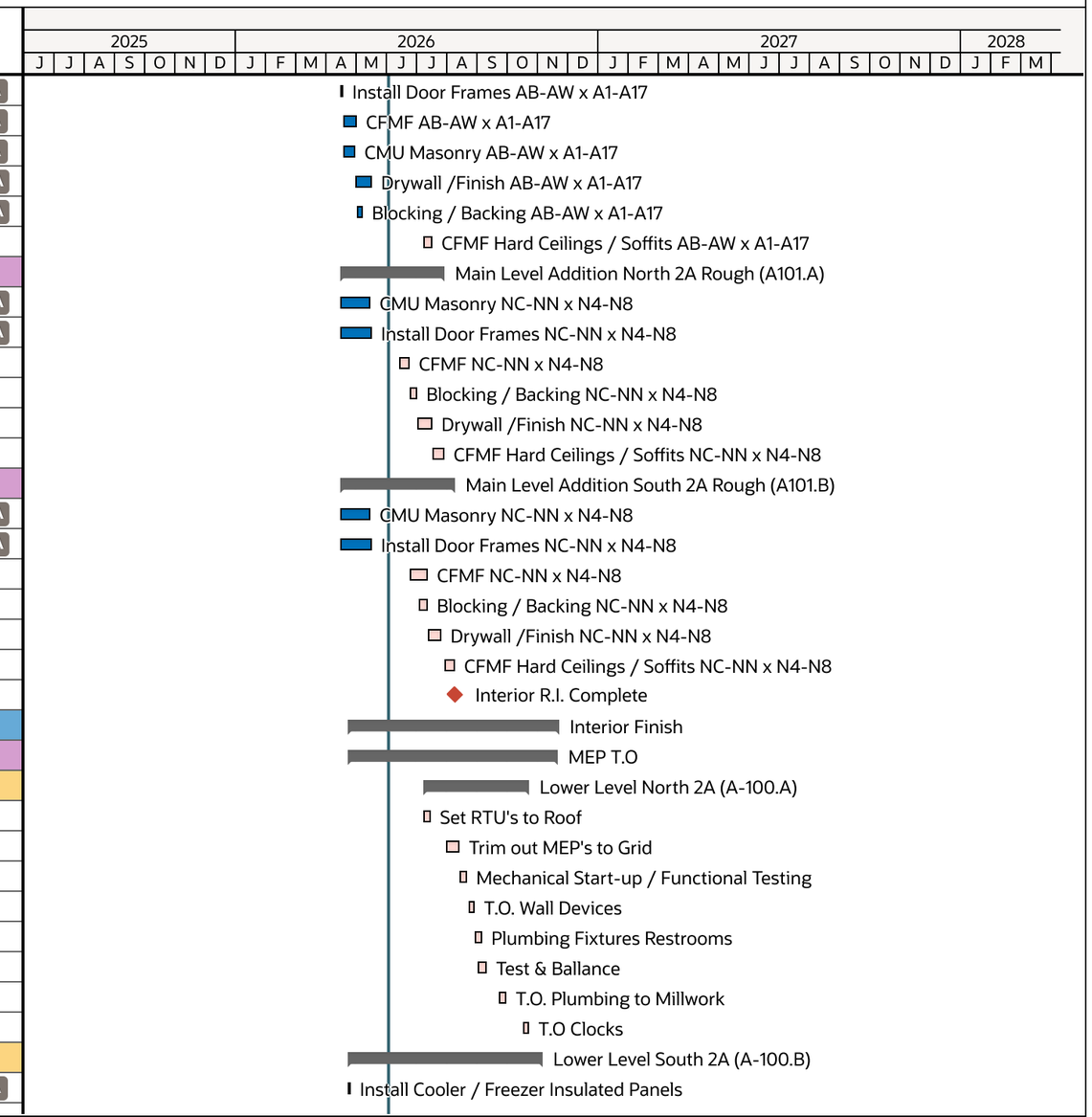
375	X4680	Install Door Frames AB-AW x A1-A17	13-Apr-26 A	16-Apr-26 A
376	X4700	CFMF AB-AW x A1-A17	16-Apr-26 A	29-Apr-26 A
377	X4690	CMU Masonry AB-AW x A1-A17	17-Apr-26 A	28-Apr-26 A
378	X4720	Drywall /Finish AB-AW x A1-A17	28-Apr-26 A	15-May-26 A
379	X4710	Blocking / Backing AB-AW x A1-A17	30-Apr-26 A	06-May-26 A
380	X4730	CFMF Hard Ceilings / Soffits AB-AW x A1-A17	06-Jul-26	16-Jul-26
381	Main Level Addition Nor...	Main Level Addition North 2A Rough (A101.A)	13-Apr-26 A	28-Jul-26
382	X4750	CMU Masonry NC-NN x N4-N8	13-Apr-26 A	13-May-26 A
383	X4740	Install Door Frames NC-NN x N4-N8	13-Apr-26 A	15-May-26 A
384	X4760	CFMF NC-NN x N4-N8	12-Jun-26	23-Jun-26
385	X4770	Blocking / Backing NC-NN x N4-N8	23-Jun-26	30-Jun-26
386	X4780	Drywall /Finish NC-NN x N4-N8	30-Jun-26	15-Jul-26
387	X4790	CFMF Hard Ceilings / Soffits NC-NN x N4-N8	16-Jul-26	28-Jul-26
388	Main Level Addition Sou...	Main Level Addition South 2A Rough (A101.B)	13-Apr-26 A	07-Aug-26
389	X4810	CMU Masonry NC-NN x N4-N8	13-Apr-26 A	13-May-26 A
390	X4800	Install Door Frames NC-NN x N4-N8	13-Apr-26 A	15-May-26 A
391	X4820	CFMF NC-NN x N4-N8	23-Jun-26	10-Jul-26
392	X4830	Blocking / Backing NC-NN x N4-N8	01-Jul-26	10-Jul-26
393	X4840	Drywall /Finish NC-NN x N4-N8	10-Jul-26	24-Jul-26
394	X4850	CFMF Hard Ceilings / Soffits NC-NN x N4-N8	28-Jul-26	07-Aug-26
395	X4860	Interior R.I. Complete		07-Aug-26
396	Interior Finish	Interior Finish	21-Apr-26 A	20-Nov-26
397	MEP T.O	MEP T.O	21-Apr-26 A	19-Nov-26
398	Lower Level North 2A (...	Lower Level North 2A (A-100.A)	06-Jul-26	21-Oct-26
399	X5025	Set RTU's to Roof	06-Jul-26	13-Jul-26
400	X5010	Trim out MEP's to Grid	30-Jul-26	12-Aug-26
401	X5040	Mechanical Start-up / Functional Testing	13-Aug-26	19-Aug-26
402	X5000	T.O. Wall Devices	21-Aug-26	28-Aug-26
403	X5020	Plumbing Fixtures Restrooms	28-Aug-26	04-Sep-26
404	X5050	Test & Ballance	31-Aug-26	08-Sep-26
405	X5030	T.O. Plumbing to Millwork	21-Sep-26	28-Sep-26
406	X5060	T.O Clocks	15-Oct-26	21-Oct-26
407	Lower Level South 2A (...	Lower Level South 2A (A-100.B)	21-Apr-26 A	04-Nov-26
408	X5130	Install Cooler / Freezer Insulated Panels	21-Apr-26 A	24-Apr-26 A



Project ID: 24-014
Prepared By: Ben Chasse
06-Jun-26 10:25 a.m.
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Current
Progress
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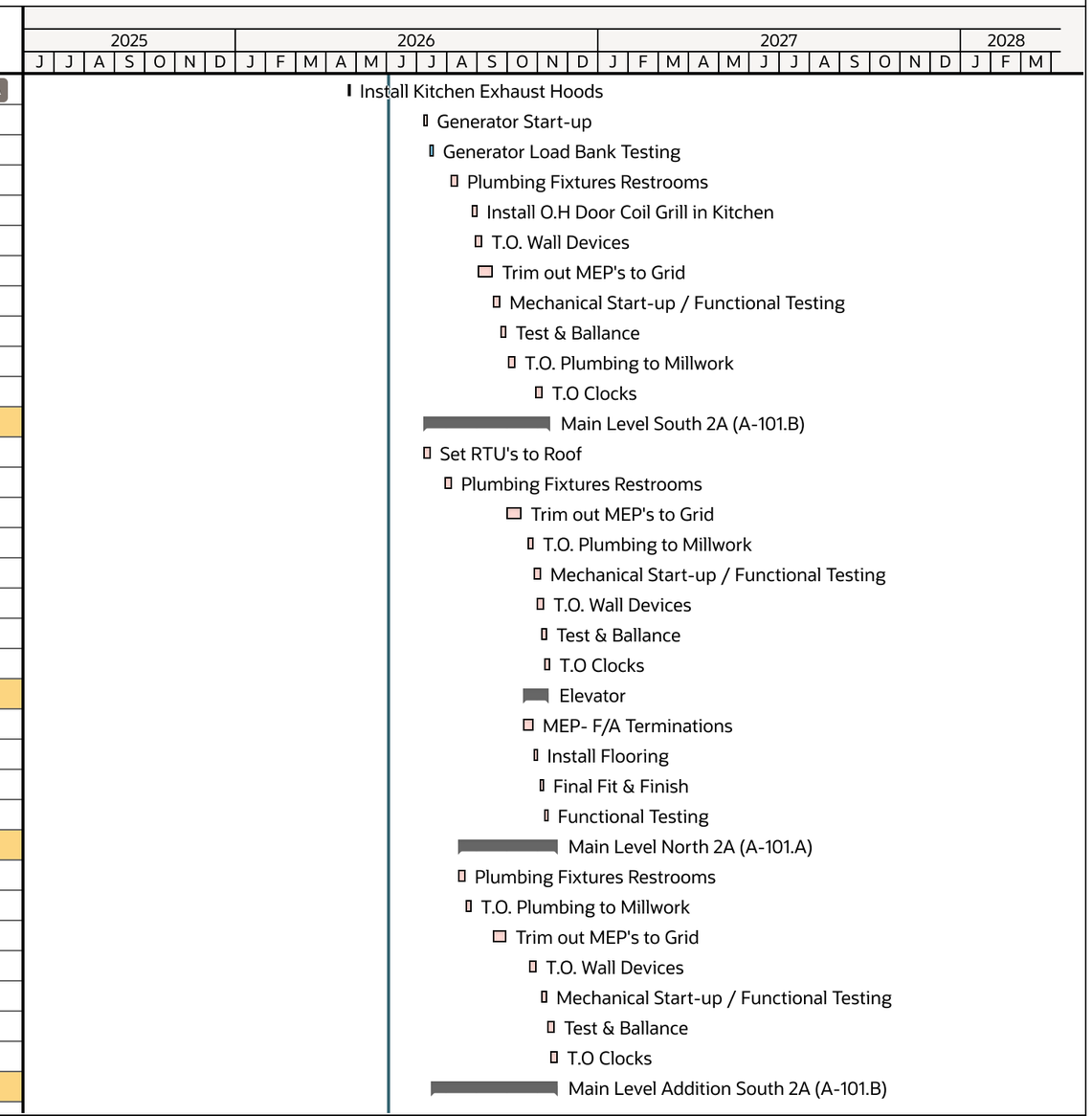
Summary

The Sherman School - Construction Schedule

Data Date: 01-Jun-26

	ID	Name	Start	Finish
409	X5140	Install Kitchen Exhaust Hoods	21-Apr-26 A	24-Apr-26 A
410	X5110	Generator Start-up	06-Jul-26	10-Jul-26
411	X5120	Generator Load Bank Testing	13-Jul-26	17-Jul-26
412	X5150	Plumbing Fixtures Restrooms	03-Aug-26	10-Aug-26
413	A2070	Install O.H Door Coil Grill in Kitchen	24-Aug-26	31-Aug-26
414	X5160	T.O. Wall Devices	28-Aug-26	04-Sep-26
415	X5170	Trim out MEP's to Grid	31-Aug-26	15-Sep-26
416	X5190	Mechanical Start-up / Functional Testing	15-Sep-26	22-Sep-26
417	X5200	Test & Ballance	22-Sep-26	29-Sep-26
418	X5180	T.O. Plumbing to Millwork	30-Sep-26	07-Oct-26
419	X5210	T.O Clocks	28-Oct-26	04-Nov-26
420	Main Level South 2A (...	Main Level South 2A (A-101.B)	06-Jul-26	12-Nov-26
421	X5335	Set RTU's to Roof	06-Jul-26	13-Jul-26
422	X5220	Plumbing Fixtures Restrooms	28-Jul-26	04-Aug-26
423	X5230	Trim out MEP's to Grid	29-Sep-26	13-Oct-26
424	X5240	T.O. Plumbing to Millwork	19-Oct-26	26-Oct-26
425	X5250	Mechanical Start-up / Functional Testing	26-Oct-26	02-Nov-26
426	X5270	T.O. Wall Devices	29-Oct-26	05-Nov-26
427	X5260	Test & Ballance	02-Nov-26	09-Nov-26
428	X5280	T.O Clocks	05-Nov-26	12-Nov-26
429	Elevator	Elevator	16-Oct-26	10-Nov-26
430	X5070	MEP- F/A Terminations	16-Oct-26	26-Oct-26
431	X5080	Install Flooring	27-Oct-26	30-Oct-26
432	X5090	Final Fit & Finish	02-Nov-26	05-Nov-26
433	X5100	Functional Testing	06-Nov-26	10-Nov-26
434	Main Level North 2A (...	Main Level North 2A (A-101.A)	11-Aug-26	19-Nov-26
435	X5290	Plumbing Fixtures Restrooms	11-Aug-26	18-Aug-26
436	X5300	T.O. Plumbing to Millwork	18-Aug-26	25-Aug-26
437	X5310	Trim out MEP's to Grid	15-Sep-26	29-Sep-26
438	X5340	T.O. Wall Devices	22-Oct-26	29-Oct-26
439	X5320	Mechanical Start-up / Functional Testing	02-Nov-26	09-Nov-26
440	X5330	Test & Ballance	09-Nov-26	16-Nov-26
441	X5350	T.O Clocks	12-Nov-26	19-Nov-26
442	Main Level Addition So...	Main Level Addition South 2A (A-101.B)	13-Jul-26	19-Nov-26



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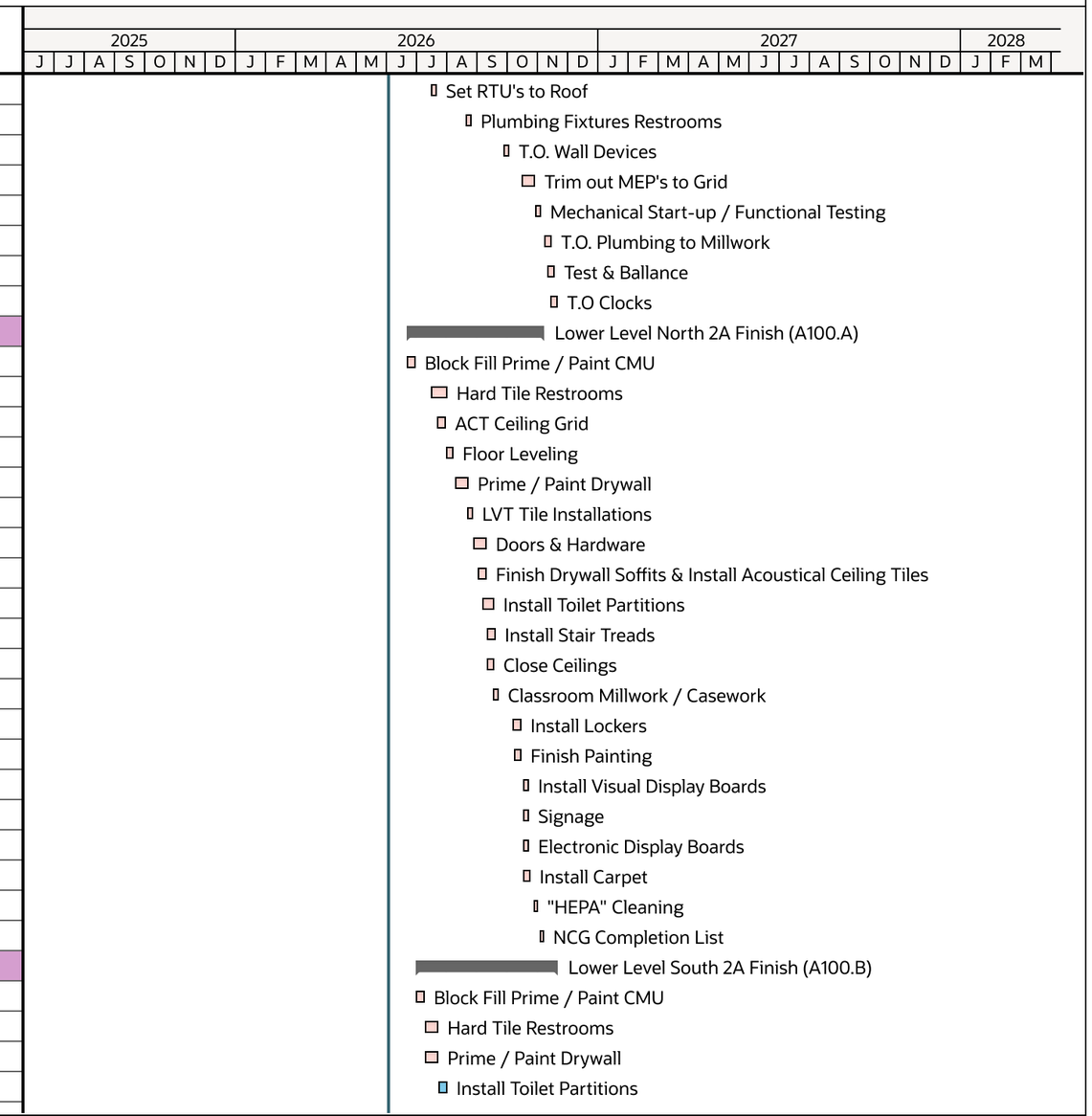
	ID	Name	Start	Finish
443	X5365	Set RTU's to Roof	13-Jul-26	20-Jul-26
444	X5360	Plumbing Fixtures Restrooms	18-Aug-26	25-Aug-26
445	X5410	T.O. Wall Devices	25-Sep-26	02-Oct-26
446	X5370	Trim out MEP's to Grid	13-Oct-26	27-Oct-26
447	X5380	Mechanical Start-up / Functional Testing	27-Oct-26	03-Nov-26
448	X5390	T.O. Plumbing to Millwork	06-Nov-26	13-Nov-26
449	X5400	Test & Ballance	09-Nov-26	16-Nov-26
450	X5420	T.O Clocks	12-Nov-26	19-Nov-26
451	Lower Level North 2A Fi...	Lower Level North 2A Finish (A100.A)	19-Jun-26	06-Nov-26
452	X5430	Block Fill Prime / Paint CMU	19-Jun-26	29-Jun-26
453	X5440	Hard Tile Restrooms	13-Jul-26	31-Jul-26
454	X5460	ACT Ceiling Grid	20-Jul-26	29-Jul-26
455	X5465	Floor Leveling	29-Jul-26	05-Aug-26
456	X5450	Prime / Paint Drywall	07-Aug-26	21-Aug-26
457	X5480	LVT Tile Installations	20-Aug-26	26-Aug-26
458	X5510	Doors & Hardware	27-Aug-26	08-Sep-26
459	X5500	Finish Drywall Soffits & Install Acoustical Ceiling Tiles	31-Aug-26	08-Sep-26
460	X5490	Install Toilet Partitions	04-Sep-26	16-Sep-26
461	X5530	Install Stair Treads	08-Sep-26	17-Sep-26
462	X5475	Close Ceilings	08-Sep-26	16-Sep-26
463	X5470	Classroom Millwork / Casework	14-Sep-26	21-Sep-26
464	X5520	Install Lockers	05-Oct-26	14-Oct-26
465	X5540	Finish Painting	06-Oct-26	14-Oct-26
466	X5550	Install Visual Display Boards	15-Oct-26	22-Oct-26
467	X5560	Signage	15-Oct-26	21-Oct-26
468	X5580	Electronic Display Boards	15-Oct-26	21-Oct-26
469	X5590	Install Carpet	15-Oct-26	23-Oct-26
470	X5600	"HEPA" Cleaning	26-Oct-26	30-Oct-26
471	X5610	NCG Completion List	02-Nov-26	06-Nov-26
472	Lower Level South 2A Fi...	Lower Level South 2A Finish (A100.B)	29-Jun-26	19-Nov-26
473	X5620	Block Fill Prime / Paint CMU	29-Jun-26	08-Jul-26
474	X5630	Hard Tile Restrooms	08-Jul-26	22-Jul-26
475	X5640	Prime / Paint Drywall	08-Jul-26	22-Jul-26
476	X5660	Install Toilet Partitions	22-Jul-26	31-Jul-26



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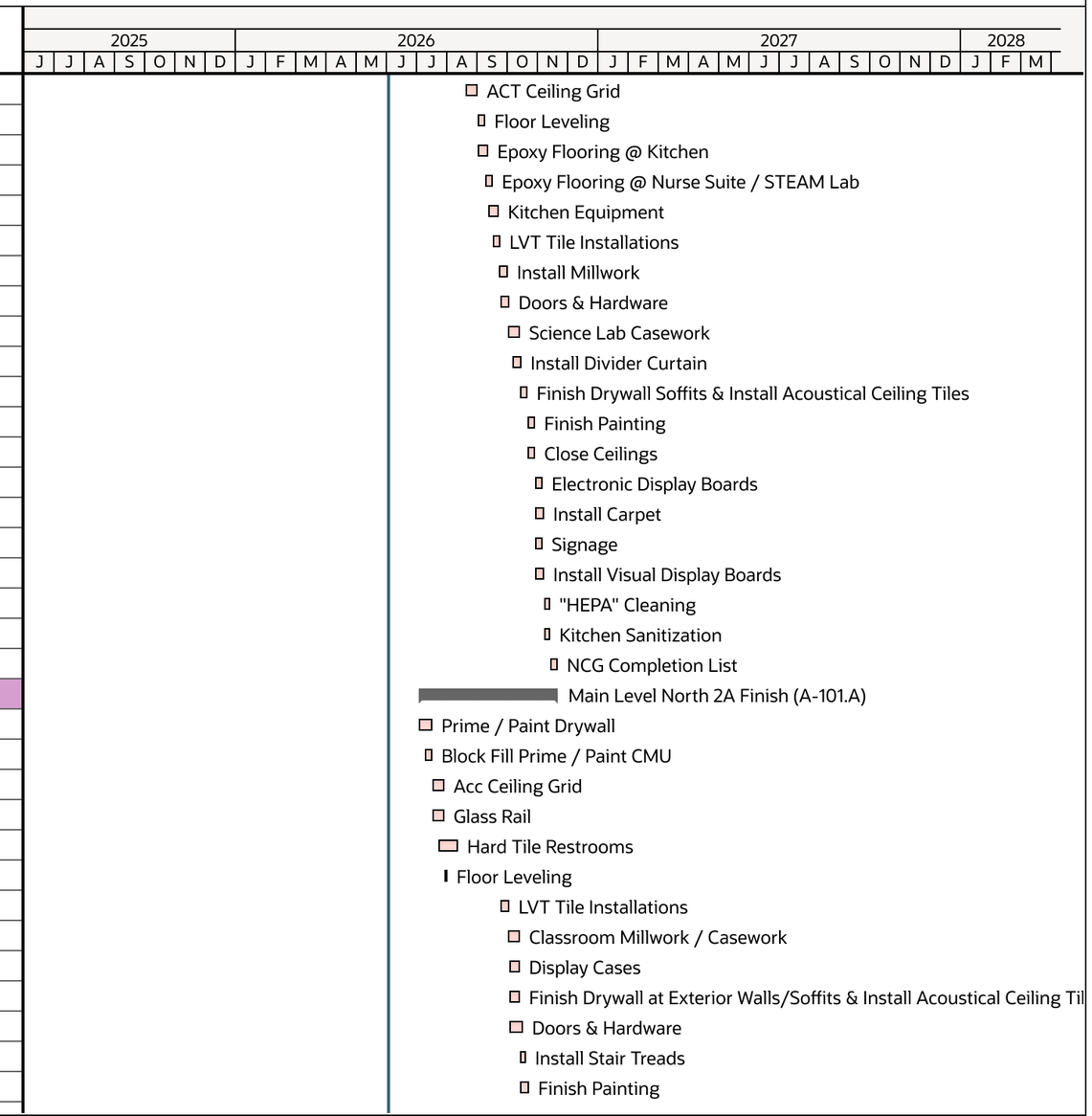
	ID	Name	Start	Finish
477	X5650	ACT Ceiling Grid	19-Aug-26	31-Aug-26
478	X5655	Floor Leveling	31-Aug-26	08-Sep-26
479	X5680	Epoxy Flooring @ Kitchen	31-Aug-26	10-Sep-26
480	X5690	Epoxy Flooring @ Nurse Suite / STEAM Lab	08-Sep-26	15-Sep-26
481	X5700	Kitchen Equipment	10-Sep-26	21-Sep-26
482	X5710	LVT Tile Installations	15-Sep-26	22-Sep-26
483	X5670	Install Millwork	21-Sep-26	30-Sep-26
484	X5740	Doors & Hardware	22-Sep-26	01-Oct-26
485	X5720	Science Lab Casework	30-Sep-26	12-Oct-26
486	X5750	Install Divider Curtain	05-Oct-26	13-Oct-26
487	X5730	Finish Drywall Soffits & Install Acoustical Ceiling Tiles	12-Oct-26	19-Oct-26
488	X5770	Finish Painting	19-Oct-26	28-Oct-26
489	X5725	Close Ceilings	19-Oct-26	27-Oct-26
490	X5790	Electronic Display Boards	28-Oct-26	04-Nov-26
491	X5800	Install Carpet	28-Oct-26	05-Nov-26
492	X5810	Signage	28-Oct-26	04-Nov-26
493	X5820	Install Visual Display Boards	28-Oct-26	05-Nov-26
494	X5830	"HEPA" Cleaning	05-Nov-26	12-Nov-26
495	X5840	Kitchen Sanitization	05-Nov-26	11-Nov-26
496	X5850	NCG Completion List	12-Nov-26	19-Nov-26
497	Main Level North 2A Fin...	Main Level North 2A Finish (A-101.A)	01-Jul-26	19-Nov-26
498	X5870	Prime / Paint Drywall	01-Jul-26	16-Jul-26
499	X5860	Block Fill Prime / Paint CMU	08-Jul-26	16-Jul-26
500	X5890	Acc Ceiling Grid	16-Jul-26	28-Jul-26
501	X5950	Glass Rail	16-Jul-26	27-Jul-26
502	X5880	Hard Tile Restrooms	22-Jul-26	11-Aug-26
503	X5895	Floor Leveling	28-Jul-26	31-Jul-26
504	X5910	LVT Tile Installations	22-Sep-26	01-Oct-26
505	X5900	Classroom Millwork / Casework	30-Sep-26	12-Oct-26
506	X5920	Display Cases	01-Oct-26	12-Oct-26
507	X5930	Finish Drywall at Exterior Walls/Soffits & Install Acoustical Ceiling Tiles	01-Oct-26	12-Oct-26
508	X5940	Doors & Hardware	01-Oct-26	15-Oct-26
509	X5960	Install Stair Treads	12-Oct-26	19-Oct-26
510	X5970	Finish Painting	12-Oct-26	22-Oct-26



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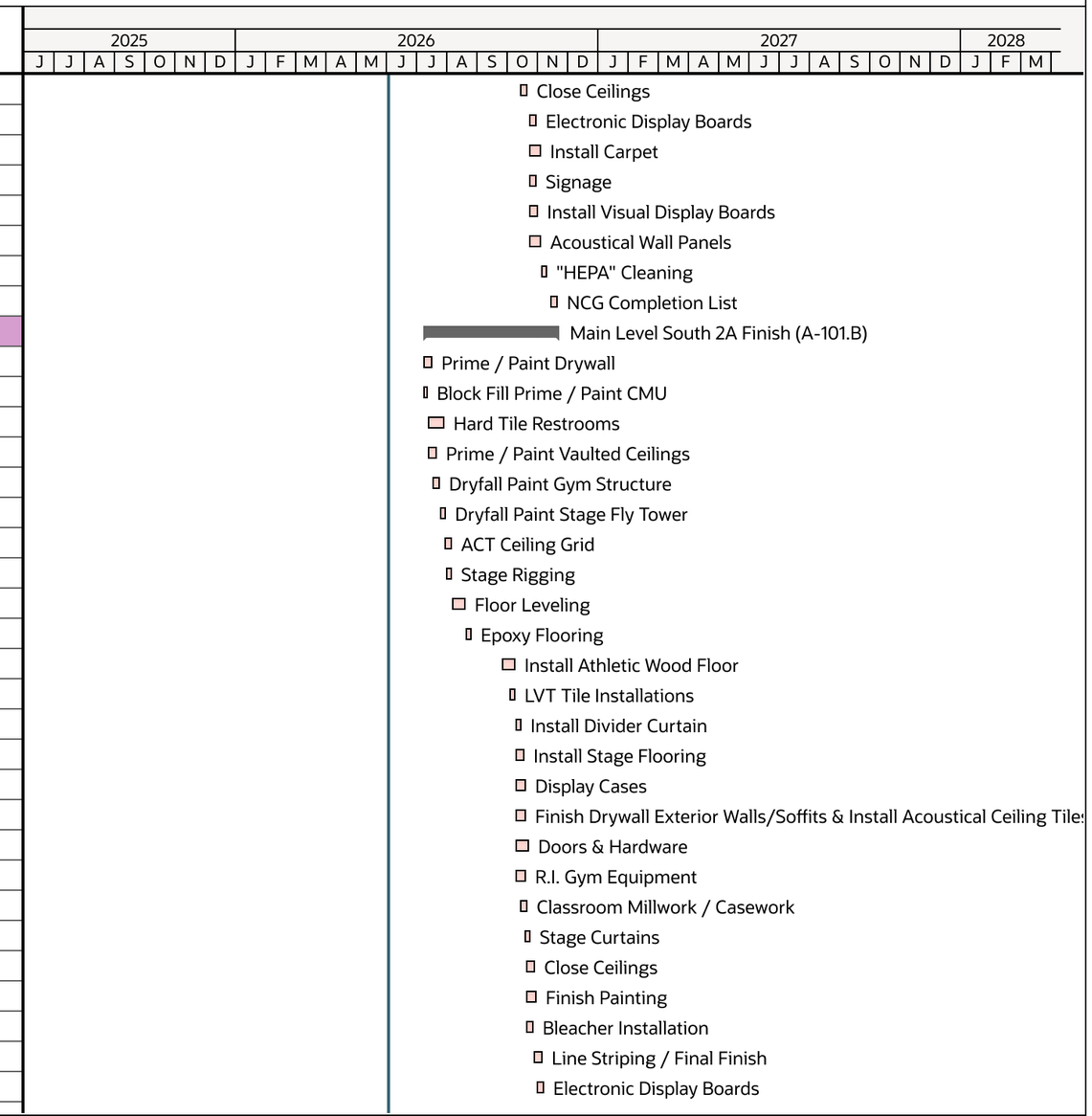
	ID	Name	Start	Finish
511	X5915	Close Ceilings	12-Oct-26	20-Oct-26
512	X5990	Electronic Display Boards	22-Oct-26	29-Oct-26
513	X6000	Install Carpet	22-Oct-26	02-Nov-26
514	X6010	Signage	22-Oct-26	29-Oct-26
515	X6020	Install Visual Display Boards	22-Oct-26	30-Oct-26
516	X6030	Acoustical Wall Panels	22-Oct-26	02-Nov-26
517	X6040	"HEPA" Cleaning	02-Nov-26	09-Nov-26
518	X6050	NCG Completion List	12-Nov-26	19-Nov-26
519	Main Level South 2A Fin...	Main Level South 2A Finish (A-101.B)	06-Jul-26	20-Nov-26
520	X6060	Prime / Paint Drywall	06-Jul-26	16-Jul-26
521	X6070	Block Fill Prime / Paint CMU	06-Jul-26	10-Jul-26
522	X6080	Hard Tile Restrooms	10-Jul-26	28-Jul-26
523	X6090	Prime / Paint Vaulted Ceilings	10-Jul-26	20-Jul-26
524	X6100	Dryfall Paint Gym Structure	16-Jul-26	23-Jul-26
525	X6130	Dryfall Paint Stage Fly Tower	23-Jul-26	29-Jul-26
526	X6110	ACT Ceiling Grid	28-Jul-26	04-Aug-26
527	X6150	Stage Rigging	29-Jul-26	05-Aug-26
528	X6115	Floor Leveling	04-Aug-26	18-Aug-26
529	X6140	Epoxy Flooring	18-Aug-26	24-Aug-26
530	X6120	Install Athletic Wood Floor	23-Sep-26	07-Oct-26
531	X6200	LVT Tile Installations	01-Oct-26	08-Oct-26
532	X6180	Install Divider Curtain	07-Oct-26	14-Oct-26
533	X6190	Install Stage Flooring	07-Oct-26	16-Oct-26
534	X6230	Display Cases	08-Oct-26	19-Oct-26
535	X6240	Finish Drywall Exterior Walls/Soffits & Install Acoustical Ceiling Tiles ...	08-Oct-26	19-Oct-26
536	X6250	Doors & Hardware	08-Oct-26	22-Oct-26
537	X6170	R.I. Gym Equipment	08-Oct-26	19-Oct-26
538	X6160	Classroom Millwork / Casework	12-Oct-26	19-Oct-26
539	X6220	Stage Curtains	16-Oct-26	23-Oct-26
540	X6255	Close Ceilings	19-Oct-26	27-Oct-26
541	X6270	Finish Painting	19-Oct-26	29-Oct-26
542	X6210	Bleacher Installation	19-Oct-26	26-Oct-26
543	X6260	Line Striping / Final Finish	26-Oct-26	04-Nov-26
544	X6300	Electronic Display Boards	29-Oct-26	05-Nov-26



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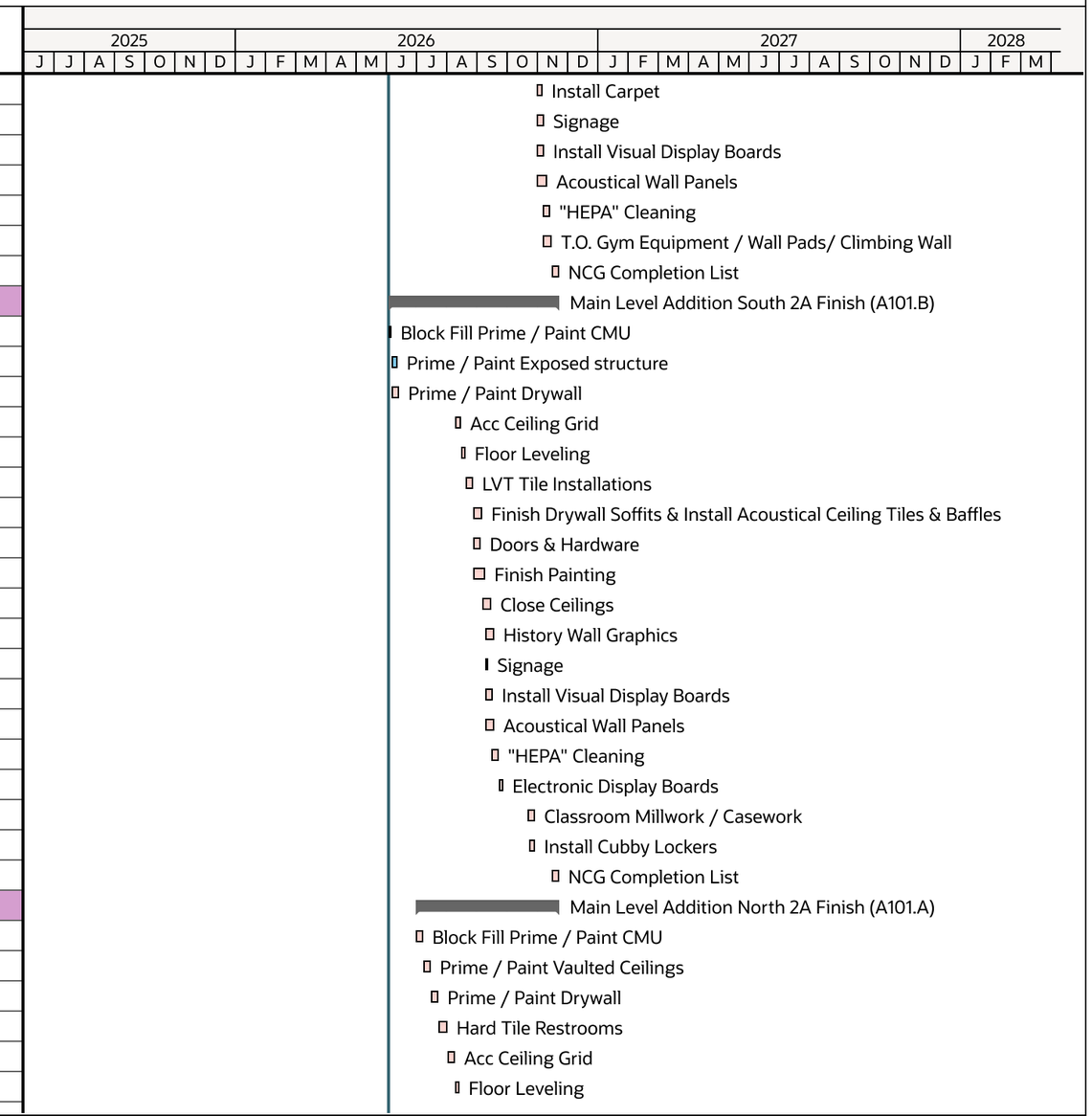
	ID	Name	Start	Finish
545	X6310	Install Carpet	29-Oct-26	04-Nov-26
546	X6320	Signage	29-Oct-26	05-Nov-26
547	X6330	Install Visual Display Boards	29-Oct-26	06-Nov-26
548	X6340	Acoustical Wall Panels	29-Oct-26	09-Nov-26
549	X6350	"HEPA" Cleaning	04-Nov-26	11-Nov-26
550	X6280	T.O. Gym Equipment / Wall Pads/ Climbing Wall	04-Nov-26	13-Nov-26
551	X6360	NCG Completion List	13-Nov-26	20-Nov-26
552	Main Level Addition Sou...	Main Level Addition South 2A Finish (A101.B)	01-Jun-26	20-Nov-26
553	X6370	Block Fill Prime / Paint CMU	01-Jun-26	04-Jun-26
554	X6380	Prime / Paint Exposed structure	05-Jun-26	10-Jun-26
555	X6390	Prime / Paint Drywall	05-Jun-26	11-Jun-26
556	X6400	Acc Ceiling Grid	07-Aug-26	14-Aug-26
557	X6405	Floor Leveling	14-Aug-26	19-Aug-26
558	X6430	LVT Tile Installations	19-Aug-26	26-Aug-26
559	X6440	Finish Drywall Soffits & Install Acoustical Ceiling Tiles & Baffles	26-Aug-26	04-Sep-26
560	X6450	Doors & Hardware	26-Aug-26	03-Sep-26
561	X6460	Finish Painting	26-Aug-26	08-Sep-26
562	X6465	Close Ceilings	04-Sep-26	14-Sep-26
563	X6470	History Wall Graphics	08-Sep-26	17-Sep-26
564	X6510	Signage	08-Sep-26	11-Sep-26
565	X6520	Install Visual Display Boards	08-Sep-26	15-Sep-26
566	X6530	Acoustical Wall Panels	08-Sep-26	17-Sep-26
567	X6480	"HEPA" Cleaning	14-Sep-26	21-Sep-26
568	X6500	Electronic Display Boards	21-Sep-26	25-Sep-26
569	X6410	Classroom Millwork / Casework	19-Oct-26	28-Oct-26
570	X6420	Install Cubby Lockers	21-Oct-26	28-Oct-26
571	X6540	NCG Completion List	13-Nov-26	20-Nov-26
572	Main Level Addition Nor...	Main Level Addition North 2A Finish (A101.A)	29-Jun-26	20-Nov-26
573	X6550	Block Fill Prime / Paint CMU	29-Jun-26	06-Jul-26
574	X6560	Prime / Paint Vaulted Ceilings	06-Jul-26	14-Jul-26
575	X6580	Prime / Paint Drywall	14-Jul-26	21-Jul-26
576	X6570	Hard Tile Restrooms	22-Jul-26	31-Jul-26
577	X6590	Acc Ceiling Grid	31-Jul-26	07-Aug-26
578	X6595	Floor Leveling	07-Aug-26	12-Aug-26



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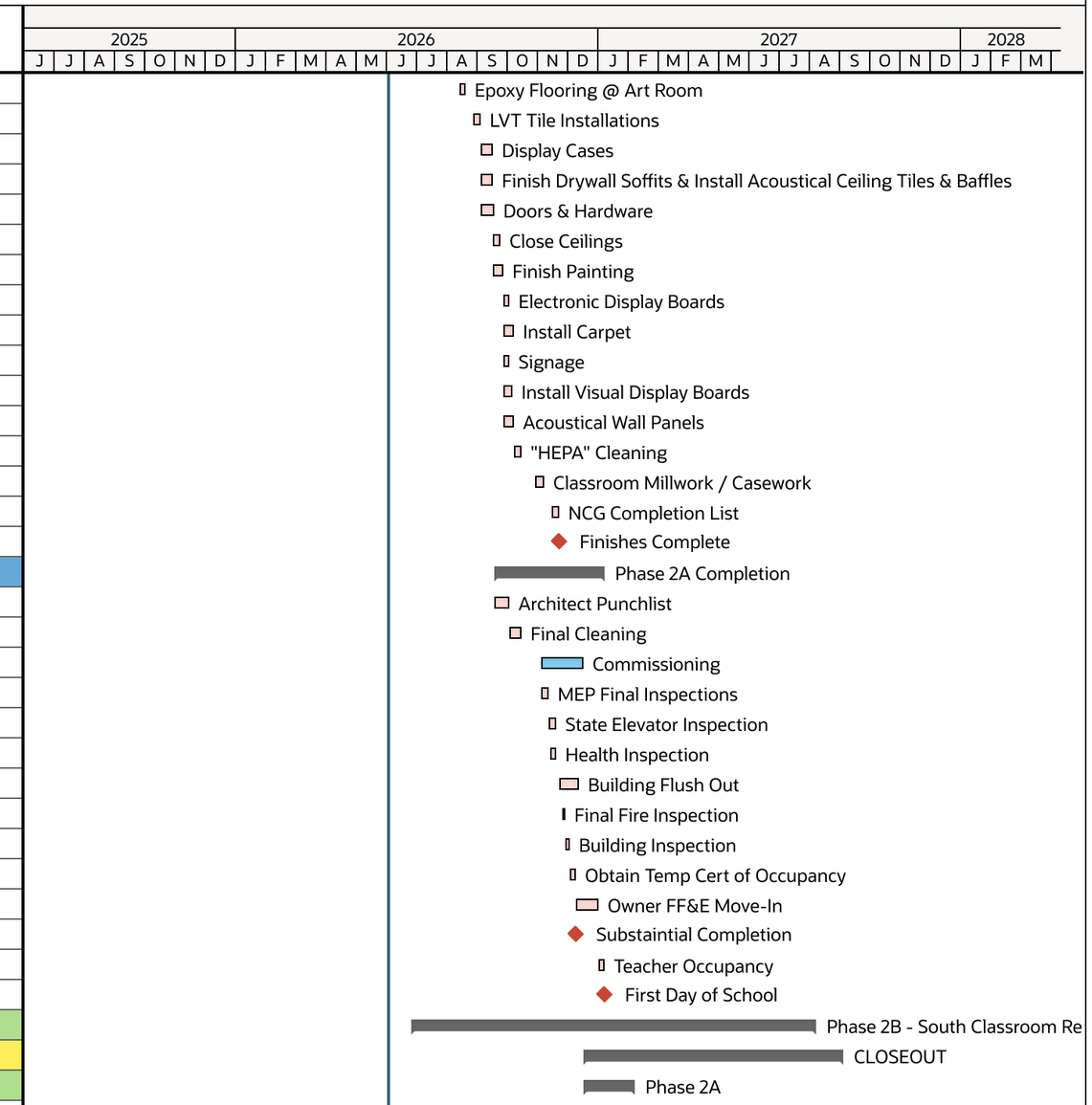
	ID	Name	Start	Finish
579	X6600	Epoxy Flooring @ Art Room	12-Aug-26	19-Aug-26
580	X6620	LVT Tile Installations	26-Aug-26	03-Sep-26
581	X6630	Display Cases	03-Sep-26	15-Sep-26
582	X6640	Finish Drywall Soffits & Install Acoustical Ceiling Tiles & Baffles	03-Sep-26	15-Sep-26
583	X6650	Doors & Hardware	03-Sep-26	16-Sep-26
584	X6625	Close Ceilings	15-Sep-26	22-Sep-26
585	X6660	Finish Painting	15-Sep-26	25-Sep-26
586	X6680	Electronic Display Boards	25-Sep-26	02-Oct-26
587	X6690	Install Carpet	25-Sep-26	06-Oct-26
588	X6700	Signage	25-Sep-26	02-Oct-26
589	X6710	Install Visual Display Boards	25-Sep-26	05-Oct-26
590	X6720	Acoustical Wall Panels	25-Sep-26	06-Oct-26
591	X6730	"HEPA" Cleaning	06-Oct-26	13-Oct-26
592	X6610	Classroom Millwork / Casework	28-Oct-26	06-Nov-26
593	X6740	NCG Completion List	13-Nov-26	20-Nov-26
594	X6750	Finishes Complete		20-Nov-26
595	Phase 2A Completion	Phase 2A Completion	17-Sep-26	06-Jan-27
596	X7070	Architect Punchlist	17-Sep-26	01-Oct-26
597	X7050	Final Cleaning	02-Oct-26	13-Oct-26
598	X7020	Commissioning	03-Nov-26	16-Dec-26
599	X7030	MEP Final Inspections	03-Nov-26	10-Nov-26
600	X7000	State Elevator Inspection	11-Nov-26	17-Nov-26
601	X7010	Health Inspection	11-Nov-26	18-Nov-26
602	X7105	Building Flush Out	20-Nov-26	11-Dec-26
603	X7040	Final Fire Inspection	24-Nov-26	27-Nov-26
604	X7060	Building Inspection	27-Nov-26	01-Dec-26
605	X7080	Obtain Temp Cert of Occupancy	01-Dec-26	08-Dec-26
606	X7090	Owner FF&E Move-In	08-Dec-26	30-Dec-26
607	X7100	Substaintial Completion		08-Dec-26
608	X7110	Teacher Occupancy	30-Dec-26 C	06-Jan-27
609	X7120	First Day of School	06-Jan-27 C	
610	Phase 2B - South Classroo...	Phase 2B - South Classroom Renovation	24-Jun-26	06-Aug-27
611	CLOSEOUT	CLOSEOUT	16-Dec-26	02-Sep-27
612	Phase 2A	Phase 2A	16-Dec-26	05-Feb-27



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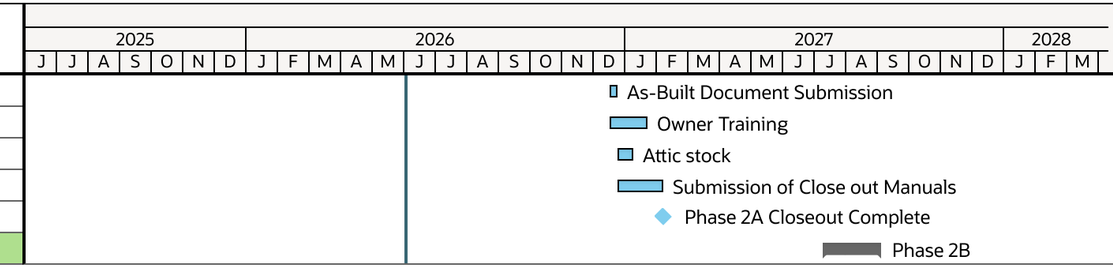
	ID	Name	Start	Finish
613	Z1020	As-Built Document Submission	16-Dec-26	23-Dec-26
614	Z1010	Owner Training	16-Dec-26	22-Jan-27
615	Z1030	Attic stock	23-Dec-26	08-Jan-27
616	Z1000	Submission of Close out Manuals	23-Dec-26	05-Feb-27
617	A2030	Phase 2A Closeout Complete		05-Feb-27
618	Phase 2B	Phase 2B	07-Jul-27	02-Sep-27



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BOE APPROVED 02/04/2026

SHERMAN SCHOOL

2026-2027 CALENDAR

September 4	New Teacher Orientation
September 7	Labor Day – School/Offices Closed
September 8	Opening Day for Teachers
September 14	**Early Dismissal - First Day for Students**
September 15	**Early Dismissal**
October 12	No School – Indigenous Peoples Day
October 22	Early Dismissal – Professional Development
November 3	No School – Election Day / Prof. Dev.
November 11	Early Dismissal – Veterans Day
November 18	Evening Conferences
November 19	2-Hour Delay – Morning Conferences
November 20	Early Dismissal – Afternoon Conferences
November 25-27	Thanksgiving Recess
December 24 - January 3	Holiday Recess
January 15	Early Dismissal - Professional Development
January 18	No School – Martin Luther King Day
February 10	2-Hour Delay – Morning Conferences
February 11-12	Early Dismissal – Afternoon Conferences
February 15	No School – President's Day
March 26	No School – Good Friday
April 6	Early Dismissal – Professional Development
April 12-16	No School – Spring Recess
May 18	Early Dismissal – Professional Development
May 31	No School – Memorial Day
June 10	Early Dismissal – Professional Development
June 21	**Early Dismissal -- Last Day of School***

*Any days lost by emergency closing of school will be added to the calendar beginning June 22, 2026 through and including June 30, 2027. If needed, additional snow emergency days will be taken from spring recess beginning with April 16,2026 and working backwards.

Graduation date will be set by the BOE at its April 2027 meeting.

September 2026 (13)

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	**14**	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2026 (21)

Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2026 (17)

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2026 (17)

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January 2027 (19)

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

February 2027 (19)

Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

March 2027 (22)

Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

April 2027 (17)

Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

May 2027 (20)

Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June 2027 (15)

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	**21**	22	23	24	25	26
27	28	29	30			

KEY

	Early Dismissal (12:30 PM)
	2 Hour Delay -- Conferences
	Teacher Work Day – No Students
	School Closed

SECTION 004010 – STATEMENT OF VENDOR QUALIFICATIONS

PART 1 - GENERAL

1.1 INSTRUCTIONS

A. Submit completed form with Bid.

1. This form must be notarized.

B. Provide a clear and comprehensive response to each question.

1.2 VENDOR INFORMATION

A. If necessary, questions may be answered on separate attached sheets. The Vendor may submit any additional information he/she desires.

1. Vendor name:

_____

2. Permanent main office address, telephone number and email address:

_____
Street Town/City State Zip Code

_____
Telephone (Main) Telephone (Direct) Email address

3. Date organized:

_____

4. Date of incorporation, if applicable:

_____

5. Federal ID #: _____

6. Dun & Bradstreet Rating: _____

7. List the background and experience of the principal members of the organization, including its officers:

_____

_____

_____

_____

8. Number of Employees:

Office: _____ Supervisory: _____ Field: _____ Total: _____

9. List name(s) of principal contacts:

Contact: _____
(Name) (Email Address)

Contact: _____
(Name) (Email Address)

10. Number of years engaged in business under present firm or trade name:

_____

11. Description of the general character of work performed by company:

_____

_____

_____

_____

_____

12. Has Vendor failed to complete a Contract or awarded Work? Yes [ ] No [ ]. If yes, indicate where and describe the circumstances resulting in the failure to complete the work:

_____

_____

_____

13. Has the Vendor ever filed for Bankruptcy? Yes [ ] No [ ].

14. Does the Vendor have any judgements, claims, arbitration, legal proceedings or suits pending or outstanding? Yes [ ] No [ ]. If yes, provide an explanation of the circumstances:

_____

_____

_____

_____

_____

15. Describe Vendor's experience with work similar in nature and scope to this project:

_____

_____

_____

_____

_____

16. Is the Vendor certified as an: MBE [ ] WBE [ ] African American [ ] Not Applicable [ ]

    a. Cities and States of certification:

    _____
    (City) (State)

    _____
    (City) (State)

B. Contracts on Hand:

1. Complete the following schedule indicating current contracts, the approximate gross cost, and the anticipated dates of completion for each:

a.	Contract 1:	Gross Cost:	Anticipated Completion:
b.	Contract 2:	Gross Cost:	Anticipated Completion:
c.	Contract 3:	Gross Cost:	Anticipated Completion:

2. List three (3) important contracts completed within the last five (5) years. Indicate the gross cost, month and year completed for each:

   a. Contract 1: Gross Cost: Completed:

   b. Contract 2: Gross Cost: Completed:

   c. Contract 3: Gross Cost: Completed:

C. Financial Disclosure

1. Does the Vendor agree; if requested by the Owner, to furnish a current detailed financial statement and supporting documentation? Yes [ ] No [ ]

D. Bonding

1. Bonding Company:

   _____
   (Name)

   _____
   (Agent) (Telephone No.)

2. Bonding Capacity:

   _____
   (Per job) (Aggregate)

3. Value of Work currently bonded: _____

E. Insurance

1. Insurance Company:

   _____
   (Name)

   _____
   (Agent) (Telephone No.)

2. List Vendor's insurance "Experience Modification Rate" (EMR) for the three (3) most recent years:

   2025 _____

2024 _____

2023 _____

1.3 VENDOR REQUIREMENTS

A. Vendor must be an equal opportunity employer.

1. Have you ever been a party to or otherwise involved in any action or legal proceedings involving matters related to allegations of discrimination based on race, color, nationality, sex, or religion? Yes [ ] No [ ]. If yes, provide full details. Attach additional pages as required:

_____

_____

_____

_____

2. Have you ever been accused of discrimination based upon race, color, nationality, sex, or religion in any action or legal proceeding, including any proceeding related to any Federal Agency? Yes [ ] No [ ]. If yes, provide full details:

_____

_____

B. This Project requires the payment of Prevailing Wages, see Section 008000 Wage Rates, pursuant to the Connecticut General Statues Section 31-53 (a-h) as amended.

C. Required Vendor / Contractor Pre-Qualifications: The project requires that all persons bidding on public contracts in excess of $1,000,000.00 must be pre-qualified with the Commissioner of the Department of Administrative Services of the State of Connecticut. Certificates must be submitted with Quotations.

1.4 VENDOR CERTIFICATION

A. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated on this _____ day of _____, 20_____.

_____
(Name of Vendor)

By: _____

Title: _____

State of)
) ss.
County of)

I, _____; being duly sworn, deposes and says s/he is _____
(Name) (Title)
of _____ and that the answers to the
(Name of Organization)
foregoing questions and all statements therein contained are true and correct.
Subscribed and sworn before me this _____ day of _____, 20_____.

My Commission Expires: _____.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 004010

SECTION 004313 - BID SECURITY FORMS

1.1 BID FORM SUPPLEMENT

A. A completed bid bond form is required to be attached to the Forms of Proposal.

1.2 BID BOND FORM

A. AIA Document A310-2010 "Bid Bond" is the recommended form for a bid bond. A bid bond acceptable to Owner, or other bid security as described in the Instructions to Bidders, is required to be attached to the Bid Form as a supplement.

B. Copies of AIA standard forms may be obtained from The American Institute of Architects; https://www.aiacontracts.org/; email: docspurchases@aia.org; (800) 942-7732.

END OF DOCUMENT 004313

AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Town of Sherman, Incorporated Town in the State of Connecticut
Mallory Town Hall, 9 Route 39 North, Sherman, Connecticut 06478

BOND AMOUNT: $

PROJECT:
(Name, location or address, and Project number, if any)
Sherman School Renovation / Sherman Central Offices Projects
2 Route 37 East, Sherman, Connecticut 06478

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

ADDITIONS AND DELETIONS:
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This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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Signed and sealed this day of .

	(Contractor as Principal)	*(Seal)*
(Witness)	*(Title)*	
	(Surety)	*(Seal)*
(Witness)	*(Title)*	

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AIA® Document A152™ – 2019

Purchase Order

PURCHASER: *(name and address)* Town of Sherman / Sherman Board of Education 9 Route 39 North, Sherman, CT 06784	**VENDOR:** *(name and address)*	**ARCHITECT:** *(name and address)* Antinozzi Associates, PC 271 Fairfield AvenueBridgeport, CT 06604
PURCHASE ORDER INFORMATION: Number: Date:	**DELIVER TO:** *(name and address)* Sherman School 2 Route 37 East, Sherman, CT 06478	**PROJECT:** *(name and address)* Sherman School Renovation Project 2 Route 37 East Sherman, CT 06784

IDENTIFICATION OF GOODS
The Vendor agrees to provide the following goods to the Purchaser:
(Insert a list of goods to be provided by the Vendor, including details for identification and quantities for each, or identify a separate exhibit that includes such information.)

PRICE
The Purchaser shall pay the Vendor the following amount for the goods provided under this Purchase Order:
(Insert the price the Purchaser is to pay the Vendor, including amounts for taxes, duties, tariffs, handling charges, delivery, and incidental services. Identify unit prices, if applicable.)

PAYMENTS
The Purchaser shall pay the Vendor according to the following payment terms:
(Insert payment terms, such as payment due dates, deposit requirements, and discounts, if any.)

DELIVERY
The Vendor shall deliver the goods to the "Deliver To" address above. The Vendor's additional delivery requirements are:
(Insert additional delivery requirements, such as delivery date or range of dates, hours of delivery, split delivery, inside delivery, unpackaging requirements, or receiving instructions.)

OTHER REQUIREMENTS OR TERMS
Purchases are subject to the applicable provisions of the Drawings and the specified requirements set forth in the Project Manual for the Sherman School Renovation Project / Sherman Central Offices Project; Technology Contract Documents.

Sherman School Renovation State Project No. 127-0009RNV
Sherman Central Office State Project No. 127-0010BE-RNV

CONTRACT DOCUMENTS
The Contract Documents consist of:

.1 This Purchase Order and all documents or exhibits referenced herein
.2 AIA Document A152™-2019, Exhibit A - Terms and Conditions
.3 Other:

PURCHASER'S Authorized Representative *(Signature)*	**VENDOR'S** Authorized Representative *(Signature)*
(Printed name and title)	*(Printed name and title)*
Date	*Date*

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AIA® Document A152™ – 2019 Exhibit A

Terms and Conditions

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 The Work

The Vendor shall perform the Work in accordance with the Contract Documents. The term "Work" means the Vendor's performance, including the sale of goods and any incidental warehousing, delivery, and other items or services required by the Contract Documents and provided or to be provided by the Vendor. The Work includes all labor, materials, packaging, temporary protection, storage, and equipment necessary to fulfill the Vendor's obligations, except as specifically indicated in the Contract Documents to be the responsibility of others.

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This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

§ 1.2 Governing Law, including the Uniform Commercial Code

The Contract is for the sale of goods and shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rule and including the jurisdiction's Uniform Commercial Code (UCC) as adopted. Disputes shall be resolved in a court of competent jurisdiction unless the parties agree otherwise.

§ 1.3 Contract Formation – Offer and Acceptance

The Contract Documents are identified in the Purchase Order and are an offer to form a contract. The Vendor may accept the offer by (1) signing the Purchase Order and returning it to the Purchaser, (2) sending the Purchaser written confirmation of the Vendor's acceptance, (3) delivering to the Purchaser conforming goods described in the Contract Documents in accordance with the terms of the Contract Documents and before the Purchaser has made, or initiated action to make, other arrangements for the procurement of the goods, or (4) accepting payment for the goods described in the Contract Documents. The Vendor's acceptance is expressly limited to the terms of the offer, including these Terms and Conditions. This Contract shall not be modified unless expressly agreed to in writing by authorized representatives of the Purchaser and Vendor. Additional or different terms are not a part of the Contract.

§ 1.4 The Contract

Upon acceptance in accordance with Section 1.3, the Contract Documents form the agreement between the Purchaser and Vendor. The Contract represents the entire and integrated Contract between the parties hereto and supersedes all prior proposals, offers, terms and conditions, negotiations, representations, or contracts, either written or oral. The Contract Documents shall not be construed to create a contractual relationship of any kind between any persons or entities other than the persons or entities specifically identified in the Purchase Order as the Purchaser and the Vendor. Neither party to the Contract shall assign the Contract without written consent of the other.

§ 1.5 Ownership and Use of Architect's Drawings, Specifications and Other Documents

Documents prepared by the Architect and the Architect's consultants are Instruments of Service for use solely with respect to this Project. The Architect and the Architect's consultants shall retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Vendor, sub-vendors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. The Instruments of Service may not be used for other Projects, or for additions to this Project outside the scope of the Work, without the specific written consent of the Architect and the Architect's consultants.

§ 1.6 Severability

The invalidity of any provision of the Contract Documents shall not invalidate the

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Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.7 Waiver of Consequential Damages

The Purchaser and Vendor waive claims against each other for consequential damages arising out of or relating to this Contract.

§ 1.8 Time

Time limits stated in the Contract Documents are of the essence of the Contract. By accepting the Purchaser's offer in accordance with Section 1.3, the Vendor confirms that the time limits stated in the Contract Documents, including required delivery dates, are a reasonable period for performing the Work and shall not be changed unless agreed to by both parties in writing.

ARTICLE 2 PRICE AND PAYMENTS

§ 2.1 When payment is due pursuant to the payment terms in the Purchase Order, the Vendor shall submit to the Purchaser an itemized invoice, supported by data substantiating the Vendor's right to payment.

§ 2.2 Except with the Purchaser's knowledge and consent, the Vendor shall not engage in any activity, or offer any employment, interest, or contribution to the Purchaser's employees or consultants that would reasonably appear to compromise the Purchaser's employees' or consultants' judgment with respect to this Project.

ARTICLE 3 PURCHASER

§ 3.1 The Purchaser shall furnish any information required for the Vendor's performance of the Work with reasonable promptness after receiving the Vendor's written request for such information.

§ 3.2 If the Vendor is to make delivery at the Project premises, the Purchaser shall provide (1) suitable spaee and aceess for such delivery and (2) temporary storage until the goods are accepted or removed from the Project premises.

ARTICLE 4 VENDOR

§ 4.1 Delivery

§ 4.1.1 Unless otherwise stated in the Contract Documents, the Vendor shall make delivery of the goods (1) to the Project premises and (2) within a reasonable time from acceptance of the Contract as set forth in Section 1.3.

§ 4.1.2 If the Vendor is to make delivery at the Project premises, the Vendor shall, prior to delivery, coordinate with the Purchaser to (1) confirm the conditions under which the goods are to be delivered; (2) verify the stage of completion of the Project; (3) determine availability of facilities for access, delivery, and storage; and (4) determine restrictions imposed by the Purchaser. The Vendor shall promptly report to the Purchaser conditions that would impede the Vendor's delivery. If the Vendor is required to unpackage the goods, the Vendor shall remove and dispose of the packaging and delivery materials. The Vendor shall promptly remedy damage and loss to property caused in whole or in part by the Vendor, sub-vendors, or anyone directly or indirectly employed by any of them.

§ 4.2 Submittals

If submittals, such as shop drawings, product data, and samples, are required by the Contract Documents, the Vendor shall prepare such submittals and provide them to the Purchaser in a manner and sequence to allow reasonable time for review. By providing submittals, the Vendor represents to the Purchaser that the Vendor has (1) reviewed and approved them; (2) determined and verified materials and measurements, or will do so; and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Purchaser shall review and approve, or take other appropriate action, upon the Vendor's submittals in a timely manner. The Work shall be in accordance with approved submittals. Shop drawings, product data, samples and similar submittals are not Contract Documents.

§ 4.3 Indemnification

§ 4.3.1 To the fullest extent permitted by law, the Vendor shall indemnify and hold harmless the Purchaser, and its agents and employees from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performanee of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Vendor, a sub-vendor, anyone direetly or indirectly

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employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 4.3.1.

§ 4.3.2 In claims against any person or entity indemnified under Section 4.3.1 by an employee of the Vendor, a sub-vendor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 4.3.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Vendor or sub-vendor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 4.3.3 Provided the Purchaser has fulfilled its payment obligations under the Contract Documents, the Vendor shall defend and indemnify the Purchaser from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any sub-vendor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Purchaser shall notify the Vendor. If approved by the applicable court, when required, the Vendor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

ARTICLE 5 TITLE AND RISK OF LOSS

§ 5.1 Unless otherwise stated in the Contract Documents, title to all goods shall be transferred to the Purchaser upon acceptance in accordance with Article 6.

§ 5.2 Unless otherwise stated in the Contract Documents, the risk of loss with respect to all goods provided by the Vendor shall remain with the Vendor, and the Purchaser has no obligation to insure such goods, until acceptance in accordance with Article 6.

ARTICLE 6 ACCEPTANCE

§ 6.1 When the Vendor considers the Work, or a portion thereof which the Purchaser agrees to accept separately, to be complete, the Vendor shall notify the Purchaser. Thereafter, the Vendor shall allow the Purchaser 10 days to inspect the goods to determine, based on conformance with the Contract Documents, if they are accepted or rejected, in whole or in part, and to notify the Vendor of rejection of any goods with the specific basis for such rejection. The term "day" shall mean calendar day unless otherwise specifically defined in the Contract Documents.

§ 6.2 If the Purchaser rejects any of the goods, the Vendor shall provide a remedy and evidence of arrangements to accomplish such remedy. The Purchaser shall allow the Vendor a reasonable amount of time to remedy the rejected goods. When the Vendor considers the remedied goods to be complete, the parties shall follow the procedures set forth in Section 6.1. If the Purchaser rejects any of the goods for a second time, the Purchaser shall promptly notify the Vendor and the Vendor shall refund payments made for such goods and, if applicable, the Vendor shall promptly remove the rejected goods from the Project premises. Goods not inspected or rejected in accordance with Section 6.1 shall be deemed aceepted.

§ 6.3 The provisions of this Article 6 do not preclude recovery of damages as provided by law. The Purchaser's acceptance, or failure to discover a Vendor's breach after acceptance, shall not bar the Purchaser from making claims or from remedies and damages due to the Vendor's breach of this Agreement, including the Vendor's breach of warranties in Article 7.

ARTICLE 7 WARRANTIES

§ 7.1 The Vendor warrants to the Purchaser that the goods furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Vendor further warrants that the goods will conform to the requirements of the Contract Documents. Goods not conforming to these requirements may be considered defective. The Vendor's warranty excludes remedy for damage or defect caused by abuse, alterations to the goods not executed by the Vendor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage.

§ 7.2 The Vendor assigns to the Purchaser all manufacturers' warranties and guarantees applicable to the goods upon acceptance in accordance with Article 6. The Vendor shall provide the Purchaser with all available manufacturer warranty information, product data, and material safety data sheets pertaining to the goods.

§ 7.3 The Vendor hereby provides to the Purchaser all warranties relating to the goods implied by law, including the warranty of merchantability and warranty of fitness for a particular purpose.

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§ 7.4 The Vendor acknowledges that no exclusion of, or limitation on, warranties contained in any proposal, product literature, or other submittal shall affect the warranties provided in this Article 7.

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SECTION 007000 – STANDARD FORM OF AGREEMENT

PART 1 - GENERAL

1.1 GENERAL CONDITIONS OF THE CONTRACT

A. AIA Document A151, "Standard Form of Agreement between Owner and Vendor for Technology" 2019 Edition, included herein, as modified, will be executed as the Contract for Technology.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 007000

AIA® Document A151™ – 2019

Standard Form of Agreement between Owner and Vendor for Technology

AGREEMENT made as of the day of in the year 2026
(In words, indicate day, month, and year.)

BETWEEN the Owner:
(Name, legal status, address, and other information)

Town of Sherman / Sherman Board of Education
9 Route 39 North
Sherman, Connecticut 06784

and the Vendor:
(Name, legal status, address, and other information)

ADDITIONS AND DELETIONS:
The author of this document may have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

for the following Project:
(Name, location, and detailed description)

Sherman School Renovation Project / Sherman Central Administration Project
2 Route 37 East
Sherman, Connecticut 06784

The Architect:
(Name, legal status, address, and other information)

Antinozzi Associates, PC
271 Fairfield Avenue
Bridgeport, Connecticut 06604

The Owner and Vendor agree as follows.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Governing Law, including the Uniform Commercial Code

This Agreement is for the sale of goods, specifically Technology, and shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rule and including the jurisdiction's Uniform Commercial Code (UCC) as adopted. If this Agreement conflicts with terms provided by the UCC, the Agreement shall prevail. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 14.7.

§ 1.2 The Contract Documents

The Contract Documents are enumerated in Article 15 and consist of this Agreement (including, if applicable, Supplementary and other Conditions of the Contract), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Vendor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all. Performance by the Vendor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.3 The Contract

The Contract Documents form the Contract for the Work. The Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior proposals, offers, terms and conditions, negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between any persons or entities other than the Owner and the Vendor. The primary purpose of the Contract is the sale of goods, and any services provided are incidental to such primary purpose.

§ 1.4 Modifications

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A Modification is a written amendment to the Contract for changes in the Work signed by both parties or a written order for a minor change in the Work signed by the Architect. A minor change in the Work is a change that is consistent with the intent of the Contract Documents and does not involve an adjustment in the Contract Sum or an extension of the Contract Time.

§ 1.4.1 Modifications affecting cost or schedule must be authorized by Change Order. Upon receipt of an authorized Change Order, the Vendor must promptly proceed with the Work which must be performed in accordance with the requirements of the Contract Documents.

§ 1.4.2 For costs incurred by Change Order, the Vendor's fee must not exceed five (5) percent if the subcontract is on the basis of Cost of the Work plus a fee.

§ 1.4.3 The maximum allowable fee for overhead and profit of all Vendor subcontractor must not exceed ten (10) percent.

§ 1.5 The Work

The Work means the Vendor's performance, including the sale of FF&E and Technology and any incidental fabrication, shipping, warehousing, delivery, installation, and other items or services required by the Contract Documents and provided, or to be provided, by the Vendor. The Work includes all labor, materials, temporary protection, storage, and equipment necessary to fulfill the Vendor's obligations, except as specifically indicated in the Contract Documents to be the responsibility of others. The Work may constitute the whole or a part of the Project.

§ 1.6 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.7 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.7.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Vendor, sub-vendors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.7.2 The Vendor, sub-vendors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to the protocols established pursuant to Sections 1.8 and 1.9, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Vendor, sub-vendors, and suppliers may not use the Instruments of Service on other projects, or in connection with additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.8 Digital Data Use and Transmission

The parties shall agree upon written protocols governing the transmission and use of, and reliance on, Instruments of Service or any other information or documentation in digital form.

§ 1.9 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to written protocols governing the use of, and reliance on, the information contained in the model shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

§ 1.10 Severability

The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable.

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In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.11 Notice

§ 1.11.1 Except as otherwise provided in Section 1.11.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission in accordance with a building information modeling exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with a building information modeling exhibit, insert requirements for delivering Notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 1.11.2 Notice of Claims shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.12 Assignment of Contract

Neither party to the Contract shall assign the Contract without written consent of the other, except that the Owner may, without consent of the Vendor, assign the Contract to a lender providing financing for the Project if the lender assumes the Owner's rights and obligations under the Contract Documents. The Vendor shall execute all consents reasonably required to facilitate such assignment.

§ 1.13 Code Compliance Requirements

In order to meet the needs of persons with disabilities; when applicable, technology for this Project must comply with the requirements of the current Connecticut State Building Code, including ICC/ANSI A117.1 2009; Section 504 Rehabilitation Act of 1973, including the Uniform Federal Accessibility Standards (UFAS) and 504 Regulations; the Americans with Disabilities Act Accessibility Guideline (ADAAG); and the 2010 Federal ADA Standards for Accessible Design.

§ 1.13.1 Accessible knee clearances must be a minimum of thirty inches wide; twenty-seven inches high (twenty-four inches for children); and nineteen inches deep as specified by the Contract Documents.

§ 1.13.2 Comply with the applicable requirements of the current Connecticut Fire Safety Code and current OSHA – Title 29/Labor requirements.

ARTICLE 2 CONTRACT SUM AND PAYMENTS

§ 2.1 Contract Sum

§ 2.1.1 The Owner shall pay the Vendor the Contract Sum in current funds for the Vendor's performance of the Contract. The Contract Sum shall be ($), subject to additions and deductions as provided in the Contract Documents.

§ 2.1.2 Alternates

Intentionally Deleted.

§ 2.1.3 Unit prices, if any: Refer to Sherman School and Central Administration Technology Bid Forms.

(Identify the item and state the unit price and the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 2.1.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

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§ 2.2 Payments
§ 2.2.1 The Owner shall make payments to the Vendor in conformance with the following payment terms:
(Insert payment terms, such as payment due dates, deposit requirements, and prompt payment discounts, if any.)

§ 2.2.1.1: The Owner may approve invoices for payments of materials delivered and work completed up to ninety-five percent of the Contract value. The Owner will retain the remaining five percent of the Contract value pending final written acceptance of the work; and fully executed, notarized Waivers of Liens. Submit invoices monthly to the Architect for review in accordance with payment schedules as determined by the Owner.

§ 2.2.1.2 Stored Materials and associated subparagraphs: Invoices for materials and equipment purchased or fabricated and stored off site but not yet installed (phasing delivery only) must be submitted with the following documentation:

§ 2.2.1.2.1 Copies of all invoices from Supplier showing total value of materials stored off site:

§ 2.2.1.2.2 Insurance certificate from Agent for full value of materials stored plus 10 percent; and indicating what materials stored and the storage location.

§ 2.2.1.2.3. An executed Security Agreement.

§ 2.2.1.2.4. An executed Bill of Sale.

§ 2.2.1.2.5. Photographs documenting the materials stored, clearly labeled bearing the project name and date.

§ 2.2.1.3: To be eligible for payment, store materials must be stored at the Vendor's place of business or Owner pre-approved secure location.

§ 2.2.2 When payment is due pursuant to the payment terms of Section 2.2.1, the Vendor shall submit to the Owner an itemized invoice, supported by data substantiating the Vendor's right to payment.

§ 2.2.3 Except with the Owner's knowledge and consent, the Vendor shall not engage in any activity, or offer any employment, interest, or contribution to the Owner's employees or consultants, that would reasonably appear to compromise the Owner's employees' or consultants' judgment with respect to this Project.

ARTICLE 3 TIME
§ 3.1 Contract Time
§ 3.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for completion of the Work. The Contract Time shall be measured from the date of commencement. The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 3.1.2 Time limits stated in the Contract Documents are of the essence of the Contract. By executing this Agreement, the Vendor confirms that the Contract Time is a reasonable period for performing the Work.

§ 3.1.3 If the Vendor is delayed at any time in the commencement or progress of the Work by (1) changes ordered in the Work; (2) labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions not reasonably anticipatable, unavoidable casualties, or any causes beyond the Vendor's control; or (3) other causes that the Vendor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine, subject to the provisions of Article 14.

§ 3.1.4 If the Vendor fails to achieve completion of the Work as provided in this Article 3, liquidated damages, if any, shall be assessed as set forth in Section 2.1.5.

§ 3.2 Date of Commencement
The date of commencement of the Work shall be:
(Check one of the following boxes.)

[X] The date of this Agreement. Coordinate with construction activities as scheduled by Newfield Construction, the Construction Manager, for the renovated school building and site.

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[ ] A date set forth in a notice to proceed issued by the Owner.

[X] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

As set forth in Section 003113, Schedule of the Project Manual, installation will commence by December 8, 2026. All State Contract Items must be ordered prior to June 30, 2026, to maintain pricing. By entering into this Agreement, Vendors and State Contract providers acknowledge that installation commencing by December 8, 2026 will not impact pricing.

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.3 Completion
§ 3.3.1 Completion of the Work occurs upon acceptance of all FF&E and Technology in the Contract Documents in accordance with Article 8.

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Vendor shall achieve completion of the entire Work:
(Check the appropriate box and complete the necessary information.)

[ ] Not later than ( ) calendar days from the date of commencement of the Work.

[X] By the following date: 12/30/2026

§ 3.3.3 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to completion of the entire Work, the Vendor shall achieve completion of such portions by the following dates:

Portion of Work	Completion Date

ARTICLE 4 OWNER
§ 4.1 The Owner's Representative
The Owner shall identify a representative authorized to act on behalf of the Owner with respect to the Project. The Owner's representative shall not be changed without ten days' prior notice to the Vendor. The Owner identifies the following representative:
(Name, address, email address, and other information)

Philip Giuliani, Director of Facilities
Sherman School
2 Route 37 East
Sherman, Connecticut 06784
T: (860) 355-3793, Ext: 379

§ 4.2 Information and Services Required of the Owner
§ 4.2.1 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.2.2 Unless otherwise provided in the Contract Documents, the Owner shall provide
- **.1** areas of the Project premises that the Vendor may use to perform the Work;
- **.2** access to the Project premises for the Vendor at reasonable times;
- **.3** information regarding any restrictions on the use of, or access to, the Project premises;
- **.4** suitable space for receipt, inspection, acceptance, and staging of materials and FF&E and Technology;
- **.5** utilities and facilities on the Project premises and vertical transportation necessary for progress and execution of the Work; and
- **.6** a secured premises for storage of FF&E and Technology until acceptance.

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§ 4.2.3 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall furnish any other information or services under the Owner's control and relevant to the Vendor's performance of the Work with reasonable promptness after receiving the Vendor's written request for such information or services.

ARTICLE 5 VENDOR

§ 5.1 The Vendor's Representative

The Vendor shall identify a representative authorized to act on behalf of the Vendor with respect to the Project. The Vendor's representative shall not be changed without ten days' prior notice to the Owner and Architect. The Vendor identifies the following representative:
(Name, address, email address, and other information)

§ 5.2 The Vendor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents by activities or duties of the Architect in the Architect's administration of the Contract.

§ 5.3 The Vendor shall coordinate its Work with the work provided by the Owner and the Owner's other vendors, consultants, and contractors. The Vendor may communicate with the Owner's other vendors, consultants, and contractors, for the purposes of completing the Work. The Vendor shall keep the Owner reasonably informed of any such communications. The Vendor shall be entitled to rely on the accuracy and completeness of work and information furnished by the Owner and the Owner's other vendors, consultants, and contractors. The Vendor shall provide prompt written notice to the Owner if the Vendor becomes aware of any error, omission, or inconsistency in such work or information.

§ 5.4 Review of Contract Documents and Inspection of Project Premises by Vendor

§ 5.4.1 Execution of the Contract by the Vendor is a representation that the Vendor has visited the Project premises, if required in the Contract Documents, and correlated personal observations with requirements of the Contract Documents.

§ 5.4.2 Before starting each portion of the Work, including placing orders for FF&E and Technology, the Vendor shall (1) carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 4.2; (2) visit and inspect the Project premises in order to gain an understanding of the conditions under which the Work is to be performed; (3) determine availability of facilities for access, delivery, transportation, and staging; (4) determine any restrictions imposed by the Owner and the Owner's separate vendors and contractors; and (5) correlate observations with the requirements of the Contract Documents. The Vendor shall promptly report to the Owner and Architect conditions observed that would impede the Vendor's performance of the Work. The Vendor's obligations to review the Contract Documents are for the purpose of facilitating delivery and installation by the Vendor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Vendor shall promptly report to the Architect any errors, inconsistencies, or omissions discovered by or made known to the Vendor as a request for information in such form as the Architect may require. It is recognized that the Vendor's review is made in the Vendor's capacity as a vendor and not as a licensed design professional, unless otherwise specifically provided for in the Contract Documents.

§ 5.4.3 The Vendor shall promptly report to the Architect any nonconformity discovered by or made known to the Vendor as a request for information in such form as the Architect may require.

§ 5.4.3.1 The Vender is solely responsible for the accuracy of field dimensions. Notify the Architect of differences identified between information specified by the Construction Documents before proceeding. No extra compensation will be allowed for differences between actual dimensions and measurements indicated on the Project Drawings.

§ 5.4.4 If the Vendor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Vendor's notices or requests for information pursuant to Sections 5.4.2 or 5.4.3, the

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Vendor shall submit Claims as provided in Article 14. If the Vendor fails to perform the obligations of Sections 5.4.2 or 5.4.3, the Vendor shall pay such costs and damages to the Owner, subject to Section 14.12, as would have been avoided if the Vendor had performed such obligations. If the Vendor performs those obligations, the Vendor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies, or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 5.5 Supervision

§ 5.5.1 The Vendor shall supervise and direct the Work using the Vendor's best skill and attention. The Vendor shall be solely responsible for and have control over the means, methods, techniques, sequences, and procedures of fabrication, shipment, delivery, and installation, and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.

§ 5.5.2 The Vendor shall be responsible to the Owner for acts and omissions of the Vendor's employees, sub-vendors, and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Vendor or any of its sub-vendors.

§ 5.5.3 The Vendor shall be responsible for inspection of portions of the Work already performed to determine that such portions are in proper condition for subsequent Work.

§ 5.6 Labor and Materials

§ 5.6.1 Unless otherwise provided in the Contract Documents, the Vendor shall provide and pay for labor, materials, tools, installation equipment and machinery, delivery, and other facilities and services necessary for proper execution and completion of the Work whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 5.6.2 The Vendor shall enforce strict discipline and good order among the Vendor's employees and other persons carrying out the Work. The Vendor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

§ 5.6.3 The Vendor shall make no substitution or change in the Contract Documents unless done in accordance with a Modification, and after providing the Architect notice and a reasonable opportunity to evaluate the proposed substitution or change and consult with the Owner. The Vendor shall thoroughly investigate and warrant that substitutions will have no material impact to the building, its systems, services, infrastructure, structural elements, clearances, accessibility or use. The Cost to alter Work provided or installed by other Contractors, resulting from a Vendor's substitution, shall be the sole responsibility of the Vendor.

§ 5.7 Taxes

This Project is tax exempt. Include no amount for State Sales Tax or Federal Excise Tax on products for this Project. The Owner will furnish the Vendor with written documentation of the Project's tax-exempt status upon request.

§ 5.8 Permits, Fees, Notices, and Compliance with Laws

§ 5.8.1 Unless otherwise provided in the Contract Documents, the Vendor shall secure and pay for permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 5.8.2 The Vendor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. If the Vendor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Vendor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 5.9 Allowances

The Vendor shall include in the Contract Sum all allowances stated in the Contract Documents. The Owner shall select items under allowances with reasonable promptness. Allowance amounts shall include the costs to the Vendor of items delivered at the Project premises and all required taxes, less applicable trade discounts. Vendor's costs for unloading

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and handling at the Project premises, labor, installation, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowance. Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Modification. The amount of the Modification shall reflect the difference between actual costs and the allowances under Section 2.1.4.

§ 5.10 Vendor's Schedules

§ 5.10.1 The Vendor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a progress schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the progress of the Work and Project, shall be related to the entire Project, and shall provide for expeditious and practicable execution of the Work.

§ 5.10.2 The Vendor shall perform the Work in general accordance with the most recent schedule submitted to the Owner and Architect.

§ 5.10.3 The Vendor's progress schedule shall indicate dates for commencement and completion of phases of the Work within the Contract Time, including dates for order placement, fabrication, shipping, delivery, and installation. The schedule shall indicate other critical dates, such as deadlines for approval of submittals of colors, finishes, and materials. The Vendor shall obtain and submit for the Owner's and the Architect's information written confirmation from sub-vendors of dates of fabrication and delivery.

§ 5.10.4 The Vendor shall cooperate with the Owner and Architect in coordinating the Vendor's progress schedule with those of contractors and separate vendors and with the requirements of the Owner and Architect. The Vendor shall cooperate in determining mutually acceptable dates and times for delivery, installation, and inspection of the Work, and use of services and facilities provided to the Vendor, all to be confirmed in writing within a reasonable time in advance of such dates and times.

§ 5.11 Submittals

§ 5.11.1 The Vendor shall review for compliance with the Contract Documents and submit to the Architect shop drawings, product data, samples, and similar submittals required by the Contract Documents in coordination with the Vendor's progress schedule and in such sequence as to allow the Architect reasonable time for review. By submitting shop drawings, product data, samples, and similar submittals, the Vendor represents to the Owner and Architect that the Vendor has (1) reviewed and approved them; (2) determined and verified materials, field measurements, and field installation criteria related thereto, or will do so; and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Work shall be in accordance with approved submittals. Shop drawings, product data, samples and similar submittals are not Contract Documents.

§ 5.11.1.1: Before ordering any technology, send the Owner's Representative two submittal binders of all awarded items. Upon receipt the submittal binder will be given to the Architect for review. Allow ten (10) business days for review of each submittal.

§ 5.11.1.2 Submittal Format: Organize and clearly mark submittal documents by group and item number. Submit fabric and colors samples for final review. Submittals are required in accordance with Division 1 and individual specification sections including basis of design specified products.

§ 5.11.2 The Vendor shall provide the Owner with available manufacturer's warranty documents, product data, and material safety data sheets.

§ 5.12 Cleaning Up

The Vendor shall keep the Project premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Vendor shall remove waste materials, rubbish, the Vendor's tools, construction equipment, machinery, and surplus material from and about the Project.

§ 5.12 .1 Clean the premises on a **Daily Basis**. Remove all wrapping, scrap materials, packaging and associated debris from the project site. Use of dumpsters provided by the Owner or Construction Manager are not permitted without prior written acceptance. Carefully and thoroughly clean the entire installation to the Owner's satisfaction.

§ 5.12 .2 Maintain access to existing walkways, corridors and other similar facilities. Obstruction of require means of emergency egress and disabling the building's life safety equipment is prohibited. Do not close or otherwise obstruct walkways, corridors or exit pathways without prior written acceptance by the Owner and authorities having jurisdiction.

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§ 5.13 Access to Work
The Vendor shall provide the Owner and Architect with reasonable access to the Work in preparation and progress wherever located.

§ 5.14 Indemnification
§ 5.14.1 To the fullest extent permitted by law, the Vendor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Vendor, a sub-vendor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 5.14.1.

§ 5.14.2 In claims against any person or entity indemnified under Section 5.14.1 by an employee of the Vendor, a sub-vendor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 5.14.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Vendor or sub-vendor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 5.14.3 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Vendor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any sub-vendor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Vendor. If approved by the applicable court, when required, the Vendor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

ARTICLE 6 TITLE AND RISK OF LOSS
§ 6.1 Title to all FF&E and Technology shall be transferred to the Owner upon acceptance in accordance with Article 8.

§ 6.2 The risk of loss with respect to all FF&E and Technology provided by the Vendor shall remain with the Vendor, and the Owner has no obligation to insure such FF&E and Technology, until acceptance in accordance with Article 8.

ARTICLE 7 DELIVERY AND INSTALLATION
§ 7.1 The Vendor shall deliver FF&E and Technology in accordance with the Vendor's progress schedule, or at a time agreed upon by the Owner and Architect, and in accordance with Article 5. Do not reply upon the availability of on-site storage. Storage of Technology prior to installation is the sole responsibility of the Vendor.

§ 7.1.1 **Installation** is controlled by the schedule and must be coordinated with the Construction Manager's schedule. The Owner will reject any technology not reviewed by the Technology Consultant. The Owner will reject any tailgate deliveries to the site and the associated cost is the sole responsibility of the Vendor.

§ 7.2 Delivery and installation of all FF&E and Technology shall be made at the Project premises unless otherwise specified in the Contract Documents.

§ 7.2.1 Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other Work.

§ 7.2.1.1 Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect, Construction Manager, and Owner's Designated Representative of scheduled meeting dates.

§ 7.2.1.2 Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the Contract Documents, related Requests for Information, related Change in the Work, purchases, deliveries, submittals, possible conflicts, compatibility requirements, time schedules, space and

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access limitations, regulations of authorities having jurisdiction, installation procedures, coordination with other Work, protection of adjacent Work, and other issues related to the Work performed under this Agreement.

§ 7.2.1.3 Reporting: Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions. Distribute minutes of the meeting to each party present and to other parties requiring information. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at the earliest feasible date.

§ 7.3 The Vendor shall coordinate with the Owner regarding the logistics of the Vendor's delivery and installation obligations at the Project premises.

§ 7.3.1 Install work in the proper location within the building and completely assembled, polished, cleaned, and in proper operating condition, inclusive of all utility connections.

§ 7.3.2 Do not reply upon the availability of on-site storage. Storage of Technology prior to installation is the sole responsibility of the Vendor

§ 7.3.2 Contract the services of qualified installer responsible for making plumbing, electrical and data connections from the building's established service infrastructure to the Vendors' products. The Vendor bears sole responsibility for the connection of their products and items to the building's infrastructure.

§ 7.3.3 Install all technology supplied with adjustable glides or leveling devices such that they are level and true. Install height adjustable technology in accordance with the requirements of the Contract Documents; or in the absence of specification by the Contract Documents, as directed by the Architect.

§ 7.3.3 Equipment accessories (i.e. shelving) must be unfastened from shipping position and installed for use. Place keys for locks in individual packages marked with room names and numbers; and provided to the Owner, or the Owner's designated representative.

§ 7.3.4 Provide Allen wrenches, hex-head wrenches, set-screw wrenches or other similar special tools necessary for height adjustment with the technology item or equipment.

§ 7.4 Deliver work in an undamaged condition as packaged by the manufacturer, with the manufacturer's seal and label intact. Report to Owner's designated representative prior to unloading or installing any technology. Construction personnel, School Department personnel, and the Architect are not authorized to receive product.

§ 7.5 Provide temporary protection of materials in case of inclement weather during the removal of packing material and product assembly.

§ 7.5.1 Uncrate and assemble technology outside the new school building. Removal of packaging and packing materials will NOT be permitted within spaces of the new school facility without prior authorization from the local authority having jurisdiction.

§ 7.6 Take all necessary precautions to protect technology against damage, theft and deterioration on the site. Similarly, protect the work of other trades adjacent to or in which the Vendors work is installed. Promptly repair or replace damage to the work of other trades caused by the Vendor or the Vendor's subcontractors.

§ 7.6.1 Provide cardboard and/or Masonite sheets to protect the finished floor during installation.

§ 7.7 Secure Attachment of Technology Items: To ensure proper attachment of Technology items, where "items" are attached to wall, ceiling, overhead structure, floor and/or furniture component, provide information adequate for architect to verify those items, are attached securely and per manufacturer's recommendations. The Architect's review may be implemented during the submittal process.

§ 7.7.1 Provide struts, hangers, fasteners, safety harnesses, channels, bolts, screws, rods, etc. to securely attach items to the building structure as required to meet field conditions and meet applicable codes.

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§ 7.8 The Vendor shall deliver to the Owner, or designated Owner's Representative, the keys for all furniture, furnishings, and equipment controlled by locks. Keys shall be presented in separate labeled envelopes indicating the product manufacturer, product type and bearing designations corresponding with the submitted keying schedule. Under no circumstances shall keys be left inside installed furnishings, fixtures or equipment.

ARTICLE 8 ACCEPTANCE

§ 8.1 The Owner and Architect may conduct a preliminary inspection of Technology within seven days after its delivery to the Project premises for the purpose of verifying the delivery and quantities. Preliminary inspections shall not constitute acceptance of, taking charge over, or taking control of, such Technology. The Architect shall report to the Vendor any defects, damage, deficiencies, or nonconformity observed during the preliminary inspection.

§ 8.2 When the Vendor considers the Work, or a portion thereof which the Owner agrees to accept separately, to be complete, the Vendor shall notify the Owner and Architect. The Vendor shall allow the Owner and Architect a reasonable amount of time to inspect the Technology to determine, based on conformance with the Contract Documents, if it is accepted or rejected in whole or in part. Based on the Architect's recommendation to the Owner and the Owner's own inspection, if any, the Owner shall accept or reject the Technology, in whole or in part.

§ 8.3 If the Owner rejects any of the Technology, the Owner, or the Architect acting on behalf of the Owner, shall notify the Vendor within seven days of the date of inspection, specifying the basis for such rejection. Upon rejection, the Vendor shall provide a remedy and evidence of arrangements to accomplish such remedy. The Owner shall allow the Vendor a reasonable amount of time to remedy the rejected Technology. When the Vendor considers the remedied Technology to be complete, the parties shall follow the procedures set forth in Section 8.2. If the Owner rejects any of the Technology for a second time, the Owner shall promptly notify the Vendor and the Vendor shall promptly remove the rejected Technology from the Project premises and refund payments made for such rejected goods to the Owner. If the Vendor disagrees with an Owner's rejection, the Vendor may make a claim.

§ 8.4 Technology not inspected in accordance with Section 8.2 or rejected in accordance with Section 8.3 shall be deemed accepted.

§ 8.5 The Owner's acceptance under this Article 8 cannot be revoked; however, the provisions of this Article 8 do not preclude recovery of damages as provided by law. The Owner's acceptance, or failure to discover a Vendor's breach after acceptance, shall not bar the Owner from making claims in accordance with Article 14 or from remedies and damages due to the Vendor's breach of this Agreement, including the Vendor's breach of warranties in Article 9.

ARTICLE 9 WARRANTIES

§ 9.1 The Vendor warrants to the Owner that the Technology furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Vendor further warrants that the Technology will conform to the requirements of the Contract Documents. Technology not conforming to these requirements may be considered defective. The Vendor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Technology not executed by the Vendor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage.

§ 9.2 The Vendor assigns to the Owner all Technology manufacturers' warranties and guarantees upon acceptance in accordance with Article 8.

§ 9.3 The Vendor hereby provides to the Owner all warranties relating to the Technology implied by law, including the warranty of merchantability and warranty of fitness for a particular purpose.

§ 9.4 The Vendor acknowledges that no exclusion of, or limitation on, warranties contained in any proposal, product literature, or other submittal shall affect the warranties provided in this Article 9.

ARTICLE 10 ARCHITECT

§ 10.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during the Vendor's performance, and until completion, of the Work. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 10.2 Except as otherwise provided in the Contract Documents or when direct communications have been specially

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authorized, the Owner and Vendor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with sub-vendors and suppliers shall be through the Vendor. Communications by and with separate vendors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 10.3 The Architect will assist the Owner in coordinating schedules for fabrication, delivery, and installation of the Work, but will not be responsible for failure of the Vendor or a sub-vendor to meet schedules for completion or to perform their respective duties and responsibilities in conformance with applicable schedules.

§ 10.4 The Architect will visit the Project premises at intervals appropriate to the stage of the Work, or as otherwise agreed with the Owner, to become generally familiar with, and to keep the Owner informed about, the progress and quality of the portion of the Work completed, and to determine, in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Architect will not have control over, charge of, or responsibility for, the means, methods, techniques, sequences, or procedures of fabrication, shipment, delivery, storage, or installation, or for the safety precautions and programs in connection with the Work, as these are solely the Vendor's rights and responsibilities under the Contract Documents.

§ 10.5 The Architect may order minor changes in the Work. The Architect's order for minor changes shall be in writing. If the Vendor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Vendor shall notify the Architect and shall not proceed to implement the change in the Work. If the Vendor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Vendor waives any adjustment to the Contract Sum or extension of the Contract Time.

§ 10.6 The Architect will conduct inspections of Technology and provide recommendations as set forth in Article 8. Pursuant to Article 8, the Architect is only responsible for identifying defects, deficiencies, or nonconformities that the Architect actually observes, or reasonably should observe, during its inspections. The Architect is not required to make exhaustive or continuous inspections to fulfill its responsibilities in Article 8 and has no responsibility to discover latent defects.

§ 10.7 The Architect will review and approve or take other appropriate action upon the Vendor's submittals such as shop drawings, product data, and samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

ARTICLE 11 RELATED ACTIVITIES OF OWNER OR OF SEPARATE VENDORS

§ 11.1 The Owner shall coordinate the activities of the Owner's own forces and of each separate vendor or contractor, if any, with the Work.

§ 11.2 If the Work depends for proper execution or results upon activities by the Owner or a separate vendor or contractor, the Vendor shall, prior to proceeding with that portion of the Work, promptly report to the Owner and Architect apparent discrepancies or defects in, or arising from, the activities of the Owner or separate vendors or contractors, that would impede the Vendor in achieving proper execution and results. If the Vendor fails to report reasonably discoverable discrepancies or defects, it shall be responsible for deficiencies or defects in its Work due to such deficiencies or defects.

§ 11.3 The Vendor shall reimburse the Owner for costs the Owner incurs that are payable to a separate vendor or contractor because of the Vendor's delays, improperly timed activities, or damage to the work of a separate vendor or contractor. The Owner shall be responsible to the Vendor for costs the Vendor incurs because of the delays, improperly timed activities, or damage to the Work caused by a separate vendor or contractor.

§ 11.4 If a dispute arises among the Vendor, separate vendors, or contractors, and the Owner as to the responsibility under their respective contracts for maintaining the Project premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 12 PROTECTION OF PERSONS AND PROPERTY

§ 12.1 Safety Precautions and Programs

The Vendor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Vendor shall take reasonable precautions for safety of, and shall

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provide reasonable protection to prevent damage, injury, or loss to

.1 employees on the Work and other persons who may be affected thereby;

.2 the Work, and materials and Technology to be incorporated therein, whether in storage on or off the Project premises, under care, custody, or control of the Vendor or sub-vendors; and

.3 other property at the Project premises or adjacent thereto.

The Vendor shall comply with, and give notices required by, applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons and property and their protection from damage, injury, or loss. The Vendor shall promptly remedy damage and loss to property caused in whole or in part by the Vendor, sub-vendors, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Vendor is responsible under Sections 12.1.2 and 12.1.3. The Vendor may make a claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect, or of anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Vendor. The foregoing obligations of the Vendor are in addition to the Vendor's obligations under Section 5.14.

§ 12.2 Hazardous Materials and Substances

§ 12.2.1 The Vendor is responsible for compliance with the requirements of the Contract Documents regarding hazardous materials or substances. If the Vendor encounters a hazardous material or substance not addressed in the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the Project premises by the Vendor, the Vendor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Vendor. By written agreement between the Owner and Vendor, the Contract Time shall be extended appropriately, and the Contract Sum shall be increased in the amount of the Vendor's reasonable additional costs of shutdown, delay, and start-up.

§ 12.2.2 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Vendor, sub-vendors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area, if in fact, the material or substance presents the risk of bodily injury or death as described in Section 12.2.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 12.2.3 If, without negligence on the part of the Vendor, the Vendor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Vendor for all cost and expense thereby incurred.

ARTICLE 13 INSURANCE

§ 13.1 The Vendor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in this Article 13 or elsewhere in the Contract Documents. The Vendor shall purchase and maintain the insurance required by this Agreement from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Vendor shall maintain the required insurance from the date of commencement of the Work to the date of completion of the Work, unless a different duration is stated below.

§ 13.1.1 Refer to Section 007550, "Insurance Requirements" of the Project Manual for insurance coverages required by the Town of Sherman for this Work.

§ 13.13 Waiver of Subrogation

§ 13.13.1 The Owner and Vendor waive all rights against (1) each other and any of their sub-vendors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) separate vendors or contractors, if any, and any of their sub-vendors, subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by this Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Vendor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified

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above from the Architect, Architect's consultants, separate vendors and contractors, and sub-vendors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 13.13.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual, or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 13.13.2 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause. The Owner shall pay the Architect and Vendor their just shares of insurance proceeds received by the Owner, and by appropriate agreements, written where legally required for validity, the Architect and Vendor shall make payments to their consultants and sub-vendors in similar manner.

ARTICLE 14 CLAIMS AND DISPUTES

§ 14.1 Binding Dispute Resolution

For any claim subject to, but not resolved by, mediation pursuant to Section 14.6, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[ ] Arbitration pursuant to Section 14.7 of this Agreement

[X] Litigation in a court of competent jurisdiction

[ ] Other *(Specify)*

If the Owner and Vendor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, claims will be resolved in a court of competent jurisdiction.

§ 14.2 Claims, disputes, and other matters in question arising out of or relating to this Contract, including those alleging an error or omission by the Architect but excluding those arising under Section 12.2, shall be referred initially to the Architect for decision. Such matters, except those waived as provided for in Section 14.12, shall, after initial decision by the Architect or 30 days after submission of the matter to the Architect, be subject to mediation as a condition precedent to binding dispute resolution.

§ 14.3 Notice of Claims

Claims by either the Owner or Vendor shall be initiated by notice to the other party in accordance with Section 1.11.2.

§ 14.4 Time Limits on Claims

The Owner and Vendor shall commence all claims and causes of action against the other and arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in this Agreement, whether in contract, tort, breach of warranty, or otherwise, within the period specified by applicable law, but in any case not more than 10 years after the date of completion of the Work. The Owner and Vendor waive all claims and causes of action not commenced in accordance with this Section 14.4.

§ 14.5 If a claim, dispute, or other matter in question relates to or is the subject of a mechanic's lien, the party asserting such matter may proceed in accordance with applicable law to comply with the lien procedures, including notice or filing deadlines.

§ 14.6 The parties shall endeavor to resolve their disputes by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with their Construction Industry Mediation Procedures in effect on the date of this Agreement. A request for mediation shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the mediation. The request may be made concurrently with the binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

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§ 14.7 If the parties have selected arbitration as the method for binding dispute resolution in this Agreement, any claim, subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association, in accordance with the Construction Industry Arbitration Rules in effect on the date of this Agreement. Demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 14.8 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation; (2) the arbitrations to be consolidated substantially involve common questions of law or fact; and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 14.9 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, any party to an arbitration may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a Claim not described in the written Consent.

§ 14.10 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to this Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 14.11 Continuing Contract Performance
Pending final resolution of a Claim, except as otherwise agreed in writing, the Vendor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 14.12 Waiver of Claims for Consequential Damages
The Vendor and Owner waive claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- **.1** damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- **.2** damages incurred by the Vendor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business, and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages. Nothing contained in this Section 14.12 shall be deemed to preclude an assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

ARTICLE 15 ENUMERATION OF CONTRACT DOCUMENTS

§ 15.1 The Contract Documents are defined in Article 1 and, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 15.2 The Agreement is this executed AIA Document A151™–2019, Standard Form of Agreement Between Owner and Vendor for Technology.

§ 15.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Exhibit A: Sherman School Renovation Project / Sherman School Central Administration Project Manual dated June 16, 2026

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Section	Title	Date	Pages

§ 15.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Exhibit B: Sherman School Renovation Project / Sherman School Central Administration Technology Drawings dated June 16, 2026.

Number	Title	Date

§ 15.6 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to quotations or proposal requirements are not part of the Contract Documents unless the quotation or proposal requirements are enumerated in this Article 15.

§ 15.7 Additional documents, if any, forming part of the Contract Documents:

.1 Other Exhibits:
(Check all boxes that apply.)

[ ] The Sustainability Plan:

Title	Date	Pages

[ ] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.2 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents.)

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	**VENDOR** *(Signature)*
(Printed name and title)	*(Printed name and title)*

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SECTION 007500 – GUARANTEE BONDS

PART 1 - GENERAL

1.1 BID FORM SUPPLEMENT

A. Prior to the Owner's execution of the contract agreement, the Town will require the Vendor(s) to furnish separate performance and labor and materials payment bonds covering the faithful performance of the entire construction contract agreement.

1. The performance bond and the labor and material payment bond shall each be in the amount of one hundred percent (100%) of the contract amount.

B. Submit the "Performance Bond" and "Labor and Material Payment Bond", must be submitted on the forms enclosed in this section.

1. The bonds must be signed by an official of the bonding company and accompanied by the bonding agent's written power of attorney.
2. Provide four (4) copies each of the bonds and the power of attorney in order that one (1) copy of each may be attached to each copy of the contract agreement.

C. The Vendor(s) quotation shall include the total premiums for the performance and payment bonds.

D. The Bonds will be executed by a Surety Company or Companies with an AM Best Rating of A- or better that are authorized to do business in the State of Connecticut and who are acceptable to the Owner. Bond costs are paid for by the Vendor and included in his bid.

1.2 GUARANTEE BOND FORMS

A. AIA Document A312-2010 "Performance Bond" is the recommended form for a performance bond. A performance bond acceptable to Owner, or other guarantee bond as described in the Invitation and Instructions to Bidders, is required to be attached to the Bid Form as a supplement.

B. AIA Document A312-2010 "Payment Bond" is the recommended form for a labor and material payment bond. A payment bond acceptable to Owner, or other guarantee bond as described in the Invitation and Instructions to Bidders, is required to be attached to the Bid Form as a supplement

C. Copies of AIA standard forms may be obtained from The American Institute of Architects; https://www.aiacontracts.org/; email: docspurchases@aia.org; (800) 942-7732.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 007500

AIA® Document A312® – 2010

Performance Bond

VENDOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

ADDITIONS AND DELETIONS:
The author of this document may have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:
(Name, legal status and address)
Town of Sherman / Sherman Board of Education
9 Route 39 North, Sherman, Connecticut 06478

CONTRACT
Date:
Amount: $
Description:
(Name and location)
Sherman School
2 Route 37 East, Sherman, Connecticut 06478

BOND
Date:
(Not earlier than Contract Date)

Amount: $
Modifications to this Bond:

(Any additional signatures appear on the last page of this Performance Bond.)

VENDOR AS PRINCIPAL
Company: *(Corporate Seal)*

Signature: _____
Name and Title:

SURETY
Company: *(Corporate Seal)*

Signature: _____
Name and Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)
Antinozzi Associates, PC
271 Fairfield Avenue
Bridgeport, Connecticut
06604

§ 1 The Vendor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.

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§ 2 If the Vendor performs the Contract, the Surety and the Vendor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Contract, the Surety's obligation under this Bond shall arise after

- **.1** the Owner first provides notice to the Vendor and the Surety that the Owner is considering declaring a Vendor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Vendor and Surety to discuss the Vendor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Vendor Default;
- **.2** the Owner declares a Vendor Default, terminates the Contract and notifies the Surety; and
- **.3** the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Contract to the Surety or to a contractor selected to perform the Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Vendor, with the consent of the Owner, to perform and complete the Contract;

§ 5.2 Undertake to perform and complete the Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the Owner and a vendor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Vendor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- **.1** After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- **.2** Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Vendor under the Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- **.1** the responsibilities of the Contractor for correction of defective work and completion of the Contract;
- **.2** additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- **.3** liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the Vendor.

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§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Vendor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Vendor Default or within two years after the Vendor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Vendor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Vendor under the Contract after all proper adjustments have been made, including allowance to the Vendor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Vendor is entitled, reduced by all valid and proper payments made to or on behalf of the Vendor under the Contract.

§ 14.2 Contract. The agreement between the Owner and Vendor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Vendor as required under the Contract or to perform and complete or comply with the other material terms of the Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Vendor.

§ 15 If this Bond is issued for an agreement between a Vendor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Vendor.

§ 16 Modifications to this bond are as follows:

(Any additional signatures appear on the last page of this Performance Bond)

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

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AIA® Document A312® – 2010

Payment Bond

VENDOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Town of Sherman / Sherman Board of Education
9 Route 39 North, Sherman, Connecticut 06784

CONTRACT
Date:
Amount: $
Description:
(Name and location)
Sherman School
2 Route 37 East, Sherman, Connecticut, 06784

BOND
Date:
(Not earlier than Contract Date)

Amount: $
Modifications to this Bond:

(Any additional signatures appear on the last page of this Payment Bond.)

VENDOR AS PRINCIPAL
Company: *(Corporate Seal)*

Signature: _____
Name and Title:

SURETY
Company: *(Corporate Seal)*

Signature: _____
Name and Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)
Antinozzi Associates, PC
271 Fairfield Avenue
Bridgeport, Connecticut
06604

ADDITIONS AND DELETIONS:
The author of this document may have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

§ 1 The Vendor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference, subject to the

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following terms.

§ 2 If the Vendor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Contract, then the Surety and the Vendor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Vendor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Contract and tendered defense of such claims, demands, liens or suits to the Vendor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Vendor,

- **.1** have furnished a written notice of non-payment to the Vendor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- **.2** have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Vendor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Vendor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Vendor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Vendor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By the Vendor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Vendor in the performance of the Contract are dedicated to satisfy obligations of the Vendor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Vendor that are unrelated to the Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

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§ 11 The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Vendor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Vendor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- **.1** the name of the Claimant;
- **.2** the name of the person for whom the labor was done, or materials or equipment furnished;
- **.3** a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Contract;
- **.4** a brief description of the labor, materials or equipment furnished;
- **.5** the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Contract;
- **.6** the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- **.7** the total amount of previous payments received by the Claimant; and
- **.8** the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Vendor or with a subcontractor of the Vendor to furnish labor, materials or equipment for use in the performance of the Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the work of the Vendor and the Vendor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Contract. The agreement between the Owner and Vendor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Vendor as required under the Contract or to perform and complete or comply with the other material terms of the Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Vendor.

§ 17 If this Bond is issued for an agreement between a Vendor and subcontractor, the term Vendor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Vendor.

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§ 18 Modifications to this bond are as follows:

(Any additional signatures appear on the last page of this Payment Bond)

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

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SECTION 007550 - INSURANCE REQUIREMENTS

PART 1 - GENERAL

1.1 CERTIFICATES OF INSURANCE

A. The Vendor, for the duration of this Agreement, and any such longer period as expressly provided below or required by law, must carry insurance to protect the interests of the Owner.

1. The Vendor must obtain statutory workers' compensation and employers' liability insurance, comprehensive automobile liability insurance, commercial general liability insurance, excess/umbrella coverage and professional services liability insurance to not less than the minimum limits as required in this Section, all at no cost to the Owner.
2. The insurance limits and coverages set forth in this Section are the minimum requirements under the Agreement. The inclusion of these minimum requirements shall not be interpreted to restrict the rights of the Additional Insureds (defined below) to the stated minimum coverage amounts in the event the Architect maintains coverage at higher limits. The liability insurance coverages shall be primary and non-contributory

B. Each policy held by a subcontractor of the Vendor under this Agreement shall provide the same coverage to the extent of such subcontractor's negligent acts or omissions.

C. Each of the policies for the insurance mentioned above will be issued by an insurance company or companies satisfactory to the Owner and with a rating of A-VII or better by A.M. Best.

1. Such policies will contain a provision that coverages will not be changed, canceled, or non-renewed without at least thirty (30) days' prior written notice to the Owner.
2. Each insurance policy will state that the insurance company agrees to investigate and defend the insured against all claims for damages to the extent that all alleged damages might be covered by insurance.

D. Additional Insureds: Commercial General Liability, Comprehensive Automobile Liability and Umbrella/Excess Liability insurance policies shall name the Town of Sherman and the Sherman Board of Education (and such other parties, including any Architect, Construction Manager that may be selected by the Owner, as are specified by the Owner) (collectively, the "Additional Insureds") as Additional Insureds on a primary and non-contributory basis.

E. Certificates of Insurance: Certificates of insurance shall clearly indicate the Project name or some easily identifiable reference to the relationship to the Owner. Certificates of Insurance showing all required insurance coverages, thirty (30) day notice of cancellation and Additional Insureds, along with copies of additional insured endorsements, will be filed with the Owner on or before the earlier of the commencement of services or the execution of the Agreement.

1. The Vendor shall update such certificates throughout the duration of the period during which the Vendor is required to carry such insurance. At any time requested by the Owner, the Vendor will provide to the Owner a copy of any of the aforementioned policies, and any endorsements or amendments thereto.

F. The Vendor shall provide written notification to the Owner of the cancellation or expiration of any required insurance.

1. The Vendor shall provide such written notice within five (5) business days of the date the Vendor is first aware of the cancellation or expiration, or is first aware that the cancellation or expiration is threatened or otherwise may occur, whichever comes first.

G. The above insurance requirements and certificate(s) are subject to final approval by the Town's Insurance Agent as to form and substance and could require changes in the types of coverage and limits.

1.2 COMPREHENSIVE GENERAL LIABILITY INSURANCE

A. The Vendor shall maintain General Liability insurance at the following minimum limits:

1. Each Occurrence; $2,000,000.00.
2. General Aggregate; $4,000,000.00.
3. Products / Completed Operations Aggregate; $4,000,000.00.

1.3 AUTOMOBILE LIABILITY INSURANCE

A. The Vendor shall maintain Automobile Liability insurance at the following minimum limits.

1. Combined Single Limit Each Accident; $1,000,000.00.
2. General Aggregate: $1,000,000.00
3. Include coverage for all owned, hired, and non-owned vehicles.

1.4 UMBRELLA LIABILITY INSURANCE

A. The Vendor shall provide Commercial Umbrella Liability insurance at the following minimum limits.

1. Combined Single Limit Each Occurrence; $2,000,000.00.
2. Aggregate for Bodily Injury and Property Damage; $2,000,000.00.

1.5 WORKERS COMPENSATION AND EMPLOYERS' LIABILITY INSURANCE

A. The Vendor shall maintain Workers' Compensation and Employers' Liability insurance at the following amounts.

1. Workers Compensation, Statutory Limits for the State of Connecticut.
2. Employers' Liability Insurance:

a. Bodily Injury Each Accident; $100,000.00.
b. Bodily Injury by Disease Each Employee; $100,000.00.
c. Bodily Injury by Disease Policy Limit; $500,000.00.

1.6 PROFESSIONAL LIABILITY INSURANCE

A. The Vendor shall provide Professional Liability insurance at the following amounts:

1. A combined single limit per occurrence; $2,000,000.00.
2. In aggregate; $2,000,000.00.

B. Each policy of Insurance, with the exception of Professional Liability and Worker's Compensation shall include a waiver of subrogation in favor of the Town of Sherman/Sherman Board of Education and shall provide no less than thirty (30) days notice to the Town/Board in the event of a cancellation of change in conditions or amounts of coverage. The Commercial General Liability, Automobile, and Umbrella Liability shall name the Town of Sherman/Sherman Board of Education, the State of Connecticut and the selected Construction Manager as an additional insured.

C. Certificates of Insurance, acceptable to the Town of Sherman/Sherman Board of Education shall be delivered to the Town/Board prior to the commencement of the work and keep in force throughout the term hereof.

D. The above insurance requirements shall also apply to all sub-consultants and/or subcontractors to the Architect and the Architect shall not allow any sub-consultants and/or subcontractors to commence work until the sub- consultants and/or subcontractors insurance has been so obtained and approved.

E. The above insurance requirements and certificate are subject to final approval by the Town's Insurance Agent as to form and substance and could require changes in the types of coverage and limits.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 007550

SECTION 008400 – WAGE RATES AND STATEMENT OF COMPLIANCE

PART 1 - GENERAL

1.1 PREVAILING WAGE ADDENDUM

A. The Contractor shall weekly submit to the Director a certified payroll, which shall consist of a complete copy of its records relating to the wages and hours worked by each employee and a schedule of the occupation or work classification at which each mechanic, laborer or workman on the Project is employed during each work day and week. The submission shall be in such manner and form as the State Labor Commissioner requires and in compliance with the requirements of Public Act 93¬392. This weekly submission shall also include a statement signed by the employer (the Contractor) indicating the information set forth in Section l (f) of Public Act 93-392.

1.2 APPLICABLE LAWS

A. All provisions of the Contract Documents shall be subject to all applicable provisions of law including, without limitation, federal, state and local laws related to prevailing wages, record keeping, and reporting.

1. The wages paid on an hourly basis to any mechanic, laborer or workman employed upon the work herein contracted to be done, and the amount of payment or contribution paid or payable on behalf of each such employee welfare fund as defined in the Connecticut General Statutes shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the Town of Sherman.

2. Any Contractor who is not obligated by agreement to make payment or contribution on behalf of such employees to any such employee welfare fund shall pay to each employee as part of his wages the amount of payment or contribution for his classification on each payday.

1.2 WAGE RATES AND RECORDS

A. Wage Rates: The minimum rates of wages to be paid to workers employed under this Contract shall be as set forth in the schedule of rates of wages

1. Wage Rate Schedules: The current Connecticut Department of Labor Wage and Benefit Rate schedule is attached.

B. Records: In accordance with Connecticut General Statutes 31-53, 31-54 and 31-55a, all Contractors and Subcontractors working under this Contract are required to complete and submit the following forms to the Owner.

1. “Contractors Wage Certifications Form”.
2. “Contracting Agency Certification Form”.

3. "Payroll Certification For Public Works Projects – Weekly Payroll".

C. Penalties: Any Contractor or Subcontractor not in compliance with the minimum wage requirements is subject to the penalties prescribed by law.

1.3 ADJUSTMENTS TO PREVAILING WAGES

A. Contractors bidding on this project should be aware of the following "Connecticut Public and Special Acts" P.A. 02-69:

Public Act No. 02-69
Substitute Senate Bill No. 63
AN ACT CONCERNING ANNUAL ADJUSTMENTS TO PREVAILING WAGES.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. (NEW) (Effective October 1, 2002) Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of Section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of Section 31-53 and 31-55a, of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 008400

DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS)
Office of School Construction Grants & Review (OSCG&R)

CURRENT PREVAILING WAGE RATES

FORM SCG-6000

IN COMPLIANCE WITH SECTION 31-53 OF THE CONNECTICUT GENERAL STATUTES (C.G.S.)

SHALL BE INSERTED

PRIOR TO RELEASE OF DOCUMENTS For BID or PROCUREMENT

ANNUAL ADJUSTMENT OF WAGE RATES

WILL BE AS REQUIRED

PER C.G.S. SECTION 31-55a

If you have questions regarding wages and workplace standards refer to the Department of Labor website: http://www.ctdol.state.ct.us or call 860-263-6000

Rev. 04/24/2017

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased project delivery and installation.
4. Vendor's use of site and premises.
5. Coordination with occupants.
6. Work restrictions.
7. Specification and Drawing conventions.

B. Related Requirements:

1. Section 017300 "Execution" for coordination of Owner-installed products.

1.3 DEFINITIONS

A. Work Package: A group of specifications, drawings, and schedules prepared by the design team to describe a portion of the Project Work for pricing, permitting, and construction.

1.4 PROJECT INFORMATION

A. Project Identification: Sherman School Renovation, State Project No. 127-0009RNV / 127-0010BE-RNV.

1. Project Location: 2 CT Route 37 East, Sherman, Connecticut 06784.

B. Owner: Town of Sherman, Sherman Board of Education.

1. Owner's Representatives:

a. Kerry Merkel, Sherman School Building Committee Chairperson.
b. Tim Laughlin, Sherman Board of Education Project Liaison.

2. Sherman School Representative:

a. Dr. Patricia Cosentino, Superintendent of Schools.
b. Dr. Mary Fernand, Principal.
c. Karen Fildes, Director of Teaching.
d. Phillip Giuliani, Director of Facilities.

C. Owner's Program Manager: Construction Solutions Group, LLC.

1. Owner's Program Manager Representatives:

a. James P. Giuliano; President.
b. Samantha D'Agostino; Project Manager.

D. Architect: Antinozzi Associates, PC.

1. Architect's Representatives:

a. Michael LoSasso, AIA, LEED AP; Principal.
b. Kevin Matis; Senior Associate, BIM Coordinator.
c. Brittney Dishian; Senior Associate, Interior Designer.

E. Architect's Consultants: Architect has retained the following design professionals, who have prepared designated portions of the Contract Documents:

1. Civil Engineering, Landscape Architecture: Stantec Consulting Services.

a. Civil Engineering Representatives:

(1) Philip Katz, PE.
(2) Kent Gannon, PE.

2. Environmental Services: Pennoni.

a. Environmental Services Representative: James Twitchell, Senior Environmental Hygienist / Office Director.

3. Geotechnical Engineering: Down to Earth Consulting. LLC.

a. Geotechnical Engineer: Dan Lamesa, PE; Principal.

4. Structural Engineering: e2 Engineers.

a. Structural Engineering Representatives:

(1) Scott Erricson, PE; President.
(2) Christopher Wenderoth, Senior Engineer II.

5. Mechanical Engineering: Consulting Engineering Services (CES)

a. Mechanical Engineering Representatives:

(1) Eric Gebrian, PE; Associate.

(2) Adam Sterrer, Senior Mechanical Engineer.

6. Plumbing & Fire Protection Engineering: Consulting Engineering Services (CES)

   a. Plumbing & Fire Protection Engineer Representative: Jacob Coons.

7. Electrical Engineering: Consulting Engineering Services (CES).

   a. Electrical Engineering Representative: Vaney C. Murello; Project Manager.

8. Technology/AV/Security Consulting Services: D'Agostino & Associates

   a. Technology/AV/Security Consulting Services Representatives:

      (1) Marc J. D'Agostino, President.
      (2) Nicholas D'Agostino, Senior Manager, Systems Design.

9. Acoustical Design Consulting: Jaffe Holden

   a. Acoustical Design Consulting Representatives:

      (1) Mark Reber, Principal, Acoustics.
      (2) Madeline Didier, WELL AP; Senior Consultant, Acoustics.

F. Other Owner Consultants: Owner has retained the following design professionals who have prepared designated portions of the Contract Documents:

1. Commission Agent: van Zelm Engineers has prepared the following portions of the Contract Documents:

   a. Commissioning Agent Representative: Bill Donald, Team Leader – Commissioning Services.
   b. Scope of Service: Commissioning Services as required for High Performance Building for Schools.

2. Third Party Code Review: Versteeg Associates, LLC.

   a. Third Part Code Review Representative: Joseph H. Versteeg, Principal.

G. Construction Manager: Newfield Construction.

1. Construction Manager Representative:

   a. Brian Grant, Executive Vice President.
   b. Mike D'Angelo, Project Executive.
   c. John Flis, Project Executive.
   d. Matthew Olshefski, Superintendent
   e. Ben Chasse, Project Manager.

2. Construction Manager for this Project is Project's constructor. The terms "Construction Manager" and "Contractor" are synonymous.

1.5 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and includes, but is not limited to, the following:

1. Purchase, delivery and Assembly/Installation of the Technology Packages for the Sherman School and the Sherman Central Offices Renovation projects and related Work indicated in the Contract Documents and as required for a complete installation

B. Type of Contract:

1. The Owner will procure Furniture, Furnishings, and Equipment (FF+E), and Technology utilizing the Massachusetts Higher Education Consortium (MHEC); competitive public bidding; or a combination of both procurement methods.

2. Vendor contracts will be awarded based upon one or more complete Category Bid Packages. The selective provision of individual items within a Bid Package is not permitted.

1.6 PHASED DELIVERY AND INSTALLATION

A. Deliver and install the Work in phases, after each phase is substantially complete as indicated by the Construction Manager’s Project Schedule.

1. Vendors must include provisions for the temporary secure storage, maintenance, mobilization, transport, delivery, and installation of Technology for areas completed under Project Construction Phase 2.

1.7 VENDOR'S USE OF SITE AND PREMISES

A. Limits on Use of Site: Limit use of Project site to areas within the Contract limits indicated by the Construction Manager. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits on Use of Site: Confine operations to areas with active phases of work.
2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by delivery and installation operations.

C. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by delivery and installation operations.

1.8 WORK RESTRICTIONS

A. Comply with restrictions on construction operations.

1. The project site will be occupied by elementary and middle school students, administrators, and staff during this project's construction. Coordinate Vendor activities to avoid noise sensitive activities, such as, dates for standardized testing.
2. The project site may be occupied after regular school hours by the public and the Town's Parks and Recreations activities. Avoid work activities that may disrupt after hours community use of the facility.
3. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to between 8:30 a.m. to 3:00 p.m., Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner, Construction Manager, and authorities having jurisdiction.

1. Student Arrival and Dismissal: Deliveries before 8:30 a.m. and after 3:00 p.m. are not permitted to avoid conflicting with student arrival and dismissal periods without prior approval from the Sherman Public Schools. Schedule deliveries to avoid half-day dismissal dates. Refer to the Sherman School Calendar included within the Project Manual.
2. Weekend Hours: Coordinate approval with Owner's Program Manager and Town of Sherman.
3. Early Morning Hours: Coordinate approval with Owner's Program Manager and Town of Sherman.
4. Hours for Utility Shutdowns: Not permitted without prior written authorization from the Owner at not less than 72 hours prior to shutdown.
5. Hours for Noise-Generating Activities: Drilling, power-actuated fastening, or other similar noise generating activities are not permitted without prior written authorization from the Owner at not less than 72 hours prior to noise generating activity.

C. On-Site Work Day Restrictions: Do not perform work resulting in utility shutdowns or resulting in noisy activity on-site during work black-out days indicated in Document 003113 "Preliminary Schedules" or as otherwise indicated by the Owner and the Owner's Program Manager.

D. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:

1. Notify Construction Manager and Owner's Program Manager not less than two business days in advance of proposed utility interruptions.
2. Obtain Owner's written permission, through the Construction Manager, before proceeding with utility interruptions.

E. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner and Owner's Program Manager, through the Construction Manager not less than three business days in advance of proposed disruptive operations.
2. Obtain Owner's written permission, through the Construction Manager, before proceeding with disruptive operations.

F. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Project site is not permitted.

G. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

H. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.9 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.
4. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

D. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
2. Section 014000 "Quality Requirements" for field testing by an independent testing agency.

1.3 DEFINITIONS

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

1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Refer to Section 003031 “Sherman School and Central Administration Furniture Bid Forms” and Section 003031 “Sherman School and Central Administration Technology Bid Forms” for Schedule of Unit Prices.

END OF SECTION 012200

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Document 002600 "Procurement Substitution Procedures" for requirements for substitution requests prior to award of Contract.
2. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

1. Substitutions for Cause: Changes proposed by Vendor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Vendor or Owner that are not required to meet other Project requirements but may offer advantage to Vendor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use Section 012510 “CSI Form 13.1A Substitution Request” included with the Project Manual, or such form that is otherwise acceptable to the Architect.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.

b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within 15 days of receipt of request, or **seven** days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. If a comparable product or substitution is proposed, the Vendor is solely responsible for verifying that the substitution does not impact the structural design; HVAC, electrical, plumbing or utility system requirements; clearances, dimensions or layouts; building or fire code requirements; or any other change in the original design. If the substitution does require a change in any of the items noted above or similar design change or physical changes, the Vendor shall be responsible for the costs resulting from the substitution, including additional design costs.

B. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Vendor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Vendor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed unless otherwise indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

Advancement of Construction Technology

SUBSTITUTION REQUEST

(After the Bidding Phase)

Project: _____

_____

To: _____

Re: _____

Substitution Request Number: _____

From: _____

Date: _____

A/E Project Number: _____

Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer Address: _____ Phone: _____ _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone _____

History: ☐ New product ☐ 2-5 years old X☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

_____

_____

X☐ Point-by-point comparative data attached

Reason for not providing specified item: _____

_____

Similar Installation:

Project: _____ Architect: _____

Address: _____ Owner: _____

_____ Date Installed: _____

Proposed substitution affects other parts of Work: X ☐ No ☐ Yes; explain _____

_____

Savings to Owner for accepting substitution: _____ ($ _____).

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

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SUBSTITUTION REQUEST
(Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

Attachments: _____

_____

_____

_____

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01330.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01330.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: Date:

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ A/E ☐ _____

_____

_____

_____

_____

_____

_____

_____

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SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

B. Related Requirements:

1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710.

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Proposal Request or 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
c. Include costs of labor and supervision directly attributable to the change.
d. Include an updated Vendor's delivery and installation schedule that indicates the effect of the change, including, but not limited to, changes in activity duration,

start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

e. Quotation Form: Use forms acceptable to Architect.

B. Vendor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Vendor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use form acceptable to Architect.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Change Proposal Request, Architect will issue a Change Order for signatures of Owner and Vendor on AIA Document G701.

1. Vendor’s fee must not exceed five (5) percent if the subcontract is on the basis of Cost of the Work plus a fee.
2. The maximum allowable fee for overhead and profit of all Vendor subcontractors must not exceed ten (10) percent.

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Vendor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:

1. General coordination procedures.
2. RFIs.
3. Digital project management procedures.
4. Web-based Project management software package.
5. Project meetings.

B. Each vendor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific vendor.

C. Related Requirements:

1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
2. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. BIM: Building Information Modeling.

B. RFI: Request for Information. Request from Owner, Construction Manager, Architect, or Vendor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.

3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and in prominent location in built facility. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate vendors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Vendor's installation schedule.
2. Preparation of the schedule of values.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Preinstallation conferences.
6. Project closeout activities.
7. Startup and adjustment of systems.

1.6 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Vendor shall prepare and submit an RFI in the form specified.

1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Vendor.
2. Coordinate and submit RFIs in a prompt manner to avoid delays in Vendor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Owner name.
3. Owner's Project number.
4. Name of Architect and Construction Manager.
5. Architect's Project number.
6. Date.
7. Name of Vendor.
8. RFI number, numbered sequentially.
9. RFI subject.
10. Specification Section number and title and related paragraphs, as appropriate.
11. Drawing number and detail references, as appropriate.
12. Field dimensions and conditions, as appropriate.
13. Vendor's suggested resolution. If Vendor's suggested resolution impacts the Contract Time or the Contract Sum, Vendor shall state impact in the RFI.
14. Vendor's signature.
15. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.

1. Attachments shall be electronic files in PDF format.

D. Architect's Action: The Architect will review all Requests for Information to determine whether they are Requests for Information within the contractual definition of this term. If the Architect determines that the document is not a Request for Information the documents will be returned to the Vendor without review, for resubmittal on the proper form and in the proper manner in accordance with the terms of the contract. Inquires that can be addressed with careful review of the Contract Documents will not be designated as an RFI and will be returned without response.

E. Architect will review each RFI, determine action required, and respond. Responses to Requests for Information shall be issued within ten (10) working days of receipt of the request from the vendor for time sensitive issues for review by the Architect or one consultant. If a longer period of time is determined necessary by the Architect, the Architect will, within ten (10) working days of receipt of the request, notify the vendor of the anticipated response time. The ten (10) working days referred to herein will start on the date and time stamped received "In from Vendor" by the Architect and ends on the date and time stamped "Out to Vendor" by the Architect. If the vendor submits a Request for Information on a schedule activity with ten (10) working days or less of float on the current project schedule, the vendor shall not be entitled to any time extension due to the time it takes the Architect to respond to the request provided that the owner responds within the ten (10) working days set forth above.

1. The following Vendor-generated RFIs will be returned without action:

   a. Requests for approval of submittals.
   b. Requests for approval of substitutions.
   c. Requests for approval of Vendor's means and methods.
   d. Requests for coordination information already indicated in the Contract Documents.
   e. Requests for adjustments in the Contract Time or the Contract Sum.
   f. Requests for interpretation of Architect's actions on submittals.
   g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Vendor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

   a. If Vendor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 5 days of receipt of the RFI response.

F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Use software log that is part of web-based Project software. Software log with not less than the following**:**

1. Project name.
2. Name and address of Vendor.
3. Name and address of Architect.
4. RFI number, including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

G. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Vendor disagrees with response.

H. Responses from the Architect will not change any requirement of the Contract Documents unless so noted by the Owner in the response to the Request for Information. In the event the Vendor believes that a response to a Request for Information will cause a change to the requirements of the contract document the Vendor shall provide written notice to the Architect and Owner's Representative, in accordance with the requirements of the Changes article, stating that the Vendor considers the response to be a change to the requirements of the Contract. Failure to provide such written notice shall waive the vendor's right to seek additional time or cost under the Changes article of these General Conditions.

1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Use of Architect's Digital Data Files: Digital data files of Architect's BIM model will be provided by Architect for Vendor's use during installation.

1. Digital data files may be used by Vendor in preparing, Shop Drawings, and Project Record Drawings.
2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
3. Digital Drawing Software Program: Contract Drawings are available in Revit 2025 format.
4. Vendor shall execute a data licensing agreement in the form of AIA Document C106 Digital Data Licensing Agreement.

    a. Subcontractors and other parties granted access by Vendor to Architect's digital data files shall execute a data licensing agreement in the form of AIA Document C106.

B. Web-Based Project Management Software Package: If directed, use Construction Manager's web-based Project management software package for purposes of hosting and managing Project communication and documentation until Final Completion.

1. Web-based Project management software includes, at a minimum, the following features:

    a. Compilation of Project data, including Vendor, subcontractors, Architect, Architect's consultants, Owner, and other entities involved in Project. Include names of individuals and contact information.
    b. Access control for each entity for each workflow process, to determine entity's digital rights to create, modify, view, and print documents.
    c. Document workflow planning, allowing customization of workflow between project entities.
    d. Creation, logging, tracking, and notification for Project communications required in other Specification Sections, including, but not limited to, RFIs, submittals, Minor Changes in the Work, Construction Change Directives, and Change Orders.
    e. Track status of each Project communication in real time, and log time and date when responses are provided.

f. Procedures for handling PDFs or similar file formats, allowing markups by each entity. Provide security features to lock markups against changes once submitted.
g. Processing and tracking of payment applications.
h. Processing and tracking of contract modifications.
i. Creating and distributing meeting minutes.
j. Document management for Drawings, Specifications, and coordination drawings, including revision control.
k. Management of construction progress photographs.
l. Mobile device compatibility, including smartphones and tablets.

2. At completion of Project, provide digital archive in format that is readable by common desktop software applications in format acceptable to Architect. Provide data in locked format to prevent further changes.

C. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:

1. Assemble complete submittal package into a single indexed file, incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.8 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of seven days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Owner's Program Manager (OPM), Move Manager, Construction Manager, and Architect, within three days of the meeting.

B. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other Sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect, Construction Manager, Owner's Program Manager, and Move Manager of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Sustainable design requirements.
i. Possible conflicts.
j. Compatibility requirements.
k. Time schedules.
l. Weather limitations.
m. Manufacturer's written instructions.
n. Warranty requirements.
o. Compatibility of materials.
p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
2. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
3. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Vendor's installation schedule.
2. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal Schedule: Submit concurrently with the first complete submittal of Vendor's installation schedule.

    a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal Category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled dates for purchasing.
    h. Scheduled date of fabrication.
    i. Scheduled dates for installation.
    j. Activity or event number.

1.5 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Construction Manager.
5. Name of Vendor.
6. Name of firm or entity that prepared submittal.
7. Names of subcontractor, manufacturer, and supplier.
8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
9. Category and type of submittal.
10. Submittal purpose and description.
11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
12. Drawing number and detail references, as appropriate.
13. Indication of full or partial submittal.
14. Location(s) where product is to be installed, as appropriate.
15. Other necessary identification.
16. Remarks.
17. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

E. Submittals Utilizing Web-Based Project Software: Prepare submittals as PDF files or other format indicated by Project management software.

1.6 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.

a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

B. Coordination: Coordinate preparation and processing of submittals with performance of installation activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 working days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Vendor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 working days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 working days for initial review of each submittal.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.7 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

   a. Manufacturer's catalog cuts.
   b. Manufacturer's product specifications.
   c. Standard color charts.
   d. Statement of compliance with specified referenced standards.
   e. Testing by recognized testing agency.
   f. Application of testing agency labels and seals.
   g. Notation of coordination requirements.
   h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

   a. Wiring diagrams that show factory-installed wiring.
   b. Printed performance curves.
   c. Operational range diagrams.

d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

a. Project name and submittal number.
b. Generic description of Sample.
c. Product name and name of manufacturer.
d. Sample source.
e. Number and title of applicable Specification Section.
f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics and identification information for record.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of the Vendor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available.

a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: Submit two sets of Samples. Architect will retain one Sample set; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Vendor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.

2. Installer Certificates: Submit written statements on manufacturer's letterhead, certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead, certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

1.8 VENDOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Vendor's Approval: Indicate Vendor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Vendor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals received from Vendor that do not have Vendor's review and approval.

1.9 ARCHITECT'S REVIEW

A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return.

1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action, as follows:

a. No Exceptions Taken: The submitted product or item is consistent with the specified requirements without modification.
b. Make Corrections Noted: The submitted product or item is materially consistent with the specified requirements except for aspects identified by the Architect's review. Acquisition of the product or item may proceed with the understanding that noted items are corrected prior to acquisition.
c. Rejected: The product or item is inconsistent with the specified requirements and is not acceptable.
d. Revise & Resubmit: The product or item requires significant revision, alteration, adjustment or correction to meet the specified requirements. Resubmission of the item or product is required prior to its acquisition.
e. Submit Specified Item: An item not included with the original submission is required to complete review of the submitted product or item.

B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Architect will return without review submittals received from sources other than Vendor.

F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Vendor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Vendor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Vendor to provide quality-assurance and quality-control services required by Architect, Owner, Owner’s Program Manager, Commissioning Authority, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced," unless otherwise further described, means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

C. Installer/Applicator/Erector: Vendor or another entity engaged by Vendor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).

D. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) in accordance with 29 CFR 1910.7, by a testing agency accredited in accordance with NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

E. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).

F. Testing Agency: An entity engaged to perform specific tests, inspections, or both. The term "testing laboratory" has the same meaning as the term "testing agency."

G. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work, to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

H. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work, to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Vendor's quality-control services do not include contract administration activities performed by Architect or Construction Manager.

1.3 DELEGATED DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Vendor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated Design Services Statement: Submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Vendor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.4 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Architect regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Architect for clarification before proceeding.

1. In instances where conflicting standards or requirements represent a difference in the cost of the Work, the Vendor’s bid must include a value representing the higher cost standard or requirement. If after receiving clarification from the Architect, it is determined that a lower cost standard or requirement is applicable, the Vendor will adjust the cost of Work downward following the requirements of Section 012600 “Contract Modification Procedures”

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified is the minimum provided or performed. The actual installation may comply exactly with the minimum

quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

A. Vendor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
2. Primary wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.

B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

D. Reports: Prepare and submit certified written reports and documents as specified.

E. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.6 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.

7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample-taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement of whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement of whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

1.7 QUALITY ASSURANCE

A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that is similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities be performed by entities who are recognized experts in those operations. Specialists will satisfy qualification requirements indicated and engage in the activities indicated.

1. Requirements of authorities having jurisdiction supersede requirements for specialists.

G. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect, demonstrate, repair, and perform service on installations of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.8 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Vendor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.

2. Costs for retesting and reinspecting construction that replaces or is necessitated by Work that failed to comply with the Contract Documents will be charged to Vendor, and the Contract Sum will be adjusted by Change Order.

B. Vendor Responsibilities: Tests and inspections not explicitly assigned to Owner are Vendor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Vendor by authorities having jurisdiction, whether specified or not.

2. Engage a qualified testing agency to perform quality-control services.

a. Vendor will not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
4. Where quality-control services are indicated as Vendor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspection requested by Vendor and not required by the Contract Documents are Vendor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Vendor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Owner’s Program Manager, Architect, Commissioning Authority, and Vendor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Owner’s Program Manager, Architect, Commissioning Authority, and Vendor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Vendor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform duties of Vendor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's

services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

G. Vendor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.

5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Vendor's Installation Schedule. Update and submit with each Application for Payment.

1. Schedule Contents: Include tests, inspections, and quality-control services, including Vendor- and Owner-retained services, commissioning activities, and other Project-required services paid for by other entities.
2. Distribution: Distribute schedule to Owner, Owner’s Program Manager, Architect, Commissioning Authority, Construction Manager, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.

2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Owner’s Program Manager, Architect's, Commissioning Authority's, and authorities' having jurisdiction reference during normal working hours.

1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, sample-taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Vendor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of This Section Includes: Administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Section 012500 "Substitution Procedures" for requests for substitutions.
2. Section 017700 "Closeout Procedures" for submitting warranties.
3. Section 018113 “VOC Limits for Adhesives, Sealants, Paints and Coatings” for requirements in accordance with Connecticut Building Standard Guidelines, Compliance Manual for High Performance Buildings.

1.2 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products unless otherwise indicated.
3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.

1. Evaluating Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the

specification. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.

C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:

1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
2. Data indicating compliance with the requirements specified in "Comparable Products" Article.

E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 013300 "Submittal Procedures."

F. Substitution: Refer to Section 012500 "Substitution Procedures" for definition and limitations on substitutions.

1.3 QUALITY ASSURANCE

A. Compatibility of Options: If Vendor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Resolution of Compatibility Disputes between Multiple Vendors:

a. Vendors are responsible for providing products and construction methods compatible with products and construction methods of other vendors.
b. If a dispute arises between the multiple vendors over concurrently selectable but incompatible products, Architect will determine which products will be used.

B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is inconspicuous.
2. Equipment Nameplates: Provide a permanent nameplate on each item of service- or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:

a. Name of product and manufacturer.
b. Model and serial number.
c. Capacity.
d. Speed.
e. Ratings.

3. See individual identification Sections in Divisions 21, 22, 23, and 26 for additional equipment identification requirements.

1.4 COORDINATION

A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and that products are undamaged and properly protected.

C. Storage:

1. Provide a secure location and enclosure off site for storage of materials and equipment installed in subsequent Project Construction Phases.

a. Reference Section 003113 Schedule for determination of initial storage period based upon Project Construction Schedule.
b. Coordinate actual storage period with Architect at least 30 days before anticipated delivery date. Adjust storage duration as required once delivery date is established.
c. The Vendor may seek compensation for storage facility durations that exceed the initial storage period duration at determined by the Vendor at the date of Bid.

2. Store products to allow for inspection and measurement of quantity or counting of units.
3. Store materials in a manner that will not endanger Project structure.

4. Store products that are subject to damage by the elements under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation and with adequate protection from wind.
5. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections are to be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Vendor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of Owner or endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of Owner or endorsed by manufacturer to Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in Specifications establish salient characteristics of products.

6. Or Equal: For products specified by name and accompanied by the term "or equal," "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

    a. Submit additional documentation required by Architect through Construction Manager in order to establish equivalency of proposed products. Unless otherwise indicated, evaluation of "or equal" product status is by Architect, whose determination is final.

B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Vendor's convenience will not be considered.

    a. Sole product may be indicated by the phrase "Subject to compliance with requirements, provide the following."

2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Vendor's convenience will not be considered.

    a. Sole manufacturer/source may be indicated by the phrase "Subject to compliance with requirements, provide products by the following."

3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Vendor's will not be considered unless otherwise indicated.

    a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."

4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed or an unnamed product that complies with requirements.

    a. Non-limited list of products is indicated by the phrase "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following."
    b. Provision of an unnamed product is not considered a substitution, if the product complies with requirements.

5. Limited List of Manufacturers: Where Specifications include a list of at least three manufacturers' names, provide a product by one of the manufacturers listed that complies

with requirements. Comparable products or substitutions for Vendor's convenience will not be considered unless otherwise indicated.

a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."

6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.

a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."
b. Provision of products of an unnamed manufacturer is not considered a substitution, if the product complies with requirements.

7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of at least three manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.

C. Visual Matching Specification: Where Specifications require the phrase "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

E. Sustainable Product Selection: Where Specifications require product to meet sustainable product characteristics, select products complying with indicated requirements. Comply with requirements in Division 01 sustainability requirements Section and individual Specification Sections.

1. Select products for which sustainable design documentation submittals are available from manufacturer.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: Architect will consider Vendor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with the following requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for a comparable product. Architect will notify Vendor of approval or rejection of proposed comparable product within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

1. Architect's Approval of Submittal marked with approval notation from Architect's action stamp, and indication of approval via electronic mail. See Section 013300 "Submittal Procedures."
2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

C. Submittal Requirements, Two-Step Process: Approval by Architect of Vendor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

D. Submittal Requirements, Single-Step Process: When acceptable to Architect, incorporate specified submittal requirements of individual Specification Section in combined submittal for comparable products. Approval by Architect of Vendor's request for use of comparable product and of individual submittal requirements will also satisfy other submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:

1. Installation of the Work.
2. Utility and service connections.
3. Progress cleaning.
4. Starting and adjusting.
5. Protection and repair of installed construction.

B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017419 “Construction Waste Management and Disposal.”
4. Section 017700 "Closeout Procedures" for Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.

1.1 HIGH PERFORMANCE BUILDINGS GENERAL REQUIREMENTS

A. Implement practices and procedures to meet the project’s environmental goals, which include complying with Connecticut Standard Guidelines Compliance Manual for High Performance Buildings, September 2011, with additional mandatory building project requirements for schools. Specific project goals which may impact this and the other sections of this specification include: use of recycled-content materials; use of locally-manufactured materials; use of low-emitting materials; use of certified wood products; construction waste recycling; and the implementation of a construction indoor air quality management plan. Ensure that the requirements related to these goals, as defined in this Section and other Sections of the contract documents, are implemented to the fullest extent. Substitutions or other changes to the work shall not be allowed if such changes substantially compromise the stated High Performance Building criteria.

B. Comply with Connecticut Standard Guidelines Compliance Manual for High Performance Buildings, September 2011, with additional mandatory building project requirements for schools and the Department of Administrative Services / Office of School Construction Grants High Performance School Construction Bulletin, June 2017

1.2 PREINSTALLATION MEETINGS

A. Delivery and Layout Conference: Conduct conference at Project site.

1. Prior to establishing layout of furnishing, fixtures and equipment, review building location requirements. Inform Architect and Move Manager of scheduled meeting. Require representatives of each entity directly concerned with Project layout to attend, including the following:

   a. Owner's Building and Facilities Manager.
   b. Owner's Program Manager (OPM).
   c. Construction Manager.

2. Review meanings and intent of dimensions, notes, terms, graphic symbols, and other layout information indicated on the Drawings.
3. Review requirements for including layouts on Shop Drawings and other submittals.
4. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
5. Review accessible routes for the delivery and distribution of furnishing, fixtures and equipment.
6. Maintain required fire exits clear and free from obstructions.
7. Review Vendor's temporary protections for floors, walls, doors, door frames, elevators and other installed building elements and systems.

1.3 QUALITY ASSURANCE

A. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

B. High Performance Building Performance Requirements:

1. Adhesives, sealants, paints or coatings used for work in this section for interior applications shall meet the requirements of Section 018113 "Volatile Organic Compound (VOC) Limits," where applicable.
2. Materials manufactured within a radius of 500 miles from the project site where all or a portion of the raw resources also originate within a radius of 500 miles shall be documented in accordance with the High Performance Building Requirements of this Section.
3. Materials that contain recycled content shall be documented in accordance with the High Performance Building Requirements of this Section.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Comply with requirements specified in other Sections.

1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.

C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

B. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work, including Specification Section number and paragraph, and Drawing sheet number and detail, where applicable.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb, and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces, unless otherwise indicated on Drawings.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.

F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.

J. Repair or remove and replace damaged, defective, or nonconforming Work.

1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.4 UTILITY AND SERVICE CONNECTIONS

A. The Vendor is solely responsible for the connection of Vendor installed products to the building’s establish electrical, data and plumbing systems. Contract the services of licensed electricians and plumbers having a minimum of five (5) years’ experience in electrical, data and plumbing trades.

1. Coordinate the provision of all necessary piping, transitions, fittings, wire, cabling, patch cords and similar devices with plugs, receptors, and fittings coordinated with the building’s services and receptacle infrastructure.

2. Transfer electrical or data wiring through Vendor supplied furnishings and equipment from receptacles designated by the Construction Documents. Supply whips as required to suit building receptacles and services. Coordinate power and voltage rating with building supplied services.

3. Terminate electrical and data services with appropriate devices and receptacles within Vendor supplier furnishings and equipment.

4. Route plumbing systems through Vendor supplied furnishings and equipment from domestic water and sanitary drainage systems designated by the Construction Drawings.

5. Provide fittings necessary to provide watertight connections and terminations with Vendor supplier furnishings and equipment.

3.5 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

   a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.7 PROTECTION AND REPAIR OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.

C. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

D. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for requirements for Applications for Payment for Substantial Completion and Final Completion.
2. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
3. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.3 DEFINITIONS

A. List of Incomplete Items: Vendor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Vendor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.5 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items required by other Sections.

1.7 SUBSTANTIAL COMPLETION PROCEDURES

A. Vendor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Vendor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner’s Representative. Label with manufacturer's name and model number.

    a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Owner's signature for receipt of submittals.

5. Submit testing, adjusting, and balancing records.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.

2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
6. Advise Owner of changeover in utility services.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with construction tools, and similar elements.
9. Complete final cleaning requirements.
10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Vendor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Vendor of items, either on Vendor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.8 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:

1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit Final Completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Vendor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Vendor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.9 LIST OF INCOMPLETE ITEMS

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Vendor that are outside the limits of construction.

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding through interior spaces, listed by room or space number.
2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Vendor.
    e. Page number.

4. Submit list of incomplete items in the following format:

    a. MS Excel Electronic File: Architect will return annotated file.

1.10 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit on digital media acceptable to Architect.

D. Warranties in Paper Form:

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or

installation, including the name of the product and the name, address, and telephone number of Installer.

3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Vendor.

E. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Remove tools, construction equipment, and surplus material from Project site.
d. Remove snow and ice to provide safe access to building.
e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
f. Remove dirt, marring, smudges, and finger prints from ceiling pads and wall surfaces following installation of furniture, furnishings, equipment and technology components.

g. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
h. Vacuum and mop concrete.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Touch-up painted surfaces damaged during installation with finish matching color and sheen of adjacent surfaces.
m. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
n. Clean strainers.
o. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste-disposal requirements in Section 017419 "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations required by Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory manuals.
2. Emergency manuals.
3. Systems and equipment operation manuals.
4. Systems and equipment maintenance manuals.
5. Product maintenance manuals.

B. Related Requirements:

1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.2 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.3 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Architect and Commissioning Authority will comment on whether content of operation and maintenance submittals is acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operation and maintenance manuals in the following format:

1. Submit PDF format document via electronic mail to Architect. Enable reviewer comments on draft submittals.

C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Architect and Commissioning Authority will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect and Commissioning Authority will return copy with comments.

1. Correct or revise each manual to comply with Architect's and Commissioning Authority's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's and Commissioning Authority's comments and prior to commencing demonstration and training.

E. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.4 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

B. Submit three paper copies. Architect, through Construction Manager, will return two copies.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

C. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment. Enclose title pages and directories in clear plastic sleeves.

4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

   a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.

   b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.5 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual to contain the following materials, in the order listed:

   1. Title page.
   2. Table of contents.
   3. Manual contents.

B. Title Page: Include the following information:

   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name and contact information for Contractor.
   6. Name and contact information for Construction Manager.
   7. Name and contact information for Architect.
   8. Name and contact information for Commissioning Authority.
   9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
   10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

   1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation in accordance with ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.6 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY MANUAL

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals. List items and their location to facilitate ready access to desired information. Include the following:

1. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
2. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
3. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

1.7 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

1.8 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.

8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.9 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component

incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

I. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

J. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of maintenance manuals.

1.10 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

E. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017823

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Instruction in operation and maintenance of systems, subsystems, and equipment.
2. Demonstration and training video recordings.

1.2 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

B. Qualification Data: For instructor and videographer.

C. Attendance Record: For each training module, submit list of participants and length of instruction time.

D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.3 CLOSEOUT SUBMITTALS

A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.

1. Identification: On each copy, provide an applied label with the following information:

a. Name of Project.
b. Name and address of videographer.
c. Name of Architect.
d. Name of Construction Manager.
e. Name of Contractor.
f. Date of video recording.

2. Transcript:

a. Prepared and bound in format matching operation and maintenance manuals. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding video recording. Include name of Project and date of video recording on each page.
b. Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.

3. At completion of training, submit complete training manual(s) for Owner's use prepared in same paper and PDF file format required for operation and maintenance manuals specified in Section 017823 "Operation and Maintenance Data."

1.4 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events similar to those required.

D. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:

1. Inspect and discuss locations and other facilities required for instruction.
2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
3. Review required content of instruction.
4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.6 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.

2. Documentation: Review the following items in detail:

    a. Emergency manuals.
    b. Systems and equipment operation manuals.
    c. Systems and equipment maintenance manuals.
    d. Product maintenance manuals.
    e. Project Record Documents.
    f. Identification systems.
    g. Warranties and bonds.
    h. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

    a. Startup procedures.
    b. Equipment or system break-in procedures.

c. Routine and normal operating instructions.
d. Regulation and control procedures.
e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning.
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

1.7 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."

B. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Owner will furnish an instructor to describe Owner's operational philosophy.
2. Owner will furnish Contractor with names and positions of participants.

C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner and Owner’s Commissioning Agent, through Construction Manager, with at least seven days' advance notice.

D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.

F. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.9 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

1. At beginning of each training module, record each chart containing learning objective and lesson outline.

B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode with vibration reduction technology.

1. Submit video recordings to Owner and Owner’s Program Manager, through the Construction Manager, on CD-ROM or thumb drive.
2. File Hierarchy: Organize folder structure and file locations in accordance with Project Manual table of contents. Provide complete screen-based menu.

3. File Names: Utilize file names based on name of equipment generally described in video segment, as identified in Project specifications.
4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the equipment demonstration and training recording that describes the following for each Contractor involved on the Project, arranged in accordance with Project Manual table of contents:

    a. Name of Contractor/Installer.
    b. Business address.
    c. Business phone number.
    d. Point of contact.
    e. Email address.

C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.

1. Film training session(s) in segments not to exceed 15 minutes.

    a. Produce segments to present a single significant piece of equipment per segment.
    b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
    c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.

D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.

1. Furnish additional portable lighting as required.

E. Narration: Describe scenes on video recording by dubbing audio narration off-site after video recording is recorded. Include description of items being viewed.

F. Transcript: Provide a transcript of the narration. Display images and running time captured from videotape opposite the corresponding narration segment.

G. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TRAINING REQUIREMENT MATRIX

A. Provide training for the minimum number of Owner designated personnel, in the minimum durations, for each system indicated by the following matrix.

1. Reference requirements included under Division 27 and 28 sections for additional training requirements and information.

B. TRAINING MATRIX

DIVISION 27 – COMMUNICATION SYSTEMS				
System Description	Minimum No. Trained (Personnel)	Minimum Training Period (Hours)	Training Media Provided	Specification Section No.
LAN & Wi-Fi Network	2	20	Manual and video	272100
Servers and Firewall	2	20	Manual and video	272113
3D Printers and Monitors	2	8	Manual and video	272400
Phone System	2	8	Manual and video	273000
Audio – Visual Equipment	2	20	Manual and video	274116.51
DIVISION 28 – ELECTRONIC SAFETY & SECURITY				
System Description	Minimum No. Trained (Personnel)	Minimum Training Period (Hours)	Training Media Provided	Specification Section No.
Security – Emergency Systems	4	4	Manual and video	281320

END OF SECTION 017900

SECTION 27 2100 – LAN NETWORK & WI-FI

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Network Active Electronics

1.2 RELATED DOCUMENTS

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

B. Related Drawings:

1. IT – Technology Drawings

1.3 SUMMARY

A. The devices described in this section shall be procured and delivered to the project site and shall match the construction phasing of this project. All timelines are described within the Bid manual phasing schedule.

B. All manufacturer warranties shall start from the installation date and not necessarily the purchase date.

C. Section includes the Local Area Network Active Electronics for the data infrastructure installation.

D. These active electronics shall support the data infrastructure, wireless devices, video surveillance system and the district wide voice system.

E. All data horizontal and backbone cabling infrastructure (fiber and copper) has been installed by others and is NOT part of this bid.

F. Configuration of LAN switches shall be performed by the BOE IT personnel with technical assistance from the Manufacturer.

1.4 SUBMITTALS

A. Pricing for all devices shown within Article 2.2 – BILL OF MATERIAL BOM must be filled out and submitted with this bid proposal and shall include all unit and total pricing.

B. Product Data: For each type of product indicated. Include dimensions and data on features, performance, electrical characteristics, ratings, and finishes.

C. Product Data: Submit manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

D. Samples of manufacturer's standard and extended warranties.

E. Equipment List: Include every piece of equipment by model number, manufacturer, serial number, location, and date of original installation.

1.5 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain all materials from one (1) source from a single approved manufacturer for each product required within this specification.

B. All devices procured and delivered, as part of this specification shall be new from the manufacturer. Refurbished devices will not be accepted for this project. The technology consultant will verify all devices prior to delivery and installation of all devices described within this specification.

1.6 DELIVERY, STORAGE AND HANDLING

A. Take care in handling products in accordance with manufacturer's instructions.

B. Store indoors in original undamaged packaging, in a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity. Store products upright in secure, protected area. Verify with manufacturers that site conditions are acceptable before receiving material.

C. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Interior, Controlled Environment: System components installed in temperature-controlled interior environments shall be rated for continuous operation in ambient temperatures of 36 to 122 deg F (2 to 50 deg C) dry bulb and twenty to ninety percent (20-90%) relative humidity.

1.7 WARRANTY

A. Standard Manufacturer Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of any device and equipment related to operation, and equipment that fail in materials within specified warranty period.

PART 2 - PRODUCTS

2.1 NETWORK ELECTRONICS

A. The selected manufacturer will be EXTREME NETWORKS, Morrisville, NC 27560.

B. The Category 6A rated horizontal cabling has been furnished and installed by others.

C. All OM4, 50m fiber backbone cabling has been furnished and installed by others.

D. All associated devices and/or licensing required to obtain a fully functional system, whether directly stated within the BOM provided or not, shall be included as part this Bid response.

2.2 WIRELESS ACCESS POINTS

A. The selected manufacturer will be EXTREME NETWORKS, Morrisville, NC 27560.

B. Manufacturer and product numbers are described within the Bill of Material within this section.

C. All wireless access points and associated licenses are to be procured and delivered.

D. All WAP configuration within the LAN shall be performed by the BOE IT personnel with technical assistance from the manufacturer.

2.3 EQUIPMENT – BOM

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY
1	SWITCH GEAR			
2	EXTREME	20G-DACP-SFPDDZ5M	SFPDD TO SFPDD 20G DAC 0.5M	15
3	EXTREME	100G-DACP-QSFPZ5M	100G Passive DAC QSFP28 0.5m	2
4	EXTREME	10106	PWR CORD,NEMA,10A,C14,C13,ST	34
6	EXTREME	XN-ACPWR-1200W-FB	1200W AC PSU FB	15
7	EXTREME	XN-ACPWR-350W-FB	350W AC PSU FB	4
8	EXTREME	USK12-STD-B-S-C-EW	USK12 EP1 STD NET EW Tier B per YR	15
9	EXTREME	USK12-STD-C-S-C-EW	USK12 EP1 STD NET EW Tier C per YR	2
10	EXTREME	5420F-16 W-32P-4XE	5420F 16port 802.3bt 90w & 32 PoE+	15
11	EXTREME	5520-24X	5520 24port Fiber Switch	2
12	EXTREME	10301	SR SFP+ module	60
13	EXTREME	PS-ESU-REMOTE	Remote (ESU) Extreme Service Unit	5
14	WI-FI			
15	EXTREME	AP4020-WW	AP4020-WW Wi-Fi 7 Indoor Access Point	67
16	EXTREME	AP4060X-WW	AP4060X-WW Wi-Fi 7 Weatherized AP	6
17	EXTREME	AIO-TS06360-N	5dBi and 6dBi Outdoor Dipole Tri-band	30
18	EXTREME	USK12-STD-A-S-C-EW	USK12 EP1 STD NET EW Tier A per YR	70
19	EXTREME	PS-ESU-REMOTE	Remote (ESU) Extreme Service Unit	5

2.4 CLEANING

A. Remove rubbish and debris: Installation contractor is not allowed you use the onsite dumpster and is responsible to discard their own debris off site.

B. Clean installed items using methods and materials recommended in writing by manufacturer.

END OF SECTION 27 2100

SECTION 27 2113 - SERVERS AND STORAGE DEVICES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Servers and Storage Devices

1.2 RELATED DOCUMENTS

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

1.3 SUMMARY

A. The devices described in this section shall be procured and delivered to the BOE IT department to accommodate the construction phasing of this project. All timelines are described within the phasing schedule.

B. All manufacturer warranties shall start from the installation date and not necessarily the purchase date.

1.4 SUBMITTALS

A. Pricing for all devices shown within Article 2.2 – BILL OF MATERIAL BOM must be filled out and submitted with this bid proposal and shall include all unit and total pricing.

B. Product Data: For each type of product indicated. Include dimensions and data on features, performance, electrical characteristics, ratings, and finishes.

C. Product Data: Submit manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

D. Samples of manufacturer's standard and extended warranties.

E. Equipment List: Include every piece of equipment by model number, manufacturer, serial number, location, and date of original installation.

1.5 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain all materials from one (1) source from a single approved manufacturer for each product required within this specification.

B. The awarded integrator must be a Manufacturer certified reseller of the electronics described within this section.

C. All devices procured and delivered, as part of this specification shall be new from the manufacturer. Refurbished devices will not be accepted for this project. The technology

consultant will verify all devices prior to delivery and installation of all devices described within this specification.

1.6 DELIVERY, STORAGE AND HANDLING

A. Take care in handling products in accordance with manufacturer's instructions.

B. Store indoors in original undamaged packaging, in a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity. Store products upright in secure, protected area. Verify with the manufacturer that site conditions are acceptable before receiving material.

C. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Interior, Controlled Environment: System components installed in temperature-controlled interior environments shall be rated for continuous operation in ambient temperatures of 36 to 122 deg F (2 to 50 deg C) dry bulb and twenty to ninety percent (20-90%) relative humidity.

1.7 WARRANTY

A. Standard Manufacturer Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of any device and equipment related to operation, and equipment that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS

2.1 SERVER & PURE STORAGE DEVICES

A. The selected manufacturer shall be DELL Technologies, Fortinet, and StarTech.

2.2 BILL OF MATERIAL

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY
1	HPE	P83291-005	HPE ProLiant DL360 Gen11 Rack Server - Intel Xeon Gold 5416S 2 GHz - 64GB - SSD 2 x 480GB - 2 x 1000W	1
2	Fortinet	FG-100F-BDL-950-36	FortiGate 100F - security appliance - with FortiCare 24X7 Comprehensive Support	1
3	StarTech	RKCONS1708K	8 Port Rackmount KVM Console w/ Cables - Integrated KVM Switch w/ 17" LCD - 1U LCD KVM Drawer 50000	2

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine data room conditions, ceiling and wall surfaces to assure they are in compliance with requirements and other conditions affecting installation and operation of all devices within this specification.

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

3.2 SYSTEM INSTALLATION

A. The contractor awarded this section is responsible for the Warranty and Support on all items is required.

B. Comply with all manufacturers' recommendations and best practices.

C. The contractor awarded this section shall deliver and unpack all devices specified within this document and dispose of all trash.

D. All device locations must be coordinated and verified by the owner prior to actual installation.

E. All devices within this specification must be installed per the manufacturers recommended insulation specifications.

F. All configuration(s) required to obtain a fully functional system shall be included within this portion of work.

G. Network Installer awarded this section shall be responsible for the following:
   1. In addition to the specifications in this section, the installer will implement all configurations supplied by the owner, including, but not limited to-
      a. Network security configuration
   2. Physical installation and rack mounting of equipment
   3. Connection of network equipment to uninterrupted power supplies (UPS). Equipment with dual power supplies shall be connected to discrete UPS units.
   4. Firmware updates to the latest general release
   5. Installation of licenses.
   6. Changing of all default passwords
   7. All network devices must be labeled and tagged with appropriate descriptions of their location in the building and in the system configuration.
   8. Backup copies of configuration files on USB flash drive shall be furnished to the owner.

3.3 SYSTEM STARTUP

A. The Contractor shall not apply power to the system until after:
   1. System and components have been installed and inspected in accordance with the manufacturer's installation instructions.

3.4 CLEANING

A. Remove rubbish and debris: Installation contractor is not allowed you use the onsite dumpster and is responsible to discard their own debris off site.

B. Clean installed items using methods and materials recommended in writing by manufacturer.

END OF SECTION 27 2113

SECTION 27 2120.15 – PATCH CORDS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Patch Cords, Copper and Fiber

1.2 RELATED DOCUMENTS

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

B. Related Drawings:

1. IT – Technology Drawings

1.3 SUMMARY

A. The devices described in this section shall be procured and delivered to the project site and shall match the construction phasing of this project. All timelines are described within the Bid manual phasing schedule.

B. All manufacturer warranties shall start from the installation date and not necessarily the purchase date.

C. Section includes the Copper and Fiber patch cords for the data infrastructure installation.

D. All data horizontal and backbone cabling infrastructure (fiber and copper) has been installed by others and is NOT part of this bid.

1.4 SUBMITTALS

A. Pricing for all devices shown within Article 2.2 – BILL OF MATERIAL BOM must be filled out and submitted with this bid proposal and shall include all unit and total pricing.

B. Product Data: For each type of product indicated. Include dimensions and data on features, performance, electrical characteristics, ratings, and finishes.

C. Product Data: Submit manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

D. Samples of manufacturer's standard and extended warranties.

E. Equipment List: Include every piece of equipment by model number, manufacturer, serial number, location, and date of original installation.

1.5 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain all materials from one (1) source from a single approved manufacturer for each product required within this specification.

B. All devices procured and delivered, as part of this specification shall be new from the manufacturer. Refurbished devices will not be accepted for this project. The technology consultant will verify all devices prior to delivery and installation of all devices described within this specification.

1.6 DELIVERY, STORAGE AND HANDLING

A. Take care in handling products in accordance with manufacturer's instructions.

B. Store indoors in original undamaged packaging, in a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity. Store products upright in secure, protected area. Verify with manufacturers that site conditions are acceptable before receiving material.

C. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Interior, Controlled Environment: System components installed in temperature-controlled interior environments shall be rated for continuous operation in ambient temperatures of 36 to 122 deg F (2 to 50 deg C) dry bulb and twenty to ninety percent (20-90%) relative humidity.

1.7 WARRANTY

A. Standard Manufacturer Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of any device and equipment related to operation, and equipment that fail in materials within specified warranty period.

PART 2 - PRODUCTS

2.1 PATCH CORDS

A. The selected manufacturer will be PATCHBOX, 1219 Digital Drive, Suite 130, Richardson, TX 75081.

B. Manufacturer and product numbers are described within the Bill of Material within this section.

2.2 EQUIPMENT – BOM

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY
1	PatchBox	PONE30UTPBK	PATCHBOX.ONE 30RU CAT.6A UTP BLACK FRAME 24 x 1.8M CASSETTES & 6 PATCHCATCH & 2	30
2	PatchBox	CONE30OM411	PATCHBOX.ONE 30RU OM4 CASSETTE LC-LC 1.8M	2
3	PatchBox	PONEIDLABEL	Patchbox.one / ID-Labels	6
4			Installation	1

2.3 CLEANING

A. Remove rubbish and debris: Installation contractor is not allowed you use the onsite dumpster and is responsible to discard their own debris off site.

B. Clean installed items using methods and materials recommended in writing by manufacturer.

END OF SECTION 27 2120.15

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SECTION 27 2400 - 3D PRINTERS AND MONITORS

PART 1 - GENERAL

1.01 Section Includes

A. 3D printers

B. Monitors

1.02 RELATED DOCUMENTS

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

B. Related Drawings:

1. IT – Technology Drawings

1.03 SUMMARY

A. Equipment should be installed throughout the facility as indicated on the IT drawings.

1. The contractor is responsible for providing and coordinating final equipment arrangements, locations, phased activities and construction methods that minimize disruption to the owner's operations and provide complete and operational systems.

1.04 APPLICABLE STANDARDS

A. All of the work within the scope of this bid shall be performed in accordance with the applicable state, county and city laws and ordinances. The bidder shall be able to obtain all permits and licenses as required in addition to being a licensed contractor. All materials, supplies and equipment being furnished shall be installed in accordance with the latest version of the applicable standards of:

1. OSHA

2. Components of the system shall be of the type approved by Safety and Regulatory Agencies including:

   a. Underwriters' Laboratories (UL), Inc.

   b. Federal Communications Commission (FCC).

   c. Agency approvals and UL Listing declare the system's design, components, and installation shall meet the highest standards.

1.05 SUBMITTALS

A. Pricing for all devices shown within article 2.3 – BILL OF MATERIAL BOM must be filled out and submitted with this bid proposal and shall include all unit and total pricing.

B. Product Data: Submit manufacturer’s technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

C. Samples of manufacturer’s standard and extended warranties.

D. All original licensing software.

E. Equipment List: Include every piece of equipment by model number, manufacturer, serial number, location, and date of original installation.

1.06 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain all materials from one (1) source from a single approved manufacturer for each product required within this specification.

B. All devices procured and delivered as part of this specification shall be new from the manufacturer. Refurbished devices will not be accepted for this project. The technology consultant will verify all devices prior to delivery and installation of all devices described within this specification.

1.07 DELIVERY, STORAGE AND HANDLING

A. Take care in handling products in accordance with manufacturer’s instructions.

B. Site delivery conditions: there is not a traditional loading dock where a truck can back up to unload heavy equipment. There is a receiving area at the rear of the school where a ramp and/or stairs is available to get from the driveway to the finished floor level.

C. Store indoors in original undamaged packaging, in a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity. Store products upright in secure, protected area. Verify with the manufacturer that site conditions are acceptable before receiving material.

D. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Interior Controlled Environment: System components installed in temperature-controlled interior environments shall be rated for continuous operation in ambient temperatures of 36 to 122 deg F (2 to 50 deg C) dry bulb and twenty to ninety percent (20 to 90%) relative humidity.

1.08 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of any device and equipment related to operation, and equipment that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Unless stated otherwise within product descriptions, The Manufacturer's standard manufacturer's warranty from date of Substantial Completion shall be provided.

PART 2 - PRODUCTS

2.01 3D Printers

A. The selected manufacturer shall be Bambu or approved equivalent.

B. All devices are to be procured, delivered and installed as indicated under this portion of the specification.

2.02 MONITORS

A. The selected manufacturer shall be Dell and Apple or approved equivalent.

B. All devices are to be procured, delivered and installed as indicated under this portion of the specification.

2.03 BILL OF MATERIAL – BOM

A. The following Bill of Materials are meant to assist the bidding integrator with the intent of the system build-outs. All material and parts not described but required for a fully functional systems(s) as stated within this section must be furnished, installed and configured as part of this project.

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY
1	Bambu	Specify	Bambu Lab H2D Pro - 3D printer	2
2	Dell	DELL-U3225QE	Dell UltraSharp U3225QE - LED monitor - 4K - 32" - HDR	17
3	Dell	DELL-U2725QE	Dell UltraSharp U2725QE - LED monitor - 4K - 27" - HDR	17
4	Apple	Specify	Magic Keyboard with Numeric Keypad - US English	34

PART 3 - EXECUTION

3.01 SECURE ATTACHMENT

A. To ensure proper attachment of Fixtures, Furnishings & Equipment items, including and Technology items, where “items” are attached to wall, ceiling, overhead structure, and/or floor, Contractor shall provide information adequate for architect to verify items, attached to wall, ceiling, and/or floor are attached securely and per manufacturer’s recommendations. Architect’s review may be implemented during submittal process.

B. The contractor should provide struts, hangers, fasteners, safety harnesses, channels, bolts, screws, rods, etc. to securely attach items to existing structure as required to meet field conditions and meet applicable codes.

3.02 SYSTEM INSTALLATION

1. The computers shall be delivered to the school and coordinated with the IT personnel from the Board of Education.

B. The contractor awarded this section shall deliver and unpack all devices specified within this document and dispose of all trash.

C. All device locations must be coordinated and verified by the owner prior to actual installation.

D. All devices within this specification must be installed per the manufacturers' recommended insulation specifications.

3.03 CLEANING

A. Remove rubbish and debris: Installation contractor is not allowed you use the onsite dumpster and is responsible to discard their own debris off site.

B. Clean installed items using methods and materials recommended in writing by manufacturer.

END OF SECTION 27 2400

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SECTION 27 3000 - PHONE SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Phone handsets

B. These specifications contain the functional and operational requirements for the new Voice system.

C. This phone system shall be sole sourced in products and installation contractor:

CCi Voice
70 Stony Hill Rd
Bethel, CT 06801
+1 203-938-8400

Contact: Cooper LeBlanc

1.2 INTENT

A. This phone syste and all handsets shall be procured, configured, and installed as stated within this specification.

B. Integration of this new Phone system shall include integrating with the PA systems and shall allow every handset to utilize the PA system. Each handset shall be configured to utilize the PA system per the Owners' direction.

C. General: Provide and install a complete phone system with all specified devices, installation, associated supporting devices, configuration of system, and testing in accordance with this section to provide a complete and functional system.

D. It is the intent of these specifications to procure a fully acceptable, effective and reliable phone system. These specifications recognize the importance of a complete system operation and are not limited to specifying of equipment only. The following are also required from the contractor awarded this section:

1. Prompt delivery and professional installation including service of equipment as specified.
2. Contractor awarded this section must provide, for objective evaluation, references, which clearly state and show the effectiveness of proposed equipment and services.
3. Used products will not be acceptable. The manufacturer must satisfactorily demonstrate that he has supplied and will continue to supply products to avoid the obsolescence of equipment installed in the building.

4. All equipment shall be fully guaranteed for twelve (12) months of the Owner's acceptance of substantial completion. This guarantee shall become effective from the day of installation completion. When in normal operation, if the equipment is found to be below the manufacturer's specification, repair and replacement of equipment shall be provided. Repairs shall be started within twenty-four (24) hours and completed without delay. The installation contractor shall either stock spares or be capable of obtaining all required replacement parts within twenty-four (24) hours.

1.3 APPLICABLE STANDARDS

A. All of the work within the scope of this bid shall be performed in accordance with the applicable state, county and city laws and ordinances. The contractor awarded this section shall be able to obtain all permits and licenses as required in addition to being a licensed contractor. All materials, supplies and equipment being furnished shall be installed in accordance with the latest version of the applicable standards of:

1. OSHA
2. Uniform Building Code
3. Americans with Disabilities Act (ADA)
4. Components of the system shall be of the type approved by Safety and Regulatory Agencies including:
   a. Underwriters' Laboratories (UL), Inc.
   b. Federal Communications Commission (FCC).
   c. Agency approvals and UL Listing declare the system's design, components, and installation shall meet the highest standards.
   d. System installation shall comply with UL 681 and UL 611.
5. The equipment shall comply with Part 68 of the FCC Telephone Requirements Rules.
6. All circuits and equipment shall be installed and protected according to the National Electric Code and any applicable local requirements.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

B. Operating and Maintenance instructions for each product.

C. Samples of manufacturer's standard and extended warranties.

D. Equipment List: Include every piece of equipment by model number, manufacturer, serial number, and date of original installation.

1.5 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain all materials from one (1) source from a single approved manufacturer for each different product required.

1.6 DELIVERY, STORAGE AND HANDLING

A. Take care in handling products in accordance with manufacturer's instructions.

B. Store indoors in original undamaged packaging, in a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity. Store products upright in secure, protected area. Verify with the manufacturer that site conditions are acceptable before receiving material.

1.7 WARRANTY

A. Standard Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of any device and equipment related to operation, and equipment that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. The selected manufacturer shall be Sangoma.

B. All necessary equipment, cabling, and configurations required for a complete system to accommodate all the phones and users in this town/district is required as part of this section.

C. All patch cords required to connect each new IP phone to the existing Ethernet, 8P8C jack shall be furnished with each new phone as part of this section.

2.2 BILL OF MATERIAL

A. The following bill of material is a guideline for what is minimally required. The voice integrator shall furnish, install, and configure devices required for a fully functional system.

B. The following devices are offered as REFERENCE only. Actual quantities of all devices MUST be verified with the IT drawings.

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY
1	Handsets			
2	Sangoma	P325	6 LCD LCD labeled buttons, HD Voice, Gigabit computer pass-through, 1 x USB port, 4.3" (diagonal), 480x272 pixel Color Display, IPS - Wall Phone - PHW	13

3	Sangoma	P3xx	Wall Mount Kit	13
4	Sangoma	P330	12 LCD labeled buttons, HD Voice, Gigabit computer pass-through, 2 x USB, WiFi capable, 4.3" Color Display - Administration Desk Phone 7821 - PHA	18
5	Sangoma	P325	6 LCD LCD labeled buttons, HD Voice, Gigabit computer pass-through, 1 x USB port, 4.3" (diagonal), 480x272 pixel Color Display, IPS - Desk Phone - PHB	30
6	Yealink	CP965	5 " Color Screen Display, 20' Range, Full-duplex speakerphone, 10/100 pass-through - Conference Room Phone - PHC	2
7			Installation	1

PART 3 - EXECUTION

3.1 EXAMINATION

A. Any area that may incur damage of any devices specified within this section must be brought to the attention of the technology consultant.

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

C. The installation contractor awarded this section shall be responsible for replacing all damaged and/or faulty equipment specified within this section up until the Owner's acceptance of substantial completion.

3.2 SYSTEM INSTALLATION

A. The contractor awarded this section is responsible for the Warranty and Support on all phone devices is required.

B. Comply with all manufacturers' recommendations and best practices.

C. The contractor awarded this section shall deliver and unpack all devices specified within this document and dispose of all trash.

D. All device locations must be coordinated and verified by the owner prior to actual installation.

E. All devices within this specification must be installed per the manufacturer's recommended insulation specifications.

F. All cabling shall be properly dressed in a neat fashion that is acceptable to the owner. This shall include Velcro & nylon ty-wraps secured to the furniture so that all cables are properly supported, protected from damage in an aesthetically pleasing fashion.

G. All configuration(s) required to obtain a fully functional system shall be included within this portion of work.

H. The contractor awarded this section shall be responsible for the following:

1. The phone system shall remain fully functional during the entire installation. Any outages shall be coordinated with the town IT department 14 days prior to any outage or cutovers.
2. Installation of licenses required.
3. Testing and verification of phone system.

3.3 SYSTEM STARTUP

1. System and components have been installed and inspected in accordance with the manufacturer's installation instructions.
2. A visual inspection of the system components has been conducted to ensure that defective equipment items have not been installed and that there are no loose connections.
3. All system grounding and transient protection systems have been verified as properly installed and connected, as indicated.

B. Satisfaction of the above requirements shall not relieve the contractor of responsibility for incorrect installations, defective equipment items, or collateral damage as a result of Contractor work/equipment.

3.4 FIELD QUALITY CONTROL

A. Verify that all accessories required for a complete and functional phone system have been properly installed.

B. Verify each phone handset installed has dial-tone and can attain connectivity to the Public address system.

C. Manufacturer's Perform tests and inspections: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including:

1. All Connections
2. Operational Tests: Perform operational system tests to verify that system complies with Specifications. Include all modes of system operation.

3.5 CLEANING

A. Remove rubbish, debris, and waste materials and deposit in dumpster provided on site.

B. Clean installed items using methods and materials recommended in writing by manufacturer.

END OF SECTION 27 3000

SECTION 27 41 16.51 - AUDIO VIDEO SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

a. The Contractor, Subcontractors and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

B. Related Drawings:

1. "IT" Drawings – Technology Plans

C. Section Includes
1. Interactive Display with Mounts
2. Document Cameras
3. Video conferencing Cameras

1.2 BIDDER RESPONSBILITY

A. This specification and the AV drawings are detailed only to the extent necessary to show design intent and signal flow. The bidder shall examine and be thoroughly familiar with all contract drawings, design intent, systems specified, their installation, configuration, and industry best practices. The contractor is responsible for all devices and configuration required to produce a fully functional system, including devices that may not be documented on either this specification or the AV drawings. Equipment required to meet this requirement shall be provided without claim for additional payment. Specific products to meet the required functionality are listed within this specification and notated within the AV drawing package.

1.3 FUNCTIONAL REQUIREMENTS

A. The contractor shall furnish and install the AV devices specified herein and within the IT drawings and integrate them into the owner furnished audio visual systems.

1.4 SUMMARY

A. Furnish and install interactive boards, document cameras, and video cameras as shown on drawings and as specified herein, complete with all apparatus, equipment, power supplies, wiring, labor, and services necessary to ensure a complete working system. Verify completeness of equipment listed and correctness of type numbers. Furnish and install supplementary equipment needed to meet system requirements, without claim for added payment. Labor furnished shall be specialized and experienced in systems installation.

B. Interconnection from/to all devices and teachers station outlets, testing, and all configurations, are part of this section.

C. This work includes, but is not limited to the following:

1. Secure all devices specified within existing plenum rated enclosures, or backboxes, or on wall behind displays, as required and specified.
2. Furnish and install interactive displays with the specified display mounts.
3. Furnish any additional items, not specifically mentioned herein, to meet system requirements as specified, without claim for additional payment. Such items may include hardware, transformers, line/distribution amplifiers, and other devices for proper installation, interface, isolation or gain structure.
4. Submission of shop drawings prior to fabrication.
5. Verification of dimensions and conditions at the job site.
6. Installation in accordance with these specifications, manufacturer's recommendations, and all applicable code requirements.
7. Setup and adjustment of signal processing, system tests and adjustments, written report, demonstration for approval, participation in acceptance tests, and final adjustments as required.
8. Coordination with the Electrical Contractor is required to assure correct Systems conduit routing, Systems backbox locations, and clean power circuit locations as specified in Division 26 – Electrical.
9. Coordination with the Public Address Systems Contractor
10. Coordination with the Tel/Data Contractor and other Low Voltage Contractors
11. Coordination with the Owner's IT department and installers
12. Performance standards, without claim for additional payment
13. System Documentation
14. Instruction of owner's operating personnel
15. Maintenance and services for two years
16. Guarantee all equipment and components for the specified period from the date of acceptance.

D. All work described within this section must be coordinated with other trades to ensure a successful installation.

1.5 SUBMITTALS

A. Provide Submittals in accordance with requirements of Division 01 – General Requirements and as described within this specification.

B. Bidder Qualifications (Pre-Bid Submittal):
1. Perspective bidders must be thoroughly experienced in installing, engineering, configuring and testing systems of the scope and size specified. Bidders must be a system integrator, normally engaged in the business of audiovisual and sound reinforcement system installation. Bidder shall provide a list of systems their company has furnished and installed of similar size and scope within the last (5) years. Indicate project name, address, and reference.
2. Bidder shall have qualified CTS, CTS-D, and CTS-I engineers, technicians, and project managers who will be assigned to this project. A CTS-D and CTS-I shall be employed on this project for the entirety of the installation and close-out.
3. The bidder shall have a qualified and certified system programmer who will program the system. Submit all manufacturer certifications related to system programming, DSP programming, and control programming.

C. Bid Submittals:
   1. In conjunction with the bidding requirements set forth in the Division 01 documents, the bidder shall submit itemized unit prices for all devices, or their equivalents, listed within this specification or documented on the AV drawings.
   2. The bid price shall include any Add-Alternates described.

D. Product Data: Submit manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified or required. Do not procure material or begin work until product data and shop drawing submittals have been approved. All product data shall be submitted in one submission, in PDF format, with manufacturer provided specifications and cutsheets.

E. Shop Drawings: Shop drawings shall be created in ACAD or equivalent and submitted electronically in DWG and PDF.
   1. Include plan view locations, elevations, installation details, and accessories.
   2. Complete list of wire run numbers and termination locations of each end.
   3. Provide IP address table and addressing protocol in coordination with Owner's IT department.
   4. Submit samples of lettering/label size and typeface for custom plates, panels, or other equipment where required.
   5. Provide EDID and HDCP management plan for all video signals.
   6. Consultant and Architect shall approve all panel and furniture finishes. The Consultant and Architect may request samples of finishes which the Contractor shall provide at no additional cost to the project.
   7. Provide conduit riser documented in plan and elevation view.

F. Closeout Submittals:
   1. Create user manuals for all devices within the system, including instructions for how to use the device.

1.6 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain all materials from one source from a single approved manufacturer for each different product required.

B. Certification: CE, FCC Class A

1.7 DELIVERY, STORAGE AND HANDLING

A. Take care in handling products in accordance with manufacturer's instructions.

B. Store indoors in original undamaged packaging, in a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity. Store products upright in

secure, protected area. Do not stack! Verify with manufacturer that site conditions are acceptable before receiving material.

C. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Interior, Controlled Environment: System components installed in temperature-controlled interior environments shall be rated for continuous operation in ambient temperatures of 36 to 122 deg F (2 to 50 deg C) dry bulb and 20 to 90 percent relative humidity.

1.8 WARRANTY AND GUARANTEE

A. All systems and components shall be guaranteed free of defects in materials and workmanship for a period of one (1) year (or to the length of the Manufacturer's warranty if longer) from the date of acceptance and shall be repaired or replaced within forty-eight (48) hours following report of such defects by the owner.

B. The Contractor shall be available on call and on eight (8) hour notice during the first month following acceptance of the system, to assist the Owner's representatives in any problems which may arise during the initial period of operation. If corrective measures on-site are required, they will be performed within 12 hours of the determination of a need for a site visit.

C. If, during the Guarantee period, any component is out of service for more than seven (7) days due to unavailability of parts or service, Contractor shall supply and install an identical new component. If an identical component is not available, the Contractor will substitute equivalent equipment, with the approval of the Owner.

D. During the Guarantee period, the Systems Contractor will provide the Owner with a 24 hour service phone number for emergency calls. A service engineer will respond to all emergency calls within one (1) hour. The personnel answering this call must be fully qualified to troubleshoot problems and propose solutions. A qualifying emergency event is defined as an event that may cause severe hardship or cause the systems to be inoperable or unusable for a scheduled class or event.

E. During the course of the Guarantee period, the Contractor shall provide a minimum of three (3) service visits to the site for inspection and adjustment of equipment. Contractor shall submit proposed schedule for these visits and shall notify Owner and Systems Designer in writing at least one month in advance of each visit.

F. During the course of the guarantee period, the Systems Contractor will supply the Owner with any published updates of manufacturer provided operating programs for any and all software-controlled equipment that are issued to correct "bugs". During the Guarantee period, the Owner will rely on the Systems Contractor to determine when to update the software, unless it is needed to correct a situation that renders the systems unstable, non-functional, or otherwise affects operations.

G. Repeated device failures, defined as the failure of a device or a single type of device three or more times over three contiguous months, will be considered as a failure of a manufactured system and all items of this type shall be replaced at no charge to the Owner.

PART 2 - PRODUCTS

2.1 INTERACTIVE DISPLAY AND MOUNTS

A. The interactive display manufacturer shall be SMART Technologies.

B. All Audio Visual and associated cabling required for each system specified within this document is to be furnished, installed, terminated and tested as part of this section.

C. Wiring Method: Install cables in raceways unless otherwise indicated.

D. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

2.2 BILL OF MATERIAL – BOM

A. The following bill of material is a guideline for what is minimally required. The AV integrator shall furnish, install, and configure devices required for a fully functional system.

B. The following devices are offered as REFERENCE only. Actual quantities of all devices MUST be verified with the IT drawings.

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY
1	SMART	MX265-V5	65" SMART Board MX065-V5 interactive display with IQ	6
2	SMART	MX275-V5	75" SMART Board MX075-V5 interactive display with IQ	16
3	SMART	MX286-V5	86" SMART Board MX085-V5 interactive display with IQ	12
4	SMART	WM-SBID-200	SMART Wall Mount for SMART MX series interactive displays	34
5	SMART		SMART Document Camera	32
6	SMART	SWC-120UHD	SMART Ultra HD Camera 120	34
7	Lu Uno		Interactive Gym Wall Audio System w/1-Year Subscription	1
8			Installation	1

PART 3 - EXECUTION

3.1 INSTALLATION

A. This specification shall include all installation and setup labor and configuration of all devices to furnish a complete, efficient and effective system.

B. All cables, connectors and peripheral equipment’s required to attain a fully functional system shall be furnished, installed and performed by the contractor awarded this project.

C. Locate all apparatus requiring adjustments, cleaning or similar attention so that it will be accessible for such attention.

D. Furnish and install brackets, braces and supports. The minimum fastening or support safety factor shall be at least three (3). Design shall be to the approval of the Architect.

E. Provide custom color or finish for any equipment or materials supplied which are exposed to public view. Color and finish of all such equipment or materials shall be approved in writing by the Architect. This does not exclude equipment or materials where standard colors and finishes may be specified herein.

F. The equipment specified herein is designed to operate in environments of normal humidity, dust and temperature. Protect equipment and related wiring where extreme environmental conditions can occur.

G. Secure equipment firmly in place.

H. Take precautions to prevent electromagnetic and electrostatic hum. Install equipment to provide safe operation.

I. Clearly, consistently, logically, and permanently mark connectors, jacks, relays, receptacles, cables, and cable terminations.

J. SECURE ATTACHMENT OF AUDIO-VISUAL ITEMS

1. To ensure proper attachment of Fixtures, Furnishings & Equipment items, including and Technology items, where “items” are attached to wall, ceiling, overhead structure, and/or floor, Contractor shall provide information adequate for architect to verify items, attached to wall, ceiling, and/or floor are attached securely and per manufacturer’s recommendations. Architect’s review may be implemented during submittal process.

2. The contractor shall provide struts, hangers, fasteners, safety harnesses, channels, bolts, screws, rods, etc. to securely attach items to existing structure as required to meet field conditions and applicable codes.

3.2 COMMISSIONING OF SYSTEMS AND EQUIPMENT

A. Engage a factory-authorized service representative or technician who is familiar with this project to participate and assist, if necessary, in the functional performance testing of the equipment included in this Division with the Commissioning Agent.

3.3 EXAMINATION

A. Examine room conditions, ceiling and wall surfaces to assure they are in compliance with requirements and other conditions affecting installation and operation of Interactive Whiteboards projectors and speakers.

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

3.4 FIELD QUALITY CONTROL

A. Verify that accessories required for each unit have been properly installed.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

C. Perform tests and inspections.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

D. Tests and Inspections:

1. Inspection: Verify that units and controls are properly installed, connected, and labeled, and that interconnecting wires and terminals are identified.
2. Pretesting: Align and adjust system and pretest components, wiring, and functions to verify that they comply with specified requirements.
3. Operational Tests: Perform operational system tests to verify that system complies with Specifications. Include all modes of system operation.

3.5 CLEANING

A. Remove rubbish and debris: Installation contractor is not allowed you use the onsite dumpster and is responsible to discard their own debris off site.

B. Clean installed items using methods and materials recommended in writing by manufacturer.

3.6 DEMONSTRATION

A. Bidding contractor shall engage a factory-authorized service representative to train the Owner's maintenance personnel to adjust, operate, and maintain each system described within this specification for the audio-visual equipment. This training shall include twenty (20) hours, in the blocks of hours that shall be described by the Owner.

B. Upon approval of the above test report by the Architect and at a mutually agreeable time, demonstrate operation of each major component and of the complete installation. After demonstration, assist as required in acceptance tests.

C. Final Adjustments:

1. Make control adjustments as directed by the Architect. Make a record of these control settings. Provide covers, caps, or shaft locks for controls not used in system operation.

3.7 COMPLETION

A. Warranty service shall commence 1 year after acceptance. Warranty service shall be provided during standard business hours within 24 hours after notice of concern.

B. Labor and materials provided under the scope of project shall be covered under 1-year warranty. Devices shall be free of defects from installation of manufacturer. If an item requires replacement, this shall be provided at no additional cost to the owner. If items are abused or rendered inoperable from misuse, they shall not be covered under said warranty.

C. The contractor shall engage a factory-authorized service representative to train the Owner's maintenance personnel to adjust, operate, and maintain each system described within this specification for the audio-visual equipment. This training shall include twenty (20) hours, in

the blocks of hours that shall be described by the Owner. These services shall be considered as part of the contract and at no additional fees charged to owner.

END OF SECTION 27 4116.51

SECTION 27 6000 - CHARGING CARTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Charging Carts

1.02 RELATED DOCUMENTS

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

B. Related Drawings:

1. IT – Technology Bid Package

1.03 SUMMARY

A. The new charging carts specified within this section shall minimally support the computers and mobile devices required for this project.

B. Equipment shall be installed throughout the facility as indicated on the IT drawings.

1. The contractor is responsible for providing and coordinating final equipment arrangements, locations, phased activities and construction methods that minimize disruption to the owner's operations and provide complete and operational systems.

1.04 APPLICABLE STANDARDS

A. All of the work within the scope of this bid shall be performed in accordance with the applicable state, county and city laws and ordinances. The bidder shall be able to obtain all permits and licenses if required. All materials, supplies and equipment being furnished shall be installed in accordance with the latest version of the applicable standards of:

1. OSHA

2. Components of the system shall be of the type approved by Safety and Regulatory Agencies including:

   a. Underwriters' Laboratories (UL), Inc.

   b. Agency approvals and UL Listing declare the system's design, components, and installation shall meet the highest standards.

1.05 SUBMITTALS

A. Pricing for all devices shown within article 2.3 – BILL OF MATERIAL BOM must be filled out and submitted with this bid proposal and shall include all unit and total pricing.

B. Product Data: Submit manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

C. Samples of manufacturer's standard and extended warranties.

D. Equipment List: Include every piece of equipment by model number, manufacturer, serial number, location, and date of original installation.

1.06 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain all materials from one (1) source from a single approved manufacturer for each product required within this specification.

B. All devices procured and delivered as part of this specification shall be new from the manufacturer. Refurbished devices will not be accepted for this project. The technology consultant will verify all devices prior to delivery and installation of all devices described within this specification.

1.07 DELIVERY, STORAGE AND HANDLING

A. Take care in handling products in accordance with manufacturer's instructions.

B. Site delivery conditions: there is not a traditional loading dock where a truck can back up to unload heavy equipment. There is a receiving area in the rear of the school where a ramp and/or stairs is available to get from the driveway to the finished floor level.

C. Store indoors in original undamaged packaging, in a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity. Store products upright in secure, protected area. Verify with the manufacturer that site conditions are acceptable before receiving material.

1.08 WARRANTY

A. Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of any device and equipment related to operation, and equipment that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Unless stated otherwise within product descriptions, The Manufacturer's standard manufacturer's warranty from date of Substantial Completion shall be provided.

PART 2 - PRODUCTS

2.01 DESKTOP COMPUTERS

A. The selected manufacturer shall be Ergotron #YES24-CHR-1.

B. Alternate manufacturers are allowed but must meet all characteristics of the Ergotron #YES24-CHR-1.:

C. All devices are to be procured, delivered and installed as indicated under this portion of the specification.

D. All associated devices and/or licensing required to obtain a fully functional system shall be included as part the contractor's bid submittal.

2.02 BILL OF MATERIAL – BOM

A. The following Bill of Materials is meant to assist the bidding integrator with the intent of the system installation. All material and parts not described but required for a fully functional system as stated within this section must be furnished, installed and configured as part of this project.

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY
1	Ergotron	YES24-CHR-1	Charging Cart	15
2			Installation of Cart	15

PART 3 - EXECUTION

3.01 SECURE ATTACHMENT

A. To ensure proper attachment of Fixtures, Furnishings & Equipment items, including and Technology items, where “items” are attached to wall, ceiling, overhead structure, and/or floor, Contractor shall provide information adequate for architect to verify items, attached to wall, ceiling, and/or floor are attached securely and per manufacturer’s recommendations. Architect’s review may be implemented during submittal process.

B. The contractor shall provide struts, hangers, fasteners, safety harnesses, channels, bolts, screws, rods, etc. to securely attach items to existing structure as required to meet field conditions and meet applicable codes.

3.02 SYSTEM INSTALLATION

1. The Charging Stations shall be delivered to the school and coordinated with the IT personnel from the Board of Education.

B. The contractor awarded this section shall deliver and unpack all devices specified within this document and dispose of all trash.

C. All device locations must be coordinated and verified by the owner prior to actual installation.

D. All devices within this specification must be installed per the manufacturers' recommended insulation specifications.

3.03 CLEANING

A. Remove rubbish and debris: Installation contractor is not allowed you use the onsite dumpster and is responsible to discard their own debris off site.

B. Clean installed items using methods and materials recommended in writing by manufacturer.

END OF SECTION 27 6000

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SECTION 280507.23 – UNINTERRUPTIBLE POWER SUPPLIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Uninterruptible Power Supplies (UPS's)

B. Power Distribution Units (PDU's)

1.2 RELATED DOCUMENTS

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

B. Related Drawings:

1. IT – Technology Drawings

1.3 SUMMARY

A. The devices and installation described in this section shall be procured and installed shall match the construction phasing of this project. All is described within the phasing schedule.

B. All manufacturer warranties shall start from the installation date and not necessarily the purchase date.

C. Section includes the UPS and PDU's procurement, installation into the designated Data room and racks described on the IT drawings.

D. These devices should support the Network electronics and servers provided by others.

E. All 19-inch mounting rack and cabinets have been provided by others and are already installed in the facility.

F. The installation integrator awarded this section shall be responsible for the following:

1. Procure UPS's and PDU's.
2. Deliver to the facility address.
3. Coordinated delivery with the construction manager and owner.
4. Install network cards, sensors and other ancillary products defined on the bill of material.
5. Install devices within the designated data room(s) as defined on the IT drawings.
6. Mount devices into the existing data racks per manufacturers requirements and in locations shown on the IT drawings.
7. Power devices to determine devices are in proper working order.
8. Discard of all packing material from the project site.

1.4 APPLICABLE STANDARDS

A. All of the work within the scope of this bid shall be performed in accordance with the applicable state, county and city laws and ordinances. The contractor awarded this section shall be able to obtain all permits and licenses as required in addition to being a licensed contractor. All materials, supplies and equipment being furnished shall be installed in accordance with the latest version of the applicable standards of:

1. OSHA
2. Uniform Building Code
3. Americans with Disabilities Act (ADA)
4. Components of the system shall be of the type approved by Safety and Regulatory Agencies including:
   a. Underwriters' Laboratories (UL), Inc.
   b. Federal Communications Commission (FCC).
   c. Agency approvals and UL Listing declare the system's design, components, and installation shall meet the highest standards.
   d. System installation shall comply with UL 681 and UL 611.
5. All circuits and equipment shall be installed and protected according to the National Electric Code and any applicable local requirements.

1.5 SUBMITTALS

A. Pricing for all devices shown within Article 2.2 – BILL OF MATERIAL BOM must be filled out and submitted with this bid proposal and shall include all unit and total pricing.

B. Product Data: For each type of product indicated. Include dimensions and data on features, performance, electrical characteristics, ratings, and finishes.

C. Product Data: Submit manufacturer’s technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

D. Samples of manufacturer’s standard and extended warranties.

E. Operation and Maintenance Data: For devices listed within this specification.

1.6 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain all materials from one (1) source from a single approved manufacturer for each product required within this specification.

B. All devices procured and delivered as part of this specification shall be new from the manufacturer. Refurbished devices will not be accepted for this project. The technology consultant will verify all devices prior to delivery and installation of all devices described within this specification.

C. The contractor's Quality Assurance Inspector shall conduct a visual inspection of all installations to verify that the installations are in accordance with this section and the manufacturer's specifications. Records of the inspections signed and dated by the Quality Assurance Inspector shall be provided to the technology consultant. The technology consultant shall be notified by the contractor of any inspection(s) and the technology consultant may elect to participate in any inspection(s). All QC information shall be provided to the owner upon completion.

1.7 DELIVERY, STORAGE AND HANDLING

A. Take care in handling products in accordance with manufacturer's instructions.

B. Store indoors in original undamaged packaging, in a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity. Store products upright in secure, protected area. Verify with the manufacturer that site conditions are acceptable before receiving material.

C. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Interior, Controlled Environment: System components installed in temperature-controlled interior environments shall be rated for continuous operation in ambient temperatures of 36 to 122 deg F (2 to 50 deg C) dry bulb and twenty to ninety percent (20-90%) relative humidity.

1.8 WARRANTY

Standard Manufacturer Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of any device and equipment related to operation, and equipment that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS

2.1 UNINTERRUPTIBLE POWERR SULLPIES (UPS's) & POWER DISTRIBUTION UNITS (PDU's)

A. The selected manufacturer shall be EATON.

B. Other manufacturers will NOT be considered for this product. The district has standardized this product and is expanding upon an existing infrastructure.

C. These UPS's and PDU's shall be installed into 19-inch equipment, 2 or 4-post racks are existing and have sufficient rack space to mount these UPS's and PDU's.

2.2 UPS & PDU – BOM

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY
1	Eaton	9PX6KG2	Eaton 9PX G2 6kVA 5.4kW 208V Online UPS L6-30P or HW Input 2 L6-20R, 2 L6-30R, HW Output, Cybersecure Network Card 3U	3
2	Eaton	9PXTFMR5G2	APC Smart-UPS On-Line, 5kVA, Rackmount 5U, 208V, 12x 5-20R+2x L6-20R+1x L6-30R NEMA, Network Card+SmartSlot, W/ rail kit, W/ transformer 208V to 120V	1
3	Eaton	PDUMV30HV	Tripp Lite Series PDU Metered 208V / 240V 30A 6 C19 24; C13 L6-30P Vertical 0URM - vertical rackmount - power	4
4	Eaton	EMPDT1H1C2	Temperature & Humidity Sensor	2
5			Installation, Coordination with Trades, & Startup A/R	1

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine data room conditions, ceiling, and wall surfaces to assure they are in compliance with requirements and other conditions affecting installation and operation of all devices within this specification.

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

3.2 SYSTEM INSTALLATION

A. Comply with all manufacturers' recommendations and best practices.

B. The contractor awarded this section shall deliver and unpack all devices specified within this document and dispose of all trash.

C. All device locations must be coordinated and verified by the owner prior to actual installation.

D. All devices within this specification must be installed per the manufacturer's recommended insulation specifications.

3.3 SYSTEM STARTUP

A. The Contractor shall not apply power to the system until after:

1. System and components have been installed and inspected in accordance with the manufacturer's installation instructions.

2. A visual inspection of the system components has been conducted to ensure that defective equipment items have not been installed and that there are no loose connections.
3. All system grounding and transient protection systems have been verified as properly installed and connected, as indicated.
4. Satisfaction of the above requirements shall not relieve the contractor of responsibility for incorrect installations, defective equipment items, or collateral damage as a result of Contractor work/equipment

3.4 FIELD QUALITY CONTROL

A. Verify that accessories required for each unit have been properly installed, level and secured.

3.5 SECURE ATTACHMENT

1. To ensure proper attachment of Fixtures, Furnishings & Equipment items, including and Technology items, where “items” are attached to wall, ceiling, overhead structure, and/or floor, Contractor shall provide information adequate for architect to verify items, attached to wall, ceiling, and/or floor are attached securely and per manufacturer’s recommendations. Architect’s review may be implemented during submittal process.
2. Contractor shall provide struts, hangers, fasteners, safety harnesses, channels, bolts, screws, rods, etc. to securely attach items to existing structure as required to meet field conditions and meet applicable codes.

3.6 CLEANING

1. Remove rubbish and debris: Installation contractor shall not use the onsite dumpster and is responsible to discard their own debris off site.
2. Clean installed items using methods and materials recommended in writing by manufacturer.

END OF SECTION 28 0507.23

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SECTION 28 1320 – SECURITY – EMERGENCY SYSTEM

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Rapid Emergency Response System

1.02 SUMMARY

A. Procurement, installation, and configuration required for a fully functional system(s) is required by the contractor awarded this section.

B. The contractor must show proof of at least two technicians with the Centegix Emergency Response System training prior to being awarded this project.

1.03 SUBMITTALS

A. The contractor shall offer a complete parts list with this bid, for all products specified within this document and/or required for complete installation.

B. Product Data: Submit manufacturer's product specification sheets for every product to be used in this system within two (2) weeks of award of project. Product specification sheets must have the product being utilized and its part or model number visibly indicated. Product data shall include dimensions and data on features, performance, electrical characteristics, ratings, and finishes.

C. Include an itemized bill of materials and a detailed description of the proposed system(s) within the bid response. Any appendices are only intended to assist the contractor to formulate a bid. Quantities are estimated and should be verified by contractor.

D. In the event that the installation contractor does not furnish or does not supply sufficient documentation, the owner has the right to engage a separate contractor to attain any or all required documentation. All costs related to this event shall result in a back charge to the installation vendor via a change order.

1.04 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain all materials from one (1) source from a single approved manufacturer for each product required within this specification.

B. All devices procured and delivered as part of this specification shall be new from the manufacturer. Refurbished devices will not be accepted for this project. The technology consultant will verify all devices prior to delivery and installation of all devices described within this specification.

C. Installer Qualifications – Installer must be a certified, factory trained, accredited and licensed installer for the manufacturers described within Article 1 above.

PART 2 - PRODUCTS

2.01 Security response System

A. The selected manufacturer shall be CENTEGIX , Atlanta GA.

1. Alternate manufacturers shall not be accepted.

2.02 BILL OF MATERIAL – BOM

A. The following Bill of Materials is meant to assist the bidding integrator with the intent of the system installation. All material and parts not described but required for a fully functional system as stated within this section must be furnished, installed and configured as part of this project.

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY
1	Centegix	Specify	CENTEGIX Gateway Cabling & Installation	1
2	Centegix	Specify	Implementation	1
3	Centegix	Specify	Safety Blueprint Remote Installation	1
4	Centegix	Specify	Safety Platform Installation	1
5	Annual Services			
6		Specify	Safety Platform (CrisisAlert, Safety Blueprint, Visitor Management)	1
7		Specify	Wireless Backup Data	1

PART 3 - EXECUTION

3.01 FIELD QUALITY CONTROL

A. Testing Agency: The Contractor shall engage a qualified testing agency to perform tests and inspections with the Owner and appointed project manager.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and correct any configurations to provide a fully functional system.

C. The contractor awarded this section shall deliver and unpack all devices specified within this document and dispose of all trash.

END OF SECTION 28 2320

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APPENDIX B – TECHNOLOGY

PART 1 - GENERAL

1.1 ITEM DATA SHEETS

A. Refer to the following Item Data Sheets.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION – APPENDIX B

Data Sheet

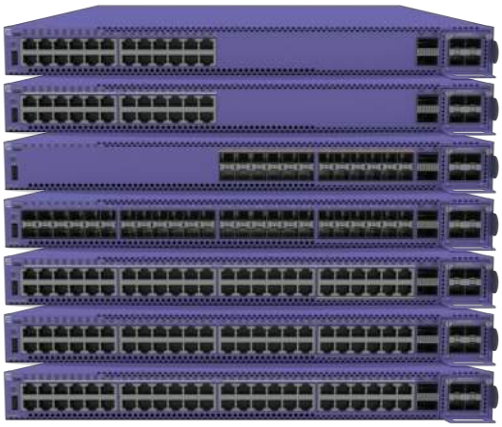
5520 Series Switches

Highlights

- Manageable by Extreme Platform ONE™, ExtremeCloud™ IQ, or ExtremeCloud IQ Site Engine
- Fabric-enabled operations with Extreme Fabric for simplified and secure network provisioning and automation
- Choice of operating system (OS) with dual-persona Universal Hardware
- Automated Extreme Platform ONE Security policy enforcement
- Automated and streamlined switch provisioning and day-to-day operations with cloud-based instant actions
- Fixed 24 and 48-port switches with gigabit and multi-gigabit support
- Front to back cooling with AC power on all models
- Back to front cooling with DC power on select models

Key Hardware Features

- Choice of 10Gb and 25Gb modular uplink ports
- 30W, 60W and 90W PoE support for powering connected devices
- 200Gb per unit stacking of up to eight switches
- Hot-swappable, redundant power
- supplies and fans
- MACsec on access and modular uplink ports for secure link encryption
- Extended Edge Switching controlling bridge in support of V300/V400 edge devices
- Non-blocking, wire-speed design



Universal Edge/Aggregation Switches

The 5520 Series is a family of high-performance, feature-rich edge and aggregation switches designed for the next-generation digital enterprise. Available in 24 and 48-port 1 Gigabit models, 1/2.5/5 Gigabit multi-rate models, as well as a 24-port 10 Gigabit model, the 5520 Series provides end-to-end secure network segmentation and advanced policy capabilities that can be deployed across a range of edge, aggregation, and wiring closet environments. As a universal hardware solution, the 5520 offers a user-selectable choice of Extreme's flagship switch operating systems.

The 5520 supports 10Gb and 25Gb modular uplinks for flexible linkage to other switches or devices over a range of media. Extended Edge Switching controlling bridge is also available in support of V300/V400 edge devices, and select models offer a choice between Front to Back or Back to Front cooling.
The 5520 Series offers 30W, 60W, and 90W PoE, making it an ideal wired backend for wireless APs or in support of next-gen powered Ethernet devices, such as digital signage, pan-tilt-zoom cameras, smart lighting, or point-of-sale terminals.

Network Management Flexibility

The 5520 Universal Switch series are managed by Extreme Platform ONE or ExtremeCloud IQ from the cloud or on premises. Alternatively, 5520 on box management can be done manually via a web-based GUI or generic command-line interface (CLI).

Extreme Platform ONE™

Extreme Platform ONE is an enterprise connectivity platform that integrates networking and security with AI into one powerful and radically simplified experience and licensing model. It supports NetOps, SecOps, and business teams with built in automation and enables organizations to regain control, unlock innovation, and boost productivity through:

- One integrated experience that is easy to use.
- Automation through built-in AI that boosts productivity, reducing cycle time for many tasks from hours to minutes.
- Simplified licensing that makes the solution as easy to buy as it is to use.
- AI-powered workflows for configuration, deployment, and management.
- Extreme Fabric and third-party switch visualization and management in cloud.
- Inventory management simplifies budgeting, planning and compliance.

Power over Ethernet (PoE)

All 5520 models support 30W, 60W, and 90W PoE that conforms with IEEE 802.3bt. This enables the 5520 to address the needs of powered edge devices, while eliminating the need for additional electrical cabling and circuits. In addition, 5520 PoE models support perpetual and fast PoE for even more efficient and reliable powered edge device operation.

VIM Options for Flexible Uplinks

The 5520 supports Versatile Interface Modules (VIMs) providing flexible uplink capabilities with a single VIM slot. VIM options include four-port 10Gb or 25Gb modules that include LRM and 256-bit MACsec support.

High-Performance Stacking

The 5520 Series supports high-speed 200Gb* stacking when running Switch Engine via its two built-in QSFP28 stacking ports. Up to eight systems can be stacked using qualified QSFP+ direct attach cables and optical transceivers.

*200Gb stacking available with Switch Engine 31.6

Audio Video Bridging

The 5520 series supports IEEE 802.1 Audio Video Bridging (AVB) when running Switch Engine OS. This allows 5520 models to deliver reliable, real-time audio/video transmission over Ethernet, meeting the quality of service required for today's high-definition, time-sensitive multimedia streams.

Universal Hardware

The 5520 Series comes with a dual-persona capability, allowing you to choose your Operating System (OS). Either the Switch Engine (EXOS) or Fabric Engine (VOSS) OS can be selected at switch start-up or changed at a later stage. When selected, the switch assumes the features and capabilities of that OS. 5520 OS selection can also be automated with Extreme Platform ONE or ExtremeCloud IQ so that the desired OS can be automatically loaded at switch start-up, facilitating remote OS enablement.

Security

Extreme Universal hardware enables the extension and enforcement of Fabric and Extreme Platform ONE Security policies. Wherever users connect through the network, their access is secure and segmented. Extreme Platform ONE Security, which combines zero trust network and application access into a single solution, automatically configures devices to enforce security policies with one click. When used in concert with Extreme Fabric, Extreme Platform ONE Security becomes part of the fabric services that automate segmentation and enable the network to flex for efficiency and resiliency while maintaining a consistent, end-to-end security policy.

Network Fabric

The 5520 series switches support Extreme's network fabric natively for network virtualization, automation, and network security. Extreme Fabric is the industry's most simple, resilient, and secure end-to-end, enterprise network fabric solution. Fabric automates discovery and onboarding of network and user devices. Its sub-second convergence reduces unplanned downtime and maintenance windows. Automated micro-segmentation and stealth topology enhance and automate network security across campus, data center, and branch. Fabric is included free with the purchase of the 5520, no additional licenses or controllers are required.

Instant Onboarding

5520 Series onboarding to the cloud is a hands-off operation using zero touch provisioning. Simply unpack the 5520 Series switch, connect it to the network, and it automatically connects to the cloud, ready to be provisioned. New switches can be configured, one-by-one, with a few clicks. Instant Port, Instant Secure Port, and Instant Stack all further reduce time spent on deployment.

Instant Port*

Instant Port automates adds, moves or changes across 5520 Series switch ports, eliminating the need for manual port configuration. The 5520 Series automatically detects the connected device and applies the correct port parameters. The result is significant time savings when adding or moving devices across the 5520 Series wired network. A simple cloud interface allows Instant Port definitions of customer designated device types which can then be applied across a single switch, a stack, or even all 5520 Series switches in the network.

*** Supported via Switch Engine only**

Instant Secure Port*

Instant Secure Port leverages Extreme Platform ONE Security for authentication and zero trust policy enforcement across the 5520 Series switch ports, while providing the same add, move, and change automation features of Instant Port. By using Extreme Platform ONE Security's cloud-based capabilities, including RADIUS (Remote Authentication Dial In User Service), unified visibility and reporting, as well as policy enforced locally on 5520 Series ports, it greatly simplifies switch security. In doing so, it delivers a consistent and frictionless security experience for any user or device connecting through the 5520 Series switch.

Note: Extreme Platform ONE Security requires a separate license.

Instant Stack*

Instant Stack simplifies cloud-based stack provisioning, enabling the entire switch stack to be set up through a single push-button operation. Real-world stack information, including each switch model and their stack order is captured and replicated in the cloud. Once set up, the entire stack is then ready to be cloud provisioned.

External Interfaces

Switch Model	Interfaces

5520-24T	• 24 x 10/100/1000BASE-T ports
	  ○ Full / Half-Duplex (autosensing)
	  ○ MACsec-capable
	• 2 x Stacking/QSFP28 ports* (unpopulated)
	• 1 x Serial console port (RJ-45)
	• 1 x 10/100/1000BASE-T out-of-band management port
	• 2 x USB A ports for management or external USB flash
	• 1 x USB Micro-B console port
	• 1 x VIM slot 1

5520-24W	• 24 x 10/100/1000BASE-T 802.3bt (90W) ports
	  ○ Full / Half-Duplex (autosensing)
	  ○ MACsec-capable
	• 2 x Stacking/QSFP28 ports* (unpopulated)
	• 1 x Serial console port (RJ-45)
	• 1 x 10/100/1000BASE-T out-of-band management port
	• 2 x USB A ports for management or external USB flash
	• 1 x USB Micro-B console port
	• 1 x VIM slot 1

5520-48T	• 48 x 10/100/1000BASE-T ports
	  ○ Full / Half-Duplex (autosensing)
	  ○ MACsec-capable
	• 2 x Stacking/QSFP28 ports* (unpopulated)
	• 1 x Serial console port (RJ-45)
	• 1 x 10/100/1000BASE-T out-of-band management port
	• 2 x USB A ports for management or external USB flash
	• 1 x USB Micro-B console port
	• 1 x VIM slot 1

5520-48W	• 48 x 10/100/1000BASE-T 802.3bt (90W) ports
	  ○ Full / Half-Duplex (autosensing)
	  ○ MACsec-capable
	• 2 x Stacking/QSFP28 ports* (unpopulated)
	• 1 x Serial console port (RJ-45)
	• 1 x 10/100/1000BASE-T out-of-band management port
	• 2 x USB A ports for management or external USB flash
	• 1 x USB Micro-B console port
	• 1 x VIM slot 1

5520-12MW-36W	• 12 x 100M/1/2.5/5GBASE-T 802.3bt (90W) PoE ports
	• 36 x 10/100/1000BASE-T 802.3bt (90W) PoE ports
	  ○ Full / Half-Duplex (autosensing)
	  ○ MACsec-capable
	• 2 x Stacking/QSFP28 ports* (unpopulated)
	• 1 x Serial console port (RJ-45)
	• 1 x 10/100/1000BASE-T out-of-band management port
	• 2 x USB A ports for management or external USB flash
	• 1 x USB Micro-B console port
	• 1 x VIM slot 1

5520-48SE	• 48 x 100/1000BASE-X (SFP) ports (unpopulated) ○ MACsec-capable • 2 x Stacking/QSFP28 ports* (unpopulated) • 1 x Serial console port (RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 2 x USB A ports for management or external USB flash • 1 x USB Micro-B console port • 1 x VIM slot
5520-24X	• 24 x 100M/1G/10GBASE-X (SFP+) ports** (unpopulated) • 2 x Stacking/QSFP28 ports* (unpopulated) • 1 x Serial console port (RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 2 x USB A ports for management or external USB flash • 1 x USB Micro-B console port • 1 x VIM slot

Switch Model	Interfaces
5520-24T-ACDC	• 24 x 10/100/1000BASE-T FDX/HDX MACsec capable ports • 2 stacking/QSFP28 ports • 1 unpopulated VIM slot • 3 unpopulated modular fan slots • 2 unpopulated modular PSU slots • AC or DC PSU capable
5520-48T-ACDC	• 48 x 10/100/1000BASE-T FDX/HDX MACsec capable ports • 2 stacking/QSFP28 ports • 1 unpopulated VIM slot • 3 unpopulated modular fan slots • 2 unpopulated modular PSU slots • AC or DC PSU capable
5520-24X-ACDC	• 24 x 100M/1Gb/10Gb SFP+ ports** (unpopulated) • 2 stacking/QSFP28 ports (unpopulated) • 1 unpopulated VIM slot • 3 unpopulated modular fan slots • 2 unpopulated modular PSU slots • AC or DC PSU capable
5520-48SE-ACDC	• 48 x 100/1000BASE-X SFP MACsec capable ports (unpopulated) • 2 stacking/QSFP28 ports (unpopulated) • 1 unpopulated VIM slot • 3 unpopulated modular fan slots • 2 unpopulated modular PSU slots • AC or DC PSU capable
5520-VIM-4X	• 4 x 1/10GBASE-X SFP+ ports (unpopulated)

5520-VIM-4XE	• 4 x 1/10GBASE-X SFP+ ports (unpopulated)
	  ○ LRM-capable
	  ○ MACsec-capable

5520-VIM-4YE	• 4 x 10/25GBASE-X SFP28 ports (unpopulated) ○ MACsec-capable

* Notes on use of the 2 x Stacking/QSFP28 ports

1. With Switch Engine, the 2 x QSFP28 ports can be used for stacking or as Ethernet uplink ports (when not stacking); stacking data rate is 40Gb or 50Gb per port.
2. With Fabric Engine, the 2 x QSFP28 ports can be used as Ethernet uplink ports if in non-Fabric mode or if no VIM is present as of the VOSS 8.4.2 release.
3. Ethernet uplink QSFP28 data rate options per port, with channelization: 4 x 10Gb SFP+, 4 x 25Gb SFP28, 1 x 40Gb QSFP+ (supported with Switch Engine and Fabric Engine); 2 x 50Gb (Switch Engine only)

** 100M on 5520-24x and 5520-24x-ACDC access ports supported with Switch Engine and with Fabric Engine. Refer to the Extreme Optics Compatibility Tool.

Performance and Scaling

Switch Model	Max Active 10Mb/ 100Mb/ 1000Mb Ports	Max Active 100Mb/1Gb/ 2.5Gb/5Gb Ports	Max Active 100Mb/ 1Gb SFP Ports	Max Active 1Gb/10Gb SFP+ Ports[1]	Max Active 25Gb SFP28 Ports[1]	Max Active 40Gb QSFP+ Ports[2]	Max Active 50Gb Ports[2]	Max Active 40Gb/ 50Gb Stacking Ports[3]	Aggregated Switch Bandwidth	Frame Forwarding Rate
5520-24T	24	0	0	12	12	2	4	2	648 Gbps	482.1 Mpps
5520-24W	24	0	0	12	12	2	4	2	648 Gbps	482.1 Mpps
5520-48T	48	0	0	12	12	2	4	2	696 Gbps	517.8 Mpps
5520-48W	48	0	0	12	12	2	4	2	696 Gbps	517.8 Mpps
5520-12MW-36W	36	12	0	12	12	2	4	2	792 Gbps	589.3 Mpps
5520-48SE	0	0	48	12	12	2	4	2	696 Gbps	517.8 Mpps
5520-24X	0	0	24	36	12	2	4	2	1080 Gbps	803.5 Mpps
5520-24T-ACDC	24	0	0	12	12	2	4	2	648 Gbps	482.1 Mpps
5520-48T-ACDC	48	0	0	12	12	2	4	2	696 Gbps	517.8 Mpps
5520-24X-ACDC	0	0	24	36	12	2	4	2	1080 Gbps	803.5 Mpps
5520-48SE-ACDC	0	0	48	12	12	2	4	2	696 Gbps	517.8 Mpps

[1] Includes 8 ports (10Gb speed only, 1Gb not supported) available through channelization of the 2 x QSFP28 ports when not used for stacking with Switch Engine, or with VOSS 8.4.2 or later

[2] Available through channelization of the 2 x QSFP28 ports when these ports are not used for stacking in Switch Engine, or with VOSS 8.4.2 or later

[3] 50Gb stacking with Switch Engine mode only 31.6 or later

Software Scaling

5520 with Switch Engine

- MAC Table: 114,688/65,536
- IPv4 ARP Table: 60,000/41,000*
- IPv4 Route Table: 81,000/16,000*
- IP Multicast Entries (S,G,V): 43,000/24,000*
- IPv6 ND Table: 18,000
- IPv6 Route Table: 40,000/8,000*
- ACL (Ingress/Egress): 9,216/1,024
- QoS Egress Queues/Port: 8
- VLANs: 4,094
- Routed VLANs: 2,048

* First value is the maximum; second is the default. Scaling limits are configurable. See the Switch Engine Release Notes for additional details.

One Policy Scaling

- Policy Profiles: 63
- Unique Permit/deny rules per switch: 8,120
- Authenticated policy users/switch: 9,216

5520 with Fabric Engine

- MAC Table: 40,960 (81,920 non-Fabric)
- IPv4 ARP/IP Host Table: 16,000/48,000
- IPv4 Route Table: 15,500
- IP Multicast Routes: 4,000
- IPv6 ND Table: 16,000
- IPv6 Route Table: 7,500
- IPv4 ACL (Ingress/Egress): 1,024/336
- QoS Egress Queues/Port: 8MAC Table: 32,000
- VLANs: 4,059
- Routed VLANs: 500

Fabric Connect Scaling

- Fabric Adjacencies per switch: 128
- BEB Nodes per VSN: 500
- L2 VSN: 3500
- L3 VSN: 256

Weights and Dimensions

Switches

Switch Model	Weight*	Physical Dimensions	
		Chassis Only	With PSU
5520-24T	5.54 kg (12.21 lb.)	Height: 44 mm (1.73 in.) Width: 441 mm (17.36 in.) Depth: 442 mm (17.42 in.)	Height: 44 mm (1.73 in.) Width: 441 mm (17.36 in.) Depth: 449 mm (17.68 in.)
5520-24W	6.25 kg (13.78 lb.)		
5520-48T	5.76 kg (12.70 lb.)		
5520-48W	6.06 kg (13.36 lb.)		
5520-12MW-36W	6.33 kg (13.96 lb.)		
5520-48SE	5.70 kg (12.57 lb.)		
5520-24X	6.25 kg (13.78 lb.)		
5520-24T-ACDC	5.15 kg (11.35 lb.)	Height: 43 mm (1.71 in.) Width: 431 mm (16.98 in.) Depth: 442 mm (17.42 in.)	Not applicable
5520-48T-ACDC	5.95 kg (13.12 lb.)		
5520-24X-ACDC	5.68 kg (12.52 lb.)		
5520-48SE-ACDC	5.91 kg (13.03 lb.)		

* Switch weights include fans but no PSUs

VIM Modules

Model	Weight*	Physical Dimensions
5520-VIM-4X	0.17 kg (0.37 lb.)	Height: 40.8 mm (1.61 in.) Width: 48.8 mm (1.92 in.) Depth: 146.3 mm (5.76 in.)
5520-VIM-4XE	0.20 kg (0.44 lb.)	
5520-VIM-4YE	0.21 kg (0.46 lb.)	

Power Supplies

Model	Weight*	Physical Dimensions
XN-ACPWR-350W-FB (350W AC)	1.08 kg (2.38 lb.)	Height: 40.8 mm (1.61 in.) Width: 48.8 mm (1.92 in.) Depth: 146.3 mm (5.76 in.)
XN-ACPWR-715W-FB (715W AC)	1.16 kg (2.56 lb.)	
XN-ACPWR-1100W-FB (1100W AC)	1.16 kg (2.56 lb.)	
XN-ACPWR-2000W-FB (2000W AC)	1.16 kg (2.56 lb.)	Height: 75 mm (2.95 in.) Width: 40 mm (1.57 in.) Depth: 292 mm (11.50 in.)
XN-ACPWR-550W-FB	0.81 kg (1.79 lb.)	Height: 40 mm (1.58 in.) Width: 73.7 mm (2.90 in.) Depth: 185.2 mm (7.29 in.)
XN-ACPWR-550W-BF	0.81 kg (1.79 lb.)	
XN-DCPWR-550W-FB	0.81 kg (1.79 lb.)	
XN-DCPWR-550W-BF	0.81 kg (1.79 lb.)	

Power Supply Unit Specifications

Item	XN-ACPWR-350W-FB	XN-ACPWR-350W-BF	XN-ACPWR-715W-FB	XN-ACPWR-1100W-FB	XN-ACPWR-2000W-FB*
Voltage Input Range (Nominal)	100VAC-240VAC	100VAC-240VAC	100VAC-240VAC	100VAC-240VAC	100VAC-240VAC
Line Frequency Range	50 Hz to 60 Hz	50 Hz to 60 Hz	50 Hz to 60 Hz	50 Hz to 60 Hz	50 Hz to 60 Hz
Power Supply Input Socket	IEC/EN 60320 C14	IEC/EN 60320 C14	IEC/EN 60320 C16	IEC/EN 60320 C16	IEC/EN 60320 C16
Power Cord Input Plug	IEC/EN 60320 C13	IEC/EN 60320 C13	IEC/EN 60320 C15	IEC/EN 60320 C15	IEC/EN 60320 C15
Operating Temperature	0°C to 55°C (32°F to 131°F) Normal Operation	0°C to 55°C (32°F to 131°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation

* 200VAC-240VAC is required to achieve full 2000W output. If run at 100VAC-120VAC, output is limited to 1100W.

Item	XN-ACPWR-550W-FB	XN-ACPWR-550W-BF	XN-DCPWR-550W-FB	XN-DCPWR-550W-BF
Voltage Input Range (Nominal)	100VAC-240VAC	100VAC-240VAC	100VAC-240VAC	100VAC-240VAC
Line Frequency Range	50 Hz to 60 Hz	50 Hz to 60 Hz	50 Hz to 60 Hz	50 Hz to 60 Hz
Power Supply Input Socket	IEC 320 - C14	IEC 320 - C14	POSITRONIC PN# PLAH03M400A1/AA-E1A	POSITRONIC PN# PLAH03M400A1/AA-E1A
Power Cord Input Plug	IEC 320 - C13	IEC 320 - C13	POSITRONIC PN# PLAH03M400A1/AA-E1A	POSITRONIC PN# PLAH03M400A1/AA-E1A
Operating Temperature	0°C to 50°C (32°F to 122°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation

PoE Power Budget

Switches

Switch Model	1 x 715W	2x 715W	1 x 1100W	2 x 1100W	1 x 2000W @ 100-120VAC	1 x 2000W @ 200-240VAC	2 x 2000W @ 100-120VAC	2 x 2000W @ 200-240VAC
5520-24W	494W	1079W	879W	1781W	879W	1779W	1869W	2160W
5520-48W	483W	1068W	868W	1770W	868W	1768W	1858W	3568W
5520-12MW-36W	464W	1049W	849W	1751W	849W	1749W	1839W	3549W

Note: It is recommended that primary and secondary power supply units (PSUs) be of the same type to support optimal PoE operation.

Minimum/Maximum Power Consumption and Heat Dissipation

Switch Model	Minimum Power Consumption (W)	Minimum Heat Dissipation (BTU/hr)	Maximum Power Consumption (W)*	Maximum Heat Dissipation (BTU/hr)**
5520-24T	52	176	142	483
5520-24W	54	182	2480	1092
5520-48T	60	205	171	584
5520-48W	59	203	4100	1817
5520-12MW-36W	66	224	4095	1862
5520-48SE	61	209	255	872
5520-24X	48	165	171	585
5520-24T-ACDC	41	140	135	459
5520-48T-ACDC	46	156	141	481
5520-24X-ACDC	39	132	169	575
5520-48SE-ACDC	45	154	223	760

* Includes maximum PoE load (W) through the switch
** Does not include PoE load heat dissipated through external electronic load

Fan and Acoustic Noise

Switch Model	Acoustic Information	
5520-24T	Typical: Single 350W AC PSU, no VIM Maximum: Dual 350W AC PSU, 5520-VIM-4YE	
	Bystander Sound Pressure 39.6 dB(A),0°C to 35°C (32°F to 95°F) (Typical) 77.5 dB(A), 50°C (122°F) (Maximum)	Sound Power 5.1 B, 0°C to 35°C (32°F to 95°F) (Typical) 8.46 B, 50°C (122°F) (Maximum)
5520-24W	Typical: Single 715W AC PSU, no VIM Maximum: Dual 1100W AC PSU, 5520-VIM-4YE	
	Bystander Sound Pressure 50.4 dB(A),0°C to 35°C (32°F to 95°F) (Typical) 67.1 dB(A), 25°C (77°F) (Maximum) 78.9 dB(A), 50°C (122°F) (Maximum)	Sound Power 6 B, 0°C to 35°C (32°F to 95°F) (Typical) 7.61 B, 25°C (77°F) (Maximum) 8.6 B, 50°C (122°F) (Maximum)
5520-48T	Typical: Single 350W AC PSU, no VIM Maximum: Dual 350W AC PSU, 5520-VIM-4YE	
	Bystander Sound Pressure 39.0 dB(A),0°C to 35°C (32°F to 95°F) (Typical) 79.0 dB(A), 50°C (122°F) (Maximum)	Sound Power 4.9 B, 0°C to 35°C (32°F to 95°F) (Typical) 8.52 B, 50°C (122°F) (Maximum))
5520-48W	Typical: Single 1100W AC PSU, no VIM Maximum: Dual 2000W AC PSU (240VAC), 5520-VIM-4YE	
	Bystander Sound Pressure 64.3 dB(A),0°C to 35°C (32°F to 95°F) (Typical) 69.1 dB(A), 25°C (77°F) (Maximum) 79.4 dB(A), 50°C (122°F) (Maximum)	Sound Power 7.24 B, 0°C to 35°C (32°F to 95°F) (Typical) 7.65 B, 25°C (77°F) (Maximum) 8.6 B, 50°C (122°F) (Maximum)
5520-12MW-36W	Typical: Single 1100W AC PSU, no VIM Maximum: Dual 2000W AC PSU (240VAC), 5520-VIM-4YE	
	Bystander Sound Pressure 62.7 dB(A),0°C to 35°C (32°F to 95°F) (Typical) 69.2 dB(A), 25°C (77°F) (Maximum) 78.8 dB(A), 50°C (122°F) (Maximum)	Sound Power 7.25 B, 0°C to 35°C (32°F to 95°F) (Typical) 7.64 B, 25°C (77°F) (Maximum) 8.6 B, 50°C (122°F) (Maximum)
5520-48SE	Typical: Single 350W AC PSU, no VIM Maximum: Dual 350W AC PSU, 5520-VIM-4YE	
	Bystander Sound Pressure 41.4 dB(A),0°C to 35°C (32°F to 95°F) (Typical) 77.9 dB(A), 50°C (122°F) (Maximum)	Sound Power 5.14 B, 0°C to 35°C (32°F to 95°F) (Typical) 8.53 B, 50°C (122°F) (Maximum)
5520-24X	Typical: Single 350W AC PSU, no VIM Maximum: Dual 350W AC PSU, 5520-VIM-4YE	
	Bystander Sound Pressure 40.6 dB(A),0°C to 35°C (32°F to 95°F) (Typical) 76.9 dB(A), 50°C (122°F) (Maximum)	Sound Power 5.05 B, 0°C to 35°C (32°F to 95°F) (Typical) 8.52 B, 50°C (122°F) (Maximum)
5520-48SE-ACDC	Typical: F2B Airflow; Single 550W AC PSU, no VIM Maximum: F2B Airflow; Dual 550W AC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 39.0 dB(A), 0°C to 40°C (Typical) 76.6 dB(A), 50°C (Maximum)	Sound Power 4.98 B, 0°C to 40°C (Typical) 8.65 B, 50°C (Maximum)
	Typical: F2B Airflow; Single 550W DC PSU, no VIM Maximum: F2B Airflow; Dual 550W DC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.7 dB(A), 0°C to 40°C (Typical) 77.2 dB(A), 50°C (Maximum)	Sound Power 4.96 B, 0°C to 40°C (Typical) 8.64 B, 50°C (Maximum)
	Typical: B2F Airflow; Single 550W AC PSU, no VIM Maximum: B2F Airflow; Dual 550W AC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.9 dB(A), 0°C to 40°C (Typical) 77.4 dB(A), 50°C (Maximum)	Sound Power 4.95 B, 0°C to 40°C (Typical) 8.65 B, 50°C (Maximum)
	Typical: B2F Airflow; Single 550W DC PSU, no VIM Maximum: B2F Airflow; Dual 550W DC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 40.2 dB(A), 0°C to 40°C (Typical) 79.5 dB(A), 50°C (Maximum)	Sound Power 5.04 B, 0°C to 40°C (Typical) 8.75 B, 50°C (Maximum)

Switch Model	Acoustic Information	
5520-24X-ACDC	Typical: F2B Airflow; Single 550W AC PSU, no VIM Maximum: F2B Airflow; Dual 550W AC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.1 dB(A), 0°C to 40°C (Typical) 75.8 dB(A), 50°C (Maximum)	Sound Power 4.90 B, 0°C to 40°C (Typical) 8.59 B, 50°C (Maximum)
	Typical: F2B Airflow; Single 550W DC PSU, no VIM Maximum: F2B Airflow; Dual 550W DC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.0 dB(A), 0°C to 40°C (Typical) 76.6 dB(A), 50°C (Maximum)	Sound Power 4.88 B, 0°C to 40°C (Typical) 8.53 B, 50°C (Maximum)
	Typical: B2F Airflow; Single 550W AC PSU, no VIM Maximum: B2F Airflow; Dual 550W AC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.3 dB(A), 0°C to 40°C (Typical) 77.3 dB(A), 50°C (Maximum)	Sound Power 4.94 B, 0°C to 40°C (Typical) 8.64 B, 50°C (Maximum)
	Typical: B2F Airflow; Single 550W DC PSU, no VIM Maximum: B2F Airflow; Dual 550W DC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 40.1 dB(A), 0°C to 40°C (Typical) 79.3 dB(A), 50°C (Maximum)	Sound Power 4.94 B, 0°C to 40°C (Typical) 8.73 B, 50°C (Maximum)
5520-24T-ACDC	Typical: F2B Airflow; Single 550W AC PSU, no VIM Maximum: F2B Airflow; Dual 550W AC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.6 dB(A), 0°C to 40°C (Typical) 76.5 dB(A), 50°C (Maximum)	Sound Power 4.94 B, 0°C to 40°C (Typical) 8.60 B, 50°C (Maximum)
	Typical: F2B Airflow; Single 550W DC PSU, no VIM Maximum: F2B Airflow; Dual 550W DC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.2 dB(A), 0°C to 40°C (Typical) 77.0 dB(A), 50°C (Maximum)	Sound Power 4.89 B, 0°C to 40°C (Typical) 8.56 B, 50°C (Maximum)
	Typical: B2F Airflow; Single 550W AC PSU, no VIM Maximum: B2F Airflow; Dual 550W AC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.46dB(A), 0°C to 40°C (Typical) 76.6 dB(A), 50°C (Maximum)	Sound Power 4.99 B, 0°C to 40°C (Typical) 8.61 B, 50°C (Maximum)
	Typical: B2F Airflow; Single 550W DC PSU, no VIM Maximum: B2F Airflow; Dual 550W DC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 39.8 dB(A), 0°C to 40°C (Typical) 79.0 dB(A), 50°C (Maximum)	Sound Power 5.03 B, 0°C to 40°C (Typical) 8.69 B, 50°C (Maximum)
5520-48T-ACDC	Typical: F2B Airflow; Single 550W AC PSU, no VIM Maximum: F2B Airflow; Dual 550W AC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.2 dB(A), 0°C to 40°C (Typical) 76.4 dB(A), 50°C (Maximum)	Sound Power 4.91 B, 0°C to 40°C (Typical) 8.58 B, 50°C (Maximum)
	Typical: F2B Airflow; Single 550W DC PSU, no VIM Maximum: F2B Airflow; Dual 550W DC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.1 dB(A), 0°C to 40°C (Typical) 77.1 dB(A), 50°C (Maximum)	Sound Power 4.88 B, 0°C to 40°C (Typical) 8.55 B, 50°C (Maximum)
	Typical: B2F Airflow; Single 550W AC PSU, no VIM Maximum: B2F Airflow; Dual 550W AC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 38.5 dB(A), 0°C to 40°C (Typical) 76.7 dB(A), 50°C (Maximum)	Sound Power 4.94 B, 0°C to 40°C (Typical) 8.54 B, 50°C (Maximum)
	Typical: B2F Airflow; Single 550W DC PSU, no VIM Maximum: B2F Airflow; Dual 550W DC PSU, with 5520-VIM-4YE	
	Bystander Sound Pressure 39.6 dB(A), 0°C to 40°C (Typical) 79.0 dB(A), 50°C (Maximum)	Sound Power 5.00 B, 0°C to 40°C (Typical) 8.70 B, 50°C (Maximum)

Product Specifications

Environmental

Environmental Specifications

- EN/ETSI 300 019-2-1 v2.1.2 - Class 1.2 Storage
- EN/ETSI 300 019-2-2 v2.1.2 - Class 2.3 Transportation
- EN/ETSI 300 019-2-3 v2.1.2 - Class 3.1e Operational
- EN/ETSI 300 753 (1997-10) - Acoustic Noise
- ASTM D3580 Random Vibration Unpackaged 1.5 G

Environmental Compliance

- EU RoHS - 2011/65/EU
- EU WEEE - 2012/19/EU
- EU REACH - Regulation (EC) No 1907/2006 - Reporting
- China RoHS - SJ/T 11363-2006
- Taiwan RoHS - CNS 15663 (2013.7)

Environmental Operating Conditions

- Temp: 0°C to 50°C (32°F to 122°F) for Front-Back cooling
- Temp: 0°C to 45°C (32°F to 113°F) for Back-Front cooling (5520-24T, 5520-24X, 5520-48T, 5520-48SE)
- Humidity: 5% to 95% relative humidity, non-condensing
- Altitude: 0 to 3,000 meters (9,850 feet)
- Shock (half sine): 98m/s^2 (10G), 11 ms, 18 shocks
- Random vibration: 3 Hz to 500 Hz at 1.5 G rms

Packaging and Storage Specifications

- Temp: -40°C to 70°C (-40°F to 158°F)
- Humidity: 5% to 95% relative humidity, non-condensing
- Packaged Shock (half sine): 180 m/s^2 (18 G), 6 ms, 600 shocks
- Packaged Vibration: 5 Hz to 62 Hz at velocity 5 mm/s, 62 Hz to 500 Hz at 0.2G
- Packaged Random Vibration: 5 Hz to 20 Hz at 1.0 ASD w/–3 dB/oct. from 20 Hz to 200 Hz
- Packaged Drop Height: 14 drops minimum on sides and corners at 42 inches (<15 kg box)

Energy Star Certified Models*

- 5520-24T / 5520-24T-BASE
- 5520-24X / 5520-24X-BASE
- 5520-24W
- 5520-48T / 5520-48T-BASE
- 5520-48SE / 5520-48SE-BASE
- 5520-48W
- 5520-12MW-36W
- 5520-24T-ACDC / 5520-24T-ACDC-BASE
- 5520-24X-ACDC / 5520-24X-ACDC-BASE
- 5520-48T-ACDC / 5520-48T-ACDC-BASE
- 5520-48SE-ACDC / 5520-48SE-ACDC-BASE

*Energy Star Models must be ordered with Air Temp sensor ESTS01

IEEE 802.3 Media Access Standards

- IEEE 802.3ab 1000BASE-T
- IEEE 802.3bz 2.5G/5GBASE-T
- IEEE 802.3bt Type4 PoE
- IEEE 802.3ae 10GBASE-X
- IEEE 802.3aq 10GBASE-LRM
- IEEE 802.3by 25GBASE-X
- IEEE 802.3ba/802.3bm 40GBASE-X and 100GBASE-X
- IEEE 802.3az Energy Efficient Ethernet

Regulatory and Safety

North American ITE

- UL 60950-1
- UL/CuL 62368-1 Listed
- Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)
- CDRH Letter of Approval (US FDA Approval)
- CAN/CSA 22.2 No. 60950-1

European ITE

- EN 60950-1, EN 62368-1
- EN 60825-1 Class 1 (Lasers Safety)
- 2014/35/EU Low Voltage Directive

International ITE

- CB Report and Certificate per IEC 60950-1
- IEC 62368-1

EMI/EMC Standards

North American EMC for ITE

- FCC CFR 47 Part 15 Class A (USA)
- CB Report and Certificate IEC 62368-1
- RoHS Directive 2011/65/EU
- AS/NZS 60950-1 (Australia /New Zealand)

European EMC Standards

- EN 55035
- EN 55032 Class A EN 55024
- EN 55011
- EN 61000-3-2,2014 (Harmonics)
- EN 61000-3-3 2013 (Flicker)
- EN 300 386 (EMC Telecommunications)
- 2014/30/EU EMC Directive

International EMC Certifications

- CISPR 32, Class A (International Emissions)
- AS/NZS CISPR32
- CISPR 24 Class A (International Immunity)
- IEC 61000-4-2/EN 61000-4-2 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria B
- IEC 61000-4-3 /EN 61000-4-3 Radiated Immunity 10V/m, Criteria A
- IEC 61000-4-4/EN 61000-4-4 Transient Burst, 1 kV, Criteria AB
- IEC 61000-4-5 /EN 61000-4-5 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria B
- IEC 61000-4-6 Conducted Immunity, 0.15-80 MHz, 10V/m unmod. RMS, Criteria A
- IEC/EN 61000-4-11 Power Dips & Interruptions, >30%, 25 periods, Criteria C

Country Specific

- VCCI Class A (Japan Emissions)
- ACMA RCM (Australia Emissions)
- CCC Mark (China)
- KCC Mark, EMC Approval (Korea)
- EAC Mark (Custom Union)
- NRCS Mark (South Africa)
- BSMI Mark (Taiwan)
- Anatel (Brazil)
- NoM (Mexico)

Ordering Notes

Customers ordering a 5520 switch receive the base switch along with Base software license, fan modules and rack- mount kit. At least one Power Supply Unit (PSU) is required for 5520 operation, and a second PSU is required for redundancy and/or additional power.

Versatile Interface Modules (VIMs), power supplies, transceiver/ optics, power cords, console cables, as well as Premier and MACsec licenses must be ordered separately.

Base Software and Optional Premier License

The Base software included with each 5520 unit supports most available switch features. Certain features, however, require a Premier license to operate. A Premier license is available in two forms – a perpetual license or included as part of an Extreme Platform ONE Standard subscription license.

For Switch Engine, a Premier License is required for:

- 5 or more OSPF interfaces
- PIM DM / PM SSM
- Anycast RP (Rendezvous Point)
- Multicast Source Discovery Protocol (MSDP)
- IS-IS/BGP4/MBGP*
- GRE Tunneling
- EthernetVPN (EVPN)
- Multi-Protocol Label Switching (MPLS)***

For Fabric Engine, a Premier License is required for:

- 5 or more OSPF or RIP interfaces
- 3 or more BGP peers
- 25 or more VRFs**
- Layer 3 Virtual Service Networks (L3 VSNs)
- Distributed Virtual Routing (DvR) Controller

* Up to 2 BGP interfaces included in Base software with the EXOS 31.4 Release
** VRFs included in Base software with the VOSS 8.4 Release
*** MPLS available with Switch Engine 31.6 release

Ordering Information

5520 Systems - Fans Included

Part Number	Product Name	Description
5520-24T	5520 24-port Switch	5520 Universal Switch with 24 x 10/100/1000BASE-T Full / Half-Duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 2 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-24W	5520 24-port 90w PoE Switch	5520 Universal Switch with 24 x 10/100/1000BASE-T Full / Half-Duplex 802.3bt 90W PoE MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license.
5520-48SE	5520 48-port SFP Switch	5520 Universal Switch with 48 x 100M/1Gb SFP MACsec capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-48T	5520 48-port Switch	5520 Universal Switch with 48 x 10/100/1000BASE-T Full / Half-Duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-48W	5520 48-port 90w PoE Switch	5520 Universal Switch with 48 x 10/100/1000BASE-T Full / Half-Duplex 802.3bt 90W PoE MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-12MW-36W	5520 48-port 90w PoE with 12 ports multi-rate Switch	5520 Universal Switch with 12 x 100Mb/1Gb/2.5Gb/5Gb 802.3bt 90W PoE MACsec-capable ports plus 36 x 10/100/1000BASE-T 802.3bt 90W PoE Full / Half-Duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-24X	5520 24-port SFP+ Switch	5520 Universal Switch with 24 x 100Mb/1Gb/10Gb SFP+ ports, includes 2 Stacking/QSFP28 ports, 2 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license

5520 Systems – Without Fans and PSUs (ordered separately)

Part Number	Product Name	Description
5520-24T-BASE	5520 24-port Switch	5520 Universal Switch with 24 x 10/100/1000BASE-T Full / Half-Duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 2 unpopulated fan slots, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-48T-BASE	5520 48-port Switch	5520 Universal Switch with 48 x 10/100/1000BASE-T Full / Half-Duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 unpopulated fan slots, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-48SE-BASE	5520 48-port SFP Switch	5520 Universal Switch with 48 x 100M/1Gb SFP MACsec-capable ports, includes 2 x Stacking/ QSFP28 ports, 3 unpopulated fan slots, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-24X-BASE	5520 24-port SFP+ Switch	5520 Universal Switch with 24 x 100Mb/1Gb/10Gb SFP+ ports, includes 2 Stacking/QSFP28 ports, 2 unpopulated fan slots, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license

5520 Systems - AC/DC Switches without Fans and PSUs (ordered separately)

Part Number	Product Name	Description
5520-24T-ACDC-BASE	5520 24-port Switch	5520 Universal Switch with 24 x 10/100/1000BASE-T FDX/HDX MACsec-capable ports, 2 x Stacking/QSFP28 ports, 1 unpopulated VIM slot, 3 unpopulated modular fan slots, 2 unpopulated modular PSU slots, AC or DC PSU capable.
5520-48T-ACDC-BASE	5520 48-port Switch	5520 Universal Switch with 48 x 10/100/1000BASE-T FDX/HDX MACsec-capable ports, 2 x Stacking/QSFP28 ports, 1 unpopulated VIM slot, 3 unpopulated modular fan slots, 2 unpopulated modular PSU slots, AC or DC PSU capable.
5520-24X-ACDC-BASE	5520 24-port SFP+ Switch	5520 Universal Switch with 24 x 1Gb/10Gb SFP+ ports, 2 Stacking/QSFP28 ports, 1 unpopulated VIM slot, 3 unpopulated modular fan slots, 2 unpopulated modular PSU slots, AC or DC PSU capable.
5520-48SE-ACDC-BASE	5520 48-port SFP Switch	5520 Universal Switch with 48 x 1000BASE-X SFP MACsec capable ports, 2 x Stacking/ QSFP28 ports, 1 unpopulated VIM slot, 3 unpopulated modular fan slots, 2 unpopulated modular PSU slots, AC or DC PSU capable.

Versatile Interface Modules (VIM)

Part Number	Product Name	Description
5520-VIM-4X	4-port SFP+ module	5520 Versatile Interface Module with 4 x 1/10Gb SFP+ ports
5520-VIM-4XE	4-port SFP+ module LRM/ MACsec capable	5520 Versatile Interface Module with 4 x 1/10Gb SFP+ LRM and MACsec-capable ports
5520-VIM-4YE	4-port SFP28 module MACsec capable	5520 Versatile Interface Module with 4 x 10/25Gb SFP28 MACsec-capable ports

Power Supplies for use with 5520 AC only Switches

Part Number	Product Name	Description
XN-ACPWR-350W-FB*	350W AC PSU FB	350W AC Power Supply Module - Front to Back airflow, also used on X465 and VSP 4900
XN-ACPWR-715W-FB*	715W AC PSU FB	715W AC PoE Power Supply Module - Front to Back airflow, also used on 5720, X465, and VSP 4900
XN-ACPWR-1100W-FB*	1100W AC PSU FB	1100W AC PoE Power Supply Module - Front to Back airflow, also used on 5720, X465, and VSP 4900
XN-ACPWR-2000W-FB*	2000WAC PSU FB	2000W AC PoE Power Supply Module - Front to Back airflow, also used on 5720, X465, and VSP 4900
XN-ACPWR-350W-BF	350W AC PSU BF	350W Back to Front cooling AC PSU supported on 5520 Non-PoE switches

* XN-ACPWR-xxx-FB power supply units cannot be used with legacy 10941, 10951, 10953, or XN-ACPWR-2000W-F PSUs on the same switch

Power Supplies for use with 5520-ACDC Switches

Part Number	Product Name	Description
XN-ACPWR-550W-FB	550W AC PSU FB	550W AC Power Supply Module - Front to Back airflow
XN-ACPWR-550W-BF	550W AC PSU BF	550W AC Power Supply Module - Back to Front airflow
XN-DCPWR-550W-FB	550W DC PSU FB	550W DC Power Supply Module - Front to Back airflow
XN-DCPWR-550W-BF	550W DC PSU BF	550W DC Power Supply Module - Back to Front airflow

Accessories

Part Number	Product Name	Description
17115	Spare Fan Module FB	Fan module for 5520, Front to Back airflow
17116	Spare Fan Module BF	Fan module for 5520, Back to Front airflow
ESTS01	Air Temperature Thermal Sensor	Ambient Air Temperature Sensor for Energy Star (USB)
XN-4P-RMKIT-005	4-Post Rack Mount Kit	Spare 4-Post Rack Mount Kit for 5520
XN-2P-RMKIT-005**	2-Post Rack Mount Kit	Optional 2-Post Rack Mount Kit for 5520
XN-RJ45-DB9-CONSOLE-CBL	RJ45 to DB9 Console cable	RJ45 to DB9 console cable 6ft
XN-RJ45-USBA-CONSOLE-CBL	RJ45 to USBA Console cable	RJ45 to USB 2.0 Type A male console cable 6ft
XN-RJ45-USBC-CONSOLE-CBL	RJ45 to USBC Console cable	RJ45 to USB-C console cable 6ft

** The optional 2-post rack mount kit can be used with 5520 chassis HW rev AD or higher.

Software Licenses

Part Number	Product Name	Description
5000-PRMR-LIC-P	Premier License for 5000 Series	Perpetual Premier License for 5000 Series switches
5000-MACSEC-LIC-P	MACsec License for the 5000 Series	Perpetual MACsec license for the 5000 Series switches

Management Platform Software Subscriptions

Extreme Networks offers a simple, inclusive subscription program with Extreme Platform ONE. For additional details on subscriptions and product tiers, please refer to the Extreme Platform ONE data sheet.

Warranty

All 5520 Series models are covered under Extreme's Universal LLW policy. For warranty details, visit our Policies and Warranties page.

Power Cords

Power cords are not included with the 5520 in support of our green initiatives but can be ordered separately.

Console Cables

Console cables are not included with the 5520 in support of our green initiatives but can be ordered separately.

Optics/Transceivers

For a list of the optics and transceivers supported on the 5520 Series hardware, refer to our Extreme Optics Compatibility Tool.

Maintenance Services

Extreme's maintenance and support services are provided by in-house engineering experts. We have a rate of over 90% first-person resolution, ensuring efficient operation of your business-essential network.

With 24x7x365 phone support, advanced parts replacement, and on-site support, we augment your staff with expert resources to help you mitigate critical network issues fast. Visit Extreme Maintenance Services for more information.

Certifications

For information on Industry, Security, and Government certifications for 5520 Series models, contact your Sales Representative.

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AP4020

Key Highlights

- Wi-Fi 7 technology - high throughput, low latency, and extended range
- Manageable by Extreme Platform ONE™, ExtremeCloud™ IQ/Controller
- Reduced mean time to resolution with AI
- Extreme Platform ONE Security policy enforcement, Fabric integration
- Simultaneous IT & OT using dual radios

AP Radio Features

- 2x2:2: quad radio design including dedicated security sensor, optional dual 5GHz, and Multi-Link Operations (MLO)

Operational Modes

- Mode 1: 2.4 GHz /5 GHz/6 GHz data radios and sensor
- Mode 2: 2.4 GHz, and dual 5 GHz, and sensor

Cellular Coexistence Filter (CCF)

- Minimizes the impact of interference from cellular networks

Fully Functional with 802.3at: all data radios, sensor, and 2.5W USB

Option to enable USB to 5W with 802.3bt power

Built-in PoE Failover

Flexible, Highly Secure and Cloud-Managed, Wi-Fi 7 Access Point

The AP4020 is a Wi-Fi 7 access point (AP) that delivers increased performance and security across a range of use cases for a seamless wireless experience. Manageable by Extreme Platform ONE™, ExtremeCloud™ IQ/Controller, this AP is built on industry-leading Universal Hardware, enabling investment protection and deployment flexibility. It simplifies operations, reduces risk and saves time by leveraging Extreme's AI. The AP4020 can also automatically enforce secure access rules from Extreme Platform ONE Security.

The AP4020 Wi-Fi 7 Access Point is engineered for peak performance in enterprise environments, featuring a quad-radio design with three 2x2:2 radios. With support across the 6 GHz, 5 GHz, and 2.4 GHz bands, it delivers the next generation of high-efficiency, high-performance connectivity using 802.11be, also known as Extremely High Throughput (EHT). In addition to its advanced speed and bandwidth capabilities, the AP4020 includes a full-time dedicated security sensor, ensuring robust protection while maintaining optimal network performance.

Extreme offers one of the most extensive selections of switches to connect Wi-Fi 6E and Wi-Fi 7 access points. The switches that connect the APs include flexible PoE that offer 30/60/90 watts of power on their multi-gigabit ports to support the higher power requirements of 6 GHz Wi-Fi.

Business Benefits and Outcomes

Improve Operational Efficiency

AP4020 is part of a complete wired and wireless solution that includes AI, Extreme's Universal Wired portfolio, and access security from Extreme Platform ONE Security. Using powerful 802.11be Wi-Fi 7 technology, this solution allows deployment of high-speed and highly secure Wi-Fi into a broad range of environments including high-density venues. Operational efficiency is improved through powerful cloud-based management capabilities offered by Extreme Platform ONE or ExtremeCloud IQ across the wired and wireless infrastructure.

Reduce Risk

With more users, more devices, more applications, and more threats straining the network, the AP4020 was engineered to meet these performance and security challenges. Unlike other APs that scan only part time, the AP4020 features a dedicated tri-frequency sensor that monitors rogue devices full time, eliminating the risk of vulnerability and attacks.

The AP4020, as part of the Extreme Universal Wireless portfolio, allows the user to change an operating system use case without changing the hardware, providing deployment flexibility.

Enhance User Experiences

The enhanced user experience with a Wi-Fi 7 AP4020 access point is marked by ultra-high speeds, low latency, and exceptional connectivity, even in dense or complex environments. Leveraging Wi-Fi 7's Extremely High Throughput (EHT) technology, users enjoy faster downloads, smoother streaming, and more responsive real-time applications like video conferencing and data intensive tasks.

Network Management Flexibility

The AP4020 can be flexibly managed by Extreme Platform ONE or ExtremeCloud IQ from the cloud or on premises.

Extreme Platform ONE™

Extreme Platform ONE™ is an enterprise connectivity platform that integrates networking and security with AI into one powerful and radically simplified experience and licensing model. It supports NetOps, SecOps, and business teams with built in automation and enables organizations to regain control, unlock innovation, and boost productivity through:

- One integrated experience that is easy to use.
- Automation through built-in AI that boosts productivity, reducing cycle time for many tasks from hours to minutes.
- Simplified licensing that makes the solution as easy to buy as it is to use.
- AI driven workflows for configuration, deployment, and management.
- Inventory management simplifies budgeting, planning and compliance.

Wi-Fi 7 (802.11be) Technology

Wi-Fi 7 (802.11be) introduces benefits across the 2.4 GHz, 5 GHz, and 6 GHz bands with reduced latency and jitter for time-sensitive networking applications. Wi-Fi 7 capabilities such as 320 MHz channels, 4K-QAM, and Multi-Link Operation (MLO) helps enable superior speeds and high-density performance. The 6 GHz band enables improved quality of service (QoS) in dense environments, new applications and use cases, and an improved user experience.

* Country dependent

Software-Defined Radios

The AP4020 features two distinct software defined radio (SDR) modes for different deployment scenarios. Dual 5 GHz supports high-density deployments with a dedicated sensor. Featuring quad radios, it can transmit with multiple combinations of three data radios across the 2.4 GHz, 5 GHz, and 6 GHz bands in addition to an always-on dedicated tri-frequency sensor. The AP4020 intelligently monitors the software-configurable radios, enabling network managers to configure network RF technology based on the user environment and to configure the APs in different modes as required. The AP4020 features superior tri-frequency radio performance with a multiband filter that reduces interference and enables 5 GHz and 6 GHz operation across all available channels without restrictions.

Modern IoT Platform

The AP4020 features dual IoT radios enabling multiple concurrent IoT use cases and eliminates the need for an overlay infrastructure with improved performance and reduced complexity of multiple wireless networks. To support both IoT and guest engagement services, the AP4020 integrates Bluetooth® to connect with IoT devices wirelessly and to engage loyal customers with Apple iBeacon. Enterprises can use API-driven applications to send advertisements directly to shoppers, guests, and conference attendees. This makes it ideal for businesses to advertise their app, download pages, captive portals, or site-specific information.

Universal Hardware

The AP4020 is built with Extreme's Universal Hardware technology that allows multiple deployment use cases through a simple change of the software or feature set. This technology allows the user to choose between operating systems tailored to work with cloud- or controller-based management. The desired persona can be selected at startup or changed later. Universal hardware platforms increase flexibility and reduce obsolescence by allowing customers to gradually adopt new technologies without the need for a rip and replace approach to their hardware.

Offered with a Universal World SKU AP, the AP4020 allows customers, partners, and distributors to order one model for any region where Extreme Networks products are sold, replacing the age-old problem of country-specific models.

Security

The AP4020 delivers the highest level of security services, beginning with support for the latest Wi-Fi Alliance WPA3 security certifications. It also acts as an enforcement point for Extreme Platform ONE Security – the industry's most complete network access security solution. Extreme Platform ONE Security provides automated security policy enforcement and manages SSIDs to enforce policies on the AP4020. Extreme Fabric adds additional security by automating provisioning and deployment by connecting to a Fabric-enabled switch. Additionally, the AP supports a stateful L2-L7 DPI firewall for context-based access security, tri-frequency security, a location analytics sensor, and much more. The AP4020 also includes a unique dedicated security sensor for rich insights and threat detection when paired with AirDefense Essentials which is part of an Extreme Platform ONE Standard or ExtremeCloud IQ Pilot license.

Product Specifications

Radio Specifications

Max Users

SSID per Radio/total: 16/48

Users per Radio/total: 512/1536

802.11a

5.150 GHz–5.850 GHz Operating Frequency

Orthogonal Frequency Division Multiplexing (OFDM) Modulation

Rates (Mbps): 54, 48, 36, 24, 18, 12, 9, 6 w/auto fallback

802.11b

2.4 GHz–2.5 GHz Operating Frequency

Direct-Sequence Spread-Spectrum (DSSS) Modulation

Rates (Mbps): 11, 5.5, 2, 1 w/auto fallback

802.11g

2.4 GHz–2.5 GHz Operating Frequency

Orthogonal Frequency Division Multiplexing (OFDM) Modulation

Rates (Mbps): 54, 48, 36, 24, 18, 12, 9, 6 w/auto fallback

802.11n

2.4 GHz–2.5 GHz and 5.150–5.850 GHz Operating Frequency

802.11n Modulation

HT20 High-Throughput (HT) support (for both 2.4 GHz and 5 GHz)

HT40 High-Throughput (HT) support for 5 GHz

A-MPDU and A-MSDU Frame Aggregation

Rates (Mbps): MCS0 – MCS31 (6.5Mbps - 600Mbps)

802.11ac

5.150 GHz–5.850 GHz Operating Frequency

802.11ac Modulation (256-QAM)

5G: 2x2 Multiple-In, Multiple-Out (MIMO) Radio

2.4G: 2x2 Multiple-In, Multiple-Out (MIMO) Radio

Rates (Mbps): MCS0–MCS9 (6.5Mbps), 1733Mbps, NSS = 1-2.

2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio

VHT20/VHT40/VHT80/VHT160

TxBF (Transmit Beamforming)

802.11ax

2.4 GHz-2.5 GHz, 5.15 GHz-5.850 GHz and 5.925 GHz-7.125 GHz Operating Frequencies

802.11ax Modulation (1024-QAM)

Dual-band OFDMA

Rates (Mbps):

• 6G: HE0-HE11 (8 Mbps– 2,400 Mbps)

• 6G: 5G: HE0-HE11 (8 Mbps– 2,400 Mbps)

• 2.4G: HE0-HE11 (8Mbps– 574 Mbps)

2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio at 6 GHz

2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio at 5 GHz

2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio at 2.4 GHz

HE20/HE40/HE80/HE160/HE320 support for 6 GHz

HE20/HE40/HE80/HE160 support for 5 GHz

HE20/HE40 support for 2.4 GHz

UL/DL SU-MIMO and MU-MIMO

TxBF (Transmit Beamforming)

802.11be

2.4 GHz–2.5 GHz, 5.15 GHz–5.850 GHz, and 5.925 GHz–7.125 GHz Operating Frequencies

802.11be modulation (4096-QAM)

Rates (Mbps):

• 6G: EHT0-EHT13 (8Mbps–5,765 Mbps)

• 5G: EHT0-EHT13 (8Mbps–2,882 Mbps)

• 2.4G: EHT0-EHT13 (8Mbps–688 Mbps)

2x2:2 stream MIMO radio at 6 GHz

2x2:2 stream MIMO radio at 5 GHz

2x2:2 stream MIMO radio at 2.4 GHz

EHT20/EHT40/EHT80/EHT160/EHT320 support for 6 GHz

EHT20/EHT40/EHT80/EHT160 support for 5 GHz

EHT20/EHT40 support for 2.4 GHz

UL/DL SU-MIMO and MU-MIMO

TxBF (Transmit Beamforming)

Dual IoT Radios

(2) radios for Thread, Zigbee®, Bluetooth 5.4 Low Energy, IEEE 802.15.4 Thread

Interfaces

Eth0, Eth1: (2) wired Ethernet ports (RJ45)

Eth0: 100/1000/2500/5000Mbps autosensing link speed Ethernet port, PoE PD

Eth1: 100/1000/2500 Mbps autosensing link speed Ethernet port, PoE PD

802.3az Energy-Efficient Ethernet (EEE)

USB 2.0, Type A, 5V/500mA with POE 802.3at or 5V/1,000mA with PoE 802.3bt

Power Options

Power Draw: 802.3at PoE: Typical 21W with USB 2.5W; Max: 25.5W 2.5W USB

Power Draw: 802.3bt: Max: 28W with 5W USB

PoE Failover

Physical Specifications

Model	Dimensions	Weight
AP4020	238mm x 238mm x 38mm 9.37in. x 9.37in. x 1.50in.	1.30 kg 2.9 lbs
AP4020X	288mm x 245mm x 43mm 11.34in. x 9.65in. x 1.69in.	1.43 kg 3.2 lbs
AP4020FX	245mm x 245mm x 43mm 9.65in. x 9.65in. x 1.69in.	1.40 kg 3.1 lbs

Environmental Specifications

AP4020 Operating: 0°C to 50°C (32°F to 122°F)
AP4020X Operating: -20°C to 55°C (-4°F to 131°F)
AP4020FX Operating: -20°C to 55°C (-4°F to 131°F)
Storage: 0°C to 70°C (32°F to 158°F)
Humidity: 0% to 95% (non-condensing)

Security

Kensington lock slot
Trusted Platform Module (TPM)

Internal Antennas

(2) dual band 2.4 GHz and 5 GHz
(2) single band 5 GHz
(2) single band 6 GHz
(1) 2 GHz/5 GHz/6 GHz sensor
(3) IoT sensor

Mounting

AP support 15/16 in. flush ceiling tile included in the box
Wall mount included in the box or sold as an accessory
Sculpted ceiling tile 15/16 in. wide t-bar sold as an accessory
Sculpted ceiling tile 9/16 in. wide t-bar sold as an accessory
Beam sold as an accessory
Junction box sold as an accessory
IL or 9/16 in. t-bar sold as an accessory
SL (Silhouette) sold as an accessory
WiNG main plate adaptor sold as an accessory
Built-in slot for Kensington

Environmental Compliance

EU RoHS – 2011/65/EU and Amendments(EU) 2015/863
EU WEEE – 2012/19/EU
EU REACH - Regulation (EC) No 1907/2006 – Reporting
EU SCIP – EU Waste Framework Directive
China RoHS – 2 SJ/T 11364-2014
Taiwan RoHS CNS 15663 (2013.7)

Regulatory Compliance

Radio Standards USA

Part 15C - 15.247
Part 15E - 15.407
RF exposure - FCC Part 1.1307

Radio Standards Canada

RSS 247 for 2.4G & 5GHz
RSS 248 6GHz RLAN
RF exposure - RSS-102: Issue 5, 2015

Radio Standards CE

2014/53/EU Radio Equipment Directive
EN 300 328, EN 301 893, EN 302 502, EN 300 440
EN301 489 1, EN 301 489 17, EN 62311, EN 50385

Regulatory and Safety

North American ITE

UL 60950-1 2nd Edition listed device (U.S.)
CSA 22.2 No. 60950-1 2nd Edition 2014 (Canada)
UL/CuL 62368-1 Listed
UL 2043 Plenum rated

European ITE

EN 62368-1
2014/35/EU Low Voltage Directive

International ITE

CB IEC 62368-1 2nd Edition + National Differences
CB IEC 62368-1 1st and 3rd Editions + National Differences
AS/NZS 60950-1 (Australia /New Zealand)

EMI/EMC Standards

North American EMC Standards

FCC CFR 47 part 15 Class B (USA)
ICES-003 Class B (Canada)

European EMC Standards

EN 55032 Class B
EN 55035
EN 55011
EN 60601-1-2
EN 61000-3-2: (Harmonics)
EN 61000-3-3 (Flicker)
2014/30/EU EMC Directive

International EMC Certifications

CISPR 32 Class B (International Emissions)

CISPR 11
AS/NZS CISPR32
CISPR 35 (International Immunity)

AP4020 Antenna Gain

Software Mode	Radio 0	Radio 1	Radio 2	Sensor	IoT Radio 1	IoT Radio 2
1	2.4 GHz 1.5dBi	5 GHz 5.3dBi	6 GHz 5.9dBi	2.4 GHz: 2.2dBi 5 GHz: 4.5dBi 6 GHz: 5.4dBi	2.2dBi	1.6dBi
2	2.4 GHz 1.5dBi	5 GHz 5.3dBi	5 GHz 3.7dBi	2.4 GHz: 2.2dBi 5 GHz: 4.5dBi 6 GHz: 5.4dBi	2.2dBi	1.6dBi

Wi-Fi Alliance Certifications

Connectivity	Wi-Fi CERTIFIED™ 7 Wi-Fi CERTIFIED 6® Release 2 Wi-Fi CERTIFIED™ a, ac, n, Wi-Fi Enhanced Open™
Optimization	WMM® Wi-Fi Agile Multiband™
Security	Protected Management Frames WPA2™ – Enterprise, Personal WPA3™ – Enterprise, Personal

Power and Sensitivity Tables

Table 1: Power and Sensitivity - 2.4 GHz Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11b	1 - 11 Mbps	17	-93, -86
11g	6 Mbps	17	-92
	54 Mbps	15	-73
11n HT20	MCS0, 7	17, 15	-92, -72
11n HT40	MCS0, 7	17, 15	-90, -70
11ax HE20	HE0, 11	17, 13	-92, -61
11ax HE40	HE0, 11	17, 13	-90, -59
11be EHT20	EHT1, 13	17, 12	-91, -54
11be EHT40	EHT1, 13	17, 12	-89, -52

Power and Sensitivity – 5.0 GHz Full Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-92
	54 Mbps	16	-73
11n HT20	MCS0, 7	18, 16	-92, -73
11n HT40	MCS0, 7	18, 16	-90, -71
11ac VHT20	MCSO, 8	18, 15	-92, -70
11ac VHT40	MCSO, 9	18, 15	-90, -64
11ac VHT80	MCSO, 9	18, 15	-88, -62
11ac VHT160	MCSO, 9	18, 15	-85, -60
11ax HE20	HE0, 11	18, 14	-92, -62
11ax HE40	HE0, 11	18, 14	-90, -60
11ax HE80	HE0, 11	18, 14	-88, -58
11ax HE160	HE0, 11	18, 14	-85, -55
11be EHT20	EHT0, 13	18, 12	-92, -55
11be EHT40	EHT0, 13	18, 12	-90, -53
11be EHT80	EHT0, 13	18, 12	-87, -51
11be EHT160	EHT0, 13	18, 12	-87, -51

Power and Sensitivity – 5.0 GHz High Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-91
	54 Mbps	16	-72
11n HT20	MCS0, 7	18, 16	-91, -72
11n HT40	MCS0, 7	18, 16	-89, -70
11ac VHT20	MCSO, 8	18, 15	-91, -69
11ac VHT40	MCSO, 9	18, 15	-89, -65
11ac VHT80	MCSO, 9	18, 15	-87, -62
11ac VHT160	MCSO, 9	18, 15	-85, -60
11ax HE20	HE0, 11	18, 14	-91, -61
11ax HE40	HE0, 11	18, 14	-89, -59
11ax HE80	HE0, 11	18, 14	-87, -57
11ax HE160	HE0, 11	18, 14	-85, -55
11be EHT20	EHT0, 13	18, 12	-91, -54
11be EHT40	EHT0, 13	18, 12	-88, -52
11be EHT80	EHT0, 13	18, 12	-86, -50
11be EHT160	EHT0, 13	18, 12	-84, -48

Power and Sensitivity - 5.0 GHz Low Radio

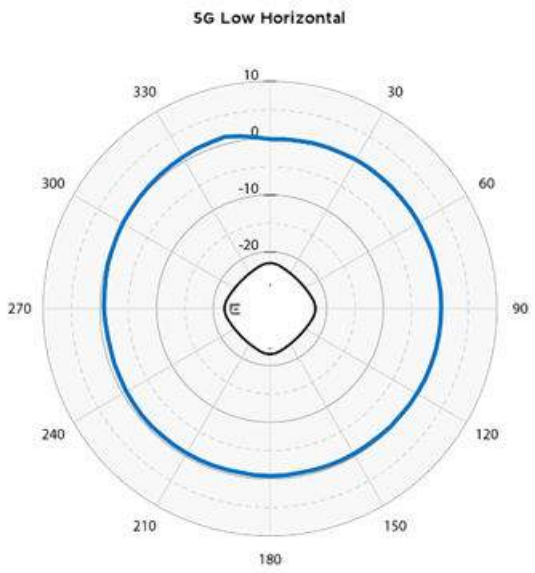
Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-94
	54 Mbps	16	-75
11n HT20	MCS0, 7	18, 16	-94, -75
11n HT40	MCS0, 7	18, 16	-92, -73
11ac VHT20	MCSO, 8	18, 15	-94, -72
11ac VHT40	MCSO, 9	18, 15	-92, -66
11ac VHT80	MCSO, 9	18, 15	-90, -64
11ac VHT160	MCSO, 9	18, 15	-88, -61
11ax HE20	HE0, 11	18, 14	-94, -64
11ax HE40	HE0, 11	18, 14	-92, -62
11ax HE80	HE0, 11	18, 14	-90, -59
11ax HE160	HE0, 11	18, 14	-87, -56
11be EHT20	EHT0, 13	18, 12	-94, -56
11be EHT40	EHT0, 13	18, 12	-92, -54

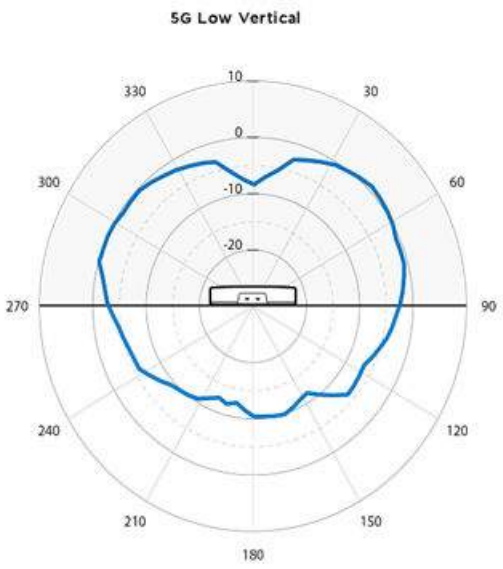
Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11be EHT80	EHT0, 13	18, 12	-89, -52
11be EHT160	EHT0, 13	18, 12	-86, -49

Power and Sensitivity - 6.0 GHz Full Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-92
	54 Mbps	16	-73
11n HT20	MCS0, 7	18, 16	-92, -73
11n HT40	MCS0, 7	18, 16	-90, -71
11ac VHT20	MCSO, 8	18, 15	-92, -70
11ac VHT40	MCSO, 9	18, 15	-90, -65
11ac VHT80	MCSO, 9	18, 15	-88, -62
11ac VHT160	MCSO, 9	18, 15	-85, -59
11ax HE20	HE0, 11	18, 14	-92, -62
11ax HE40	HE0, 11	18, 14	-90, -60
11ax HE80	HE0, 11	18, 14	-88, -58
11ax HE160	HE0, 11	18, 14	-85, -55
11be EHT20	EHT0, 13	18, 12	-92, -55
11be EHT40	EHT0, 13	18, 12	-90, -53
11be EHT80	EHT0, 13	18, 12	-88, -51
11be EHT160	EHT0, 13	18, 12	-86, -48
11be EHT320	EHT0, 13	18, 12	-83, -45

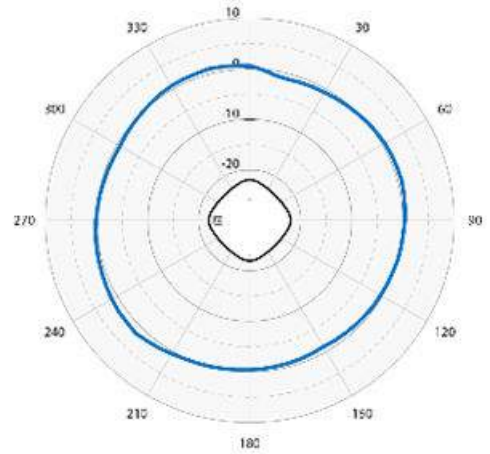
Radiation Patterns – 5G Low Azimuth and Elevation



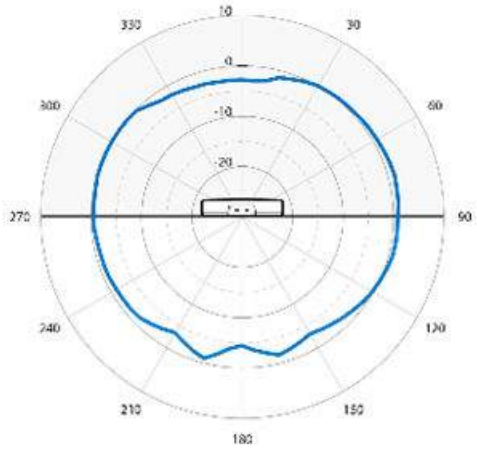


Radiation Patterns – 2G, 5G, and 6G Azimuth and Elevation

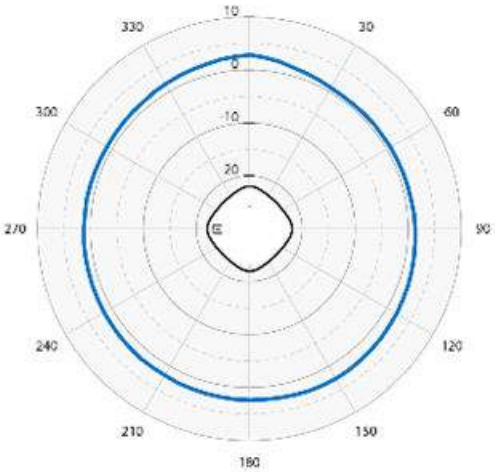
2G Horizontal



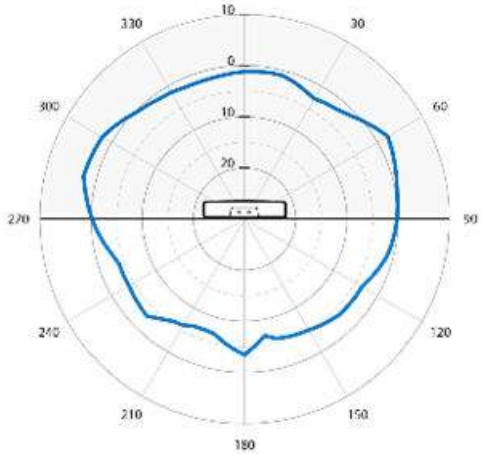
2G Vertical



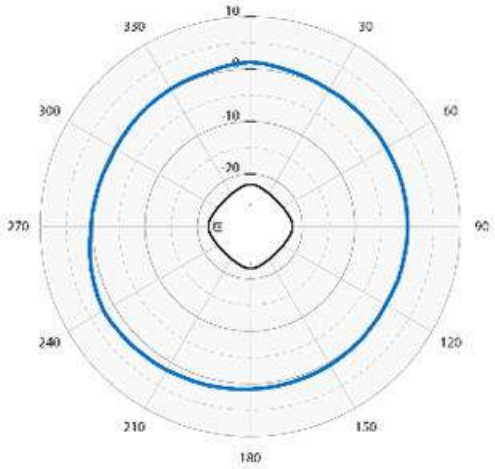
5G Horizontal



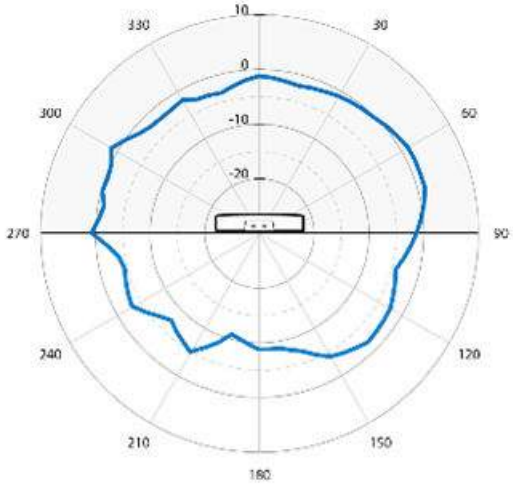
5G Vertical



6G Horizontal

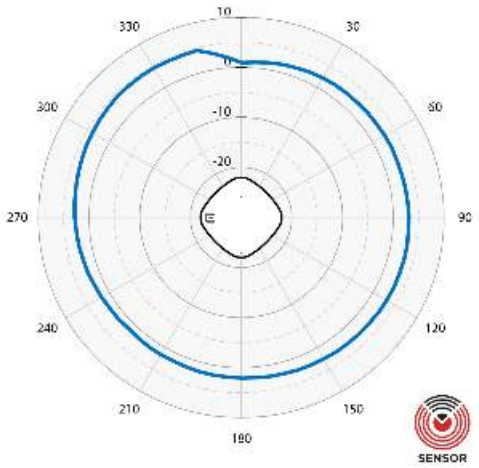


6G Vertical

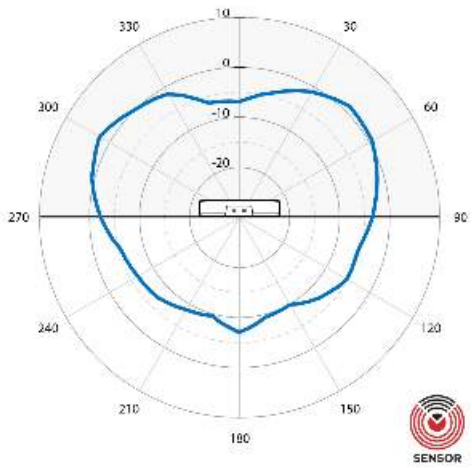


Radiation Patterns – Sensor 2G, 5G, and 6G Azimuth and Elevation

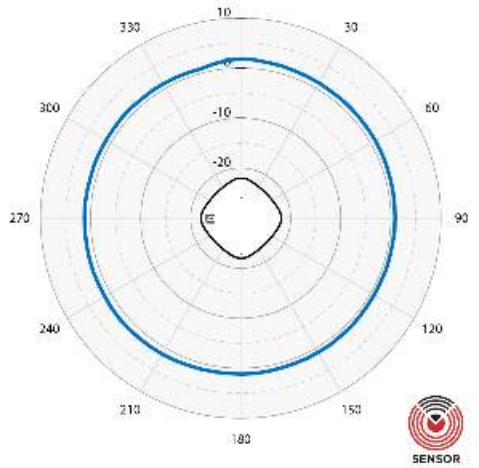
Sensor 2G Horizontal



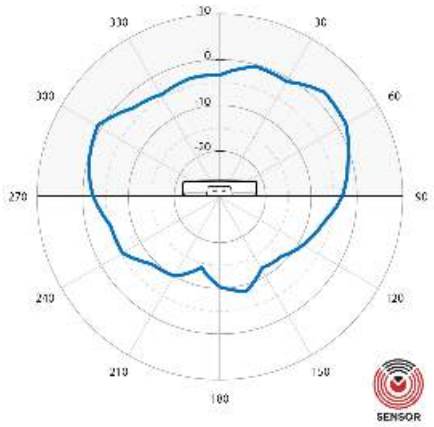
Sensor 2G Vertical



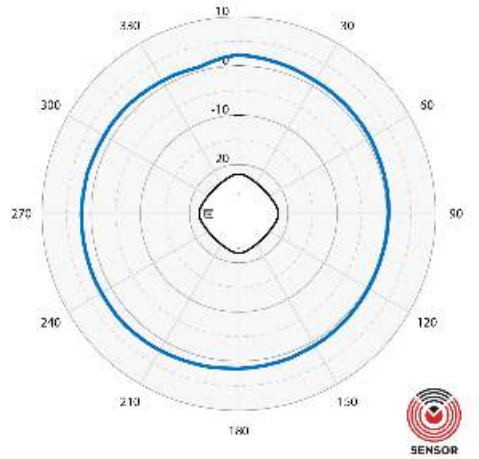
Sensor 5G Horizontal



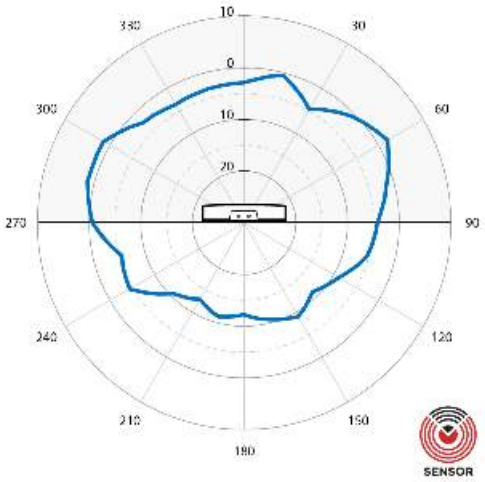
Sensor 5G Vertical



Sensor 6G Horizontal

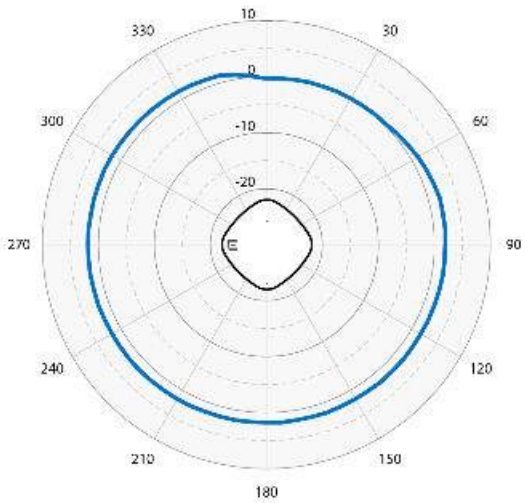


Sensor 6G Vertical

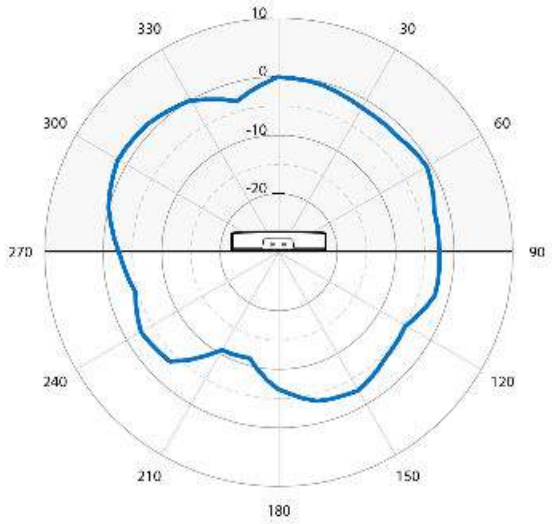


Radiation Patterns – BLE Radio 1 and Radio 2 Azimuth and Elevation

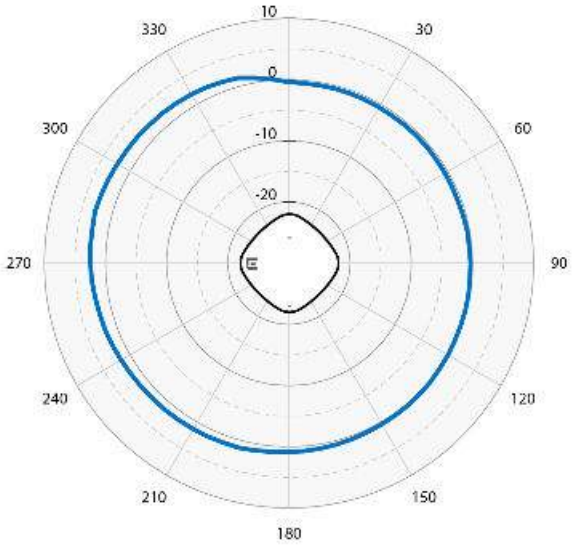
BLE Radio 1 Horizontal



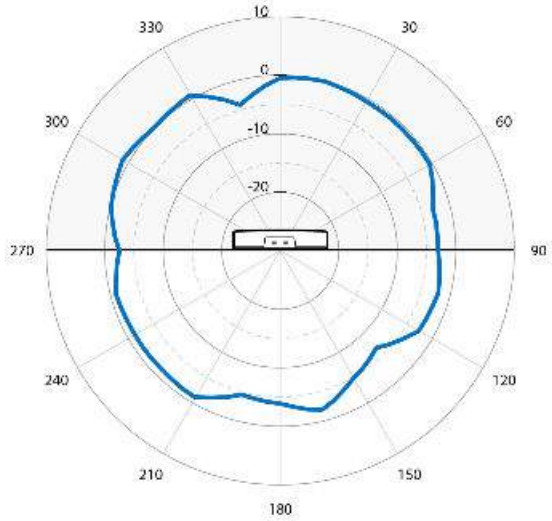
BLE Radio 1 Vertical



BLE Radio 2 Horizontal



BLE Radio 2 Vertical



Ordering Information

AP4020 Series - SKUs

Part number	Description
AP4020-WW	Indoor Quad Radio Wi-Fi 7 (2x2:2): 2.4GHz, 5GHz, 6GHz and dedicated sensor, Multi-Rate Port, internal antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: World SKU
AP4020X-WW	Indoor Quad Radio Wi-Fi 7 (2x2:2): 2.4GHz, 5GHz, 6GHz and dedicated sensor, Multi-Rate, Ext ant: 2.4GHz and 5GHz ports, Integral on 6GHz Extended Temp, (4) AI-TS06360 tri band ant incl, T-Bar Incl Mt (AH-ACC-BKT-AX-TB). Domain: World SKU
AP4020-EG	Indoor Quad Radio Wi-Fi 7 (2x2:2): 2.4GHz, 5GHz, 6GHz and dedicated sensor, Multi-Rate Port, internal antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: Egypt
AP4020-IL	Indoor Quad Radio Wi-Fi 7 (2x2:2): 2.4GHz, 5GHz, 6GHz and dedicated sensor, Multi-Rate Port, internal antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: Israel
AP4020-WW-TAA	Indoor Quad Radio Wi-Fi 7 (2x2:2): 2.4GHz, 5GHz, 6GHz and dedicated sensor, Multi-Rate Port, internal antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: World SKU TAA Compliant
AP4020X-WW-TAA	Indoor Quad Radio Wi-Fi 7 (2x2:2): 2.4GHz, 5GHz, 6GHz & dedicated sensor, Multi-Rate, Ext ant: 2.4GHz & 5GHz ports, Integral 6GHz, Ext Temp, (4) AI-TS06360 tri band ant incl, T-Bar Incl Mt (AH-ACC-BKT-AX-TB). Domain World SKU TAA Compliant

AP4020 Series – FX SKUs (For USA and Canada only)

Part Number	Description
AP4020FX-WW	Indoor Quad Radio Wi-Fi 7 (2x2:2): 2.4 GHz, 5GHz, 6GHz and dedicated sensor, Multi-Rate Port, Extended Temp, External antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: World SKU
AP4020FX-WW-TAA	Indoor Quad Radio Wi-Fi 7 (2x2:2): 2.4 GHz, 5GHz, 6GHz and dedicated sensor, Multi-Rate Port, Extended Temp, External antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: World SKU TAA Compliant

Antennas for AP4020X

NOTE: Quantity (4) AI-TS06360 antennas included with AP4020X-WW and AP4020X-WW-TAA models

Part Number	Description
AI-TS06360	3dBi (2.4 GHz) and 5dBi (5 and 6 GHz) Indoor Dipole Tri-band with RP-SMA connector
AI-TQ08055	7dBi (2.4 GHz) and 6dBi (5 and 6 GHz) Indoor Hex Sector 2.4GHz 65 Degrees and 5GHz 55 Degrees Tri-band with attached 1 meter 6-port RP-SMA cable. Mount included
AIO-DQ15021-RPSMA	15 dBi Indoor/Outdoor Sector 21 Deg, 36 inch cable, RPSMA
AIO-DD05120-RPSMA	Panel, 120 deg sector, 5dBi/5dBi, dual band, outdoor, 36" lead with 2 RP-SMA connectors
AIO-DD75060-RPSMA	Panel, 60 deg sector, 7.5dBi (2.4 GHz) and 7.5dBi (2.4GHz), dual band 36" lead with 2 RP-SMA connectors, outdoor rated
30702	Indoor, 2.3-2.7/4.9-6.1GHz, 4-feed, 5dBi, 120-degree sector antenna with standard RPSMA-type plug connector
ML-2452-SEC6M4-036	Polarized Panel, Azimuth 100° Elevation Beamwidth 80 deg, 6.92dBi/ 7.3dBi, dual band, indoor 32" leads, 4 port RP-SMA plug connectors
AI-TQ06120	6dBi Indoor Quad Sector 120 Degree Tri-band with attached 1 meter 4-port RP-SMA cable. Mount included

Antennas for AP4020FX - US and Canada Only

Part Number	Description
AI-TS06360	3dBi (2.4 GHz) and 5dBi (5 and 6 GHz) Indoor Dipole Tri-band with RP-SMA connector
AI-TH08055	7dBi (2.4 GHz) and 6dBi (5 and 6 GHz) Indoor Hex Sector 2.4GHz 65 Degrees and 5GHz 55 Degrees Tri-band with attached 1 meter 6-port RP-SMA cable. Mount included.
AI-TH14035	12dBi (2.4 GHz) and 11.5dBi (5 and 6 GHz) Indoor Hex Sector 35 Degree Tri-band with detachable 1 meter 6-port RP-SMA cable. Mount included.
AI-TH06120	6dBi Indoor Hex Sector 120 Degree Tri-band with 6 port RP-SMA

Mounting accessories

Part number	Indoor AP mounting	Notes
AH-ACC-BKT-AX-TB	Mounting bracket for Prelude 15/16" and Suprafine 9/16" ceilings and walls	Ships with AP4020 in the box Can be used for wall - 0.25"
AH-ACC-BKT-AX-WL	Mounting bracket for direct-to-wall installations	Can be used for wall - 1.25"
AH-ACC-BKT-AX-IL	Mounting bracket for interlude ceilings	
AH-ACC-BKT-AX-SL	Mounting bracket for Armstrong 1/8" and 1/4" main beam Silhouette reveal ceiling grids	Up to 0.33" ceiling tile protrusion
ACC-BKT-AX-JB	Junction box or wall mounting for indoor APs	Gang/junction box
ACC-BKT-AX-BEAM	Beam mounting for indoor APs	Up to 0.78" thick beam
AH-ACC-BKT-916-KIT	9/16" ceiling mount brackets for non-flat/protruded ceiling tiles - use with AH-ACC-BKT-AX-TB	9/16" non-flat/protruded ceiling tiles
ACC-BKT-TB-NF	Adapter bracket AH-ACC-BKT-TB for 15/16" wide t-bars non-flat/protruded ceiling tiles	5/16" wide t-bars non-flat/protruded ceiling tiles
ACC-BKT-AX-WNGADAPT	Adapter bracket for cloud AP to wing mounting plate (#37201). 10 pack.	Allow twist mount to mount to legacy mounts

Power accessories

Part number	Description
37219	PWR adapter 12V DC, 3A, 2.5 mm x 5.5 mm connector

Other accessories

Part number	Description
ACC-WIFI-MICRO-USB	Micro-USB to USB console adapter cable for Extreme wireless APs

See Product Installation Guide for more details.

Warranty

The AP4020 is covered under Extreme's Universal LLW policy. For warranty details, visit: http://www.extremenetworks.com/support/policies

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Data Sheet

AP4060 Series Access Points

Highlights

- Wi-Fi 7 technology - high throughput, low latency and extended range
- Manageable by Extreme Platform ONE™, ExtremeCloud™ IQ / Controller
- Extreme Platform ONE™ Security policy enforcement, Fabric integration
- Simultaneous IT & OT using dual radios

AP Radio Features

Quad-Radio Design

- 2.4 GHz (2x2:2)
- 5 GHz (2x2:2)
- 6 GHz (2x2:2)*
- Dedicated Tri-band Sensor

Operational Modes

- 2.4 GHz/5 GHz/6 GHz* + tri-band sensor
- 2.4 GHz/5 GHz/5 GHz + tri-band sensor

Integrated IoT Radios

- Two IoT Radios with Bluetooth Low Energy (BLE), Zigbee, Thread Capabilities

Designed for Harsh Environments

- IP67 Weatherized Enclosure
- Extended temp range: -40°C to +60°C

Cellular Coexistence Filter (CCF)

- Minimizes the impact of interference from cellular networks

Full functionality with 802.3at Power

- PoE Failover

*6 GHz operation is country dependent

Flexible, Highly Secure and Cloud-Managed, Wi-Fi 7 Weatherized Access Point

The AP4060 is a Wi-Fi 7 weatherized access point (AP) that delivers increased performance and security across a range of use cases for a seamless wireless experience. Manageable by Extreme Platform ONE™, ExtremeCloud™ IQ / Controller, this AP is built on industry-leading Universal Hardware technology, enabling investment protection and deployment flexibility. It simplifies operations, reduces risk and saves time by leveraging Extreme's AI. The AP4060 can also automatically enforce secure access rules from Extreme Platform ONE™ Security.

The AP4060 is engineered for peak performance in enterprise environments, featuring a quad-radio design with three 2x2:2 radios. It is designed for harsh environments, from hurricane force winds to sub-zero temperature. The AP4060 is IP67 rated and extends Extreme's Wi-Fi 7 coverage in a sleek form factor.

With support across the 6 GHz, 5 GHz, and 2.4 GHz bands, it delivers the next generation of high-efficiency, high-performance connectivity using 802.11be, also known as Extremely High Throughput (EHT). In addition to its advanced speed and bandwidth capabilities, the AP4060 includes a full-time dedicated security sensor, ensuring robust protection while maintaining optimal network performance.

Extreme offers one of the most extensive selections of switches to connect Wi-Fi 6E and Wi-Fi 7 access points. The switches that connect the APs include flexible PoE that offer 30/60/90 watts of power on their multi-gigabit ports to support the higher power requirements of Wi-Fi 7 and 6 GHz.

Business Benefits and Outcomes

Improve Operational Efficiency

The AP4060 series is part of a complete wired and wireless solution that combines AIOps provided by ExtremeCloud IQ, Extreme's Universal Wired portfolio, and advanced security from Extreme Platform ONE Security. Using powerful 802.11be Wi-Fi 7 technology, this solution allows deployment of high-speed and highly secure Wi-Fi into a broad range of environments, including high-density venues. ExtremeCloud IQ improves operational efficiency through powerful cloud-based management capabilities across the wired and wireless infrastructure.

Reduce Risk

With more users, more devices, more applications, and more threats straining the network, the AP4060 series was engineered to meet these performance and security challenges. Unlike other APs that scan only part time, the AP4060 features a dedicated tri-frequency sensor that monitors rogue devices full time, eliminating the risk of vulnerability and attacks. The AP4060, as part of the Extreme Universal Wireless portfolio, allows the user to change an operating system use case without changing the hardware, providing deployment flexibility.

Enhance User Experiences

The enhanced user experience with a Wi-Fi 7 AP4060 series access point is marked by high speeds, low latency, and exceptional connectivity, even in dense or complex environments. Leveraging Wi-Fi 7's Extremely High Throughput (EHT) technology, users enjoy faster downloads, smoother streaming, and more responsive real-time applications like video conferencing and data intensive tasks.

Models to Suit Customer Needs

The AP4060 series includes two models, each designed for specific deployment needs. Both are IP67 rated and support and extended temperature ranges from -40°C to 60°C (-40°F to 140°F). Both also include built-in GPS to conform with AFC guidelines for 6 GHz deployments.

- AP4060: features omnidirectional internal antennas, delivering optimal coverage for high-density outdoor environments and ideal for on-pole, or wall-mount deployments.
- AP4060X: offers external connections enabling flexible antenna choices to support diverse environments for 2.4 GHz, 5 GHz, and 6 GHz where supported.

AP4060 Wi-Fi 7 Access Point

AP4060X Wi-Fi 7 Access Point

Network Management Flexibility

The AP4060 series can be flexibly managed by Extreme Platform ONE or ExtremeCloud IQ from the cloud or on premises.

Extreme Platform ONE™

Extreme Platform ONE is Extreme Networks' enterprise connectivity platform that integrates networking and security with AI into one powerful and radically simplified experience and licensing model. It supports NetOps, SecOps, and business teams with built-in automation and enables organizations to regain control, unlock innovation, and boost productivity through:

- One integrated experience that is easy to use.
- Automation through built-in AI that boosts productivity, reducing cycle time for many tasks from hours to minutes.
- Simplified licensing that makes the solution as easy to buy as it is to use.
- AI-powered workflows for configuration, deployment, and management.
- Inventory management simplifies budgeting, planning, and compliance.

Wi-Fi 7 (802.11be) Technology

Wi-Fi 7 (802.11be) introduces benefits across the 2.4 GHz, 5 GHz, and 6 GHz* bands with reduced latency and jitter for time-sensitive networking applications. Wi-Fi 7 capabilities such as 320 MHz channels, 4K-QAM, and Multi-Link Operation (MLO) helps enable superior speeds and high-density performance. The 6 GHz* band enables improved quality of service (QoS) in dense environments, new applications and use cases, and an improved user experience.

*6 GHz operation is country dependent

Software-Defined Radios

The Wi-Fi 7 AP4060 series features two distinct software defined radio (SDR) modes for different deployment scenarios. Dual 5 GHz supports high-density deployments with a dedicated sensor. Featuring quad radios, it can transmit with multiple combinations of three data radios across the 2.4 GHz, 5 GHz, and 6 GHz bands in addition to an always-on dedicated tri-band sensor. The AP4060 intelligently monitors the software-configurable radios, enabling network managers to configure network RF technology based on the user environment and to configure the APs in different modes as required. The AP4060 features superior tri-frequency radio performance with a multiband filter that reduces interference and enables 5 GHz and 6 GHz operation across all available channels without restrictions.

Modern IoT Platform

The AP4060 series features dual IoT radios enabling multiple concurrent IoT use cases and eliminates the need for an overlay infrastructure with improved performance and reduced complexity of multiple wireless networks. To support both IoT and guest engagement services, the AP4060 integrates Bluetooth® to connect with IoT devices wirelessly and to engage loyal customers with Apple iBeacon. Enterprises can use API-driven applications to send advertisements directly to shoppers, guests, and conference attendees. This makes it ideal for businesses to advertise their app, download pages, captive portals, or site-specific information.

Security

The AP4060 series delivers the highest level of security services, beginning with support for the latest Wi-Fi Alliance WPA3 security certifications. Also, it acts as an enforcement point for Extreme Platform ONE Security – the industry's most complete network access security solution. Extreme Platform ONE Security provides automated security policy enforcement and manages SSIDs to enforce policies on the AP4060. Extreme Fabric adds additional security by automating provisioning and deployment by connecting to a Fabric-enabled switch. Additionally, the AP supports a stateful L2-L7 DPI firewall for context-based access security, tri-frequency security, a location analytics sensor, and much more. The AP4060 also includes a unique dedicated security sensor for rich insights and threat detection when paired with Extreme AirDefense.

Universal Hardware

The AP4060 series is built with Extreme's Universal Hardware technology that allows multiple deployment use cases through a simple change of the software or feature set. This technology allows the user to choose between operating systems tailored to work with cloud- or controller-based management. The desired persona can be selected at startup or changed later. Universal hardware platforms increase flexibility and reduce obsolescence by allowing customers to gradually adopt new technologies without the need for a rip and replace approach to their hardware.

Offered with Universal World SKUs, the AP4060 series allows customers, partners, and distributors to order one model for any region where Extreme Networks products are sold, replacing the age-old problem of country-specific models.

6 GHz Spectrum and AFC

The AP4060 Series of outdoor APs ship with integrated GPS to unlock the full benefits of 6 GHz standard power operation in the USA and Canada. The GPS in the APs provide precise geolocation to an AFC (Automated Frequency Coordination) service via Extreme Platform ONE or ExtremeCloud IQ, which dynamically assigns approved channels and power levels for optimal performance and regulatory compliance. Please refer to AP4060 technical documentation for more detailed information.

Product Specifications

Radio Specifications

Max Users

- SSID per Radio/Total: 16/48
- Users per Radio/Total: 512/1536

802.11a

- 5.150 GHz–5.850 GHz Operating Frequency
- Orthogonal Frequency-Division Multiplexing (OFDM) Modulation
- Rates (Mbps): 54, 48, 36, 24, 18, 12, 9, 6 w/auto fallback

802.11b

- 2.4 GHz–2.5 GHz Operating Frequency
- Direct-Sequence Spread-Spectrum (DSSS) modulation
- Rates (Mbps): 11, 5.5, 2, 1 w/auto fallback

802.11g

- 2.4 GHz–2.5 GHz Operating Frequency
- Orthogonal Frequency-Division Multiplexing (OFDM) Modulation
- Rates (Mbps): 54, 48, 36, 24, 18, 12, 9, 6 w/auto fallback

802.11n

- 2.4 GHz–2.5 GHz and 5.150 GHz–5.850 GHz Operating Frequency
- 802.11n Modulation
- HT20 High-Throughput (HT) Support (for both 2.4 GHz and 5 GHz)
- HT40 HT Support for 5 GHz
- A-MPDU and A-MSDU frame aggregation
- Rates (Mbps): MCS0–MCS31 (6.5 Mbps–600 Mbps)

802.11ac

- 5.15 GHz–5.850 GHz operating frequency
- 802.11ac modulation (256-QAM)
- 5G: 2x2 Multiple-In, Multiple-Out (MIMO) radio
- 2.4G: 2.x2 Multiple-In, Multiple-Out (MIMO) radio
- Rates (Mbps): MCS0–MCS9 (6.5 Mbps), 1733 Mbps, NSS = 1-2
- 2x2:2 stream Multiple-In, Multiple-Out (MIMO) radio
- VHT20/VHT40/VHT80/VHT160
- TxBF (Transmit Beamforming)

802.11ax

- 2.4 GHz–2.5 GHz, 5.15 GHz–5.850 GHz, and 5.925 GHz–7.125 GHz operating frequencies
- 802.11ax modulation (1024-QAM)
- Dual-band OFDMA
- Rates (Mbps):
  - 6G Rate: HE0-HE11 (8 Mbps–2,400 Mbps)
  - 5G Rate: HE0-HE11 (8 Mbps– 2,400 Mbps)
  - 2.4G Rate: HE0-HE11 (8 Mbps– 574 Mbps)
- 2x2:2 stream Multiple-In, Multiple-Out (MIMO) radio at 6 GHz
- 2x2:2 stream Multiple-In, Multiple-Out (MIMO) radio at 5 GHz
- 2x2:2 stream Multiple-In, Multiple-Out (MIMO) radio at 2.4 GHz
- HE20/HE40/HE80/HE160/HE320 support for 6 GHz
- HE20/HE40/HE80/HE160 support for 5 GHz
- HE20/HE40 support for 2.4 GHz
- UL/DL SU-MIMO and MU-MIMO
- TxBF (Transmit Beamforming)

802.11be

- 2.4 GHz–2.5 GHz, 5.15 GHz–5.850 GHz, and 5.925 GHz–7.125 GHz Operating Frequencies
- 802.11be modulation (4096-QAM)
- Rates (Mbps):
  - 6G: EHT0-EHT13 (8 Mbps–5,765 Mbps)
  - 5G: EHT0-EHT13 (8 Mbps–2,882 Mbps)
  - 2.4G: EHT0-EHT13 (8 Mbps–688 Mbps)
- 2x2:2 stream MIMO radio at 6 GHz
- 2x2:2 stream MIMO radio at 5 GHz
- 2x2:2 stream MIMO radio at 2.4 GHz
- EHT20/EHT40/EHT80/EHT160/EHT320 support for 6 GHz
- EHT20/EHT40/EHT80/EHT160 support for 5 GHz
- EHT20/EHT40 support for 2.4 GHz
- UL/DL SU-MIMO and MU-MIMO
- TxBF (transmit beamforming)

IoT Support

- (2) radios for Thread, Zigbee®, Bluetooth Low Energy (BLE) 5.4, IEEE 802.15.4

GPS Radio

- Support for L1 frequency (1575.42 MHz) and L5 frequency (1176.45 MHz)

Interfaces

- Eth0, Eth1: (2) wired Ethernet ports (RJ45)
- Eth0: 100/1000/2500/5000 Mbps autosensing link speed Ethernet port, PoE PD
- Eth1: 100/1000/2500 Mbps autosensing link speed Ethernet port, PoE PD
- 802.3az Energy-Efficient Ethernet (EEE)

Power Options

- Power draw: 802.3at PoE: typical 18W, max. 21W
- PoE failover

Physical Specifications

Model	Dimensions	Weight
AP4060	10.1" x 10.2" x 2.9" (257 mm x 260 mm x 74 mm)	5.1 lbs (2.3 kg)
AP4060X	11.1" x 10.2" 2.9" (283 mm x 260 mm x 74 mm)	5.7 lbs (2.59 kg)

Security

- Trusted Platform Module (TPM)

Internal Antennas

- (2) dual band 2.4 GHz and 5 GHz; (2) dual band 5 GHz and 6 GHz
- (1) 2 GHz/5 GHz/6 GHz sensor; (3) IoT sensor, (1) GPS

Environmental

Environmental Specifications

- Operating: -40°C to 60°C (-40°F to 140°F) with solar load
- Storage: -40°C to 70°C (-40°F to 158°F)
- Humidity: 0% to 95% (non-condensing)
- Salt Spray/Fog/Mist: ASTM B117; IEC 60068-2-52
- Wind Rating: 165 Mph sustained winds
- Operational Shock: IEC 60068-2-27, IEC60721-3-4 Class 4M3, ASTM D3332-99
- Operation Vibration: IEC 60068-2-6, IEC 60068-2-64, IEC 60721-3-4 Class 4M3, ASTM D3580-95, ETSI 300 019-2-3 v2.2.2 Section 3.1 Class 3.1 table 2

Environmental Compliance

- EU RoHS–2011/65/EU and Amendments (EU) 2015/863
- EU WEEE–2012/19/EU
- EU REACH–Regulation (EC) No 1907/2006–Reporting
- EU SCIP–EU Waste Framework Directive
- China RoHS–2 SJ/T 11364-2014
- Taiwan RoHS CNS 15663 (2013.7)

Regulatory Compliance

Radio Standards USA

- Part 15C - 15.247
- Part 15E - 15.407
- RF exposure - FCC Part 1.1307

Radio Standards Canada

- RSS 247 for 2.4 GHz and 5 GHz
- RSS 248 for 6 GHz RLAN
- RF exposure - RSS-102: Issue 5, 2015

Radio Standards CE

- 2014/53/EU Radio Equipment Directive
- EN 300 328, EN 301 893, EN 303 687, EN 300 440
- EN 301 489 1, EN 301 489 17, EN 62311, EN 50385

Regulatory and Safety

North American ITE

- UL 60950-1 2nd Edition listed device (U.S.)
- CSA 22.2 No. 60950-1 2nd Edition 2014 (Canada)
- UL/CuL 62368-1 listed

European ITE

- EN 62368-1
- 2014/35/EU Low Voltage Directive

International ITE

- CB IEC 62368-1 2nd Edition + National Differences
- CB IEC 62368-1 1st and 3rd Editions + National Differences
- AS/NZS 62368-1 (Australia/New Zealand)

EMI/EMC Standards

North American EMC Standards

- FCC CFR 47 Part 15 Class B (U.S.)
- ICES-003 Class B (Canada)

European EMC Standards

- EN 55032 Class B
- EN 55035
- EN 55011
- EN 60601-1-2
- EN 61000-3-2 (Harmonics)
- EN 61000-3-3 (Flicker)
- 2014/30/EU EMC Directive

International EMC Certifications

- CISPR 32 Class B (International Emissions)
- CISPR 11
- AS/NZS CISPR32
- CISPR 35 (International Immunity)

Wi-Fi Alliance Certifications

Connectivity	Wi-Fi CERTIFIED™ 7 Wi-Fi CERTIFIED™ 6 Release 2 Wi-Fi CERTIFIED™ a, ac, n Wi-Fi Enhanced Open™	Wi Fi 7 CERTIFIED
Optimization	WMM® Wi-Fi Agile Multiband™	
Security	Protected Management Frames WPA2™ – Enterprise, Personal WPA3™ – Enterprise, Personal	

Antenna Gain Matrix – AP4060

Operational Mode	Radio 1	Radio 2	Radio 3	Scan Radio	IoT Radio 1	IoT Radio 2
1	2.4 GHz 5 dBi	5 GHz 5.8 dBi	6 GHz 11.4 dBi	2.4 GHz: 5.3 dBi 5 GHz: 4.9 dBi 6 GHz: 5 dBi	4.3 dBi	3.8 dBi
2	2.4 GHz 5 dBi	5 GHz 5.8 dBi	5 GHz 10.5 dBi	2.4 GHz: 5.3 dBi 5 GHz: 4.9 dBi 6 GHz: 5 dBi	4.3 dBi	3.8 dBi

Power and Sensitivity Tables – AP4060 and AP4060X

Power and Sensitivity - 2.4 GHz Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11b	1 - 11 Mbps	17	-93, -86
11g	6 Mbps	17	-92
	54 Mbps	15	-73
11n HT20	MCS0, 7	17, 15	-92, -72
11n HT40	MCS0, 7	17, 15	-90, -70
11ax HE20	HE0, 11	17, 13	-92, -61
11ax HE40	HE0, 11	17, 13	-90, -59
11be EHT20	EHT1, 13	17, 12	-91, -54
11be EHT40	EHT1, 13	17, 12	-89, -52

Power and Sensitivity - 5 GHz Full Radio

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-92
	54 Mbps	16	-73
11n HT20	MCS0, 7	18, 16	-92, -73
11n HT40	MCS0, 7	18, 16	-90, -71
11ac VHT20	MCS0, 8	18, 15	-92, -70
11ac VHT40	MCS0, 9	18, 15	-90, -64
11ac VHT80	MCS0, 9	18, 15	-88, -62
11ac VHT160	MCS0, 9	18, 15	-85, -60
11ax HE20	HE0, 11	18, 14	-92, -62
11ax HE40	HE0, 11	18, 14	-90, -60
11ax HE80	HE0, 11	18, 14	-88, -58
11ax HE160	HE0, 11	18, 14	-85, -55
11be EHT20	EHT0, 13	18, 12	-92, -55
11be EHT40	EHT0, 13	18, 12	-90, -53
11be EHT80	EHT0, 13	18, 12	-87, -51
11be EHT160	EHT0, 13	18, 12	-87, -48

Power and Sensitivity - 5 GHz Radio - High

Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-92
	54 Mbps	16	-73
11n HT20	MCS0, 7	18, 16	-92, -73
11n HT40	MCS0, 7	18, 16	-90, -71
11ac VHT20	MCS0, 8	18, 15	-92, -70
11ac VHT40	MCS0, 9	18, 15	-90, -64
11ac VHT80	MCS0, 9	18, 15	-88, -62
11ac VHT160	MCS0, 9	18, 15	-85, -60
11ax HE20	HE0, 11	18, 14	-92, -62
11ax HE40	HE0, 11	18, 14	-90, -60
11ax HE80	HE0, 11	18, 14	-88, -58
11ax HE160	HE0, 11	18, 14	-85, -55
11be EHT20	EHT0, 13	18, 12	-92, -55
11be EHT40	EHT0, 13	18, 12	-90, -53
11be EHT80	EHT0, 13	18, 12	-87, -51
11be EHT160	EHT0, 13	18, 12	-85, -48

Power and Sensitivity - 5 GHz Radio - Low

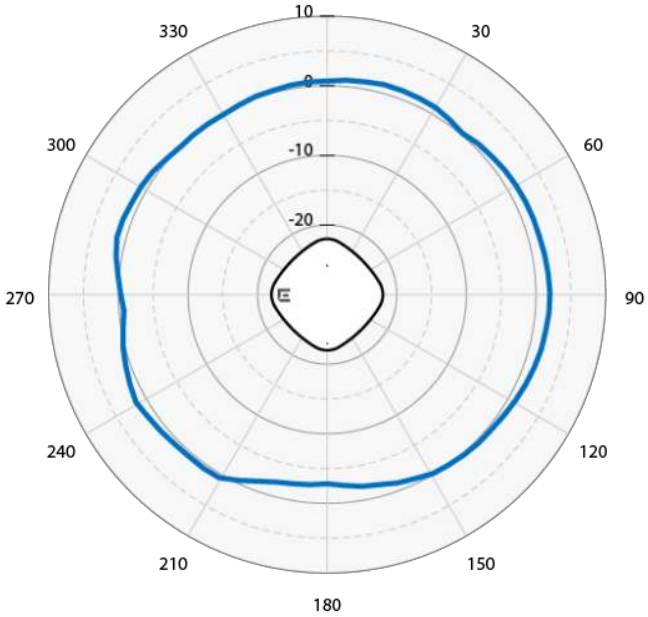
Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-92
	54 Mbps	16	-73
11n HT20	MCS0, 7	18, 16	-92, -73
11n HT40	MCS0, 7	18, 16	-90, -71
11ac VHT20	MCS0, 8	18, 15	-92, -70
11ac VHT40	MCS0, 9	18, 15	-90, -64
11ac VHT80	MCS0, 9	18, 15	-88, -62
11ac VHT160	MCS0, 9	18, 15	-85, -60
11ax HE20	HE0, 11	18, 14	-92, -62
11ax HE40	HE0, 11	18, 14	-90, -60
11ax HE80	HE0, 11	18, 14	-88, -58
11ax HE160	HE0, 11	18, 14	-85, -55
11be EHT20	EHT0, 13	18, 12	-92, -55
11be EHT40	EHT0, 13	18, 12	-90, -53
11be EHT80	EHT0, 13	18, 12	-87, -51
11be EHT160	EHT0, 13	18, 12	-85, -48

Power and Sensitivity - 6 GHz Radio – Full

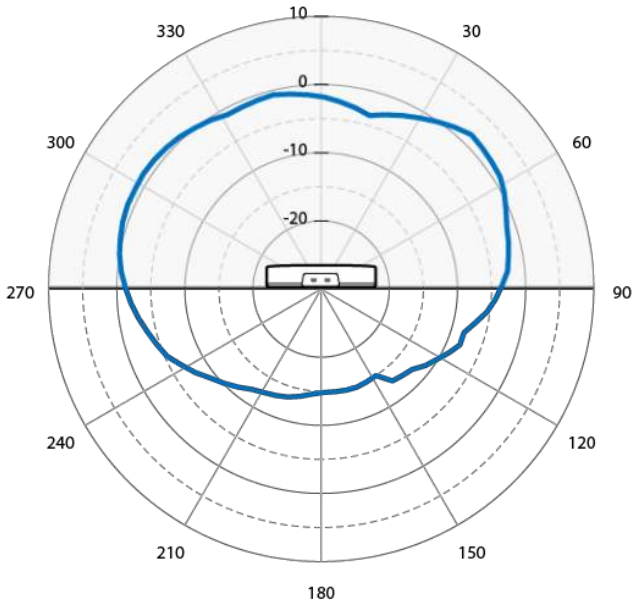
Channel	Data Rate	Power (dBm)	Sensitivity (dBm)
11a	6 Mbps	18	-92
	54 Mbps	16	-73
11n HT20	MCS0, 7	18, 16	-92, -73
11n HT40	MCS0, 7	18, 16	-90, -71
11ac VHT20	MCS0, 8	18, 15	-92, -70
11ac VHT40	MCS0, 9	18, 15	-90, -65
11ac VHT80	MCS0, 9	18, 15	-88, -62
11ac VHT160	MCS0, 9	18, 15	-85, -59
11ax HE20	HE0, 11	18, 14	-92, -62
11ax HE40	HE0, 11	18, 14	-90, -60
11ax HE80	HE0, 11	18, 14	-88, -58
11ax HE160	HE0, 11	18, 14	-85, -55
11be EHT20	EHT0, 13	18, 12	-92, -55
11be EHT40	EHT0, 13	18, 12	-90, -53
11be EHT80	EHT0, 13	18, 12	-88, -51
11be EHT160	EHT0, 13	18, 12	-86, -48
11be EHT320	EHT0, 13	18, 12	-83, -45

Radiation Patterns – AP4060

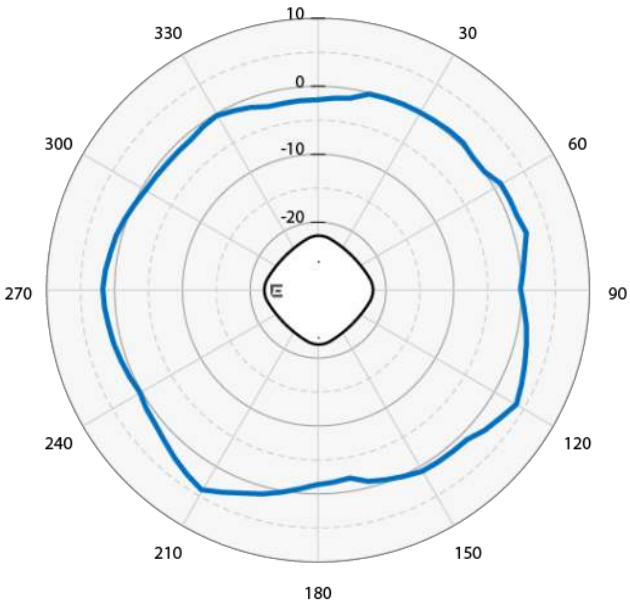
2G Azimuth



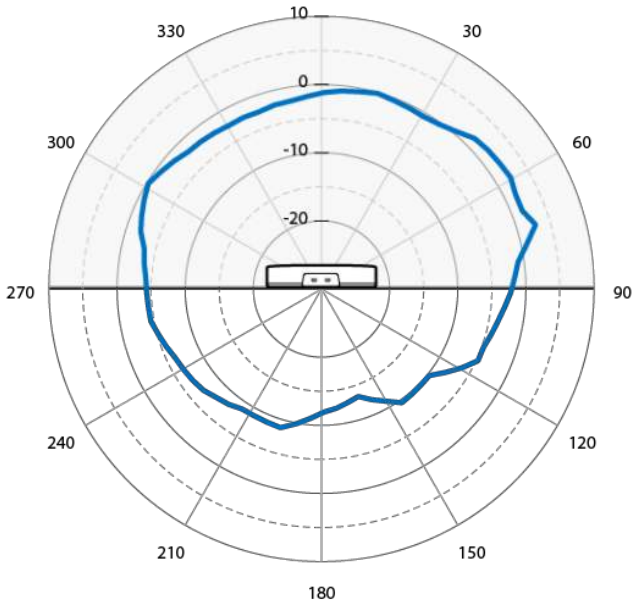
2G Elevation



5G Azimuth

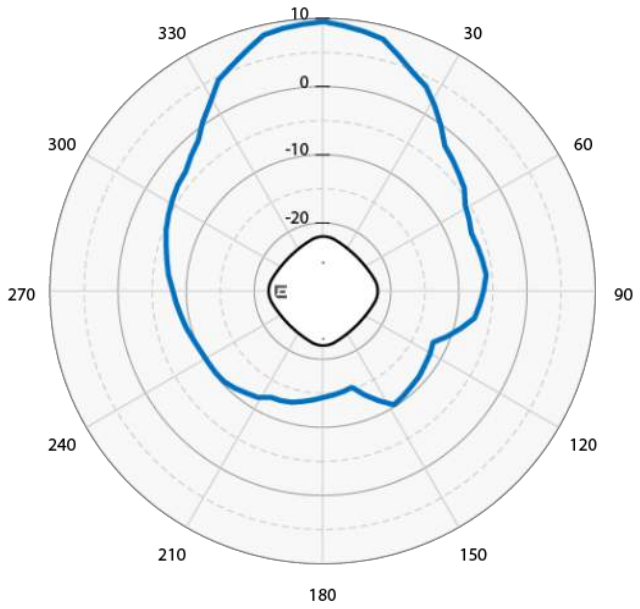


5G Elevation

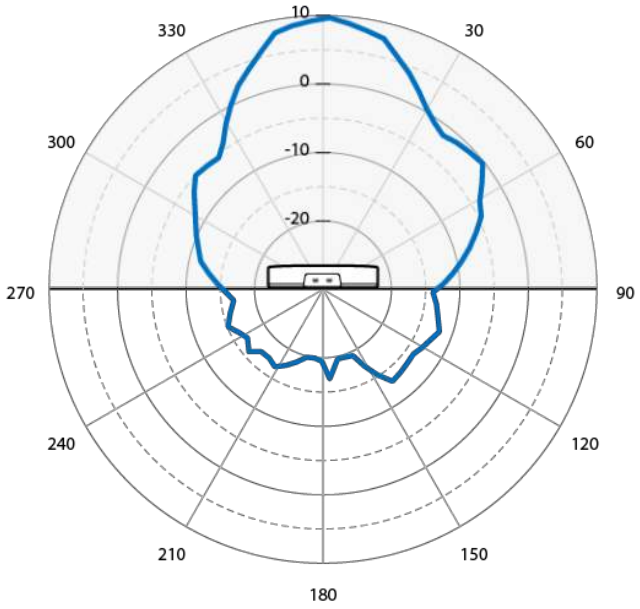


Radiation Patterns – AP4060

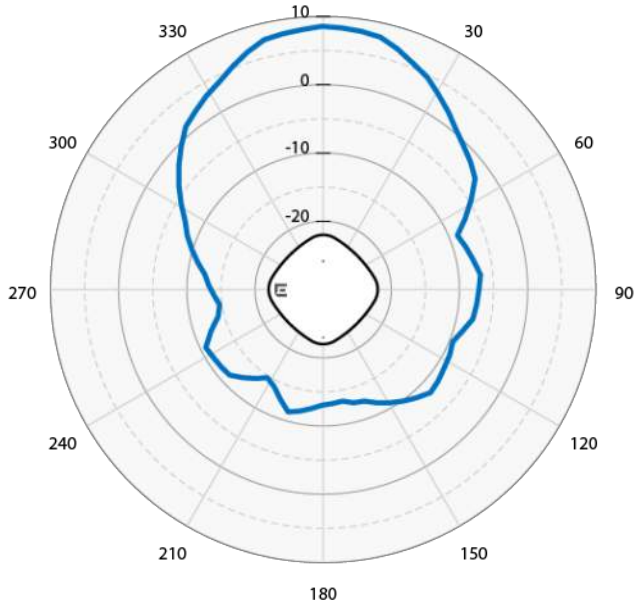
6G Azimuth



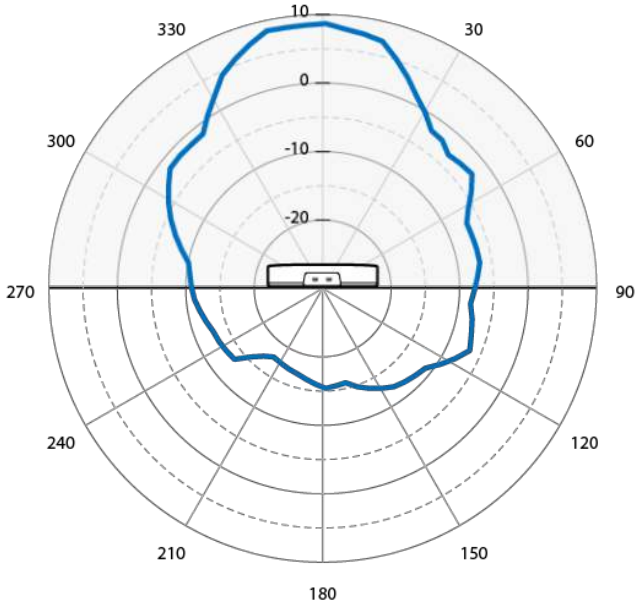
6G Elevation



5G Low Azimuth

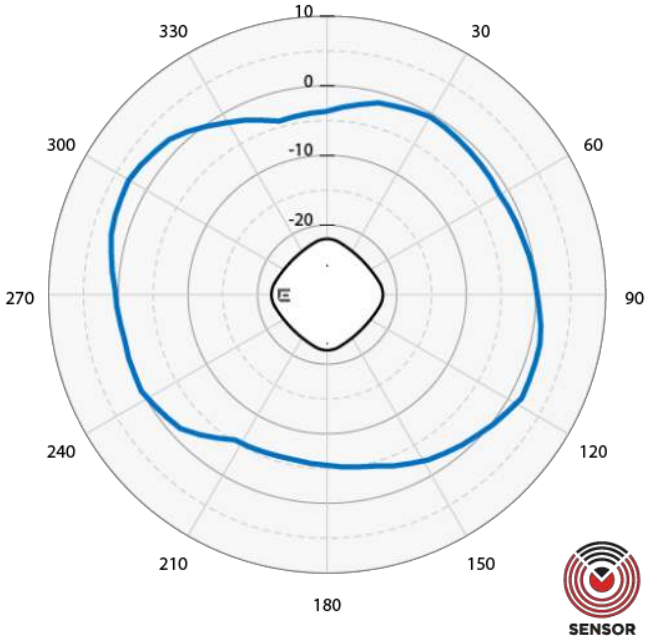


5G Low Elevation

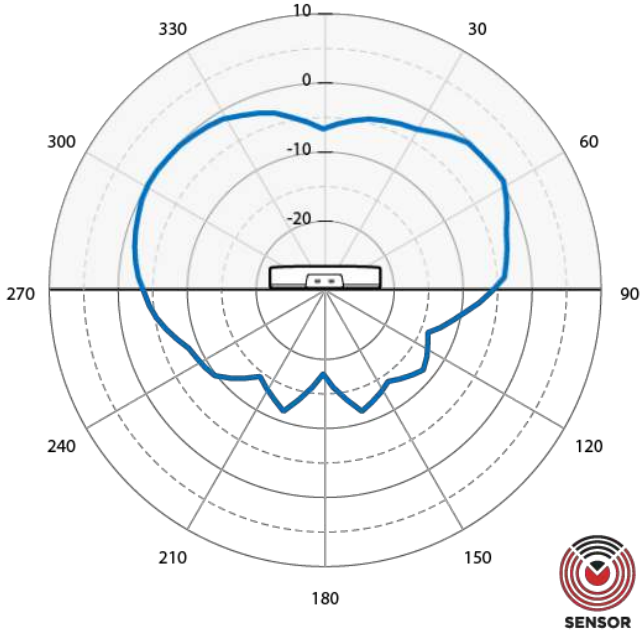


Radiation Patterns – AP4060 – Sensor

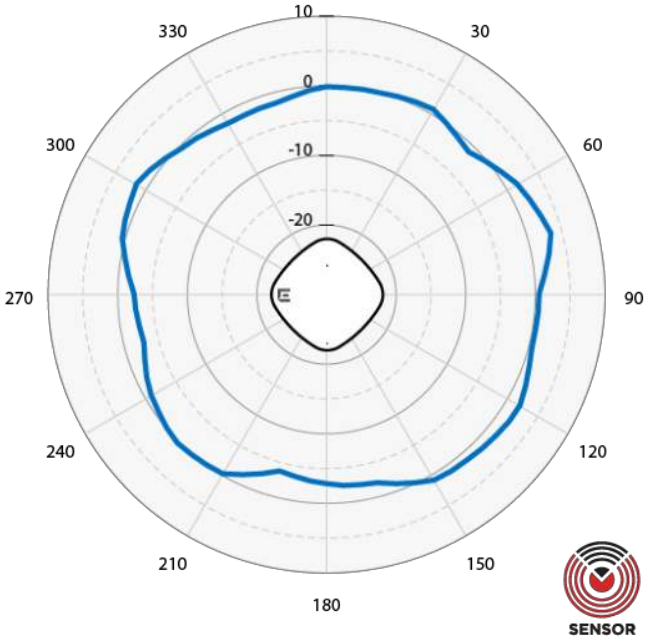
2G Sensor Azimuth



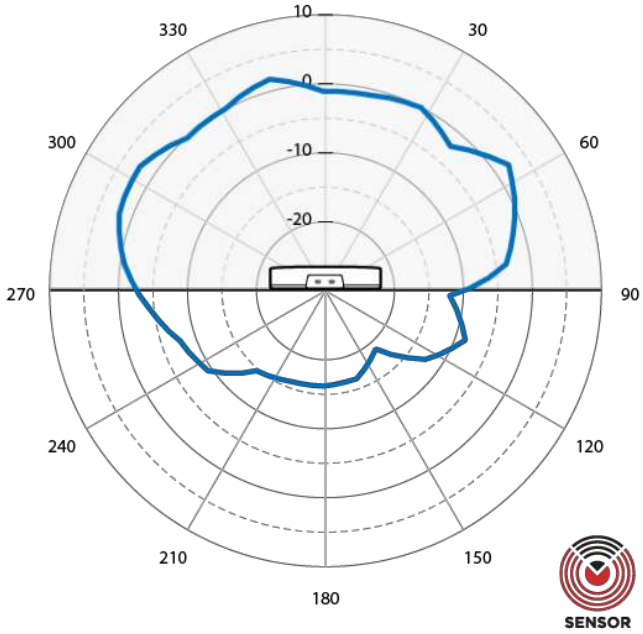
2G Sensor Elevation



5G Sensor Azimuth

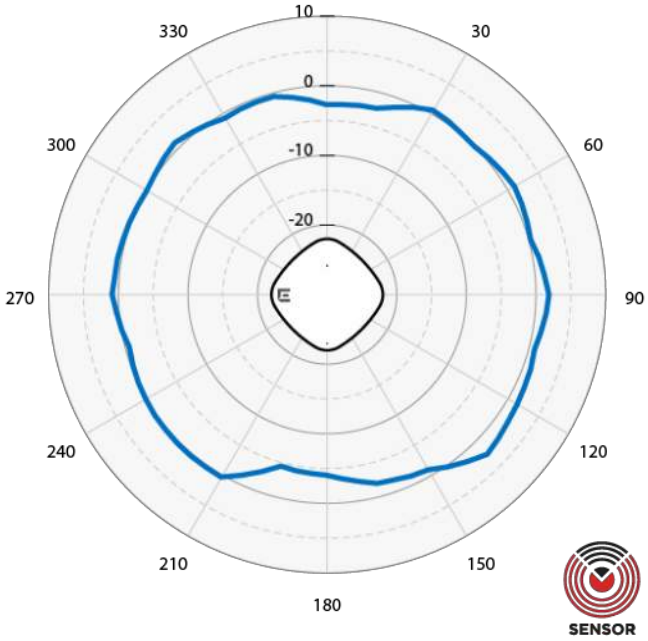


5G Sensor Elevation

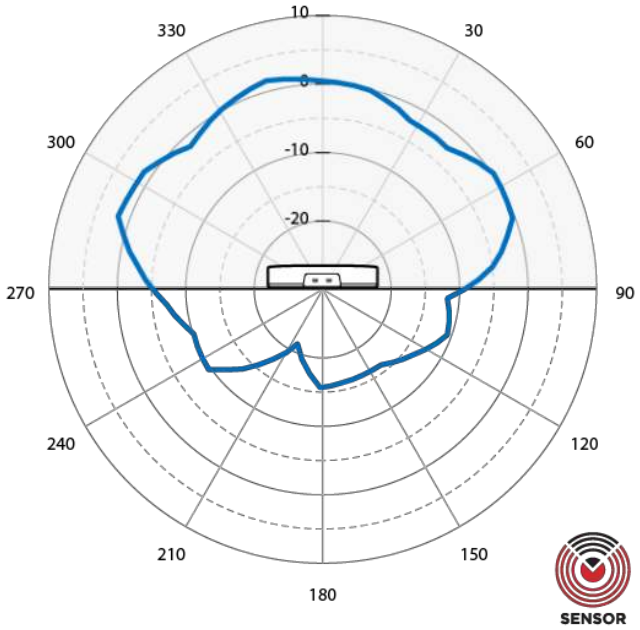


Radiation Patterns – AP4060 – Sensor

6G Sensor Azimuth

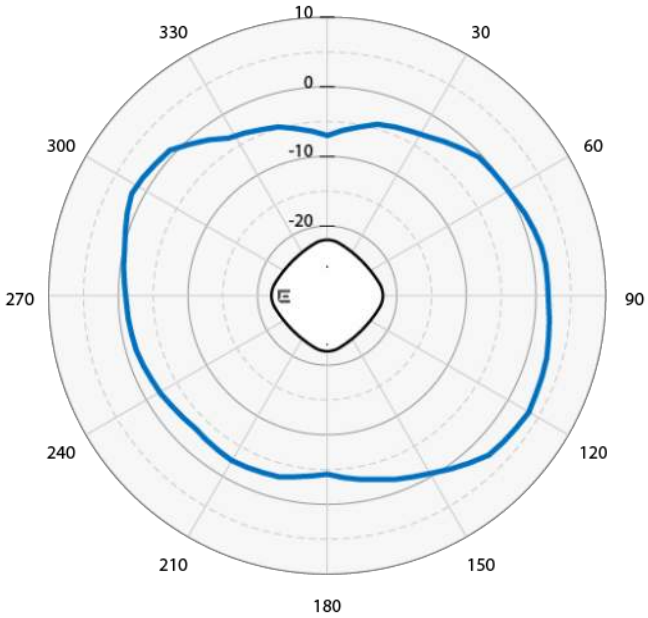


6G Sensor Elevation

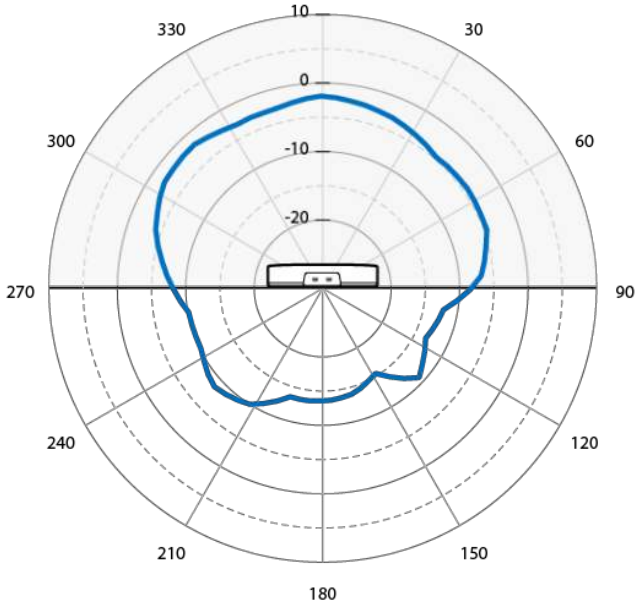


Radiation Patterns – AP4060 – BLE Radios

BLE Radio 1 Azimuth

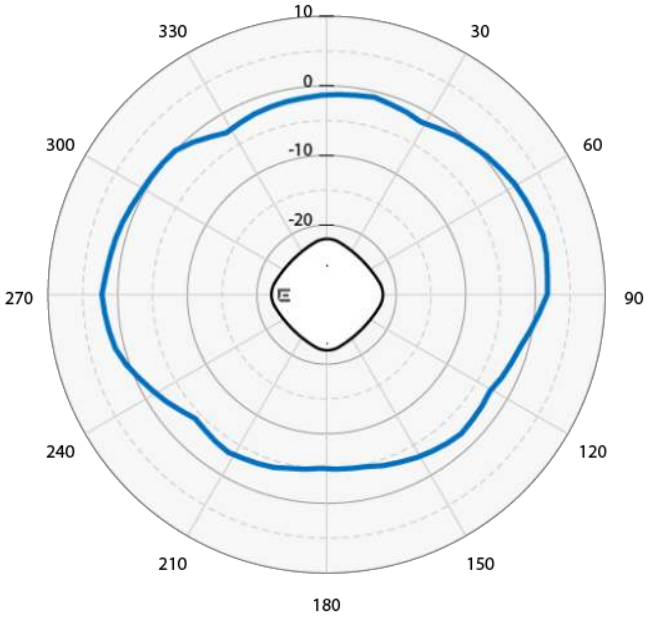


BLE Radio 1 Elevation

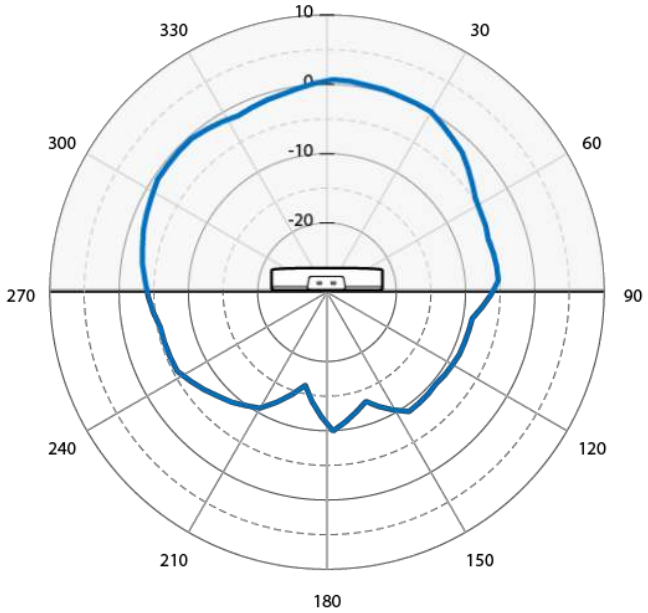


Radiation Patterns – AP4060 - BLE Radios

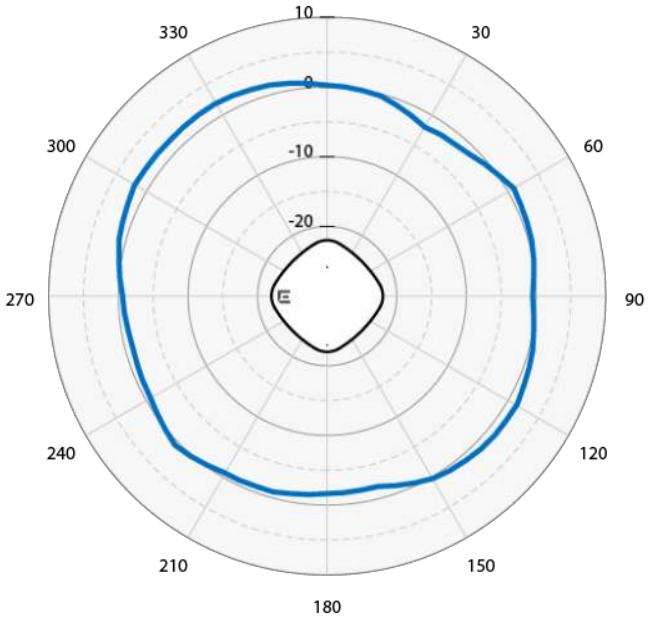
BLE Radio 2 Azimuth – Antenna #1



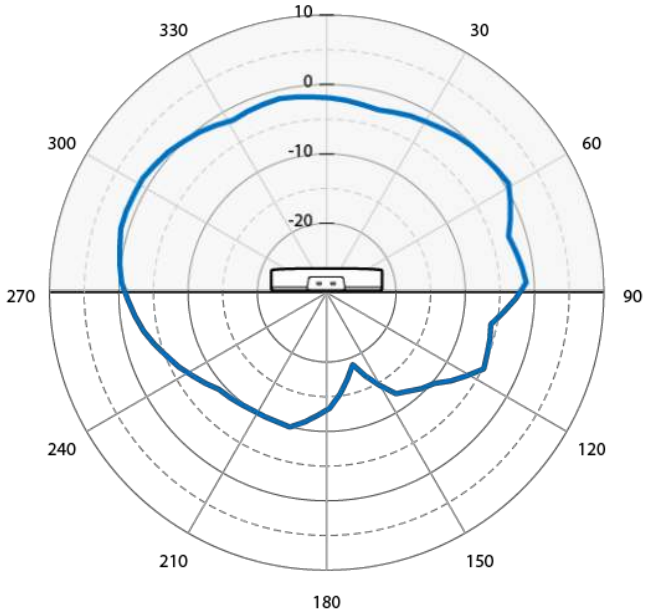
BLE Radio 2 Elevation – Antenna #1



BLE Radio 2 Azimuth – Antenna #2



BLE Radio 2 Elevation – Antenna #2



Ordering Information

AP4060 Series

Part Number	Description
AP4060-WW	Weatherized Quad Radio Wi-Fi 7 (2x2:2): 2.4 GHz, 5 GHz, 6 GHz and dedicated sensor, Multi-Rate Port, internal antennas. Domain: World SKU
AP4060X-WW	Weatherized Quad Radio Wi-Fi 7 (2x2:2): 2.4 GHz, 5 GHz, 6 GHz and dedicated sensor, Multi-Rate, External antennas, Domain: World SKU
AP4060X-EG	Weatherized Quad Radio Wi-Fi 7 (2x2:2): 2.4 GHz, 5 GHz, 6 GHz and dedicated sensor, Multi-Rate Port, External antennas. Domain: Egypt
AP4060-IL	Weatherized Quad Radio Wi-Fi 7 (2x2:2): 2.4 GHz, 5 GHz, 6 GHz and dedicated sensor, Multi-Rate Port, internal antennas. T-Bar, Incl Mt (AH-ACC-BKT-AX-TB). Domain: Israel
AP4060-WW-TAA	Weatherized Quad Radio Wi-Fi 7 (2x2:2): 2.4 GHz, 5 GHz, 6 GHz and dedicated sensor, Multi-Rate Port, internal antennas. Domain: World SKU TAA Compliant
AP4060X-WW-TAA	Weatherized Quad Radio Wi-Fi 7 (2x2:2): 2.4 GHz, 5 GHz, 6 GHz and dedicated sensor, Multi-Rate, External antennas, Domain: World SKU TAA Compliant

Antennas - AP4060X

Part Number	Description
AIO-TS06360-N	5 dBi (2.4 GHz) and 6 dBi (5 and 6 GHz) Weatherized Dipole Tri-band with N-Type Connector
AIO-TQ08055-N	8 dBi Weatherized Quad Sector 65 Degree Tri-band with 4 port N-Type Connector, Antenna Mount included
AIO-TQ14035-N	13 dBi (2.4 GHz) and 14 dBi (5 and 6 GHz) Weatherized Quad Sector 35 Degree Tri-band with 4 port N-Type Connector, Antenna Mount included
AIO-TQ06120-N	6 dBi Weatherized Quad Sector 120 Degree Tri-band with 4 port N-Type Connector, Antenna Mount included

Mounting Options

Option 1: Mount to a Pole or a Wall Vertically

Part Number	AP Mounting Accessories	Notes
AH-ACC-STRP-MRN	Weatherized access point stainless steel hose strap for 3 in. – 7 in. diameter pole.	Order (2) for mounting AP4060 or KT-147407-02 to a pole
AH-ACC-BKT-ASM	Weatherized access point stainless steel wall bracket assembly.	Allows AP4060 to mount to a wall

Option 2: Mount to a Pole or a Wall with +/- 15-Degree Tilt and/or Extension

Part Number	AP Mounting Accessories	Notes
AH-ACC-STRP-MRN	Weatherized access point stainless steel hose strap for 3 in. – 7 in. diameter pole.	Order (2) for mounting AP4060 to a pole
KT-147407-02	Outdoor mounting hardware kit for outdoor access points – stainless steel for harsh environments	Allows tilt for pole or wall mount

Option 3: Mount to a Wall with > 15-Degree Tilt and Variable Extension

Part Number	AP Mounting Accessories	Notes
MBO-ART03	MBO-ART03 Articulating Mounting Bracket	Allows 2 axis +/- 80-degree tilt (20-degree increments) and 10 inches extension - wall

Other Accessories

Item	Description
PD-9001GO-ENT	Weatherized 802.3at PoE single port midspan

For more details, refer to the Product Accessories Guide.

Warranty

The AP4060 and AP4060X wireless access points are covered under Extreme's Product Warranty policy. For warranty details, visit our Policies and Warranties page.

Support Services

Extreme offers a portfolio of services that adapts to your unique environment and technical support needs. Globally available technical support and professional services from our in-house team of experts provide the resiliency and optimization that accelerate your business and innovation.

Combined with Extreme Networks Platform ONE agentic support tools and workflows, Extreme Services helps you to anticipate issues and identify risks before they impact your business. For more information, visit our Services page.

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Sangoma

P-Series IP Phones

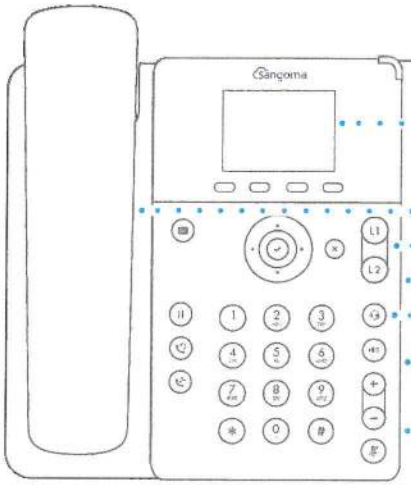
P-Series: P310, P315, P320, P325, P330, P370,
PM200 Attendant Console

User Guide

Getting Started
Meet the P-Series

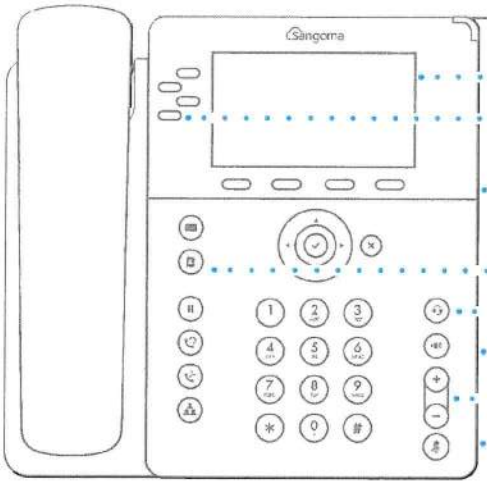
Sangoma IP phones are designed for the greatest interoperability with Sangoma Unified Communication platforms, including Asterisk, Business Voice, Business Voice Plus, Switchvox, PBXact, and CommUnity phone systems. This guide provides information about the setup and use of Sangoma P310, P315, P320, P325, P330, P370 IP phones (herein referred to as the P-Series) and the PM200 Attendant Console when a Sangoma Configuration Server is not being used. See the Sangoma website for information about using Sangoma phones with Switchvox or the Digium Phone Module for Asterisk (DPMA).

Value-Based P310 & P315



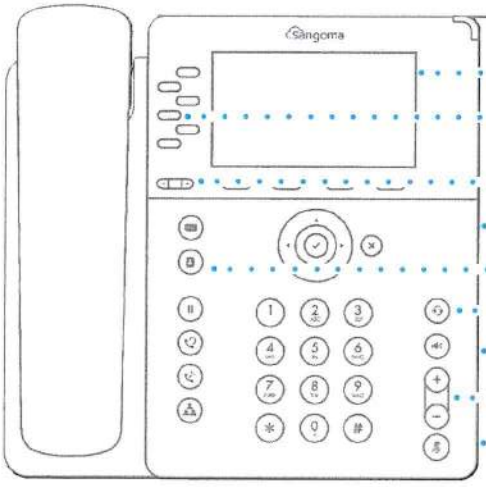
- 2.4" 320X240 BACKLIT COLOR DISPLAY
- LOUD, HIGH-QUALITY SPEAKERPHONE
- TWO SIP ACCOUNTS
- ETHERNET (**P310** FAST, **P315** GIGABIT)
- HEADSET & EHS SUPPORT
- 2 X LOCK PORTS (KENSINGTON) (BACK)
- MODERN DESIGN SOLID ROBUST BASE

Mid-Ranged P320



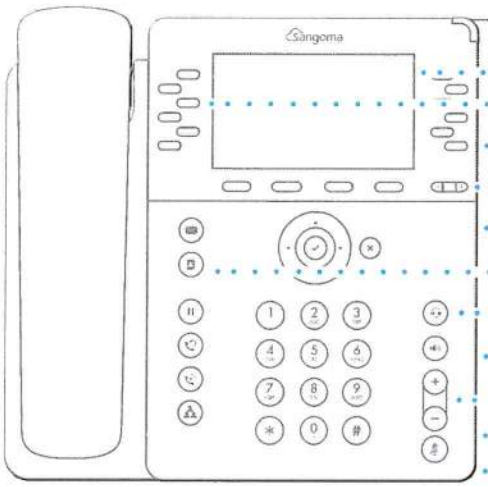
- 4.3" 480X272 IPS GLASS BACKLIT COLOR DISPLAY, ALL-AROUND VIEW
- FOUR SIP ACCOUNTS
- GIGABIT ETHERNET
- SIX DEDICATED PHONE FUNCTION KEYS
- HEADSET & EHS SUPPORT
- 2 X LOCK PORTS (KENSINGTON) (BACK)
- BACKLIT AUDIO FUNCTION KEYS
- USB PORT FOR HEADSET SUPPORT (BACK)

Mid-Ranged P325



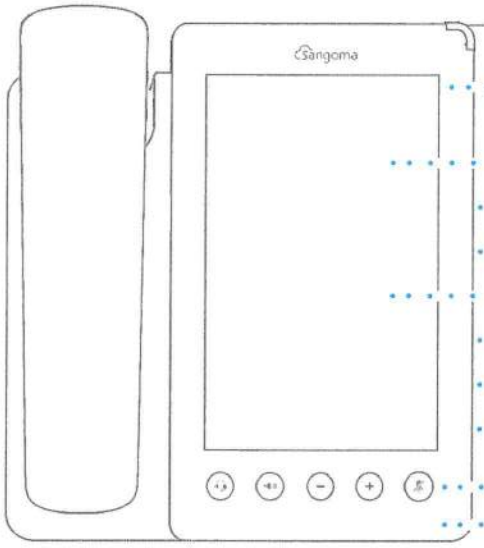
- 4.3" 480X272 BACKLIT COLOR DISPLAY IPS GLASS, ALL-AROUND VIEW
- SIX SIP ACCOUNTS
- PAGE KEY FOR VIRTUAL BLF KEYS
- GIGABIT ETHERNET
- SIX DEDICATED PHONE FUNCTION KEYS
- HEADSET & EHS SUPPORT
- USB PORT FOR HEADSET SUPPORT (BACK)
- BACKLIT AUDIO FUNCTION KEYS
- 2 X LOCK PORTS (KENSINGTON) (BACK)

Mid-Ranged P330



- 4.3" 480X272 BACKLIT COLOR DISPLAY IPS GLASS, ALL-AROUND VIEW
- 12 SIP ACCOUNTS
- GIGABIT ETHERNET
- PAGE KEY FOR VIRTUAL BLF KEYS
- SUPPORTS EXPANSION ATTENDANT CONSOLE
- SIX DEDICATED PHONE FUNCTION KEYS
- HEADSET & EHS SUPPORT
- BUILT-IN BLUETOOTH & WI-FI 2.4/5G CONNECTIVITY
- BACKLIT AUDIO FUNCTION KEYS
- 2 X USB PORT FOR HEADSET & EXPANSION MODULE (BACK & SIDE)
- 2 X LOCK PORTS (KENSINGTON) (BACK)

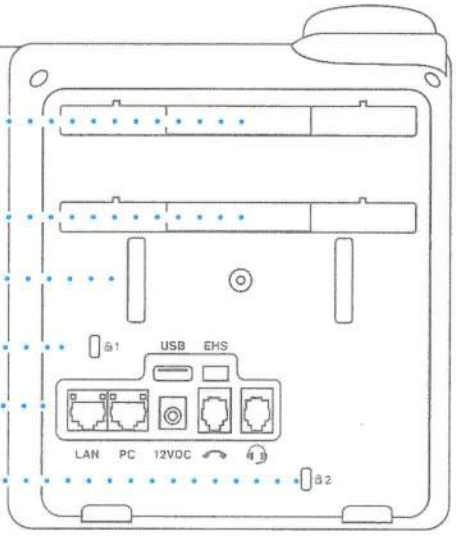
Executive P370



- 7.0" 800X1280 BACKLIT COLOR MULTI-POINT TOUCH DISPLAY MADE OF IPS GLASS WITH ALL-AROUND VISIBILITY
- BUILT-IN BLUETOOTH & WI-FI 2.4/5G CONNECTIVITY
- 2 X USB PORT FOR HEADSET & SIDECAR EXPANSION
- GIGABIT ETHERNET
- 16 SIP ACCOUNTS
- HEADSET & EHS SUPPORT
- SUPPORTS EXPANSION ATTENDANT CONSOLE
- 2 X LOCK PORTS (KENSINGTON) (BACK)
- DEDICATED AUDIO PATH & VOLUME TOUCH KEYS
- 2 X USB PORT FOR HEADSET & EXPANSION MODULE (BACK & SIDE)

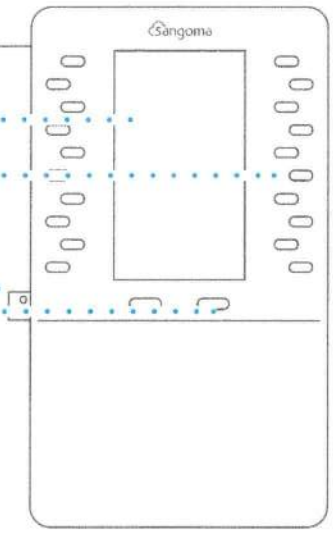
P-Series Back View

Varies Slightly by Model



- DESK STAND SLOT (LOW ANGLE)
- DESK STAND SLOT (HIGH ANGLE)
- WALL-MOUNT SLOTTING TABS
- LOCK PORT #1 (DESK STAND IN-USE)
- **CONNECTION POINTS**
  USB, EHS, LAN, PC, DC POWER, HANDSET, HEADSET
- LOCK PORT #2 (WALL-MOUNT IN-USE)

PM200 Expansion Module



Connecting to the Network

AUTOMATIC

The Sangoma P-series phone uses DHCP and LLDP-MED to discover IP address and VLAN membership information. If successful, it attempts to find a configuration server.

MANUAL

If not successful, follow instructions in Setting the Network Information (page 5) or Web UI (page 12).

Configuring P-Series Phone

XML CONFIGURATION FILE (PREFERRED)

Create and make this file available to the phone as instructed in Getting the Phone Configuration (page 6)

WEBUI TOOL**

Enter all the configuration information as described in Web User Interface Settings on (page 9).

Upgrading Phone Firmware

UC SOFTWARE (PREFERRED)

The recommended method to upgrade firmware is via the UC software platform using the supported method for the UC platform in question. Customers connecting these phones directly to a properly updated and configured Sangoma UC system will have their phones automatically updated to the latest firmware by the phone system platform itself.

MANUAL FIRMWARE UPGRADE METHOD

Firmware files can be found here: **http://phones.dl.sangoma.com/firmware/p-series/**. From a workstation, download the firmware for the desired model and version. With the phone in the factory default condition, upload the firmware directly using the phone's web user interfaces (WebUI), accessible using a URL with the phone's IP e.g.: **http://<phone IP address>/firmware** The default admin credentials for a P-Series phone are: **Username**: admin **Password**: 789

NOTE: Information on default username/passwords for all Sangoma phones is available here: https://help.sangoma.com/community/s/article/What-are-the-default-login-and-password-for-a-Sangoma-phone

NOTE: The P-series phone WebUI is locked once the phone has been provisioned to a Sangoma UC platform. Once locked, you must first Factory Reset the phone to gain access to the WebUI.

Get Connected **Networks & System Tools**

As soon as your Sangoma P-series Phone powers up, the main display shows the Sangoma logo and indicates that it is initializing, loading necessary information, and starting the phone. By default, the phone uses the dynamic protocols DHCP and LLDP-MED to attempt to get an IP address and VLAN membership information. If successful, the phone then attempts to find a configuration server.

The following sections describe what to do if your phone cannot get on the network and get configuration information.

For phone hardware specific information, press the nav button to bring up the Main Menu then select About. This will display the Phone Model, Firmware Version, firmware Date, MAC address, and IP address.

Setting the Network Information

To display and configure network settings, press the ✓ nav button to bring up the Main Menu then select Admin Settings.

NOTE: Accessing the Admin Settings menu requires the phone admin password. The default admin credentials for a P-Series phone are: **Username**: admin **Password**: 789

Select Network Settings. Here you can manually insert or change the following network parameters: Protocol, IP Address, Netmask, Gateway, Primary DNS, or Secondary DNS.

You can also configure the phone's network using the Network Tab from the Web User Interface provided the phone has not previously been provisioned using an XML config file. If the phone has already been provisioned, then a factory reset is required to unlock access to the phone WebUI. The Factory Reset selection is in the Main menu.

PROTOCOL

DHCP is selected (highlighted) by default. To enter the IP information manually, press the Next softkey. This changes the protocol from DHCP to Static and enables input fields in which you specify four-part network addresses for the following:

- IP Address
- Netmask
- Gateway
- Primary DNS
- Secondary DNS (optional)

NOTE: The Delete softkey lets you delete a key-in character, and the Back softkey redisplays the Network Settings Options, or backs up to the previous display page. Use the navigation arrow keys to move from one input box to the next. When ready, press Submit, which will restart the phone for the new settings to take effect. Press Back to redisplay the Admin Settings screen from which you can select any of the other network options.

QUALITY OF SERVICE SETTINGS

You can set priority values for Voice DSCP and SIP DSCP. However, if LLDP returns specific values to the phone, the values entered here are ignored.

VLAN (VIRTUAL LOCAL AREA NETWORK) SETTINGS

Discovery Mode– LLDP (Link Layer Discovery Protocol) is selected (highlighted) by default. If the phone does not get a response from LLDP for LLDP-MED voice endpoint, it will assume there is no VLAN. (VLAN information cannot be obtained via DHCP.)

PC Port VLAN ID - (with None or 0 selected in Discovery Mode). Select this option to enter the VLAN information manually. Enter the PC Port VLAN ID (1-4095).

Voice 802.1p Priority - Set a value for PC Port 802.1p Priority. If LLDP returns specific values to the phone, the values entered here are ignored. When finished, press the Submit softkey. NOTE: The Back softkey redisplays the Network Settings Options

ETHERNET PORT MODES

LAN Port Mode. By default, this is set to Automatic. Press Next to change to 10Mb/s Half Duplex, 10Mb/s Full Duplex, 100Mb/s Half Duplex, 100Mb/s Full Duplex, or 1000Mb/s Full Duplex.

PC Port Mode. By default, this is set to Automatic. Press Next to change to 10Mb/s Half Duplex, 10Mb/s Full Duplex, 100Mb/s Half Duplex, 100Mb/s Full Duplex, 1000Mb/s Full Duplex, or Disable.
NOTE: Prev softkey returns the previous choice; Back softkey redisplays the Network Settings Options.

WI-FI SETTINGS (ON SUPPORTED P-SERIES MODELS)

This option allows for setting up a network connection to a Wi-Fi source for certain P-Series phones.

Navigate to the Admin Settings menu, and select the Wi-Fi Settings selection (□ nav button > Admin Settings > Wi-Fi Settings)
NOTE: Wi-Fi Settings selection may not be visible until you use the nav buttons to scroll down

Wi-FI - press the soft key to toggle Wi-Fi to enabled.

SSID – (Service Set Identifier) or more commonly, the name for the WiFi network you wish to connect to. Key-in the name of the Wi-Fi you wish to connect to or press the Scan soft key to search your network for available Wi-Fi networks. Select your Wi-Fi network. If valid this Wi-Fi name will be entered in the SSID field

Wi-Fi key type – This field is "None" by default. However, when a valid SSID Wi-Fi is entered (as above), the key type is automatically recognized and entered here.
NOTE: The available key types are: None WEP WPA-WPA2-Personal

Password – IF the selected Wi-Fi key type is secured, you will be required to input the specific key type password for that SSID.
NOTE: If a password is required, and you do not enter a valid password, you will receive a "Wi-Fi connection failed. Please verify the Wi-Fi settings." error message.

Getting the Phone Configuration

The phone can be configured by using either an XML-formatted configuration file (to be downloaded from a PBX server), or by defining configuration information using the phone's Web User Interface (WebUI) Tool As noted in the previous "Setting the Network Information" section, the WebUI is only available when the phone has not been provisioned or after a Factory Reset.
NOTE: If you do not want to manage your full phone configuration, you can manually enter the basic information for your SIP accounts using the SIP Accounts option.

If you are going to create your own XML configuration file, see: **https://wiki.sangoma.com/display/PHON** for a full description of the content and XML format.

The following are possible results of your phone's attempt to find a configuration source:

- It finds more than one source for a configuration file and displays them in a list. It prompts you to select the source you want.
- It finds only one source for a configuration file. It tries to obtain that configuration after 5 seconds.
- It finds no source for a configuration file and indicates that with the message, "There were no configuration servers found ...". The "Settings" soft button will display the boot Settings Menu.

NOTE: The boot Settings Menu option, "Sangoma Configuration Server" applies to Sangoma UC products such as Switchvox, PBXact, etc.

OPTION 66

If you are creating your own configuration file and DHCP returns option 66 with a URL, the file location is found in this order:
<URL>lowercase_mac.cfg
<URL>UPPERCASE_mac.cfg
<URL>000000000000.cfg

The following is an example for the URL 10.10.8.237 and the phone MAC 00-19-15- 9C-06-46:
http://10.10.8.237/0019159c0646.cfg
http://10.10.8.237/0019159C0646.cfg
http://10.10.8.237/000000000000.cfg
http://10.10.8.237

The phone uses Wget to make the request to the URL indicated by option 66, so the URL can contain user-name, password, and a port number if necessary.

If the phone can fetch a configuration file, it saves the file location. If the phone later restarts and does not get a response from option 66, it will use the previously saved file location to try and obtain a configuration file, or downloads configuration file to your local phone.

FETCH CONFIGURATION FILE FROM URL

If you are creating your own configuration file, but not using option 66, you may enter a location for the configuration file by selecting Fetch Configuration File from URL.
Fill in the following fields for this option:

- Select the Protocol you wish to use to fetch the file. Choices are http, https, ftp, ftps.
- Enter the four-part Server address.
- Enter the Port number (optional)
- Enter the Path.
- Enter the Username (optional).
- Enter the Password (optional

Click "Submit" or click "Back" to quit and return to the Phone Setup/Configuration Options.
If the phone can fetch a configuration file, it saves the file location.

WEB USER INTERFACE TOOL

If you are not creating your own configuration file, you can use the Web User Interface tool to enter configuration information. This is described in Web User Interface Settings on page 9.

Resetting, Reconfiguring, or Restarting

RESET TO FACTORY DEFAULTS

Select Factory Reset, which is listed under the phone's Main Menu (press the ▯ nav button > Factory Reset), to clear all configuration information from the phone and start over.

CAUTION: This removes all existing accounts and contacts as well as configuration information.

RECONFIGURE

Select Reconfigure, which is listed under the phone's Main Menu. The phone asks you to confirm the reconfigure request. Click Yes to begin the operation. Reconfigure does not remove the current configuration until the new configuration is obtained. Unsupported UC platforms, you can also reconfigure the phone from the Asterisk command line interface as follows:

- pjsip send notify digium-check-cfg endpoint <list of pjsip endpoints>
- pjsip send notify digium-check-cfg uri <list of pjsip URIs>

This Asterisk command notifies the Sangoma Phone to get its configuration again.

RESTART

Click the Restart option from the phone's Main Menu to restart the phone using the current configuration. The phone issues a prompt that asks if you are sure you want to restart your phone. Click the Yes softkey to restart; or click No to cancel the operation and redisplay the phone's Main Menu

Tech Support (TS)

This section displays a list of available tech support tools to gather additional phone information and for troubleshooting. The first options under the Tech Support settings page are used at the direction of Sangoma Technical Support.

IMPORTANT: Do not use these settings unless it is at the request of Sangoma Technical Support.

- Enable/Disable Tech Support Access – To enable or disable ability of technical support persons to have remote access to this phone
- Connect to Tech Support – You can enter a password (provided by tech support representative) which will allow a Tech support agent to connect to your phone.
- Proxy Settings – To setup a proxy server host IP address and username/password

NETWORK UTILITIES

Utilities/Tools for the Tech support person to use in trouble-shooting phone problems

- Ping – Allows TS to verify active IP Addresses
- Traceroute – Tool for TS to track the pathway taken by a packet of data on an IP address from source to destination
- Nslookup – Look up IP address for a given domain name
- List mDNS Services – mDNS (multicast DNS) resolves hostnames to IP addresses within small networks
- Enable Boot Up Debug Mode – When selected the phone will prompt if you are sure you want to restart your phone

What's Next? Web User Interface Settings

The Sangoma P-series phone web user interface (WebUI) provides a means of setting basic phone configuration options manually from a web browser. To access the phone's WebUI, it must not have been previously provisioned by a Sangoma configuration server.

Otherwise, to get to the phone's WebUI, using a browser go to:

- **http://phone-ip** (phone IP address)
- **Username**: admin (phone administrator username)
- **Password**: 789 (default factory admin password)

NOTE: If you cannot access the phone's Web UI, and receive the following message, "Access to this Web User Interface has been disabled", then your phone must be Factory Reset, as described above. To Factory Reset, navigate to the Main Menu, scroll to the bottom and select "Factory Reset". After resetting and a reboot, the phone's WebUI should now be accessible.

NOTE: To find your phone's IP address, using softkeys navigate to Main Menu > About. This displays the phone's model number, firmware version, MAC address, and IP address. To find the IP address when the phone has no configuration, press the About softkey from the Settings menu.

The Web User Interface page for the Sangoma Phone Settings includes tabs that display pages for these items: **Lines** **General** **Preferences** **Contacts** **Network** **Logging** **Ringtones**

IMPORTANT: Anytime you click Submit Phone Settings (at the bottom of the page), it saves all changes that have been entered under any tab.

Lines Tab

To define the Sangoma Phone's Line keys (the SIP accounts), click the Lines tab. This displays the Lines page with tabs for individual lines. For each line, select its tab, then enter or select information as indicated:

LINE STATUS

If a line is not enabled, that line is not available for use on your phone. Enable this Line—YES or NO. If enabled, this line will be displayed on your phone's line keys, otherwise its settings will be preserved, and it will not appear on your phone.

NOTE: Line 1 is the main or primary extension for your phone, and you cannot disable it.

GENERAL

- User ID / Extension
- Authorization Name – By default this is the same as your User ID / Extension. Leave this blank unless instructed by your provider.
- Line Label on Phone
- Caller ID Name
- Register – NO or YES
- Password – SIP secret
- Voicemail Extension or SIP URI. Numeric Extension or a URI formatted as sip:user@host
- Digitmap – The digitmap is the setting that describes different dialing patterns of numbers. When a dialed number matches a digitmap pattern, the number is sent to the SIP account to place the call. The pattern may include a timer at the end. If no numbers are entered before the time expires, the number matching the pattern will be sent. If additional numbers are entered before the time elapses, the pattern no longer matches.

PRIMARY HOST

- IP Address or Hostname of SIP server
- Port
- Transport—UDP, TCP or TLS
- Seconds until Re-Registration
- Seconds until Retry on Failure

ALTERNATE HOST

If the phone cannot register to the Primary Host, it registers to the Alternate Host. Setting fields are the same as the Primary Host (above).

SIP OUTBOUND PROXY

- IP Address or Hostname.
- Port

General Tab

Enter the following general setting information as indicated and click the "Submit Phone Settings" button when finished.

SETTINGS PASSWORD PROTECTION

- Enter the Admin Password.
  - The program informs you of the quality of the password—too short, weak, strong, etc.
- Enter the password again for confirmation.

TIME

- Select Timezone / Location from dropdown.
- Enter NTP Server
- Enter Seconds until NTP Resync

SIP

- Select either "Accept all calls from any host" or "SIP Account Hosts". If you choose "SIP account hosts", the phone will only accept calls from servers to which the phone has registered accounts.
- Local SIP Port (default is 5060) – this is the SIP signaling port used locally by the phone and is not related to the SIP port(s) used for line registration.

FIRMWARE

- Displays the Current Firmware Version: in the following format: 4_9_2
- Click Firmware Update to upload apply a different firmware version to your phone
  - Click in Firmware File box to select the desired firmware file on your workstation
  - When the firmware file is selected, press Update to this Firmware Version.
  - Select Yes to proceed with firmware update, Select No to cancel.

PHONE RELOAD

- Select Restart Phone
- Press Yes to continue, or No to return to previous selection

ADVANCED: AUDIO CODECS

- Click the arrow to expand the list display.
  - Use the arrow icon to reorder the list up or down.
  - Use the disable icon to remove a codec.
  - Use the enable icon to add a codec,
  - Click the gear (setup) icon to view/edit that individual codec settings

Preferences Tab

The following preferences can be set. Click Submit Phone Settings when finished.

LOCALIZATION

- Language/Locale. From the pull-out menu, select the language locale you wish the phone to use. This affects the date and time display format and these tones: busy, dial tone, call-waiting beep, congestion (fast busy), and ring back. English/United States is the default.
- Time Format. From the pull-out menu, select the time format you wish the phone to use: 2:30 pm (12 hour); 15:30 (24 hour); or, 15.30 (24 hour)

IDLE SCREEN

- Logo Image—the current image is displayed, and you have the option of uploading a different image
- Wallpaper
- Small clock

CALL ANSWERING

- Headset Answer—select NO or YES. If YES, when you press the Answer softkey during an incoming call, the call is answered on the headset, not the speaker.
- Ring Headset Only—select NO or YES
- Electronic Hook Switch Type—Options are Automatic, Plantronics, and Jabra IQ. If you select Jabra IQ, the Jabra headset must be set to IQ mode. If the Jabra headset does not support Jabra IQ, you may need to update the firmware on the headset. See the manufacturer's documentation for more information.

DISPLAY

- Brightness. Adjust by moving the marker on the sliding scale.
- Contrast. Adjust by moving the marker on the sliding scale.
- Backlight Dimming—select NO or YES
  - If YES, enter the Seconds until Backlight Dim
  - If YES, adjust the Backlight Dim Level. It cannot be greater than brightness
- Display Missed Calls Notification—select YES or NO

SOUNDS

- Select the Default Ringtone from the dropdown.
- Adjust the following volumes by moving the marker on the sliding scale.
- Ringer Volume
- Speaker Volume
- Handset Volume
- Headset Volume
- Set Reset Volume Every Call—select NO or YES
- Set Call Waiting Tone—select NO or YES

Contacts Tab

Set the Rapid Dial Keys for the Phone. When finished, click Submit Phone Settings.

- Enable Contacts on Main Line Keys—select NO or YES. If YES, your unregistered line keys will be used as Rapid Dial Keys for contacts.
- Number of Rapid Dial Subscriptions (i.e., the number of Rapid Dial contacts to subscribe to presence updates from). Use the sliding bar to select up to 105. The default is 15.

Network Tab

Network Tab settings may be set from either the Phone or the Phone Web Interface. Setting from the Phone is described in "Network & System Tools" (page 5). When finished setting values, Click Submit Phone Settings.

IPV4 ADDRESS

- Automatic DHCP—select YES or NO. If set to NOS, the following parameters are available to be set:
- Static IP Address
- Subnet Mask
- Default Gateway
- Primary DNS Server
- Secondary DNS Server

VIRTUAL LAN

- Discovery Mode. LLDP, Manual, or None
- ID (1-4095).
- Voice 802.1p Priority.
- SIP 802.1p Priority.
- PC Port VLAN ID (1-4095).
- PC Port 802.1p Priority

QUALITY OF SERVICE

- Voice DSCP. Select a value using the sliding scale, 0-63.
- SIP DSCP. Select a value using the sliding scale, 0-63.

ETHERNET PORT MODES

- LAN Port Mode. Select value from dropdown menu (Manual, 10Mb/s Half Duplex or Full Duplex, or 100Mb/s Half Duplex or Full Duplex).
- PC Port Mode. Select value from dropdown menu (Manual, 10Mb/s Half Duplex or Full Duplex, or 100Mb/s Half Duplex or Full Duplex, or Disable).

ADVANCED NETWORK SETTINGS

Click the Arrow icon to display Miscellaneous Settings.

- Enable UDP Persist-Connection—select NO or YES. If YES, the next option is available.
- UDP Persist-Connection Interval—Select a priority 5-300 using the sliding scale. This option attempts to keep the NAT tunnel active by pinging the server on a regular interval.

Logging Tab

Logging Tab is a Technical Support tool; do not change the default settings unless support requires you to.

LOG LEVEL

- Log Level. To change, select level from the dropdown menu: Error, Warning, Information, Debug.

ENABLE NETWORK LOGGING (SYSLOG)

- Select NO or YES. If YES (enabled), the following options can be set.
- Enter IP Address or Hostname.
- Enter number for Port.

IP ADDRESS OF HOSTNAME

Enter the IP address of the host.

PORT

Enter the Port number.

Ringtones Tab

Select this tab to display the Upload Ringtone page. This page lists the already uploaded ringtones, including the pre-loaded tones, and it displays how much space you have available for adding more ringtones. To add a new ringtone, do the following:

- Click the Upload Ringtone icon.
- Enter the Ringtone File name. It must be a WAV file.
- Enter the Name you are calling the ringtone on your phone.
- Click the Upload Ringtone button.

RINGTONE LIST

The list of ringtones includes each ringtone's Name, File Size, Type, and Action options: Play, Edit, and Delete. The following tones are pre-loaded; they cannot be edited or deleted:

- Alarm
- Beep
- Chimes
- Digium
- Guitar Strum
- Jingle
- Office
- Office 2
- Rotary Phone
- Steel Drum
- Techno
- Theme
- Tweedle
- Twinkle
- Vibe

Phone Apps & Calling

Phone Apps

CALL LOG

Press the Call Log app to display your call activity for received, dialed, and missed calls. You can dial from the Call Log, see the details of the call, and save the caller as a Contact. Select from the available options on the 'Filter' softkey to choose the type of calls displayed in the call history, All Calls, Missed Calls, Dialed Calls or Received Calls.

FORWARD CALLS

Use the Forward Calls app to automatically send all incoming calls to another number. From the idle screen select the configured softkey or access from the main menu by pressing the ▯ nav button, select Applications, then select Forward.

The main display window now displays a text box. Manually enter a forwarding number or press the Contacts softkey to select one of your contacts. Then press the Set softkey. To turn off forwarding, return to the Forward Calls app and press the Off softkey.

BLUETOOTH / WIRELESS HEADSET (FOR SUPPORTED MODELS ONLY)

Bluetooth/Wireless Headset app allows you to turn on and off the option to use BT for BT wireless headsets.

- Navigate to the Main Menu (▯ nav button)
- Select Applications then select Bluetooth

There are further instructions on this page of how to proceed.

- Press the BT On soft key to activate BT.
- Press the Search soft key to find BT enabled devices
- When the device you are looking for is found, press the Pair soft key, and the device will pair up and show as Connected.
- First search for available devices, then pair or unpair the device. When a Bluetooth/Wireless device is paired, the headset audio path causes audio to go to the Bluetooth/Wireless device, instead of to the normal wired headset.

CONTACTS

The Contacts app is used for rapid dialing, direct dialing to voicemail, checking another phone user's status and for seeing detailed information about an entry in the contact list.

- Press the Contacts softkey or select it from the Applications in the Main Menu to view contacts list,
- Use the arrow buttons to scroll through the entries in the contact list. To see details for a contact, press the Show softkey in a list of contacts. Details include the phone user's status.

PARKED CALLS

When in an active call, pressing the "Park" softkey will place the current active call in the parking lot. When the phone is idle, pressing the "Parked Calls" softkey will allow the phone user to visually browse all calls waiting in the parking lot, and retrieve one to answer.

CALL QUEUES

Press Call Queues to access the queue management established for your phone.

STATUS

Press the Status softkey to update the phone user's status. A list of status options will be displayed, which

may differ depending on the UC platform the phone is registered to. With a very basic configuration, the phone user can choose from Do Not Disturb (DND) and Available. When set to DND, the phone sends a SIP response 486, which indicates busy.

VOICEMAIL

Press the Voicemail button to open the voicemail system as indicated in your phone configuration

Calling

The following are the basic calling features of the Digium Phone:

DIALING

Pick up the handset or press a line key and dial a number. Alternatively, dial a number and then lift the handset or press the Dial softkey.

Dialing is also possible from Contacts app or from the Call Log. Scroll through the list until the desired number is highlighted then press the Dial softkey.

RECEIVING CALLS

While the phone is ringing, pick up the handset or press the answer softkey to answer the call. Pressing the Ignore softkey makes the call stop ringing but uses your Call Rules.

During a call, you can answer another incoming call. Press the blinking line key to answer and put the active call on hold or continue with your active call, press the down direction key to highlight the new call, and press a softkey

REDIAL

Press the Redial button to redial the last call you made. (If you have multiple lines, Redial automatically uses the correct line.)

HOLD

During a call, press Hold. The line key flashes red. To resume that call, press either the flashing line key or the Resume softkey. If you have multiple calls on hold, and you want to resume one of the calls, highlight that call in your call list and press its Resume softkey.

TRANSFER

ASSISTED

During a call, press the Transfer button. Enter a number or press the Contacts softkey to find a number. Press the Dial softkey. When someone answers, inform them of the call to be transferred. Press the Transfer softkey, and the transfer is completed.

UNASSISTED (BLIND)

During a call, press the Transfer button. Enter a number or press the Contacts softkey to find a number. Press the Transfer softkey, and the transfer is completed.

CONFERENCE (3-WAY CALLS)

During a call, press the Conference softkey. Make a call, or Resume an existing call. Press Conference again to connect all participants. To end the Conference and put both calls on Hold, press the Split softkey on either call.

Terms & Definitions

DHCP	Dynamic Host Configuration Protocol
DDNS	Domain Name System – Human language representation of an IP address
IP	Internet Protocol
LLDP	Line Link Discovery Protocol
LLDP-MED	Line Link Discovery Protocol – Media Endpoint Devices
OPTION 66	DHCP option. When set devices will also receive the address of a provisioning server, for autoprovisioning
PBX	Private Branch Exchange system – a communication system that provides voice connectivity through desk phones within an organization
PRIMARYDNS	The main authoritative nameserver for a domain
SECONDARYDNS	As it indicates, the secondary or backup for a Primary DNS
PROTOCOL	In networking, a set of rules for formatting, processing and transporting data over an internet network
PROVISIONING	A process that configures a SIP phone to work with an IP PBX system
NETMASK	A mathematical mask that hides a portion of an IP address and replaces it with other numbers
GATEWAY	A network node or device that forms a passage between two networks operating with different transmission protocols
SIP	Session Initiation Protocol (SIP Trunking) – communications protocol for integrating multimedia communication sessions
URL	Uniform Resource Locator – a reference address to a resource on the internet
VLAN	Virtual Local Area Network
VOICE DSCP	Voice using Differentiated Services Code Point
XML	Extensible Markup Language – a markup language that defines a set of rules for encoding documents in a format that is both machine-readable and human-readable. a markup language much like HTML

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www.sangoma.com

100 Renfrew Drive, Suite 100, Markham ON L3R 9R6 Canada | +1 (256) 428-6000 or 1 (877) 344 4861 (toll free in N. America)

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Product brochure

Lithium-ion (6–11 kVA)

Eaton 9PX G2 lithium-ion UPS

Eaton's 9PX G2 lithium-ion UPS provides high power density, enhanced battery management, best-in-class efficiency, maximum power reliability, long battery life, simplified fleet management and certified cybersecurity.

Powering Business Worldwide

Eaton 9PX G2 lithium-ion UPS

Featuring advanced technology upgrades and customer-centric feature enhancements, Eaton's 9PX G2 lithium-ion UPS builds on the highly successful 9PX platform to create a best-in-class power management solution. Lithium-ion batteries provide greatly increased battery lifespan and more than double the runtime compared to similar lead-acid batteries. Industry-leading hardware technology and Brightlayer software allow end users and service providers to deploy distributed edge applications with confidence, simplify fleet management and proactively monitor all critical equipment.

Ideal use cases:

- Edge networks
- Distributed IT
- Mission-critical environments
- Data centers
- Server rooms
- Network closets
- Edge AI inferencing

Higher power density

Using wide-bandgap (WBG) technology, the 9PX G2 lithium-ion UPS maximizes usable output power per UPS and allows you to support more devices. Rack size is also minimized, saving valuable space for revenue-generating equipment. **8–11 kVA models provide four L6-30R outlets in only 4U, with the 11 kVA model offering the highest usable output power in its class!**

9PX G2 11 kVA UPS + battery **4U**

9PX G2 11 kVA output: HW + (4) L6-30R outlets

Lithium-ion batteries

Compared to similar VRLA batteries, $LiFePO_4$ (lithium iron phosphate) batteries offer longer lifespan, longer runtime, faster recharge rate and lighter weight for an easier install. $LiFePO_4$ batteries have an average lifespan of 8–10 years, while VRLA batteries have an average lifespan of 3–5 years.

Learn more at: **Eaton.com/lithium**

Exclusive BMS

Eaton's exclusive lithium-ion battery management system (BMS) monitors the health of each battery pack individually, including temperature and charge cycles. The UPS alerts in advance when battery health is low, proactively pinpointing which battery pack in the UPS or EBM requires replacement soon. Individual battery health can also be checked at any time using the LCD control panel or remote management interface. When internal battery packs require replacement, they are hot-swappable and accessible from the front of the UPS.

$LiFePO_4$ battery benefits vs. VRLA

- 2–3X longer runtime at full load
- 2–3X longer battery lifespan
- 5-year warranty for lithium-ion vs. 3 years for VRLA
- Up to 3X faster recharge time
- Over 20% lighter UPS (20–40 pounds lighter)
- Over 40% lighter EBM (60+ pounds lighter)
- 33% smaller EBM (2U vs. 3U)
- "Set it and forget it" convenience
- Reduced TCO

Versatile configurations

The 9PX G2 lithium-ion UPS has the versatility to meet the demands of a wide array of IT applications. 208V and 120V output options are available with or without maintenance bypass, and each UPS includes a 4-post rackmount rail kit and tower stands. An optional mounting kit also supports 2-post rack installation. The LCD and badge rotate to match the UPS cabinet's orientation.

Maximum power reliability

With true online double conversion, hot-swappable batteries, internal bypass and optional 0U maintenance bypass, the 9PX G2 lithium-ion UPS is perfect for preventing costly downtime of critical equipment in distributed edge deployments. Out of the box, each UPS supports up to 10 optional lithium-ion extended battery modules (EBMs) to expand backup runtime. Adaptive charging and lithium-ion battery technology allow faster recharge times. The UPS can be configured to provide hours of backup runtime to support sites without generator backup.

Maintenance bypass for 8–11 kVA UPS

Maintenance bypass for 6 kVA UPS

IEC maintenance bypass for 6 kVA UPS

A 6 kVA 9PX G2 lithium-ion UPS and 10 EBMs are shown mounted in an Eaton heavy-duty rack enclosure that supports up to 5,000 pounds. This configuration can support 3 kW for 5.75 hours. (See page 12 for complete runtime charts. Learn more about Eaton heavy-duty racks at: **Eaton.com/HDRack**)

The maintenance bypass module prevents service-related downtime and does not require additional rack space. It can be mounted behind the UPS, on the side or top of a rack, on a wall or in a tower orientation using the included hardware.

Best-in-class efficiency

Up to
97%
efficiency

With up to 97% efficiency in online mode, the 9PX G2 lithium-ion UPS is the most efficient UPS in its class, reducing energy costs and TCO. All models are certified to comply with the latest ENERGY STAR standards to reduce greenhouse gas emissions. Load segments with energy metering help IT managers optimize energy use. Sustainable product packaging also helps reduce environmental impact.

High-visibility control panel

With a high-contrast LCD that tilts up to 45 degrees for optimal viewing, the 9PX G2 lithium-ion UPS makes local management easy. The LCD displays key data like load, efficiency, runtime remaining and alarms. A large color LED status bar below the LCD helps you diagnose the UPS from a distance and quickly locate units that require attention, even in a crowded data center.

The LED status bar glows blue during normal operation and changes color to indicate automatic bypass, faults and other conditions.

Simplified fleet management

Every 9PX G2 lithium-ion UPS comes with a cybersecure Gigabit Network Card, allowing you to monitor and manage your UPS fleet remotely for greater convenience and peace of mind.

For smaller environments, you can connect to UPSs using a web browser and receive email alerts. For larger deployments spanning multiple locations, 9PX G2 lithium-ion UPSs integrate smoothly via SNMP with digital solutions from our **Brightlayer portfolio**.

Brightlayer Disaster Avoidance software helps you monitor, manage and control power equipment in physical or virtual environments with up to 25 UPSs and PDUs.

- Gracefully shut down IT equipment in the order required for safe and quick recovery from outages.
- Keep critical workloads running longer during outages by limiting server power consumption and suspending non-critical virtual machines.

Brightlayer Distributed IT software helps you remotely monitor and control up to thousands of UPSs and PDUs at remote sites in any location.

- Know what's happening with real-time reports, trend charts, dashboards and alerts prioritized by severity.
- Troubleshoot and resolve issues more quickly.
- Remotely control load segments regardless of vendor.
- Update firmware remotely to improve cybersecurity.
- Leverage integrations with virtualization platform leaders.
- Gracefully shut down IT equipment.

Brightlayer DCIM software helps you manage power, space, connectivity and cooling to maximize uptime while minimizing capital and operating costs.

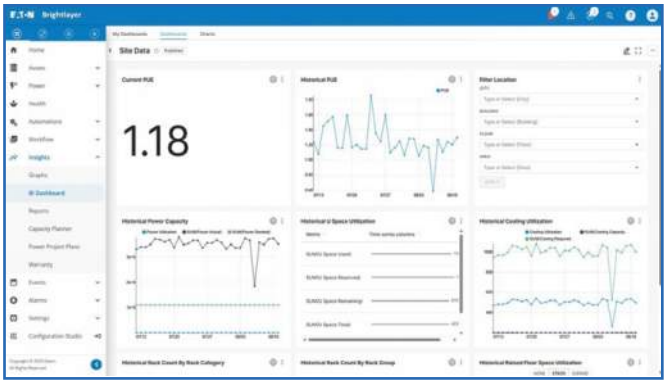
- Gain efficiencies and reduce costs with real-time data and automated alerts.
- View 2D and 3D visualizations and automated reports.
- Gain near-real-time visibility into key performance indicators.

Brightlayer EPMS software provides advanced monitoring and management of valuable power equipment and environmental conditions, with powerful diagnostic tools.

- Monitor conditions and react to issues with 24/7 visibility into electrical power assets, regardless of location or vendor.
- Identify and resolve issues through power quality and waveform analysis, high-resolution datasets and one-line diagrams.
- Access sophisticated dashboards, trend charts, energy modelling and reports.

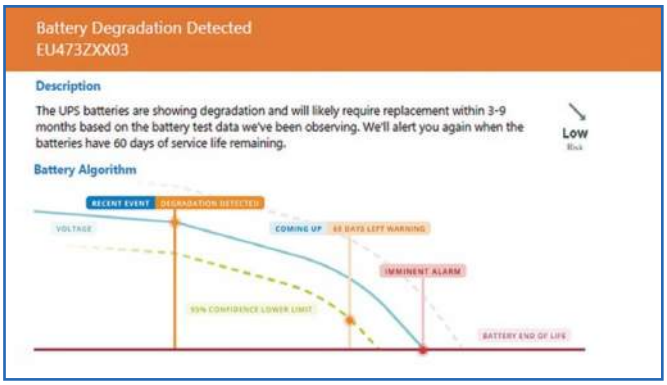
Brightlayer Remote Monitoring Service, also known as PredictPulse, provides 24/7 remote monitoring and predictive analytics to forecast failures before issues arise and dispatches field service technicians when needed.

- Know about future component failures before they happen.
- Gain fast response and repairs from Eaton technicians.
- Access real-time health trends, alarms and outages prevented.



Remote power management dashboard from Brightlayer Distributed IT software.

Data center rack view from Brightlayer DCIM software.



Battery condition notification from Brightlayer Remote Monitoring Service.

Certified cybersecurity

9PX G2 lithium-ion UPSs include Eaton's cybersecure network management card (**NETWORK-M3**), which is UL 2900-1 and IEC 62443-4-2 listed, providing industry-leading cybersecurity and automation features.

Zero-trust architecture

- Minimizes cybersecurity vulnerabilities through hardware root of trust, enabling secure boot and complete chain of trust with private hardware key encryption.

Zero-touch provisioning

- Automatically configures equipment to save time and reduce errors in large-scale deployments.

User-configurable firewall

- Reduces your organization's attackable surface area.
- Helps meet network/security compliance requirements.
- Supports IP white list.

RESTful API

- Allows you to easily integrate networked UPSs with native systems and automate M2M interactions.

Secure access via web browser or SNMP

- Access UPSs using the secure web browser interface or integrate with a network management system via SNMP.

You can upgrade 9PX G2 lithium-ion UPS firmware remotely through the included network card to keep UPSs at all your remote sites updated with the latest features and security.

Firmware updates are free of charge and do not require a service contract.

Ready for virtualization, HCI and AI

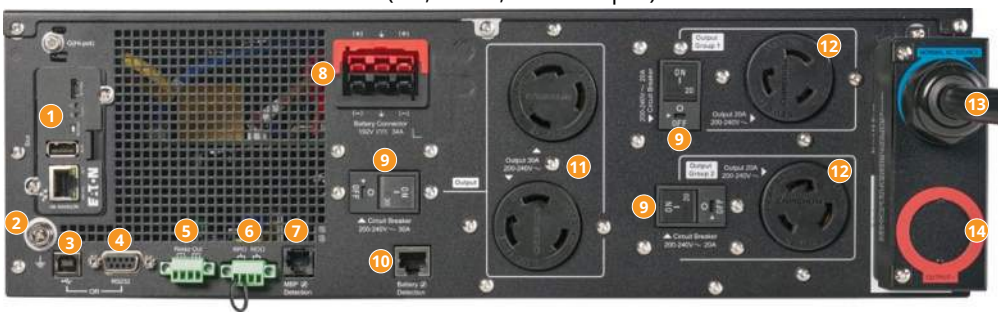
Brightlayer software enables seamless integration and intelligent coordination with virtualized, hyperconverged and generative AI infrastructures. Support for complex orchestrations during blackouts and other power events allows you to extend runtime, preserve data and gracefully shut down or migrate servers per your preferences.

Eaton is the leader in power management for virtualization platforms and has more than 500 hours invested in testing with alliance partners like Cisco, Dell, HPE, NetApp, Nutanix, Scale Computing and VMware.

Learn more at **Eaton.com/alliances**

Eaton 9PX G2 rear panel overview

Model 9PX6KG2-L lithium-ion UPS (3U, 6 kVA, 208V output)



Model 9PXTFMR5G2 step-down transformer (3U, 5 kVA, 120V output)

Not shown: 18

Model 9PXPPDM1G2 PPDM (3U, 208V + 120V output)

Not shown: 18 24

Model 9PXPPDM2G2 PPDM (3U, 208V + 120V output)

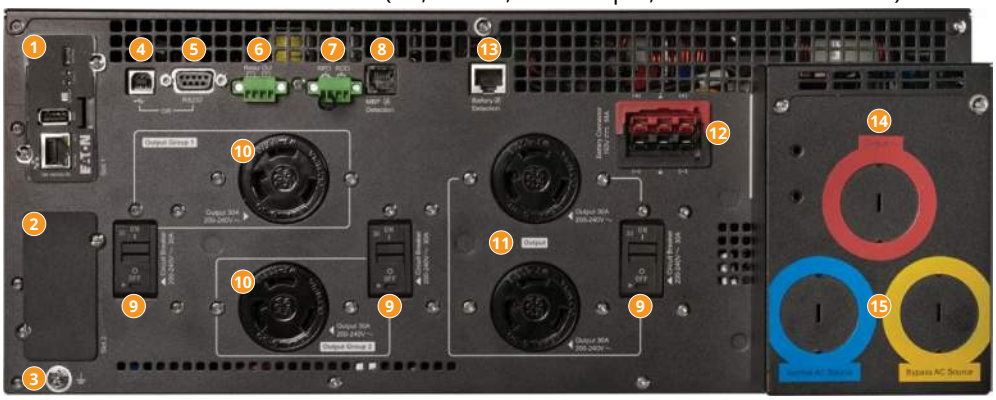
Not shown: 18 24

Model 9PXEBM192RTG2-L lithium-ion EBM (2U, 192V)

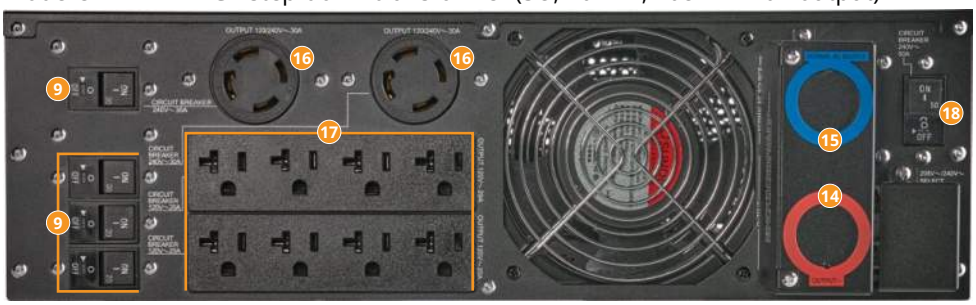
1. Network management card (NETWORK-M3; included with UPS)
2. Ground bonding screw
3. USB port (cable included)
4. RS-232 serial port (cable included)
5. Output relay contact
6. Remote power off (RPO) and remote on/off (ROO) contacts
7. Maintenance bypass module detection port
8. Extended battery module (EBM) connector
9. Output circuit breaker(s)
10. EBM detection port
11. (2) NEMA L6-30R outlets (metered load segment)
12. NEMA L6-20R outlet (metered load segment)
13. AC input cord with L6-30P plug
14. Hardwired AC output
15. Main circuit breaker
16. (18) NEMA 5-20R outlets (also function as 5-15R)
17. 3 ft. AC input cord with L6-30P plug
18. Front-panel voltage selection switch
19. (6) NEMA 5-20R outlets (also function as 5-15R)
20. NEMA L6-30R outlet
21. NEMA L14-30R outlet
22. NEMA L6-30R outlet for UPS input connection
23. 3 ft. AC input cord with L6-30P plug for UPS output connection
24. Front-panel maintenance bypass switch
25. Hardwired AC input
26. Battery communication ports
27. Battery circuit breaker

Eaton 9PX G2 rear panel overview (continued)

Model 9PX11KG2-L lithium-ion UPS (4U, 11 kVA, 208V output; 8 kVA model is similar)



Model 9PXTFMR11G2 step-down transformer (3U, 10 kVA, 208V + 120V output)

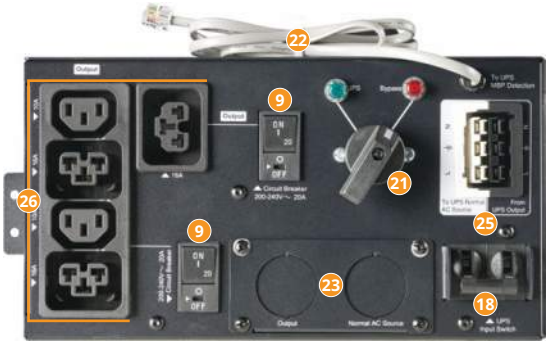


Not shown: 19

Model MBP11K208G2 maintenance bypass module (0U)

Model MBP6K208G2 maintenance bypass module (0U)

Model MBP6KIECG2 maintenance bypass module (0U)



1. Network management card (NETWORK-M3; included with UPS)
2. Second communication slot
3. Ground bonding screw
4. USB port (cable included)
5. RS-232 serial port (cable included)
6. Output relay contact
7. Remote power off (RPO) and remote on/off (ROO) contacts
8. Maintenance bypass module detection port
9. Output circuit breaker(s)
10. NEMA L6-30R outlet (metered load segment)
11. (2) NEMA L6-30R outlets (metered load segment)
12. Extended battery module (EBM) connector
13. EBM detection port
14. Hardwired AC output
15. Hardwired AC input
16. NEMA L14-30R outlet
17. (8) NEMA 5-20R outlets (also function as 5-15R)
18. Main circuit breaker
19. Front-panel voltage selection switch
20. NEMA L6-30R outlet
21. Maintenance bypass switch
22. Bypass detection cable
23. Hardwired AC input/output
24. NEMA L6-20R outlet
25. Bypass connection port
26. (2) C13 outlets and (3) C39 outlets (C39 outlets combine C13 and C19 functionality to increase flexibility and save space)

Eaton 9PX G2 lithium-ion UPS (6–11 kVA) model selection guide

For complete technical specifications or to find VRLA models, please visit **Eaton.com/9PXG2**

9PX G2 lithium-ion UPS with 208V output (200V, 208V, 220V, 230V, 240V)

Catalog number	Rack size	Power rating (VA/watts)	Default AC input/ output voltage	Maintenance bypass	Efficiency (online)	Input connection (HW = hardwired)	Output connections (HW = hardwired)	Unit dimensions (hwd) and weight
9PX6KG2-L	3U	6000/5400*	208V	Optional	96%	HW or L6-30P, 10 ft.	HW + (2) L6-30R + (2) L6-20R	5.1 x 17.3 x 27 in., 77.6 lb.
9PX8KG2-L	4U	8000/8000	208V	Optional	96.5%	HW	HW + (4) L6-30R	6.8 x 17.3 x 28.6 in., 132.3 lb.
9PX11KG2-L	4U	11000/11000	208V	Optional	97%	HW	HW + (4) L6-30R	6.8 x 17.3 x 28.6 in., 132.3 lb.

All 9PX G2 lithium-ion UPS models include a 5-year limited warranty, network management card (NETWORK-M3), 4-post rack rail kit(s) and tower stands. Product certifications and compliance: UL (USA and Canada); CE (Europe); EN 62040-2; FCC Part 15 Class A (USA); NOM (Mexico); ENERGY STAR; RoHS. * 9PX6KG2-L maximum output: 5400W at 240V with L6-30P; 4800W at 208V with L6-30P; 6000W with hardwired input and 40A input breaker. Due to continuous improvement programs, all specifications are subject to change without notice.

Eaton 9PX G2 UPS accessories

Extended battery modules (EBMs) and accessories

Catalog number	Description
9PXEBM192RTG2-L	9PX G2 2U rack/tower EBM, 192V, lithium-ion. Compatible with 6–11 kVA 9PX G2 lithium-ion UPS. Connect up to 10 EBMs per UPS. 3.4 x 17.3 x 25.4 in., 77.1 lb. 13.7 in. cable.
EBMCBL192RT-L	6 ft. EBM cable extension (192V).

Transformers

Catalog number	Description
9PXTFMR5G2	9PX G2 5 kVA step-down transformer, 3U, L6-30P input, (18) 5-20R output.
9PXTFMR11G2	9PX G2 10 kVA step-down transformer, 3U, hardwired input, hardwired + (2) L14-30R + (8) 5-20R output.

PowerPass distribution modules (PPDMs) for 9PX6KG2-L

Catalog number	Description
9PXPPDM1G2	9PX G2 PowerPass distribution module (PPDM), 3U, L6-30P input, (1) L14-30R + (1) L6-30R + (6) 5-20R output, maintenance bypass switch.
9PXPPDM2G2	9PX G2 PowerPass distribution module (PPDM), 3U, hardwired input, hardwired output, maintenance bypass switch.

Maintenance bypass modules

Catalog number	Description
MBP6K208G2	9PX G2 hot-swap maintenance bypass module, hardwired + (2) L6-30R + (2) L6-20R output. Compatible with 9PX6KG2-L and 9PX G2 3–6 kVA VRLA models.
MBP6KIECG2	9PX G2 hot-swap maintenance bypass module, hardwired + (3) C39 + (2) C13 output. Compatible with 9PX6KG2-L and 9PX G2 3–6 kVA VRLA models.
MBP11K208G2	9PX G2 hot-swap maintenance bypass module, hardwired + (4) L6-30R output. Compatible with 9PX8KG2-L, 9PX11KG2-L and 9PX G2 8–11 kVA VRLA models.

Network management accessories

Catalog number	Description
NETWORK-M3	Network management card with Web/SNMP and UL/IEC certified cybersecurity. (Bundled with all 9PX G2 lithium-ion UPS models listed in this brochure.)
EMPDT1H1C2	Environmental monitoring probe with temperature, humidity and dry contact monitoring. (Connects to NETWORK-M3.)
INDGW-M3	Industrial gateway card with Web/SNMP, industrial protocol support and UL/IEC certified cybersecurity.
RELAY-MS	Relay/serial interface card.

Other hardware accessories

Catalog number	Description
RK2PC	2-post rack mounting rail kit for 9PX G2 UPS or EBM. (One kit required per cabinet.)
BINTSYS	Battery integration system. Vertical mounting platform with caster wheel kit. 1540 lb. weight capacity.

UPS services (For more information, visit **Eaton.com/SinglePhaseService**)

Catalog number	Description
AS00NXXX-6009UC	Scheduled onsite assembly 24/7 for 3–6 kVA UPS.
AS00NXXX-11000UC	Scheduled onsite assembly 24/7 for 8–11 kVA UPS.
WFLN72XX-6009UC	2-year onsite service 24/7 with next-day response for 3–6 kVA UPS.
WFLN72XX-11000UC	2-year onsite service 24/7 with next-day response for 8–11 kVA UPS.
WFLN73XX-6009UC	3-year onsite service 24/7 with next-day response for 3–6 kVA UPS.
WFLN73XX-11000UC	3-year onsite service 24/7 with next-day response for 8–11 kVA UPS.
WFLN75XX-6009UC	5-year onsite service 24/7 with next-day response for 3–6 kVA UPS.
WFLN75XX-11000UC	5-year onsite service 24/7 with next-day response for 8–11 kVA UPS.
0005NXXX-6009UC	Onsite preventive maintenance 24/7 for 3–6 kVA UPS.
0005NXXX-11000UC	Onsite preventive maintenance 24/7 for 8–11 kVA UPS.
SU05NXXX-6009UC	Onsite startup 24/7 for 3–6 kVA UPS.
SU05NXXX-11000UC	Onsite startup 24/7 for 8–11 kVA UPS.

See website for additional information, including available service areas.

Eaton 9PX G2 UPS accessories (continued)

Rackmount power distribution units (PDUs) (For additional PDU options, visit **Eaton.com/PDU**. For hardwired connections, contact Eaton.)

Catalog number	Description
EMAT09-10	1.92 kW managed rack PDU, 1U, L5-20P / 5-20P input, (8) 5-20R outlets. Compatible with 9PXTFMR5G2, 9PXTFMR11G2, 9PXPPDM1G2.
EMI200-10	5.76 kW metered input rack PDU, 0U vertical, L14-30P input, (20) C13 / (6) C19 / (8) 5-20R outlets. Compatible with 9PXTFMR11G2, 9PXPPDM1G2.
EVMAL620A	3.8 kW managed rack PDU G4, 0U vertical, C20 / L6-20P input, (12) C13 / (12) C39 outlets. Compatible with 9PX6KG2-L.
EVMAL630A	5.8 kW managed rack PDU G4, 0U vertical, L6-30P input, (12) C13 / (12) C39 outlets. Compatible with 9PX6KG2-L, 9PX8KG2-L, 9PX11KG2-L, 9PXPPDM1G2.
EVMAL630B	5.8 kW managed rack PDU G4, 0U vertical, L6-30P input, (10) C13 / (10) C39 outlets. Compatible with 9PX6KG2-L, 9PX8KG2-L, 9PX11KG2-L, 9PXPPDM1G2.
EVMAL630X	5.8 kW managed rack PDU G4, 0U vertical, L6-30P input, (24) C13 / (18) C39 outlets. Compatible with 9PX6KG2-L, 9PX8KG2-L, 9PX11KG2-L, 9PXPPDM1G2.
EVMIL620A	3.8 kW metered input rack PDU G4, 0U vertical, C20 / L6-20P input, (12) C13 / (12) C39 outlets. Compatible with 9PX6KG2-L.
EVMIL630X	5.8 kW metered input rack PDU G4, 0U vertical, L6-30P input, (24) C13 / (18) C39 outlets. Compatible with 9PX6KG2-L, 9PX8KG2-L, 9PX11KG2-L, 9PXPPDM1G2.
PDU1230	5.8 kW basic rack PDU, 1U, L6-30P input, (16) C13 / (4) C19 outlets. Compatible with 9PX6KG2-L, 9PX8KG2-L, 9PX11KG2-L, 9PXPPDM1G2.
PDUH20DV	1.6-3.8 kW basic rack PDU, 1U, C20 / L6-20P input, (12) C13 / (2) C19 outlets. Compatible with 9PX6KG2-L.
PDUMH20	2.4 kW metered outlet rack PDU, 1U, L5-20P / 5-20P input, (12) 5-20R outlets. Compatible with 9PXTFMR5G2, 9PXTFMR11G2, 9PXPPDM1G2.
PDUMH20ATNET	1.9 kW switched rack PDU with ATS, 1U, (2) L5-20P / 5-20P inputs, (16) 5-20R outlets. Compatible with 9PXTFMR5G2, 9PXTFMR11G2, 9PXPPDM1G2.
PDUMV20HV	3.7 kW metered outlet rack PDU, 0U vertical, C20 / L6-20P input, (32) C13 / (6) C19 outlets. Compatible with 9PX6KG2-L.
PDUMV30HV	5.5 kW metered outlet rack PDU, 0U vertical, L6-30P input, (24) C13 / (6) C19 outlets. Compatible with 9PX6KG2-L, 9PX8KG2-L, 9PX11KG2-L, 9PXPPDM1G2.

Rack enclosures (For more options, visit **Eaton.com/racks**)

Catalog number	Type	Height	Width	Maximum device depth	Weight capacity	Color
SR12UB	Compact	12U	23.6 in.	32.5 in.	1000 lb.	Black
SR18UB	Compact	18U	23.6 in.	32.5 in.	1000 lb.	Black
SR24UB	Compact	24U	23.6 in.	32.5 in.	1000 lb.	Black
SR25UB	Standard	25U	23.6 in.	37 in.	3500 lb.	Black
SR42UB	Standard	42U	23.6 in.	37 in.	3500 lb.	Black
SR42UBDP	Standard	42U	23.6 in.	42 in.	3500 lb.	Black
SR42UBDPWD	Standard	42U	29.5 in.	42 in.	3500 lb.	Black
SR45UB	Standard	45U	23.6 in.	37 in.	3500 lb.	Black
SR45UBDP	Standard	45U	23.6 in.	42 in.	3500 lb.	Black
SR45UBWD	Standard	45U	29.5 in.	37 in.	3500 lb.	Black
SRH422442W	Heavy-duty	42U	23.6 in.	41 in.	5000 lb.	White
SRH422446W	Heavy-duty	42U	23.6 in.	46 in.	5000 lb.	White
SRH452442W	Heavy-duty	45U	23.6 in.	41 in.	5000 lb.	White
SRH452446W	Heavy-duty	45U	23.6 in.	46 in.	5000 lb.	White
SRH483246W	Heavy-duty	48U	31.5 in.	46 in.	5000 lb.	White
SRH483254W	Heavy-duty	48U	31.5 in.	54 in.	5000 lb.	White
SRW12UHD	Wall-mount*	12U	36.2 in.	32.5 in.	500 lb.	Black
SRW18UHD	Wall-mount*	18U	36.2 in.	32.5 in.	500 lb.	Black
SRW4USM	Wall-mount*	4U	37.9 in.	29.4 in.	200 lb.	Black
SRW6USM	Wall-mount*	6U	39.1 in.	29.4 in.	250 lb.	Black
SRW9USM	Wall-mount*	9U	39 in.	29.4 in.	250 lb.	Black

* Mounted sideways to reduce depth from wall and maximize stability.

Comprehensive data center solutions

From edge to data center, Eaton provides a single source for all the products, services and support you need for your IT infrastructure. Solutions include UPSs, PDUs, racks, KVMs, console servers, network cables, power cords, cable management, cooling, aisle containment, software and services.

Learn more at Eaton.com/EnterpriseHub

Eaton 9PX G2 lithium-ion UPS battery backup runtime (minutes)

UPS catalog numbers	Load	Watts	Battery configuration (9PXEBM192RTG2-L EBMs)										
			Internal	+ 1 EBM	+ 2 EBMs	+ 3 EBMs	+ 4 EBMs	+ 5 EBMs	+ 6 EBMs	+ 7 EBMs	+ 8 EBMs	+ 9 EBMs	+ 10 EBMs
	5%	300	112.3	385.1	641.8	898.5	1155.2	1411.9	1668.6	1925.4	2182.1	2438.8	2695.5
	10%	600	64.4	220.8	368.0	515.2	662.4	809.6	956.9	1104.1	1251.3	1398.5	1545.7
	20%	1200	34.6	118.6	197.6	276.7	355.7	434.8	513.8	592.9	671.9	751.0	830.0
	30%	1800	23.6	80.9	134.8	188.7	242.6	296.5	350.4	404.4	458.3	512.2	566.1
	40%	2400	17.9	61.3	102.1	143.0	183.8	224.7	265.5	306.3	347.2	388.0	428.9
9PX6KG2-L	50%	3000	14.4	49.3	82.1	114.9	147.8	180.6	213.4	246.3	279.1	311.9	344.8
	60%	3600	12.0	41.1	68.5	95.9	123.3	150.7	178.1	205.5	232.9	260.3	287.7
	70%	4200	10.3	35.3	58.8	82.3	105.8	129.3	152.8	176.3	199.9	223.4	246.9
	80%	4800	9.0	30.8	51.4	71.9	92.5	113.0	133.6	154.1	174.7	195.2	215.8
	90%	5400	8.0	27.4	45.6	63.8	82.1	100.3	118.6	136.8	155.0	173.3	191.5
	100%	6000	7.2	24.7	41.2	57.6	74.1	90.6	107.0	123.5	140.0	156.4	172.9
	5%	400	188.6	431.1	646.6	862.2	1077.7	1293.3	1508.8	1724.4	1939.9	2155.5	2371.0
	10%	800	103.7	237.0	355.6	474.1	592.6	711.1	829.6	948.1	1066.7	1185.2	1303.7
	20%	1600	53.5	122.2	183.3	244.5	305.6	366.7	427.8	488.9	550.0	611.2	672.3
	30%	2400	36.3	83.0	124.4	165.9	207.4	248.9	290.3	331.8	373.3	414.8	456.3
	40%	3200	27.4	62.6	93.9	125.2	156.5	187.7	219.0	250.3	281.6	312.9	344.2
9PX8KG2-L	50%	4000	22.0	50.2	75.3	100.4	125.5	150.6	175.7	200.8	225.9	251.0	276.1
	60%	4800	18.3	41.9	62.8	83.7	104.7	125.6	146.5	167.5	188.4	209.4	230.3
	70%	5600	15.7	35.9	53.8	71.7	89.7	107.6	125.5	143.5	161.4	179.3	197.3
	80%	6400	13.7	31.4	47.1	62.8	78.4	94.1	109.8	125.5	141.2	156.9	172.6
	90%	7200	12.2	27.9	41.8	55.7	69.6	83.6	97.5	111.4	125.4	139.3	153.2
	100%	8000	10.9	25.0	37.5	50.0	62.5	75.0	87.5	100.0	112.5	125.0	137.5
	5%	550	143.7	328.6	492.8	657.1	821.4	985.7	1150.0	1314.2	1478.5	1642.8	1807.1
	10%	1100	76.0	173.8	260.7	347.7	434.6	521.5	608.4	695.3	782.2	869.1	956.1
	20%	2200	39.5	90.3	135.5	180.6	225.8	270.9	316.1	361.2	406.4	451.5	496.7
	30%	3300	26.5	60.6	91.0	121.3	151.6	181.9	212.3	242.6	272.9	303.2	333.6
	40%	4400	20.0	45.6	68.4	91.2	114.1	136.9	159.7	182.5	205.3	228.1	250.9
9PX11KG2-L	50%	5500	16.0	36.5	54.7	73.0	91.2	109.5	127.7	146.0	164.2	182.4	200.7
	60%	6600	13.3	30.4	45.6	60.8	76.0	91.2	106.4	121.6	136.8	152.0	167.2
	70%	7700	11.4	26.0	39.0	52.0	65.1	78.1	91.1	104.1	117.1	130.1	143.1
	80%	8800	9.9	22.7	34.1	45.4	56.8	68.1	79.5	90.8	102.2	113.5	124.9
	90%	9900	8.8	20.1	30.2	40.2	50.3	60.3	70.4	80.5	90.5	100.6	110.6
	100%	11000	7.9	18.0	27.1	36.1	45.1	54.1	63.2	72.2	81.2	90.2	99.3

Backup runtimes are approximate and may vary with equipment, configuration, battery age, temperature and other factors.

Learn more at: **Eaton.com/9PXG2**

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

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SMART Board ® **MX (V5) series with iQ**

Display

Screen sizes (diagonal)	55" 65" 75" 86"
Backlight	LED
Aspect ratio	16:9
Maximum display resolution	4K UHD (3840 × 2160)
Refresh rate	60 Hz
Lifespan	≥ 50,000 hours
Brightness[1]	55": 300 cd/m² 65", 75", 86": 400 cd/m²
Display response time	≤ 8 ms
Viewing angle	178°
Glass	55": Full heat-tempered Anti-glare Anti-fingerprint 65", 75", 86": Full heat-tempered Anti-glare Anti-fingerprint Bonded
Frame color	White
Convenience buttons	Power Home Volume Input select Screen shade Freeze frame
Sensors	Proximity[2] Ambient light Infrared
Audio	55": 2 integrated 15 W speakers 65", 75", 86": 2 integrated 20 W speakers Integrated linear six-microphone array with support for onboard acoustic echo cancellation
NFC	Integrated RFID NFC reader/writer CCID (chip card interface device) when used with a native operating system driver for Windows®, Linux®, or Mac Supported protocols: ISO 14443A/B, ISO 15693, NFC Tag 1-4

Interactive experience

Touch technology	HyPr Touch™ with Advanced IR
Touch features	Simultaneous tool differentiation Object Awareness™ Silktouch™
Typical touch response time	≤ 5 ms
Frame rate	≥ 200 Hz
Accuracy	1 mm
Minimum object size	2 mm
Multitouch capabilities	Up to 50 touch points (OS dependent)
Tools included	Pens (×2)
Tool holders	Magnetic Frame-mounted

Software

Included	iQ embedded Android™ OS SMART Notebook® SMART Product Drivers and SMART Ink® SMART Remote Management[3]
Optional	SMART Notebook Plus Lumio™

[1] Brightness of individual displays can vary.

[2] Only available on some models

[3] Subscription for the length of the included warranty

iQ embedded Android OS

Operating system	Andraid versian 13.0 Supparts an automatic update ta Android 15
CPU	Octa-core
Memory	8 GB DDR4
OS architecture	64-bit
Storage	64 GB (up ta 576 GB)
User interface	4K UHD (3840 × 2160)
Digital whiteboard	✓
Web browser	✓
Screen sharing	✓
Google Play™ Protect Certified[4]	✓
Google Play Store	✓
Other features	Persanalized hame screen and settings Input select Split screen Picture-in-picture (PIP) with tauch pass-thraugh Interactive widgets Templates, graphic arganizers, and manipulatives File and app librories
Ability to run third-party applications	✓
Cloud storage access	✓
NFC sign in to a SMART Account	✓
Device-based sign in to a SMART Account	✓
Languages supported	Basque Catalan/Valencion Chinese (simplified) Chinese (traditianal) Czech Donish Dutch English Estanian Finnish French Galician Germon Greek Hungarian Italian Japanese Karean Lotvian Lithuanion Narwegian Palish Portuguese Ramanian Russion Slavok Slavenion Spanish Swedish Ukrainian Vietnamese Welsh
Updates	Autamatic aver-the-air (OTA)

[4]Pending final testing

PC computing

OPS support[5]	SMART PCM modules
PC module power supported OPS	85 W
Optional computing module	See › smarttech.com/accessaries

Inputs	**Front**	**Back**
OPS PC accessary slat	–	1
micraSD slat with security caver	–	1
HDMI® 2.1 4K @ 60Hz with HDCP 1.4, HDCP 2.3, ARC, and eARC suppart[6]	1	3
VGA videa	–	1
Stereo 3.5 mm (variable)	–	1
RS-232 (DB-9 connectar)	–	1
RJ45 (LAN In)	–	1
USB Type-C 4K @ 60Hz Display Part 1.2, HDCP 2.3 and HDCP 1.3, USB 2.0 (UFP) for tauch and digital audia, USB 3.2 Gen 1 (DFP) far peripherals; 27 W power delivery	1	–
USB Type-C, 4K @ 60Hz, Display Part 1.2, USB 2.0 (UFP) far tauch and digital audia, USB 3.2 Gen 1 (DFP) far peripherals; 65W power delivery	–	1
USB 2.0 Type-A	–	1
USB 3.2 Gen 1 Type-A	2	2
USB 3.2 Gen 1 Type-B	1	3

Outputs	**Front**	**Back**
HDMI 2.1 4K @ 60Hz with HDCP 2.3 suppart	–	1
USB Type-C 4K @ 60Hz Display Part 1.4a, HDCP 2.3 and HDCP 1.3, USB 3.2 Gen 1 (DFP) far touch ingest and peripherals; 4.5 W power delivery	–	1
Sterea 3.5 mm (variable)	–	1
S/PDIF aptical (fixed)	–	1
RJ45 (LAN Out)	–	1

[5]The support and performance of third-party OPS (Open Pluggable Specification) and OPS-C modules may vary. Conduct proper compatibility testing to avoid potential issues

[6]ARC and eARC support are available only with the HDMI 2 input.

Included cables and accessories	Qty
Country-specific power cable	1
16' 5" (5 m) USB 2.0 A to B cable	1
6' (1.8 m) USB 3.2 Gen 1 Type-C cable, 5A	1
Pens	2
External tri-band Wi-Fi (2.4, 5, and 6-7.2 GHz) ond Bluetooth® (2.4 GHz) antennas	2
Remote control	1
AAA batteries	2
SMART ID cards (for NFC sign in to a SMART Account)	2
Illustrated installation instructions	1
Important informatian dacument	1

Connectivity

Wired	RJ45 (×2) 1000BASE-T
Wi-Fi	IEEE 802.11ax (Wi-Fi 6e) supporting WPA, WPA2, WPA3 PSK, and 802.1X EAP authentication protocols
Bluetooth	5.2 dual mode

Storage and operating requirements

Power requirements	100V to 240V AC, 50 Hz to 60 Hz
Operating temperature	41–95°F (5–35°C)
Storage temperature	-4–140°F (-20–60°C)
Humidity	5–80% relative humidity, non-condensing

Power consumption

Typical	55": 72 W 65": 90 W 75": 103 W 86": 149 W
Standby	0.2 W

Certification and compliance[7]

Regulatory models	IDX55-5 IDX65-5 IDX75-5 IDX86-5
US / Canada	UL FCC ISED TSCA CONEG Packoging Propositian 65
EU / EEA / EFTA / UK	CE UKCA LVD CB EMCD RED REACH RoHS Battery WEEE Packaging POP Ecodesign
Australia / New Zealand	RCM RSM
Performance standards	ENERGY STAR® HDMI HDCP

Purchasing information[8]

Order numbers

MX255-V5	SMART Board® MX055-V5 interactive display with iQ
MX265-V5	SMART Board MX065-V5 interactive display with iQ
MX275-V5	SMART Board MX075-V5 interoctive display with iQ
MX286-V5	SMART Board MX086-V5 interactive display with iQ

Optional accessories

WM-SBID-200	SMART Wall Mount for SMART MX series interactive displays
SWC-120UHD	SMART Ultra HD Camera 120
Other accessories	See > smarttech.com/accessories

SMART Warranty

Terms and conditions ond warranty upgrade options vary by region. Visit smarttech.com/warronty or contact your reseller for information.

Cable requirements

See > *SMART cables and connectors guide* (docs.smarttech.com/kb/171926)

[7] Product availability may vary by region.

This product has received additional certifications not listed here.

[8] Order numbers may vary by region.

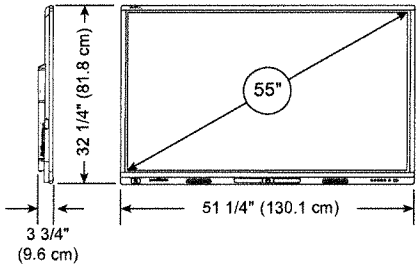
Installation, dimensions, and weights

Notes

- All dimensions ± 1/8" (0.3 cm). All weights ± 2 lb. (0.9 kg). All dimensions and weight values are preliminary and subject to change.
- Product ships upright.
- Leave space around the display to ensure adequate ventilation.

55" models

Dimensions



Weight

71 lb. (32 kg)

Shipping dimensions (including pallet)

56 1/8" × 43 3/4" × 6 1/4"
(142.5 cm × 111 cm × 16 cm)

Shipping weight

103 lb. (47 kg)

VESA mount

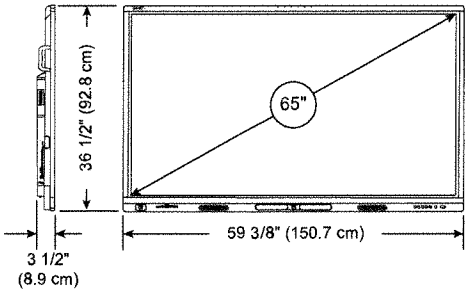
M8 400 × 400 mm

Handles

–

65" models

Dimensions



Weight

89 lb. (40 kg)

Shipping dimensions (including pallet)

63 3/4" × 45 7/8" × 6 1/4"
(162 cm × 116.5 cm × 16 cm)

Shipping weight

124 lb. (56 kg)

VESA mount

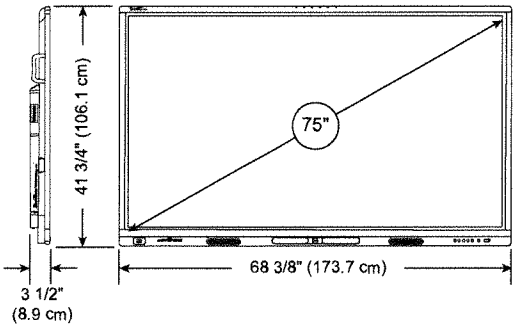
M8 600 × 400 mm

Handles

2

75" models

Dimensions



Weight

119 lb. (54 kg)

Shipping dimensions (including pallet)

71 5/8" × 50 5/8" × 6 1/4"
(182 cm × 128.5 cm × 16 cm)

Shipping weight

159 lb. (72 kg)

VESA mount

M8 800 × 400 mm

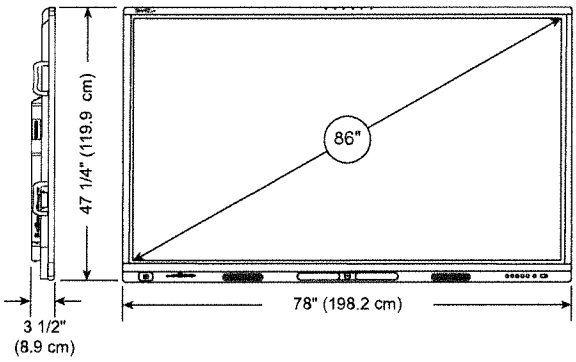
Handles

2

Installation, dimensions, and weights (continued)

86" models

Dimensions



Weight

150 lb. (68 kg)

Shipping dimensions (including pallet)

85 1/4" × 56 7/8" × 6 1/4"
(216.5 cm × 144.5 cm × 16 cm)

Shipping weight

207 lb. (94 kg)

VESA mount

M8 800 × 600 mm

Handles

4

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moving you forward

YES24 Adjusta™ Charging Cart

- **Adjustable Rows & Dividers:** Fit up to 24 Chromebooks, Ultrabooks or MacBooks
- **Lightweight Design:** Easily moves with dual-wheel locking casters that take less effort than single-wheel models
- **Customizable Options:** Accessories attach to the pegboard for STEM projects or other uses
- **Compact Footprint:** Save valuable space and effortlessly move in small spaces
- **Fast Charging:** Uses patented PowerShuttle® Technology to support safe and fast charging
- **Fully Assembled:** Just plug it in to start charging—saving you time and hassle
- **Pre-Wired Option:** Improve classroom productivity with pre-wired power adapters

FLEXIBLE CHARGING CARTS FOR THE CLASSROOM AND BEYOND

PS PowerShuttle

To educate tomorrow's innovators, schools need the right tools for hands-on learning. With Ergotron's versatile YES24 Adjusta Charging Cart, you can create a flexible STEM workstation or makerspace that supports safe and fast charging for up to 24 devices. Attach project supplies to the pegboard sides or customize it with the Pegboard Shelf and Pegboard Makerspace Kit accessories. The VESA Mount Whiteboard accessory can also be mounted to the MXV Monitor Arm for more ways to learn or teach. Think beyond the classroom with the optional accessories that fit hospitality, healthcare and other industries. And the cart is UL-certified to keep students, staff and devices safe.

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YES24 Adjusta™ Charging Cart

98-381-F56
YES24/36 PEGBOARD SHELF

98-408-896
VESA MOUNT WHITEBOARD

98-404
PEGBOARD MAKERSPACE KIT

	Standard	Pre-Wired
Part Number (grey & white)	US/CA/MX YES24-CHR-1	US/CA/MX YES24-CHR-1-65
Compatible Devices	Fits all shapes and sizes of screens up to 13″– and some up to 14″– with and without cases (Verify device dimensions for compatibility)	
Product Includes	Four (4) keys, hex screw driver, power brick Velcro® straps, bay labeling stickers, top shelf, handle, locking door latch w/ padlock bracket and two-point lock mechanism, cord wrap, 14′ (4.3 m) power cord, adjustable device bays, cord pass-through slots, cable channels, adjustable-height shelves, three (3) Brick Baskets, 4″ casters (2 directional-lock and 2 total-lock), external power receptacles, locking IT area, internal power receptacles	Everything the standard cart offers plus: Twenty-four (24) 65W power adapters with USB-C connector
AC Charge	Outlet strips include plenty of space to fit oversized wall plug or brick-style AC adapters; use adapters that come with devices	Outlet strips include plenty of space to fit oversized wall plug or brick-style AC adapters; comes with pre-wired power adapters
Auxiliary Outlet(s)	3 external receptacles	
Screen Size	≤ 14″	
# of Devices	Up to 24 with 1.45″ wide (3.7 cm) slots	
Slot Size	Ships configured for 24 units with 1.45″ wide bays. Simple shelf adjustment lets you position shelves at any height in 2/3″ increments and store your devices in landscape or portrait orientation, depending on size and the position of the power inlet and on/off button.	
UL Certification	UL 62368-1 and CAN/CSA C22.2 No. 62368-1-14	
Security	2-point locking steel doors with key lock; brackets included for your own padlock	
Power System	120Vac, 60Hz, 12Amps Features patented PowerShuttle power management technology, the system that efficiently charges up to 40% faster than a standard round-robin system. It safely prevents overloading of electrical circuits by automatically determining the maximum number of devices that can be charged at one time.	
Weight Capacity	40 lbs (18 kg) per shelf (3 shelves total in cart). Per device maximum weight of 5 lbs (2.3 kg) assumes 8 devices per shelf in a cart configured to hold 24 devices in total.	
Product Dimensions	27.75″ x 24.25″ x 42″ (70 x 62 x 107 cm)	
Product Weight	143 lbs (65 kg)	157 lbs (71 kg)
Shipping Dimensions	27.6″ x 31.5″ x 48.8″ (70 x 80 x 124 cm)	
Shipping Weight	190 lbs (86 kg)	204 lbs (92 kg)
Warranty	Limited lifetime for the frame; 5 years for other mechanical components; 3 years for electrical components; 1 year for cables	Limited lifetime for the frame; 5 years for other mechanical components; 3 years for electrical components; 1 year for cables and power adapters

IN A TEST, OUR CHARGING CART WITH POWERSHUTTLE TECHNOLOGY CHARGED UP TO 40% FASTER THAN OUR COMPETITOR'S ROUND-ROBIN CHARGING CART.

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