



PATERSON PUBLIC SCHOOLS



DEPARTMENT OF PURCHASING

90 Delaware Avenue, 4th floor, Paterson, NJ 07503

Telephone: (973) 321-0726

Website: www.paterson.k12.nj.us



INVITATION TO BID

2024-2025 SCHOOL YEAR

Bid Title:	ROOF REPLACEMENT AT P.S. 19
Bid Number:	PPS-299-25
Non-Mandatory Pre-Bid Meeting Date, Place & Time:	Monday, June 16, 2025, at 10:00 AM P.S. 19 31 James Street Paterson, New Jersey 07502 10:00 AM
Bid Opening/Due Date & Time:	Tuesday, June 24, 2025, at 10:00 AM
Bid Opening Place:	LIVESTREAM – ZOOM-PASSWORD 5050



ISSUE DATE: 6/10/2025

TABLE OF CONTENTS

SECTIONS
Ethics and Conduct
Relations with Contractors
Notices and Letters - New Jersey Sales Taxes
Notices And Letters – Bid Requirements
Notices And Letters – Unauthorized Purchase Orders
Notices And Letters – Business Registration Certificate
General Specification
Affirmative Action
c. 271 Political Contribution Disclosure Requirements
Technical Specifications
Bid Return And Required Documents

ETHICS AND CONDUCT

POLICY RELEASE

The Paterson Public School District will comply with the New Jersey Public School Contracts Law, N.J.S.A. 18A:18A-1, *et seq.* The District shall not knowingly extend favoritism to any contractor. Orders shall be placed based on quality, price and timely service. The District shall not solicit funds or materials from contractors. Employees shall not seek to procure goods and services for their own use using District's discounts or tax-exempt status. No purchases will be made knowingly from a District employee or from a member of the immediate household of an employee.

The Department of Purchasing believes in the dignity of their office, the real worth of the service rendered by their governmental agency and strives to maintain high standards of ethics, conduct and service.

Public purchasing employees are required to maintain complete independence and impartiality in dealings with contractors, both in fact and in appearance, to preserve the integrity of the competitive process and to ensure there is public confidence that contracts are awarded equitably economically and in full compliance with Public School Contracts Law.

To avoid any misunderstanding regarding compliance with the law and regarding any appearance of impropriety relative to the competitive process of awarding contracts, purchasing staff shall not accept anything of value offered from contractors.

SOLICITATION OR ACCEPTANCE OF GIFTS

In accordance with the School Ethics Act, N.J.S.A. 18A:12-21, *et seq.*, no school district employee shall solicit, receive or agree to receive any compensation, reward, employment, gift, meal, honorarium, travel, reimbursement, or any other thing of value from any person, firm, corporation, association, partnership or business that is the recipient of, or a potential Bidder or, or applicant for any contract, professional services contract, or purchase order from the school district.

Any school district employee who violates the terms of the School Ethics Act will be subject to consequences which may include, but are not limited to, suspension, termination of employment, withholding of annual increments or demotion.

DOING BUSINESS WITH ONE'S AGENCY

No employee of the District shall either directly or indirectly purchase goods and/or services for his own agency from any business entity of which their spouse or relative has a material interest.

UNAUTHORIZED COMPENSATION

No employee of the District shall, at any time, accept any compensation, payment or thing of value when such employee knows, or with the exercise of reasonable care, should know that the compensation, payment or thing of value it was given to influence a vote or other action in which the officer or employee was expected to participate in his/her official capacity.

RELATIONS WITH CONTRACTORS

The Board of Education shall maintain honest and ethical relations with contractors and shall guard against favoritism, improvidence, extravagance, and corruption in its contracting processes and practices.

The Board will not vote upon or award any contract in the amount of \$17,500 or greater to any business entity which has made a contribution reportable by the recipient under P.L. 1973, c. 83 (codified at *N.J.S.A. 19:44A-1, et seq.*) to a member of the Board of Education during the preceding one-year period.

Contributions reportable by the recipient under P.L. 1973, c. 83 (codified at *N.J.S.A. 19:44A-1, et seq.*) to any member of the school Board from any business entity doing business with the school district are prohibited during the term of a contract. The Commissioner shall take appropriate action for any violations.

When a business entity is a natural person, a contribution by that person's spouse or child that resides therewith, shall be deemed to be a contribution by the business entity. Where a business entity is other than a natural person, a contribution by any person or other business entity having an interest therein shall be deemed to be a contribution by the business entity.

The disclosure requirement set forth in section 2 of P.L. 2005, c. 271 (codified at *N.J.S.A. 19:44A-20.26*) also shall apply when the contract is required by law to be publicly advertised for bids.

This subsection shall not apply to a contract when a school district emergency requires the immediate delivery of goods or services and shall not apply to contributions made prior to the effective date of these regulations.

Legal Reference: *N.J.S.A. 19:44A-1, et seq.*; *N.J.A.C. 6A:23A-6.3*

TO: All Bidders
FROM: Lance Gaines, QPA, Director of Purchasing
RE: **New Jersey Sales Tax**

Local school districts, as political subdivisions of the State of New Jersey, are exempt from the New Jersey Sales and Use taxes, pursuant to Section 9(a) of the New Jersey Sales and Use Tax Act when purchasing items for their own use such as desks, chairs, office equipment, cleaning supplies, etc.

When purchasing items for the use of a local school district, an exempt organization certificate or number is not required.

When items are purchased for resale through a shop or store regardless of the purpose, the local school district must supply the Contractor with a valid New Jersey Resale Certificate (Form ST-3).

The local school district or any organization under the auspices of the local school district, purchasing items for resale through a shop or a store must be registered with the Division of Taxation as a contractor and have a New Jersey sales tax registration number assigned to them to legally purchase for resale. Sales tax must be collected on the sale of taxable items made in the shop or store.

When purchases for fundraising purposes are made of taxable items by school-affiliated groups, such as band groups, cheerleader groups, school clubs, etc., sales must be paid when making payments on behalf of the group. The subsequent resale of such items by the groups that are conducted for isolated or occasional fund-raising purposes and not through a shop or store are not subject to sales tax.

FEDERAL TAX ID #22600 2199W

STATE TAX ID #690220 151

New Jersey school districts are considered political sub-divisions of the State of New Jersey. Therefore, purchases, except purchases of energy, are exempt from NJ sales and use taxes pursuant to Section 9(a)(1) of the New Jersey Sales and Use Tax Act. Click on the following link for a copy of the Technical Bulletin issued by the New Jersey Division of Taxation <https://www.state.nj.us/treasury/taxation/pdf/pubs/tb/tb49.pdf>

Please note the following:

“ST-5 Exempt Organization Certificates are never issued to New Jersey government entities, including public schools.”

PTA/PTO’s and Private Nonprofit Schools qualify for exemption upon submitting an application to the Division of Taxation. They are granted an ST-5 Exempt Organization Certificate. Non-Exempt School Groups such as booster clubs, teacher organizations and parent organizations may NOT use a school’s tax-exempt status. (see the bulletin for more details).

School Stores operated on a regular basis by a school district or PTA/PTO or other affiliated groups (more frequently than monthly), sales tax must be collected on taxable sales. (see the bulletin for more details).

TO: All Bidders
FROM: Purchasing Department
RE: Unauthorized Purchase Orders

The District only recognizes purchases through the approved purchase order process.

All purchases are made by a written purchase order, with an authorized signature and purchase order number.

Please do not honor or accept any requests for goods and services unless the request is made through a written purchase order with an authorized signature and an assigned purchase order number.

Please alert our office at (973)-321-0726 if any employee attempts to place an order without an authorized purchase order.

Once a purchase order is received do not permit any employee to add items to the order.

The District will not be held responsible for any unauthorized orders or purchases.

The District will only recognize purchase orders signed by the Business Administrator or designee.

TO: All Bidders
FROM: Purchasing Department
RE: Business Registration Certificate

Pursuant to N.J.S.A. 52:32-44, Paterson Public School District is prohibited from entering into a contract with an entity unless the Bidder/proposer/Contractor, and each subcontractor that is required by law to be named in a bid/proposal/contract has a valid Business Registration Certificate on file with the Division of Revenue and Enterprise Services within the Department of the Treasury.

Prior to contract award or authorization, the Contractor shall provide the Contracting Agency with its proof of business registration and that of any named subcontractor(s).

Subcontractors named in a bid or other proposal shall provide proof of business registration to the Bidder, who in turn, shall provide it to the Contracting Agency prior to the time a contract, purchase order, or other contracting document is awarded or authorized.

During contract performance:

- (1) the Contractor shall not enter a contract with a subcontractor unless the subcontractor first provides the contractor with a valid proof of business registration.
- (2) the Contractor shall maintain and submit to the Contracting Agency a list of subcontractors and their addresses that may be updated from time to time.
- (3) the Contractor and any subcontractor providing goods or performing services under the contract, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into the State. Any questions in this regard can be directed to the Division of Taxation at (609)292-6400. Form NJ-REG can be filed online at <http://www.state.nj.us/treasury/revenue/busregcert.shtml>.

Before final payment is made under the contract, the Contractor shall submit to the Contracting Agency a complete and accurate list of all subcontractors used and their addresses.

Pursuant to N.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration as required, or that provides false business registration information, shall be liable for a penalty of \$25 for each day of violation, not to exceed \$50,000, for each proof of business registration not properly provided under a contract with a contracting agency.

Emergency Purchases or Contracts

For purchases of an emergent nature, the Contractor shall provide its Business Registration Certificate within two weeks from the date of purchase or execution of the contract or prior to payment for goods or services, whichever is earlier.

GENERAL SPECIFICATIONS

1. 1. SUBMISSIONS, MODIFICATIONS AND WITHDRAWAL OF BID:

- 1.1** Sealed bids for the work described herein must be received (date & time stamped) by the Paterson Public School District, Department of Purchasing, 90 Delaware Avenue 4th Floor, Paterson, New Jersey 07503, prior to the date and time fixed for bid opening. Bidders are cautioned that reliance on delivery or mail services for timely delivery is at the contractor's risk. Failure on behalf of the Bidder to have his/her sealed bid reach the Department of Purchasing by the prescribed date and time will result in a return of the bid unopened and unread.
- 1.2** The advertising period includes the date for the receipt of the bids, and the bid closing date and time. No bids will be opened prior to the date and time fixed for the bid opening and no bids will be opened after the closing date. Bids will be publicly opened and read aloud on the day and at the time and place specified in the advertisement/invitation to bid.
- 1.3** Bid pricing shall be submitted on the bid proposal form(s) and enclosed in a sealed envelope as provided by the Department of Purchasing. The name and address of the Bidder must be indicated on the envelope as well as the bid number as it appears in the advertisement/invitation to bid.
- 1.4** Under the terms of this invitation to bid, bids shall remain open for acceptance for sixty (60) days and may not be withdrawn after the bid opening. Completion and submission of this bid by Bidders will indicate acceptance of this condition.
- 1.5** A Bidder may modify his or her bid by letter at any time prior to the scheduled closing date and time for the receipt of bids, provided that the communication is received by the Department of Purchasing prior to such closing time. A written confirmation of any modification signed by the Bidder must have been received by the Purchasing Department before the specified closing time for acceptance of bids. The confirmation shall be accompanied by a newly executed affidavit of non-collusion.
- 1.6** Electronic communications shall not reveal the basic bid price
- 1.7** A Bidder may withdraw his or her bid at any time prior to the bid opening only by a written letter of request (on the corporation's letterhead and signed by a corporate officer) to the Department of Purchasing. The right of withdrawal is lost after a bid has been opened. If an error has been made in the bid amount, request for relief may be in writing to the Department of Purchasing. An authorized corporate officer shall sign the written request. A determination of whether the Bidder will be released shall be at the discretion of the Department of Purchasing, which will issue its finding in five (5) working days of receipt of all pertinent information relating to such a request for relief.
- 1.8** If the bid documents or conditions contain some untenable item or extremely expensive provision to which the contractor wishes to raise an objection, this must be done in writing with the purchasing agent no less than three business days prior to the bid opening. Such inquiries will have a response issued by addendum only.
- 1.9** All bid challenges must be in writing pursuant to N.J.S.A. 18A:18A-15.

2. BOND REQUIREMENTS (See Technical Specifications)

- 2.1** The Bidder shall provide a bid bond or certified check in the amount of 10% of the bid, but not more than \$20,000.00.

GENERAL SPECIFICATIONS

3. PERFORMANCE BONDS (N.J.S.A. 18A: 18A-25):

3.1 The successful Bidder shall furnish within ten (10) business days after the notice of the contract award a Performance Bond in statutory form in an amount equal to one hundred percent (100%) of the initial 2-year total contract price as security for faithful performance of this contract. No contract shall be executed unless, and until the required performance bond is submitted to the District's Department of Purchasing, and the Surety must be presently authorized to do business in the State of New Jersey. The cost of all performance bonds required under this contract shall be borne by the successful Bidder. The performance bond must be legally effective as of the date the contract is signed. The bond must indicate the successful Bidder's name exactly as it appears in the contract.

3.2 CERTIFICATE FROM SURETY COMPANY (N.J.S.A. 18A:18A-25)

Each Bidder must submit with his/her proposal a certificate from a surety company stating that the surety company will provide the Bidder with a performance bond in an amount equal to the amount of the contract (N.J.S.A. 18A:18A-25). Such surety company must be licensed and qualified to do business in the State of New Jersey. The certificate (Consent) of Surety, together with the power of attorney, must be submitted with the proposal. Failure to submit the certificate (Consent) of Surety shall be cause for disqualification and rejection of the proposal.

4. CONSIDERATION OF BIDS:

4.1 Contracts will be awarded as stated in the Technical Specifications. The board of education shall award the contract or reject all bids within such time as may be specified in the invitation to bid, but in no case more than sixty (60) days, except that the bids of any bidders who consent thereto may, at the request of the board of education, be held for consideration for such longer period as may be agreed.

4.2 The bid security of the unsuccessful Contractors (except for the lowest three (3) Contractors) will be returned as follows:

4.3 All bid security except the security of the three apparent lowest bidders shall, if requested, be returned after 10 days from the opening of the bids, Sundays and holidays excepted and the bids of such bidders shall be considered as withdrawn. Within three days after the awarding of the contract and the approval if the contractor's performance bond the bid security of the remaining unsuccessful bidders shall be returned to them forthwith, Sundays and holidays excepted.

4.4 The District reserves the right to award the contract based on a single bid for the entire work, or based on a separate bid and alternate, or any combination of separate bids and alternates.

4.5 The District reserves the right to waive in its sole discretion minor informalities or non-material exceptions where such waiver is permitted by law.

4.6 The District reserves the right to reject all bids when such rejection is in accordance with N.J.S.A. 18A:18A-22. The District also may reject the bid of any Contractor who, in its judgment, is not responsible or capable of performing the contract based upon financial capability, past performance, or experience pursuant to applicable law. A Contractor if so, rejected may request a hearing before the Superintendent by filing a written notice.

4.7 The contract shall be signed by all parties within the time limit set forth in the specifications, which shall not exceed 21 days, Sundays and holidays excepted, after the making of award. Upon his or her failure or refusal to comply in the manner and the time specified above, the District may either award the contract to the next lowest Contractor or re-advertise for new bids. In either case, the District may hold the defaulting Contractor and his or her surety liable for the entire surety amount.

GENERAL SPECIFICATIONS

5. AWARDS: (See Technical Specifications)

5.1 In executing the contract, the successful Contractor agrees to perform all work in accordance with the terms and conditions of the specifications and to complete all work within the number of calendar days specified in the contract.

5.2 Successful Contractor may be notified of the time and place for the signing of contracts, essential requirements in the conduct of the contract, including, but not limited to, the number of days specified in the technical specifications for the performance of the contract, manner and schedule of payments, and other administrative details that will be reviewed at the award meeting.

6. AWARD OF CONTRACTS WHEN BIDS ARE EQUAL (N.J.S.A. 18A:18A-37(d)):

6.1 Whenever two or more responses to a request of a purchasing agent offer equal prices and are the lowest responsible bids, the District may award the contract to the Contractor whose response, in the discretion of the District, is the most advantageous, price and other factors considered.

7. LIQUIDATED DAMAGES (N.J.S.A. 18A:18A-41):

7.1 The District may act under the terms and conditions of this agreement, to assess reasonable liquidated damages for the violation of any of the terms and conditions, or the failure of the Contractor to perform said contract or agreement in accordance with the specifications. The monetary amount, if any to be assessed, will be indicated in the Technical Specifications Scope of Work Section of this document.

8. BUY AGAINST PROCEDURE:

8.1 If the items or services to be provided under this agreement are not delivered or provided within the time specified, the District reserves the right to obtain such items or services or any part thereof from other sources via a buy-against procedure. Should the new price be greater than the contract price, the difference in cost; and in addition, re-advertisement and possible liquidated damages will be charged against the Contractor. Should the price be less than the contract price, the Contractor shall have no claim to the difference, but the re-advertisement cost and possible liquidated damages will be charged against the Contractor.

9. PROHIBITIONS: HOLD HARMLESS

Contractors, with whom the District has an executed contract, may not subcontract any part of any work done for the District without first receiving written approval from the School Business Administrator. Contractors seeking to use subcontractors must first complete the Request for Subcontract Form as provided by the School Business Administrator.

In cases of subcontracting, the District shall only pay the prime Contractor. It is the sole responsibility of the prime Contractor to ensure that all subcontractors are paid. The District shall not be responsible for payments to subcontractors and shall be held harmless against any or all claims generated against prime Contractors for non-payments to subcontractors.

10. NON-COLLUSION AFFIDAVIT

A notarized Non-Collusion affidavit must be submitted with the bid.

11. CORPORATE OWNERSHIP DISCLOSURE (N.J.S.A. 52:25-24.2):

11.1 No corporation, partnership, or limited liability company shall be awarded any contract nor shall any agreement be entered into for the performance of any work or the furnishing of any materials or supplies, the cost of which is to be paid with or out of any public funds, by the State, or any county, municipality or school district, or any subsidiary or agency of the State, or of any county, municipality or school district, or by any authority, board, or commission which exercises governmental functions, unless prior to the receipt of the bid or accompanying the bid, of said corporation, said partnership, or said limited liability company there is submitted a statement setting forth the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. If one or more such stockholder or partner or member is itself a corporation or partnership or limited liability company, the stockholders holding 10 percent or more of that corporation's stock, or the individual partners owning 10 percent or greater interest in that partnership, or the members owning 10 percent or greater interest in that limited liability company shall also be listed. The disclosure shall be continued until names and addresses of every non-corporate stockholder, and individual partner, and member, exceeding the 10 percent ownership criteria established in this act, have been listed.

To comply with this section, a bidder with any direct or indirect parent entity which is publicly traded may submit the name and address of each publicly traded entity and the name and address of each person that holds a 10 percent or greater beneficial interest in the publicly traded entity as of the last annual filing with the federal Securities and Exchange Commission or the foreign equivalent, and, if there is any person that holds a 10 percent or greater beneficial interest, also shall submit links to the websites containing the last annual filings with the federal Securities and Exchange Commission or the foreign equivalent and the relevant page numbers of the filings that contain the information on each person that holds a 10 percent or greater beneficial interest. Contained in this bid package is the FORM OF CORPORATE OWNERSHIP DISCLOSURE, which shall be completed by the bidder and attached to the bid.

12. AFFIRMATIVE ACTION REGULATIONS (N.J.S.A 10:5-31 et. seq.):

12.1 Contractors are required to comply with the State of New Jersey Affirmative Action Regulations (N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27). One of the following documents are due after notice of award, prior to signing the contract: Letter of Federal Approval, Certificate of Employee Information Report, or Complete AA302 Form.

13. BUY AMERICAN GOODS (N.J.S.A. 18A:18A-20):

13.1 Under the terms of this agreement, wherever available, and practical, the Contractor shall only use manufactured and farm products of the United States.

14. BRAND NAME OR EQUIVALENT (N.J.S.A. 18A:18A-15-d): (N/A)

14.1 The District may denote the use of brand names as a standard quality required by the District. However, the law states that brand name or equivalent be used by local boards of education in their Invitations to Bid.

14.2 All materials/supplies and/or equipment must conform to the specifications. The District may elect to return the sample or samples to the Contractor upon conclusion of the evaluation period.

15. NUMBER OF WORKING DAYS SPECIFIED (N.J.S.A. 18A:18A-19) (See technical Specifications)

15.1 All specifications for the doing of any work for the District shall have fixed in its detailed specifications, the date before which work shall be completed, or the number of days to be allowed for its completion.

16. DURATION OF CONTRACTS (N.J.S.A. 18A:18A-42): (See Technical Specifications)

17. INDEMNIFICATION:

17.1 The Contractor shall assume all risk of and responsibility for, and agrees to indemnify, defend, and save harmless the District and its employees from and against any and all claims, suits, actions recoveries, judgments and costs and expenses in connection therewith on account of the loss of life, property or injury to any person, body or property of any person or persons whatsoever, which may arise from or result directly or indirectly from the work and/or materials under this contract. This indemnification is not limited by but is in addition to the insurance obligations contained in this agreement.

18. ESTIMATED QUANTITIES: (N/A)

18.1 Contractors shall bid on the estimated quantities that have been supplied in the detailed specifications. The amounts (estimated) listed in the detailed specifications shall not be exceeded except by change order. The maximum amount of the change order(s) shall not exceed one hundred twenty percent (120%) of the estimated contract price. All change orders must be approved by the Department of Purchasing prior to exceeding any estimated quantities.

19. LIABILITY – COPYRIGHT:

19.1 The Contractor shall hold and save the District, its officers, agents, servants, and employees, harmless from liability of any nature or kind for or on account of the use of any copyrighted or non-copyrighted compensation, secret process, patented or unpatented invention, article or appliance furnished or used in the performance of the contract.

20. INSURANCE: (See Technical Specifications)

21. DELIVERY:

21.1 Unless otherwise specified in this bid, all prices in bids are to be submitted FREE ON BOARD (F.O.B.), DESTINATION (PATERSON PUBLIC SCHOOLS). Bids submitted other than F.O.B. DESTINATION may not be considered. Regardless of the method of quoting shipments, the Contractor shall assume all costs, liability and responsibility for the delivery of merchandise in good condition to the District using agency or Department of Purchasing.

GENERAL SPECIFICATIONS

21.2. In all cases the transportation carrier is responsible for taking the material off or out of the delivery vehicle. The Contractor is responsible to the platform or loading dock for platform delivery, to the inside the building for inside delivery and to the designated area in the building for spotted delivery.

21.3 The successful Contractor guarantees delivery within the times specified in the bid documents. Failure to deliver items in the prescribed time shall cause the District to impose assessments as per the schedule listed in the bid documents.

21.4 Delivery times to all school buildings shall be from 8:30 a.m. to 4:30 noon, from Monday to Friday, except holidays.

22. REPORTING (N.J.S.A. 18A:18A-15): (N/A)

22.1 Should the cost of this contract for public work exceed \$20,000.00, the District, through its authorized agent, shall upon completion of the contract report to the department as to the Contractor's performance, and shall also furnish such report from time to time during performance if the Contractor is in default.

23. SUPPLIES AND MATERIAL CHARGES:

23.1 All material charges related to Time and Material Contracts, Material Contracts, or Supplies Contracts shall be percentages minus (-) the manufacturer's suggested retail price unless another specific criteria is listed in the technical specifications.

23.2 The cost of supplies or materials will include shipping, handling, storage, overhead and profit. The successful Contractor shall supply copies of all invoices to justify material costs.

24. RIGHT TO KNOW:

24.1 All potentially hazardous materials or substances must be properly labeled in full accordance with the New Jersey Right To Know Law, N.J.S.A. 34:5A-1 et seq.

25. PAYMENTS:

25.1 The District will pay the Contractor within (90) days from the receipt of the appropriate documentation described herein the Scope of Work. This documentation includes: the Contractor invoice with the purchase order number included and the ITB number, the purchase order Contractor declaration (voucher) signed by the Contractor, and the receiving copy of the purchase order signed by a District employee indicating the goods or services that were provided by the Contractor were received and satisfactory. All payments are subject to approval of the Board at a public meeting..

Contractors will be paid monthly. For some construction and other projects payment schedules will be developed with the using department, but in no circumstance shall the Contractor be paid unless the services have been rendered.

- Invoices shall be detailed and itemized and must include, where applicable, hourly rates, detailed material charges, dates, locations where the work was performed, type of work performed and time.
- Each invoice submitted by the Contractor must be accompanied by an originally signed and dated voucher. In addition, the Contractor must indicate the amount they are requesting to be paid on the signed voucher, which must coincide with the corresponding invoice.

To ensure compliance with N.J.A.C. 6A:23A-1.1 et seq. and in the effort to avoid future audit findings, Accounts Payable will not process payment packets that do not comply with the above two bullets. Noncompliance documents will be returned which will result in a payment delay.

ALL PAYMENT INQUIRIES SHALL BE DIRECTED TO PATERSON PUBLIC SCHOOLS, ACCOUNTS PAYABLE DEPARTMENT, (973) 321-0782/83/85/

GENERAL SPECIFICATIONS

26. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the specifications or other contract documents will be made to any Bidder orally. Every request for such interpretation shall be in writing and e-mailed to Ms. Theresa Miller at tmiller@paterson.k12.nj.us. Questions should be asked in consecutive order, from beginning to end, following the organization of the ITB. Each question should begin by referencing the ITB page number and section number to which it relates. Any form or written addenda to the specifications, which if issued, will be e-mailed to all prospective bidders no later than seven (7) business days, not including Saturday, Sunday and holidays, prior to the date fixed for the opening of proposals. Failure of the Bidder to receive such addendum or interpretation shall not relieve any Bidder from any obligation under his/her bid as submitted. All addenda so issued shall become part of the contract documents. The cutoff for questions regarding this ITB is **Thursday, June 12, 2025**.

27. DEBARMENT, SUSPENSION, OR DISQUALIFICATION N.J.A.C. 17:19-4.1

The District will not enter into a contract for work with any person, company or firm that is on the State Treasurer's List of Debarred, Suspended or Disqualified Contractors or the State Department of Labor, Prevailing Wage Debarment List.

28. TAXES:

As a New Jersey governmental entity, the Board of Education is exempt from the requirements under New Jersey state sales tax (N.J.S.A. 54:32B-1 et seq.) and does not pay any sales or use taxes. Contractors should note that they are expected to comply with the provisions of said statute and the rules and regulations promulgated thereto to qualify them for examinations and reference to all labor, services, materials and supplies furnished to the District. Contractors may not use the Board's tax-exempt status to purchase supplies, materials, service or equipment.

29. NOTICE (AUTHORIZATION) TO PROCEED (N.J.S.A 18A:18A-36(b))

The Contractor, upon written request to the board of education, is entitled to receive, within seven days of the request, an authorization to proceed pursuant to the terms of the contract on the date set forth in the contract for work to commence, or, if no date is set forth on the contract, upon receipt of authorization. Authorization shall only be given to the Contractor in the form of an approved District purchase order. No word of mouth, phone, fax, e-mail, letter or other form of communication to proceed is a valid Notice to Proceed.

30. DEFERANCE TO TECHNICAL SPECIFICATIONS

Any conflicting terms and conditions set forth in the Technical Specifications supersede these General Specifications.

31. STATE OF NEW JERSEY BUSINESS REGISTRATION CERTIFICATE

The Board also requires that each Bidder complies with the current **New Jersey Business Registration Certificate procedures**, pursuant to N.J.S.A. 52:32-44. See page eleven (11) of the bid specification for additional information.

GENERAL SPECIFICATIONS

32. DISCLOSURE OF POLITICAL CONTRIBUTIONS

Pursuant to N.J.A.C. 6A:23A-6.3, business entities (contractors) entering non-emergency contracts with public school districts, are subject to the provisions of P.L. 2005, c. 271, s.2 (N.J.S.A. 19:44A-20.26), even when those contracts are publicly bid. N.J.S.A. 19:44A-20.26 provides that the contractor shall disclose contributions to:

- Any State, county, or municipal committee of a political party
- Any legislative leadership committee*
- Any continuing political committee (a.k.a., political action committee)
- Any candidate committee of a candidate for, or holder of, an elective office:
 - of the public entity awarding the contract
 - of that county in which that public entity is located
 - of another public entity within that county
 - or of a legislative district in which that public entity is located or, when the public entity is a county, of any legislative district which includes all or part of the county

Under the statute, the disclosure must list reportable contributions to any of the committees that exceed \$300 per election cycle that were made during the 12 months prior to the award of the contract.

N.J.S.A. 19:44A-20.26 itemizes the parties from whom contributions must be disclosed when a business entity is not a natural person. This includes the following:

- individuals with an “interest” ownership or control of more than 10% of the profits or assets of a business entity or 10% of the stock in the case of a business entity that is a corporation for profit
- all principals, partners, officers, or directors of the business entity or their spouses
- any subsidiaries directly or indirectly controlled by the business entity

IRS Code Section 527 New Jersey based organizations, directly or indirectly controlled by the business entity and filing as continuing political committees, (PACs).

N.J.S.A. 19:44A-20.26 itemizes the parties from whom contributions must be disclosed when a business entity is not a natural person. This includes the following:

When the business entity is a natural person, “a contribution by that person’s spouse or child, residing therewith, shall be deemed to be a contribution by the business entity.” [N.J.S.A. 19:44A-20.26(b)] The contributor must be listed on the disclosure.

Any business entity that fails to comply with the disclosure provisions shall be subject to a fine imposed by ELEC in an amount determined by the Commission, which may be based upon the amount that the business entity failed to report.

The enclosed list of agencies is provided to assist the Contractor in identifying those public agencies whose elected official and/or candidate campaign committees are affected by the disclosure requirement. It is the Contractor’s responsibility to identify the specific committees to which contributions may have been made and need to be disclosed. The disclosed information may exceed the minimum requirement.

The Contractor is advised of the responsibility to file an annual disclosure statement on political contributions with the New Jersey Election Law Enforcement Commission pursuant to N.J.S.A. 19:44A-20.27. P.L. 2005, c271, s.3 PPS Policy #6361 states that: (“**Contributions [...] to any member of the school Board from any business entity doing business with the school district are prohibited during the term of a contract**”). Furthermore, it prohibits the district from engaging a prospective contract worth more than \$17,500 if that Contractor has contributed more than \$300 to a board member’s campaign in the year prior to the one in which the Board votes upon or awards the contract.

("The Board will not vote upon or award any contract in the amount of \$17,500 or greater to any business entity which has made a contribution [of more than \$300] to a member of the Board of Education during the preceding one-year period.")

Accordingly, here in the District, current Contractors cannot contribute more than \$300 to the board election campaign of a candidate, and if a prospective Contractor contributes between \$300 and \$2,600 to a candidate, the candidate must report the contribution to ELEC, and the Board must wait one year before accepting the prospective Contractor's bid for a contract worth more than \$17,500.

33 PRE-BID CONFERENCE/MEETING The pre-bid conference attendance is not mandatory, but it is strongly recommended. Failure to attend does not relieve the Bidder of any obligations or requirements.

34. DOCUMENT RETENTION

"(The contract partner) shall maintain all documentation related to products, transactions or services under this contract for a period of seven years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request."

35. ANTI-DISCRIMINATION- (N.J.S.A. 10 :2-1)

During the term of the contract the Contractor agrees that:

- a. In the hiring of persons for the performance of work under this contract or any subcontract hereunder, or for the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under this contract, no Contractor, nor any person acting on behalf of such Contractor or subcontractor, shall, by reason of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex, discriminate against any person who is qualified and available to perform the work to which the employment relates;
- b. No Contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee engaged in the performance of work under this contract or any subcontract hereunder, or engaged in the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under such contract, on account of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex;
- c. There may be deducted from the amount payable to the Contractor by the contracting public agency, under this contract, a penalty of \$ 50.00 for each person for each calendar day during which such a person is discriminated against or intimidated in violation of the provisions of the contract; and
- d. This contract may be canceled or terminated by the contracting public agency, and all money due or to become due hereunder may be forfeited, for any violation of this section of the contract occurring after notice to the Contractor from the contracting public agency of any prior violation of this section of the contract.

37 ANTI-BULLYING

Pursuant to N.J.S.A. 18A:37-16, a contracted service provider who has witnessed, or has reliable information that a student has been subject to harassment, intimidation or bullying shall report the incident to the appropriate school official designated by the school District's policy, or to any school administrator or safe schools resource officer.

38. PREVAILING WAGES (N.J.S.A. 34:11-56.25 et esq.)

Bidders shall comply with the State of New Jersey Prevailing Wage Act for public works, if applicable, and will be required to show proof of prevailing wages to any and all employees involved in the performance of this contract. Bidders are encouraged to contact the New Jersey Department of Labor, Prevailing Wage Rate Determination Office and request current copies of the Passaic County wage and benefits rates. The successful Bidder (Contractor) shall submit certified payrolls for public works, if applicable, to the Director of Facilities to obtain payment under the awarded contract. **Failure to submit certified payrolls for public works will result in the District withholding payments.**

39. NOTICE OF CLASSIFICATION (For Public Works exceeding \$20,000) (N.J.S.A. 18A:18A-26)

Each Bidder shall submit with his/her bid a copy of a valid and active pre-qualification/classification letter issued by the Department of Transportation or the Department of Treasury (Division of Building and Construction of the State of New Jersey) as appropriate to the nature of the bid. Any bid submitted to a school board under the terms of New Jersey Statutes not including a copy of a valid and active pre-qualification/classification letter shall be rejected as being non-responsive to bid requirements.

40. UNCOMPLETED CONTRACTS (For contracts exceeding \$20,000) N.J.A.C 17:19-2.13

The Board also requires that each Bidder submit with his/her bid a **Certified Total Amount of Uncompleted Contracts** form as prescribed by law.

41. ASSIGNMENTS/SUBCONTRACTING:

The Contractor shall not assign or subcontract the whole or any part of this contract without the prior written permission of the District. Any payments under this contract shall be paid to the primary Contractor. No payments will be made to the subcontractor. This may be adjusted by the technical specifications.

42. LIST OF SUBCONTRACTORS

If applicable, all Bidders shall submit a list of subcontractors specifying the dollar amount for each trade. (See attached form).

43. SUBCONTRACTING: Subcontractor Disclosure Statement Pursuant to NJSA 18A:18A-18(b) any Bidder who bids for the overall contract and who will subcontract the following work:

- Plumbing and gas fitting work and all kindred work;
- Heating and ventilating systems and equipment;
- Electrical work
 - Structural steel and ornamental iron work; Shall identify the subcontractor that will be used on the form provided.

44. QUALIFIED SUBCONTRACTORS If the cost of the work done by the subcontractors exceed \$20,000.00, then said Contractor shall be qualified in accordance with article 6, N.J.S.A. 18A:18A-27 et. Seq. The Bidder shall supply proof that the subcontractor is qualified by submitting with the bid the subcontractor's:

- Notice of Classification
- Total Amount of uncompleted Contractors Form – Certified
- Contractor's Registration Certificate
- Current license(s) to perform the work described under this bid.

NO EXCEPTIONS

45. AUDIT BY OFFICE OF THE STATE COMPTROLLER; N.J.A.C. 17:44-2.2

Relevant records of private Contractors or other persons entering contracts with covered entities are subject to audit or review by OSC pursuant to N.J.S.A. 52:15C-14(d).

The Contractor shall maintain all documentation related to products, transactions or services under contract for a period of seven years from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request.

46. CRIMINAL HISTORY BACKGROUND CHECK; N.J.S.A. 18A:6-7.1

Bidders must comply with the following: A facility, center, school, or school system under the supervision of the Department of Education and board of education which cares for, or is involved in the education of children under the age of 18 shall not employ for pay or contract for the paid services of any teaching staff member or substitute teacher, teacher aide, child study team member, school physician, school nurse, custodian, school maintenance worker, cafeteria worker, school law enforcement officer, school secretary or clerical worker or any other person serving in a position which involves regular contact with pupils unless the employer has first determined consistent with the requirements and standards of this act, that no criminal history record information exists on file in the Federal Bureau of Investigation, Identification Division, or the State Bureau of Identification which would disqualify that individual from being employed or utilized in such capacity or position. An individual employed by a board of education or a school bus Contractor holding a contract with a board of education, in the capacity of a school bus driver, shall be required to meet the criminal history record requirements pursuant to section 6 of P.L. 1989, c. 104 (C. 18A:39-19.1). A facility, center, school, or school system under the supervision of the Department of Education and board of education which cares for or is involved in the education of children under the age of 18 may require criminal history record checks for individuals who, on an unpaid voluntary basis, provide services that involve regular contact with pupils. In the case of school districts involved in a sending-receiving relationship, the decision to require criminal history checks for volunteers shall be made jointly by the boards of education of the sending and receiving districts.

***** END OF GENERAL SPECIFICATIONS ******



AFFIRMATIVE ACTION

- **MANDATORY AFFIRMATIVE LANGUAGE**
- **AMERICANS WITH DISABILITIES ACT OF 1990**



EXHIBIT A
MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE
N.J.S.A. 10:5-31 et seq. (P.L. 1975, C. 127)
N.J.A.C. 17:27

GOODS, PROFESSIONAL SERVICE AND GENERAL SERVICE CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such actions shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor, where applicable, will send to each labor union or representative or workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

The contractor or subcontractor agrees to make good faith efforts to employ minority and women workers consistent with the applicable county employment goals established in accordance with N.J.A.C. 17:27-5.2, or a binding determination of the applicable county employment goals determined by the Division, pursuant to N.J.A.C. 17:27-5.2.

The contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, labor unions, that it does not discriminate on the basis of age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The contractor or subcontractor agrees to revise any of its testing procedures, if necessary, to ensure that all personnel testing conforms with the principles of job-related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the applicable employment goals, the contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

Letter of Federal Affirmative Action Plan Approval

Certificate of Employee Information Report

Employee Information Report Form AA302

The contractor and its subcontractors shall furnish such reports or other documents to the Div. of Contract Compliance & EEO as may be requested by the office from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Div. of Contract Compliance & EEO for conducting a compliance investigation pursuant to **Subchapter 10 of the Administrative Code at N.J.A.C. 17:27.**

AMERICANS WITH DISABILITIES ACT OF 1990

APPENDIX A

**AMERICANS WITH DISABILITIES ACT OF 1990
Equal Opportunity for Individuals with Disability**

The contractor and the Paterson Public School District of the county of Passaic, (hereafter "owner") do hereby agree that the provisions of Title 11 of the Americans With Disabilities Act of 1990 (the "Act") (42 U.S.C. S121 01 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant there unto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the owner pursuant to this contract, the contractor agrees that the performance shall be in strict compliance with the Act. If the contractor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the contractor shall defend the owner in any action or administrative proceeding commenced pursuant to this Act. The contractor shall indemnify, protect, and save harmless the owner, its agents, servants, and employees from and against all suits, claims, losses, demands, or damages, of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The contractor shall, at its own expense, appear, defend, and pay all charges for legal services and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In all complaints brought pursuant to the owner's grievance procedure, the contractor agrees to abide by any decision of the owner which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the owner, or if the owner incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the contractor shall satisfy and discharge the same at its own expense.

The owner shall, as soon as practicable after a claim has been made against it, give written notice thereof to the contractor along with full and complete particulars of the claim, If any action or administrative proceeding is brought against the owner or any of its agents, servants, and employees, the *owner shall* expeditiously forward or have forwarded to the contractor every demand, complaint, notice, summons, pleading, or other process received by the owner or its representatives.

It is expressly agreed and understood that any approval by the owner of the services provided by the contractor pursuant to this contract will not relieve the contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the owner pursuant to this paragraph.

It is further agreed and understood that the owner assumes no obligation to indemnify or save harmless the contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the contractor's obligations assumed in this Agreement, nor shall they be construed to relieve the contractor from any liability, nor preclude the owner from taking any other actions available to it under any other provisions of the Agreement or otherwise at law.



POLITICAL CONTRIBUTION DISCLOSURE FORM

- **Contractor Instructions for School Districts**



POLITICAL CONTRIBUTION DISCLOSURE FORM

Contractor Instructions For School Districts

Pursuant to N.J.A.C. 6A:23A-6.3, business entities (contractors) entering non-emergency contracts with public school districts, are subject to the provisions of P.L. 2005, c. 271, s.2 (N.J.S.A. 19:44A-20.26), even when those contracts are publicly bid. N.J.S.A. 19:44A-20.26 provides that the contractor shall disclose contributions to:

- Any State, county, or municipal committee of a political party
- Any legislative leadership committee*
- Any continuing political committee (a.k.a., political action committee)
- Any candidate committee of a candidate for, or holder of, an elective office:
 - of the public entity awarding the contract
 - of that county in which that public entity is located
 - of another public entity within that county
 - or of a legislative district in which that public entity is located or, when the public entity is a county, of any legislative district which includes all or part of the county

Under the statute, the disclosure must list reportable contributions to any of the committees that exceed \$300 per election cycle that were made during the 12 months prior to the award of the contract.

N.J.S.A. 19:44A-20.26 itemizes the parties from whom contributions must be disclosed when a business entity is not a natural person. This includes the following:

- individuals with an “interest” ownership or control of more than 10% of the profits or assets of a business entity or 10% of the stock in the case of a business entity that is a corporation for profit
- all principals, partners, officers, or directors of the business entity or their spouses
- any subsidiaries directly or indirectly controlled by the business entity

IRS Code Section 527 New Jersey based organizations, directly or indirectly controlled by the business entity and filing as continuing political committees, (PACs).

N.J.S.A. 19:44A-20.26 itemizes the parties from whom contributions must be disclosed when a business entity is not a natural person. This includes the following:

When the business entity is a natural person, “a contribution by that person’s spouse or child, residing therewith, shall be deemed to be a contribution by the business entity.” [N.J.S.A. 19:44A-20.26(b)] The contributor must be listed on the disclosure.

Any business entity that fails to comply with the disclosure provisions shall be subject to a fine imposed by ELEC in an amount determined by the Commission, which may be based upon the amount that the business entity failed to report.

The enclosed list of agencies is provided to assist the Contractor in identifying those public agencies whose elected official and/or candidate campaign committees are affected by the disclosure requirement. It is the Contractor’s responsibility to identify the specific committees to which contributions may have been made and need to be disclosed. The disclosed information may exceed the minimum requirement.

C. 271 POLITICAL CONTRIBUTION DISCLOSURE FORM

Contractor Instructions For School Districts

The enclosed Political Contribution Disclosure Form or a content-consistent facsimile (along with a signed cover sheet) must be submitted with the Contractor’s bid and is disclosable to the public under the Open Public Records Act.

The Contractor must also complete the attached Stockholder Disclosure Certification. This will assist the agency in meeting its obligations under the law. N.J.S.A. 19:44A-3(s): “The term "legislative leadership committee" means a committee established, authorized to be established, or designated by the President of the Senate, the Minority Leader of the Senate, the Speaker of the General Assembly or the Minority Leader of the General Assembly pursuant to section 16 of P.L.1993, c.65 (C.19:44A-10.1) for the purpose of receiving contributions and making expenditures.”

**List of Agencies with Elected Officials Required for Political Contribution Disclosure
N.J.S.A. 19:44A-20.26**

County Name: Passaic

State: Governor, and Legislative Leadership Committees

Legislative District #: 35 State Senator and two members of the General Assembly per district.

County:

Freeholders

County Clerk

Sheriff

Surrogate

Registrar of Deeds

Municipalities (Mayor and members of governing body, regardless of title):

Bloomingtondale Borough	Passaic City	Wanaque Borough
Clifton City	Paterson City	Wayne Township
Haledon Borough	Pompton Lakes Borough	West Milford Township
Hawthorne Borough	Prospect Park Borough	Woodland Park Borough
Little Falls Township	Ringwood Borough	
North Haledon Borough	Totowa Borough	

Boards of Education (Members of the Board):

Bloomingtondale Borough	Passaic City	Totowa Borough
Clifton City	Passaic County Manchester Regional	Wanaque Borough
Haledon Borough	Passaic Valley Regional	Wayne Township
Hawthorne Borough	Paterson City	West Milford Township
Lakeland Regional	Pompton Lakes Borough	Woodland Park Borough
Little Falls Township	Prospect Park Borough	
North Haledon Borough	Ringwood Borough	

Fire Districts (Board of fire Commissioners): None



Technical Specifications



SECTIONS
<ul style="list-style-type: none">• SECTION 1 – INFORMATION TO BIDDERS• SECTION 2 – SCOPE OF WORK

Technical Specifications - Section 1: Information to Bidders

1 PURPOSE AND INTENT

This Invitation to Bid (ITB) is issued by the Paterson Public School System (herein the “District”), **Department of Purchasing**. The intent of this Invitation is to award a Bid Contract to that responsible bidder whose proposal, conforms to all of the District’s Technical Specifications. **It is the intent of the “District” to award a contract to a SINGLE (primary contractor)**. A secondary contractor will be selected a contract if it is found to be necessary. The District will select the most capable Contractor whose bid proposal demonstrates their ability to satisfy the specific terms, conditions, and requirements as specified in this document. The successful bidder shall provide all labor, materials, and equipment necessary to perform inspection, testing, maintenance, and repairs on all **District Boiler Systems** This will be to the satisfaction of the “District” and in accordance with applicable laws, codes, standards, terms and conditions, and specifications outlined in this **Invitation for Bid**.

The expected service is described in Part 2 of the Technical Specifications (Scope of Work).

1.2 KEY EVENTS

1.2.1 PRE-BID CONFERENCE:

It is **STRONGLY RECOMMENDED** that potential Bidders attend the Pre-Bid Conference for purposes of clarifying specific information concerning the project work, hearing other Bidders’ questions regarding various aspects of the Project and the answers thereto, and learning the manner of proper completion and submission of the Bid Documents to ensure a responsive Bid. **Failure to attend does not relieve the bidder of any obligations or requirements.**

DATE/TIME:	Monday, June 16, 2025 at 10:00 AM
LOCATION	P.S. #19 31 James Street Paterson, NJ 07502

1.2.2 Bid Opening:

In order to be considered for award, the bid must be received by the Paterson Public School District, Department of Purchasing at the appropriate location by the required time. **ANY BID NOT RECEIVED ON TIME AT THE RIGHT PLACE WILL BE REJECTED. THE DATE, TIME AND LOCATION ARE:**

DATE & TIME:	Tuesday, June 24, 2025 at 10:00 AM
LOCATION:	LIVESTREAM-ZOOM https://us04web.zoom.us/j/871855428 PASSWORD: 5050

The information required to be submitted in response to this invitation to bid has been determined to be essential in the bid evaluation and contract award process. Any exception statements made by the Bidder to the bid requirements could result in a determination that the bid is materially non-responsive.

1.3 BID DELIVERY AND IDENTIFICATION

To be considered, a bid must arrive at the District, in accordance with the instructions on the BID cover sheet. Bidders submitting bids are cautioned to allow adequate delivery time to ensure timely delivery of bids. No bids shall be received after the time designated in the advertisement in accordance with N.J.S.A. 18A:18A-21(b). **THE EXTERIOR OF ALL BID RESPONSE PACKAGES MUST BE LABELED WITH THE BID IDENTIFICATION NUMBER, BID TITLE, FINAL BID OPENING DATE AND THE BUYER’S NAME. NO EXCEPTIONS.**

1.4 NUMBER OF BID COPIES (1 ORIGINAL, 1 COPY ON A USB) PLEASE ENSURE A USB, WITH YOUR COMPLETE PROPOSAL, IS DOWNLOADED AND INCLUDED WITH YOUR BID.

Each Bidder must submit **one (1) complete NON-BOUND ORIGINAL bid** , clearly marked as the “ORIGINAL” bid. Each Bidder should submit **ONE (1) FULL, COMPLETE AND EXACT COPY ON A USB** of the original. Bidders failing to provide the requested number of copies will be charged the cost incurred by the District to produce the requested number of copies. It is suggested that the Bidder make and retain a copy of its bid.

1.5 BIDDER RESPONSIBILITY

The Bidder assumes sole responsibility for the complete effort required in this bid. No special consideration shall be given after bids are opened because of a Bidder's failure to be knowledgeable of all the requirements of this bid. By submitting a bid in response to this ITB, the Bidder represents that it has satisfied itself, from its own investigation, of all the requirements of this bid.

1.6 COST LIABILITY

The District assumes no responsibility and bears no liability for costs incurred by Bidders before the award of the contract resulting from this bid.

1.7 CONTENTS OF BID

The entire content of every bid will be publicly opened and becomes a public record. This is the case notwithstanding any statement to the contrary made by a Bidder in its bid. All bids, as public records, are available for public inspection. Interested parties can make an appointment with the Purchase Bureau buyer to inspect bids received in response to this BID.

1.8 PRICE ALTERATION

Bid prices must be typed or written in ink. Any price change (including "white-outs") must be initialed. Failure to do so may preclude an award being made to the Bidder.

1.9 DURATION OF CONTRACTS (N.J.S.A. 18A:18A-42)

The Contractor shall provide the specified goods and/or services for one (1) year: **2024-2025 school year**, with an option for a renewal as described in the “Contract Renewal” Section. The original term of this contract and any extension are subject to the availability and appropriation annually of sufficient funds.

1.10 ESTIMATED CONTRACT

The District estimates expenditures under this contract to be over the bid threshold during the term of the contract. The District reserves the right to increase or decrease this amount based upon need and funding during the term of the contract.

1.11.1 CONTRACT RENEWAL

Following its initial term, the contract may be extended substantially to the same terms and conditions if the District determines that the Contractor has provided services in an effective and efficient manner. The allowable extended duration of this contract may be for a (1) one-year or (2) two-year extension.

Subject to the following limitations:

- a. the contract shall be awarded by resolution of the board of education upon a finding by the board of education that the services are performed in an effective and efficient manner.
- b. no such contract shall be extended so that it runs for more than a total of five consecutive years.
- c. any price change included as part of an extension shall be based upon the price of the original contract as cumulatively adjusted pursuant to any previous adjustment or extension and shall not exceed the change in the index rate for the 12 months preceding the most recent quarterly calculation available at the time the contract is renewed; and
- d. the terms and conditions of the contract remain substantially the same.

1.11.2. CONTRACT EFFECTIVE DATES

Any contract entered into as a result of these bid specifications shall cease to have effect at the end of the contracted period and shall not be extended by any mechanism or provision, unless in conformance with the "Public School Contracts Law," *N.J.S.A.18A:18A-1 et seq.*, except that a contract may be extended by mutual agreement of the parties to the contract when the Paterson Board of Education has commenced rebidding prior to the time the contract expires or when the awarding of a contract is pending at the time the contract expires.

SUBMISSION OF BID DEPOSITS AND BID BONDS (N.J.S.A.18A:18A-24):

As evidence of good faith, a BID BOND shall accompany each bid or CERTIFIED CHECK made payable to PATERSON PUBLIC SCHOOLS, equal to ten percent (10%) of the Contractor's bid. However, in no case will this bid deposit or certified check, or any combination thereof exceed twenty thousand dollars (\$20,000.00).

1.12.2 CERTIFICATE FROM SURETY COMPANY (NJSA 18A: 18A-25)

Each Bidder must submit with his/her bid a certificate from a surety company stating that the surety company will provide the Contractor with a performance bond in an amount equal to the amount of the contract (N.J.S.A. 18A 18A-25). Failure to submit the certificate (Consent) of Surety shall be cause for rejection of bid.

1.12.3 PERFORMANCE BONDS (N.J.S.A. 18A: 18A-25)

The successful Bidder shall furnish within ten (10) business days after the notice of the contract award a Performance Bond in statutory form in an amount equal to one hundred percent (100%) of the total contract price as security for faithful performance of this contract.

1.13 AWARD OF CONTRACT

In executing the contract, the successful Bidder agrees to perform all work in accordance with the terms and conditions of the specifications to the reasonable satisfaction of the District and to complete all work and/or services as specified in the contract. Successful Bidder will be notified of the time and place for the signing of contracts, essential requirements in the conduct of the contract, including, but not limited to, the number of days specified in the technical specifications for the performance of the contract, manner and schedule of payments, and other administrative details that will be reviewed at the award meeting. Refer to section 2 of Technical Specifications.

1.14 AWARD CRITERIA

Bids will be awarded to a qualified Contractor who is the lowest responsible Bidder as defined under, and in accordance with, the Public School Contracts Law, *N.J.S.A. 18A:18A-1, et seq.*

1.15 ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the specifications or other contract documents will be made to any Bidder orally. Notice of revisions or addenda to advertisements or bid documents shall be issued in accordance with N.J.S.A. 18A:18A-21c(1). Failure of any Bidder to receive such addendum or interpretation shall not relieve any Bidder from any obligation under his/her bid as submitted. All addenda so issued shall become part of the contract documents.

1.16 QUESTION PROTOCOL

Questions can be e-mailed to (tmiller@paterson.k12.nj.us) in writing to the attention of the assigned Purchasing staff. Written questions should reference the bid. Questions should be asked in consecutive order, from beginning to end, following the organization of the bid. Each question should begin by referencing the bid page number and section number to which it relates. Short procedural inquiries may be accepted by telephone by the assigned purchasing staff. However, oral explanations or instructions given over the telephone shall not be binding upon the District. Bidders shall not contact the Using Department directly, in person, or by telephone, concerning this bid.

1.17 SHIPPING AND HANDLING CHARGES

Shipping and handling charges are included in price. The Bidder shall not process any order or purchase that includes shipping and handling charges. The District shall seek reimbursement for all shipping and handling applied to any purchase(s).

1.18 DELIVERY

Unless otherwise specified in this ITB, all prices in bids are to be submitted FREE ON BOARD (F.O.B.), DESTINATION (PATERSON PUBLIC SCHOOLS). Bids submitted other than F.O.B. DESTINATION may not be considered. Regardless of the method of quoting shipments, the Contractor shall assume all costs, liability and responsibility for the delivery of merchandise in good condition to the District using agency or Department of Purchasing.

In all cases the transportation carrier is responsible for taking the material off or out of the delivery vehicle. The Contractor is responsible to the platform or loading dock for platform delivery, to the inside the building for inside delivery and to the designated area in the building for spotted delivery.

If specialized personnel are needed to set up, assemble, or erect an item, such action will be completed in five (5) business days. The District will impose a \$100 per day assessment against the Bidder for failure to comply within this time limit.

The successful Bidder guarantees delivery within the times specified in the bid documents. Failure to deliver items in the prescribed time shall cause the District to impose assessments as per the schedule listed in the bid documents. Delivery times to all school buildings shall be from 8:30 a.m. to 4:30 p.m. from Monday to Friday, except holidays.

1.19 INSURANCE REQUIREMENTS

The Contractor shall secure and maintain in force and effect for the term of this contract, liability insurance as provided below, unless revised in the technical specifications. The Contractor shall provide the District with current certificates for all coverage and renewals thereof, which must contain the provision that the insurance in the certificate shall not be cancelled for any reason except after thirty (30) days written notice to:

PATERSON PUBLIC SCHOOLS
DEPARTMENT OF PURCHASING, 4TH FLOOR
90 DELAWARE AVENUE, PATERSON, NJ 07503

1. Minimum Coverage:

General Liability Insurance - Including personal injury, equipment & property damage	
Aggregate	\$5,000,000 – Annual Basis
Each Occurrence	\$ 1,000,000
Fire	\$50,000
Medical	\$5,000

Automobile Liability – including personal injury and property damage	
Combined Limit	\$ 1,000,000 - Annual Basis

Worker’s Compensation & Employer’s Liability	
Each Accident	Statutory
Disease	Statutory

2. A Certificate of Insurance, which names the District as an additional named insured, shall be furnished by the Board at the time the contract is signed.

1.20 DEFINITIONS

1.20.1 GENERAL DEFINITIONS

The following definitions shall be part of any contract awarded, or order placed because of this Bid.

Addendum – Written clarification or revision to this ITB issued by the District.

Amendment – A change in the scope of work to be performed by the Contractor.

Bidder - An individual or business entity submitting a response to this ITB.

Contract - The written executed agreement between the parties, this ITB, any addendum to this ITB, and the Bidder's bid submitted in response to this ITB, as accepted by the District.

Contractor - The successful Bidder awarded a contract.

District- The entire Paterson Public School System

May - Denotes that which is permissible, not mandatory.

Project - The undertaking or services that are the subject of this ITB.

Invitation to Bid (ITB) – This document which establishes the bidding and contract requirements and solicits bids to meet the purchase needs of the using agencies as identified herein.

Shall or Must – Denotes that which is a mandatory requirement. Failure to meet a mandatory requirement will result in the rejection of a bid as materially non-responsive.

Should - Denotes that which is recommended, not mandatory.

District Contract Manager (DCM) – The individual responsible for the approval of all deliverables, i.e., tasks, sub-tasks or other work elements in the Scope of Work.

Subtasks – Detailed activities that comprise the actual performance of a task.

Task – A discrete unit of work to be performed.

Using Department - The entity for which the District has issued this bid and will enter a contract.

1.21 CONTRACT CONTINGENT ON AVAILABLE FUNDS / CANCELLATION CLAUSE

As per *N.J.S.A. 18A:18A-42*, the District entering a contract under these bid specifications, as well as any additional contract extensions, shall be subject to the availability of sufficient funds and appropriation annually of sufficient funds as may be required to meet the extended obligation. The District retains the sole discretion to cancel any contract or bid specifications when there are no sufficient funds available or when there is no annual appropriation for sufficient funds to cover the costs of the contract.

SECTION 2: SCOPE OF WORK

Technical Specifications - Section 2: Scope of Work

SEE PROJECT MANUAL



BID PROPOSAL AND REQUIRED DOCUMENTS

**Submit one (1) original bid packet (stapled to cover) and
one (1) Electronic Copy USB.**



BID RETURN BOOKLET

Please Complete

Bid Title: _____

Bid Number: _____

Company Name _____

Check

Bid Return Booklet

If submitting a bid, kindly attach and staple all pages marked "Required Documents" to this page. **One(1) original, one(1) electronic copy (USB,FLASH DRIVE).**

Check

No Bid

If you do not wish to submit a bid at this time but would like to remain in the District Bidder's list, return this form to the Paterson Public School District.

Reason for not bidding: _____

Check

Remove from List

If you wish to be removed from the District's Bidder's list do not reply to this invitation to bid.

Company Representative

Date

ATTACH AND STAPLE ALL REQUIRED DOCUMENTATION TO THIS PAGE

BID RETURN

THE FOLLOWING DOCUMENTS ARE MANDATORY ATTACHMENTS AND FAILURE TO SUBMIT THEM MAY BE CAUSE FOR DISQUALIFICATION FOR BEING NON-RESPONSIVE AND REJECTION OF THE BID.

SUBMISSION CHECKLIST

PLEASE SUBMIT YOUR BID IN THE FOLLOWING ORDER:

Bid Security / Bid Bond
Performance Bond (Shall be furnished ten (10) business days after notice of contract award)
Consent of Surety
Statement of Ownership Disclosure
Affirmative Action Requirements (Form AA302 Form or current Employee Information Report) -Required for the successful Bidder.
Equal Opportunity Language – Compliance Notice
New Jersey Business Registration Certificate, (FORM-BRC-(08-01) – provide prior to contract award
Non-Collusion Affidavit
Company Information Form
W-9 Form
Reference Sheet
Equipment / Prevailing Wage/Unauthorized Orders Certification Form
Political Contribution Disclosure Form
Disclosure of Investment Activities in Iran - provide prior to contract award
Certification of Non-involvement in Prohibited Activities in Russia or Belarus
Acknowledgement of Receipt of Addenda-Please still fill out if no addenda has been issued
Contractors Qualification Statement (SEE ATTACHED SAMPLE)
Pricing Sheet
Notice of Classification from the State (NO EXCEPTIONS)
Notarized Amount of Uncompleted Contracts from the State (NO EXCEPTIONS)
Public Works Contractor Certificate (NO EXCEPTIONS)
List of Subcontractors, if any (PLEASE READ PAGE 16, NUMBERS 43 & 44 REGARDING SUBCONTRACTING (NO EXCEPTIONS))
Copy(ies) of current license(s) to perform under this contract

BID AND PERFORMANCE BOND REQUIREMENTS FOR THIS ITB

Bid Bond Amount: 10% of total bid amount, not to exceed \$20,000.00 dollars

Performance Bond: 100% of contract value

The undersigned declares that he/she has read the specifications and included all items listed in the Checklist above.

Company Representative

Date

ATTACH AND STAPLE ALL REQUIRED DOCUMENTATION TO THIS PAGE

 **AIA** Document A305[®] – 2020
Contractor's Qualification Statement

THE PARTIES SHOULD EXECUTE A SEPARATE CONFIDENTIALITY AGREEMENT IF THEY INTEND FOR ANY OF THE INFORMATION IN THIS A305-2020 TO BE HELD CONFIDENTIAL.

SUBMITTED BY:
(Organization name and address.)

SUBMITTED TO:
(Organization name and address.)

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

TYPE OF WORK TYPICALLY PERFORMED

(Indicate the type of work your organization typically performs, such as general contracting, construction manager as constructor services, HVAC contracting, electrical contracting, plumbing contracting, or other.)

THIS CONTRACTOR'S QUALIFICATION STATEMENT INCLUDES THE FOLLOWING:
(Check all that apply.)

- Exhibit A – General Information
- Exhibit B – Financial and Performance Information
- Exhibit C – Project-Specific Information
- Exhibit D – Past Project Experience
- Exhibit E – Past Project Experience (Continued)

CONTRACTOR CERTIFICATION

The undersigned certifies under oath that the information provided in this Contractor's Qualification Statement is true and sufficiently complete so as not to be misleading.

Organization's Authorized Representative Signature Date

Printed Name and Title

NOTARY

State of:

County of:

Signed and sworn to before me this day of

Notary Signature

My commission expires:

STATEMENT OF OWNERSHIP DISCLOSURE

N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L. 2016, c.43)

This statement shall be completed, certified to, and included with all bid submissions. Failure to submit the required information is cause for automatic rejection of the bid .

Name of Organization: _____

Organization Address: _____

Part I Check the box that represents the type of business organization:

- Sole Proprietorship (skip Parts II and III, execute certification in Part IV)
- Non-Profit Corporation (skip Parts II and III, execute certification in Part IV)
- For-Profit Corporation (any type) Limited Liability Company (LLC)
- Partnership Limited Partnership Limited Liability Partnership (LLP)
- Other (be specific): _____

Part II

The list below contains the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. **(COMPLETE THE LIST BELOW IN THIS SECTION)**

OR

No one stockholder in the corporation owns 10 percent or more of its stock, of any class, or no individual partner in the partnership owns a 10 percent or greater interest therein, or no member in the limited liability company owns a 10 percent or greater interest therein, as the case may be. **(SKIP TO PART IV)**

(Please attach additional sheets if more space is needed):

Name of Individual or Business Entity	Home Address (for Individuals) or Business Address

ATTACH AND STAPLE ALL REQUIRED DOCUMENTATION TO THIS PAGE

Part III DISCLOSURE OF 10% OR GREATER OWNERSHIP IN THE STOCKHOLDERS, PARTNERS OR LLC MEMBERS LISTED IN PART II

If a Bidder has a direct or indirect parent entity which is publicly traded, and any person holds a 10 percent or greater beneficial interest in the publicly traded parent entity as of the last annual federal Security and Exchange Commission (SEC) or foreign equivalent filing, ownership disclosure can be met by providing links to the website(s) containing the last annual filing(s) with the federal Securities and Exchange Commission (or foreign equivalent) that contain the name and address of each person holding a 10% or greater beneficial interest in the publicly traded parent entity, along with the relevant page numbers of the filing(s) that contain the information on each such person. **Attach additional sheets if more space is needed.**

Website (URL) containing the last annual SEC (or foreign equivalent) filing	Page #'s

Please list the names and addresses of each stockholder, partner or member owning a 10 percent or greater interest in any corresponding corporation, partnership and/or limited liability company (LLC) listed in Part II **other than for any publicly traded parent entities referenced above.** The disclosure shall be continued until names and addresses of every non-corporate stockholder, and individual partner, and member exceeding the 10 percent ownership criteria established pursuant to N.J.S.A. 52:25-24.2 has been listed. **Attach additional sheets if more space is needed.**

Stockholder/Partner/Member and Corresponding Entity Listed in Part II	Home Address (for Individuals) or Business Address

Part IV Certification

I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the Bidder/proposer; that the District is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with the District to notify the District in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the, permitting the District to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

Company Representative

Date

REQUIRED DOCUMENT- ATTACH AND STAPLE TO "BID RETURN BOOKLET" PAGE

AFFIRMATIVE ACTION COMPLIANCE NOTICE
N.J.S.A. 10:5-31 and N.J.A.C. 17:27

GOODS AND SERVICES CONTRACTS
(INCLUDING PROFESSIONAL SERVICES)

This form is a summary of the successful Bidder's requirement to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27-1 et seq.

The successful Bidder shall submit to the public agency, after notification of award but prior to execution of this contract, one of the following three documents as forms of evidence:

(a) A photocopy of a valid letter that the Contractor is operating under an existing Federally approved or sanctioned affirmative action program (good for one year from the date of the letter);

OR

(b) A photocopy of a Certificate of Employee Information Report approval, issued in accordance with N.J.A.C. 17:27-4;

OR

(c) A photocopy of an Employee Information Report (Form AA302) provided by the Division and distributed to the public agency to be completed by the Contractor in accordance with N.J.A.C. 17:27-4.

The successful Contractor may obtain the Affirmative Action Employee Information Report (AA302) from the contracting unit during normal business hours.

The successful Contractor(s) must submit the copies of the AA302 Report to the Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (Division). The Public Agency copy is submitted to the public agency, and the Contractor copy is retained by the Contractor.

The undersigned Contractor certifies that he/she is aware of the commitment to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27.1 et seq. and agrees to furnish the required forms of evidence.

The undersigned Contractor further understands that his/her bid shall be rejected as non-responsive if said Contractor fails to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27-1 et seq.

COMPANY: _____

SIGNATURE: _____

PRINT NAME: _____

TITLE: _____

DATE: _____

REQUIRED DOCUMENT- ATTACH AND STAPLE TO "BID RETURN BOOKLET" PAGE

INSTRUCTIONS FOR COMPLETING THE EMPLOYEE INFORMATION REPORT (FORM AA302)

IMPORTANT: READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE COMPLETING THE FORM. PRINT OR TYPE ALL INFORMATION. FAILURE TO PROPERLY COMPLETE THE ENTIRE FORM **AND TO SUBMIT THE REQUIRED \$150.00 NON-REFUNDABLE FEE MAY DELAY ISSUANCE OF YOUR CERTIFICATE. IF YOU HAVE A CURRENT CERTIFICATE OF EMPLOYEE INFORMATION REPORT, DO NOT COMPLETE THIS FORM UNLESS YOU ARE RENEWING A CERTIFICATE THAT IS DUE FOR EXPIRATION. DO NOT COMPLETE THIS FORM FOR CONSTRUCTION CONTRACT AWARDS.**

ITEM 1 - Enter the Federal Identification Number assigned by the Internal Revenue Service, or if a Federal Employer Identification Number has been applied for, or if your business is such that you have not or will not receive a Federal Employer Identification Number, enter the Social Security Number of the owner or of one partner, in the case of a partnership.

ITEM 2 - Check the box appropriate to your TYPE OF BUSINESS. If you are engaged in more than one type of business check the predominate one. If you are a manufacturer deriving more than 50% of your receipts from your own retail outlets, check "Retail".

ITEM 3 - Enter the total "number" of employees in the entire company, including part-time employees. This number shall include all facilities in the entire firm or corporation.

ITEM 4 - Enter the name by which the company is identified. If there is more than one company name, enter the predominate one.

ITEM 5 - Enter the physical location of the company. Include City, County, State and Zip Code.

ITEM 6 - Enter the name of any parent or affiliated company including the City, County, State and Zip Code. If there is none, so indicate by entering "None" or N/A.

ITEM 7 - Check the box appropriate to your type of company establishment. "Single-establishment Employer" shall include an employer whose business is conducted at only one physical location. "Multi-establishment Employer" shall include an employer whose business is conducted at more than one location.

ITEM 8 - If "Multi-establishment" was entered in item 8, enter the number of establishments within the State of New Jersey.

ITEM 9 - Enter the total number of employees at the establishment being awarded the contract.

ITEM 10 - Enter the name of the Public Agency awarding the contract. Include City, County, State and Zip Code. This is not applicable if you are renewing a current Certificate.

ITEM 11 - Enter the appropriate figures on all lines and in all columns. THIS SHALL ONLY INCLUDE EMPLOYMENT DATA FROM THE FACILITY THAT IS BEING AWARDED THE CONTRACT. DO NOT list the same employee in more than one job category. **DO NOT attach an EEO-1 Report.**

Racial/Ethnic Groups will be defined:

Black: Not of Hispanic origin. Persons having origin in any of the Black racial groups of Africa.

Hispanic: Persons of Mexican, Puerto Rican, Cuban, or Central or South American or other Spanish culture or origin, regardless of race.

American Indian or Alaskan Native: Persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.

Asian or Pacific Islander: Persons having origin in any of the original peoples of the Far East, Southeast Asia, the Indian Sub-continent or the Pacific Islands. This area includes for example, China, Japan, Korea, the Phillipine Islands and Samoa.

Non-Minority: Any Persons not identified in any of the aforementioned Racial/Ethnic Groups.

ITEM 12 - Check the appropriate box. If the race or ethnic group information was not obtained by 1 or 2, specify by what other means this was done in 3.

ITEM 13 - Enter the dates of the payroll period used to prepare the employment data presented in Item 12.

ITEM 14 - If this is the first time an Employee Information Report has been submitted for this company, check block "Yes".

ITEM 15 - If the answer to Item 14 is "No", enter the date when the last Employee Information Report was submitted by this company.

ITEM 16 - Print or type the name of the person completing the form. Include the signature, title and date.

ITEM 17 - Enter the physical location where the form is being completed. Include City, State, Zip Code and Phone Number.

TYPE OR PRINT IN SHARP BALL POINT PEN

THE VENDOR IS TO COMPLETE THE EMPLOYEE INFORMATION REPORT FORM (AA302) AND RETAIN A COPY FOR THE VENDOR'S OWN FILES. THE VENDOR SHOULD ALSO SUBMIT A COPY TO THE PUBLIC AGENCY AWARDING THE CONTRACT IF THIS IS YOUR FIRST REPORT; AND FORWARD ONE COPY **WITH A CHECK IN THE AMOUNT OF \$150.00 PAYABLE TO THE TREASURER, STATE OF NEW JERSEY(FEE IS NON-REFUNDABLE)** TO:

NJ Department of the Treasury
Division of Purchase & Property
Contract Compliance Audit Unit
EEO Monitoring Program
P.O. Box 206

Trenton, New Jersey 08625-0206

Telephone No. (609) 292-5473

EXHIBIT A

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE N.J.S.A. 10:5-31 et seq. (P.L. 1975, c. 127) N.J.A.C. 17:27et seq.

GOODS, GENERAL SERVICES, AND PROFESSIONAL CONTRACTS

During the performance of this contract, the Contractor agrees as follows:

The Contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the Contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The Contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The Contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union of the Contractor's commitments under this chapter and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The Contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

The Contractor or subcontractor agrees to make good faith efforts to meet targeted county employment goals established in accordance with N.J.A.C. 17:27-5.2

EXHIBIT A (Cont)

The Contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, and labor unions, that it does not discriminate on the basis of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The Contractor or subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personnel testing conforms with the principles of job related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the targeted employment goals, the Contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The Contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

Letter of Federal Affirmative Action Plan Approval;

Certificate of Employee Information Report; or

Employee Information Report Form AA-302 (electronically provided by the Division and distributed to the public agency through the Division's website at: [http:// www.state.nj.us/treasury/contract_compliance](http://www.state.nj.us/treasury/contract_compliance)).

The Contractor and its subcontractors shall furnish such reports or other documents to the Division of Purchase & Property, CCAU, EEO Monitoring Program as may be requested by the office from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Purchase & Property, CCAU, EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.

COMPANY: _____

SIGNATURE: _____

PRINT NAME: _____

TITLE: _____

DATE: _____

COMPANY INFORMATION FORM

Company Name:		
Address:		
Address:		
City:	State:	Zip:
Tax ID No.:	(Required)	NJ BRC Number:
		(Required)
Telephone :	Fax:	
Website:	Email:	

**The information provided will be used for statistical purposes only. This information will not be used to select the winning bid*

DISCLAIMER

CONFIRMATION OF SPECIFICATIONS
I have read and understood the written specifications required by this bid and agree to all aspects of the information provided herein. _____ (y/n)
DEPARTMENT, SUSPENSION OR DISQUALIFICATION
Is your company included on the State Treasurer’s List of Debarred, Suspended or Disqualified Bidders or the State Department of labor; Prevailing Wage Debarment List? _____ (y/n)
If yes, explain: _____
NON-COLLUSION STATEMENT
Has your company been in contact with any District employee or elected official, other than the Purchasing Department to discuss this bid? _____ (y/n)
If yes, explain: _____
POLITICAL CONTRIBUTIONS
Has your company made contribution(s) that exceeded \$300.00 per election cycle to elected officials, including BOE members or Political Action Committees during the 12 months prior to award of contract _____ (y/n)
If yes, complete attached form.

Name of Officer Authorized to Submit Bid:

Print Name:	Position:
Signature:	Date:

Company Representative

Date

REQUIRED DOCUMENT- ATTACH AND STAPLE TO "BID RETURN BOOKLET" PAGE

Request for Taxpayer Identification Number and Certification

Go to www.irs.gov/FormW9 for instructions and the latest information.

**Give form to the
requester. Do not
send to the IRS.**

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See Specific Instructions on page 3.	1	Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)
	2	Business name/disregarded entity name, if different from above.
	3a	Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only one of the following seven boxes. <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C corporation <input type="checkbox"/> S corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner. <input type="checkbox"/> Other (see instructions) _____
	4	Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any) _____ <i>(Applies to accounts maintained outside the United States.)</i>
	3b	If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions <input type="checkbox"/>
	5	Address (number, street, and apt. or suite no.). See instructions.
	6	City, state, and ZIP code
7	List account number(s) here (optional)	Requester's name and address (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Social security number	
[] [] [] []	- [] [] [] [] [] [] [] []
or	
Employer identification number	
[] [] [] [] [] [] [] []	- [] [] [] [] [] [] [] []

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	Signature of U.S. person	Date
------------------	--------------------------	------

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

REFERENCE SHEET

Names and Addresses of Three (3) References

Company Name:			
Address:			
City:	State:	Zip:	
Telephone: () - 	Fax: () - 		
Contact Person :	Email:		

Company Name:			
Address:			
City:	State:	Zip:	
Telephone: () - 	Fax: () - 		
Contact Person :	Email:		

Company Name:			
Address:			
City:	State:	Zip:	
Telephone: () - 	Fax: () - 		
Contact Person :	Email:		

I declare and certify that no member of the Paterson Board of Education, nor any officer or employee or person whose salary is payable in whole or in part by said Board of Education is directly or indirectly interested in this bid or in the supplies, materials, equipment, work or services to which it relates, or in any portion of profits thereof. If a situation so exists where a Board member, employee, officer of the Board has an interest in the bid, etc. then please attach a letter of explanation to this document, duly signed by the president of the firm or company.

President: _____

Signature: _____

Company Representative

Date

REQUIRED DOCUMENT- ATTACH AND STAPLE TO "BID RETURN BOOKLET" PAGE

EQUIPMENT/ PREVAILING WAGE/UNAUTHORIZED ORDERS CERTIFICATION

The undersigned Bidder hereby certifies as follows:

- The Bidder owns or controls all the necessary equipment required to deliver the goods and/or services described in the specifications.
- If required, the Bidder has the necessary license(s) pursuant to local and state regulations to provide the services under this bid.
- The Bidder will comply with The New Jersey Prevailing Wage Act (N.J.S.A. 34:11-56.25 et seq.)
- The Bidder will not process or respond to any request or provide any type of service without a signed Purchase Order.
- The Bidder will not exceed the amount of the approved Purchase Order.
- The Bidder will report any unauthorized request for services without a valid PO
- If no award is made after 60 days, Bidder agrees to maintain the bid price effectively for an additional 60 days.
- The Bidder will comply with all Affirmative Action Requirements
- The Bidder will comply with the Americans with Disabilities Act of 1990
- If shipping charges are wrongly applied the Contractor shall not process the order and/or shall reimburse the District
- If wrong prices are applied by the District or if discount is not applied, Contractor shall not process the order and/or shall reimburse the District.
- The company has not made any contribution(s) (that exceed \$300 per election cycle) that were made during the 12 months prior to the award of the contract.

Bid # _____ Name of Bidder: _____

By: _____
(Signature)

Name of above: _____
(Print)

Title: _____ Date: _____

Company Representative

Date

REQUIRED DOCUMENT- ATTACH AND STAPLE TO "BID RETURN BOOKLET" PAGE

Disclosure of Investment Activities in Iran

Person or Entity

Part 1: Certification

COMPLETE PART 1 BY CHECKING **EITHER BOX.**

Pursuant to Public Law 2012, c. 25, any person or entity that is a successful bidder or proposer, or otherwise proposes to enter into or renew a contract, must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any parent entity, subsidiary, or affiliate is identified on the State Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The list is found on Treasury's website at www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf.

The Chapter 25 list must be reviewed prior to completing the below certification. If a vendor or contractor is found to be in violation of law, action may be taken as appropriate and as may provided by law, rule or contract, including but not limited to imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.



I certify, pursuant to Public Law 2012, c. 25, that neither the person or entity listed above, nor any parent entity, subsidiary, or affiliate thereof is listed on the N.J. Department of the Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and am authorized to make this certification on its behalf. I will skip Part 2 and sign and complete the Certification below.

OR



I am unable to certify as above because the person or entity and/or a parent entity, subsidiary, or affiliate thereof is listed on the N.J. Department of the Treasury's Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below sign and complete the Certification below.

Part 2: Additional Information

PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN.

You must provide a detailed, accurate and precise description of the activities of the person or entity, or a parent entity, subsidiary, or affiliate thereof engaging in investment activities in Iran below and, if more space is needed, on additional sheets provided by you.

Part 3: Certification of True and Complete Information

I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments there to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the above-referenced person or entity.

*I acknowledge that the **Name of Contracting Unit** is relying on the information contained herein and thereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of any contracts with the **Reference to Contracting Unit** to notify the **Reference to Contracting Unit** in writing of any changes to the answers of information contained herein.*

*I acknowledge that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I recognize that I am subject to criminal prosecution under the law and that it will also constitute a material breach of my agreement(s) with the **Name of Contracting Unit** and that the **Reference to Contracting Unit** at its option may declare any contract(s) resulting from this certification void and unenforceable.*

Full Name (Print)		Title	
Signature		Date	

CERTIFICATION OF NON-INVOLVEMENT IN PROHIBITED ACTIVITIES IN RUSSIA OR BELARUS

PATERSON BOARD OF EDUCATION

N.J.S.A. 18A:18A-49.5

Pursuant to N.J.S.A. 52:32-60.1, et seq. ([L. 2022, c. 3](#)) any person or entity (hereinafter "Vendor"ⁱ) that seeks to enter into or renew a contract with a State agency for the provision of goods or services, or the purchase of bonds or other obligations, must complete the certification below indicating whether or not the Vendor is identified on the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons list, available here: <https://sanctionssearch.ofac.treas.gov/>. If the Department of the Treasury finds that a Vendor has made a certification in violation of the law, it shall take any action as may be appropriate and provided by law, rule, or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

I, the undersigned, certify that I have read the definition of "Vendor" below, and have reviewed the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons list, and having done so certify:

(Check the Appropriate Box)

A. That the Vendor is not identified on the [OFAC Specially Designated Nationals and Blocked Persons list on account of activity related to Russia and/or Belarus](#).

OR

B. That I am unable to certify as to "A" above, because the Vendor is identified on the [OFAC Specially Designated Nationals and Blocked Persons list on account of activity related to Russia and/or Belarus](#).

OR

C. That I am unable to certify as to "A" above, because the Vendor is identified on the [OFAC Specially Designated Nationals and Blocked Persons list](#). However, the Vendor is engaged in activity related to Russia and/or Belarus consistent with federal law, regulation, license or exemption. A detailed description of how the Vendor's activity related to Russia and/or Belarus is consistent with federal law is set forth below.

(Attach Additional Sheets If Necessary.)

_____ Signature of Vendor's Authorized Representative	_____ Date
_____ Print Name and Title of Vendor's Authorized Representative	_____ Vendor's FEIN
_____ Vendor's Name	_____ Vendor's Phone Number
_____ Vendor's Address (Street Address)	_____ Vendor's Fax Number
_____ Vendor's Address (City/State/Zip Code)	_____ Vendor's Email Address

ⁱ Vendor means: (1) A natural person, corporation, company, limited partnership, limited liability partnership, limited liability company, business association, sole proprietorship, joint venture, partnership, society, trust, or any other nongovernmental entity, organization, or group; (2) Any governmental entity or instrumentality of a government, including a multilateral development institution, as defined in Section 1701(c)(3) of the International Financial Institutions Act, 22 U.S.C. 262r(c)(3); or (3) Any parent, successor, subunit, direct or indirect subsidiary, or any entity under common ownership or control with, any entity described in paragraph (1) or (2). NJ Rev. 1.22.2024

ACKNOWLEDGEMENT OF RECEIPT OF ADDENDA

THE UNDERSIGNED BIDDER HEREBY ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDA:

ADDENDUM # _____

DATE _____

ADDENDUM # _____

DATE _____

ADDENDUM # _____

DATE _____

NO ADDENDUM WAS ISSUED FOR THIS BID: _____ (check if no addendum was issued)

BY: _____
(PRINT OR TYPE NAME) (TITLE)

(SIGNATURE)

COMPANY: _____

Company Representative

Date

REQUIRED DOCUMENT- ATTACH AND STAPLE TO "BID RETURN BOOKLET" PAGE

BID PROPOSAL PRICING/COMPLIANCE FORM

The undersigned does declare that they have carefully and completely examined the specifications, together with the advertisement, instructions to bidders, bond agreements, as well as the premises and all laws, ordinances and regulations governing the work and all other documents attached hereto and fully understand the meaning of all of them and if awarded the contract, hereby agree that they will comply with all of the terms, covenants, and agreement set forth therein.

(Contract Title and Bid Number, if applicable)

(Description of goods/services being bid)

The undersigned proposes to furnish and deliver the above goods/services pursuant to the bid specification and made part hereof:

Company Name

Federal I.D. # or Social Security #

Address

Signature of Authorized Agent

Type or Print Name

Title: _____

Telephone Number

Date

E-mail address

PROPOSAL FORM

PROJECT: Roof Replacement
Paterson School 19
31 James Street
Paterson, New Jersey

OWNER: Paterson Public Schools
90 Delaware Avenue
Paterson, New Jersey

TO:

1. THE UNDERSIGNED hereby proposes and agrees, if this Proposal is accepted, to execute the Contract and to provide all labor, materials, and equipment, and perform all work required for the project named herein, in accordance with the Contract Documents dated May 2, 2025 including such addenda acknowledged hereinafter, for the prices set forth herein. Said prices include the cost of insurance, and every other item of expense, direct or indirect, incident to the Contract. This is a tax exempt job. This project is a prevailing wage job and subject to the Davis Bacon Act.
2. THE UNDERSIGNED hereby declares that he has carefully examined all Contract Documents and related documents including those incorporated by reference, and all addenda thereto as prepared by the Architect, and that he has personally inspected the actual location of the work, together with the local sources of supply, 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.
3. THE UNDERSIGNED further understands and agrees that he is to furnish and provide all the necessary material, machinery, plant, implements, tools, labor, services, skill and other items of whatever nature required, and to do and perform all the work necessary under the Contract, to complete the work in accordance with the drawings and specifications and any addenda thereto, and to accept in full compensation therefore the amount the Total Bid stated, modified by such additive or deductive alternates, if any, as are accepted by the Owner.

4. BID ITEMS

Base Bid
TOTAL\$ _____ in words _____.

Allowance # 1: Repair of existing wood features \$ 5,000 _____.

Allowance # 2: Additional brick mortar pointing \$ 5,000 _____.

Unit Price # 1 : Brick joint re-pointing (per sf) \$ _____.

Alternate # 1: Add Alternate – New Windows at Light Monitor \$ _____.

Alternate # 2: Add Alternate – Concrete Stair Replacement \$ _____.

BASE BID IS SINGLE PRIME FOR ALL WORK. TOTAL IS TO INCLUDE THE SUM OF THE ALLOWANCES

5. SCHEDULE OF VALUES

5.1 Bidders must submit a Schedule of Values with their bid, breaking down of costs for the following categories of work including labor, materials, and installation. The sum total should match the bid price.

General Conditions	\$ _____
Roof Demolition	\$ _____
Single-Ply Flat Roofing	\$ _____
Sloped Shingle Roofing	\$ _____
Gymnasium Shingle Roofing	\$ _____
Roof Hatches and Fall Protection	\$ _____
Gutters and Roof Drains	\$ _____
Painting – Wood Cornice	\$ _____
Painting – Brick	\$ _____
Masonry Joint Re-pointing	\$ _____
New Doors, Frames, and Hardware	\$ _____
Lightning Protection	\$ _____
Allowance #1 – Repair Exist. Wood Features	\$ _____ 5,000
Allowance #2 – Additional Brick joint repointing	\$ _____ 5,000
Alternate #1 – Provide new Windows	\$ _____
Alternate #2 – Replace exist. Concrete stair	\$ _____

6. CHANGES IN THE WORK

It is agreed that any additional work authorized by the Owner in writing shall be paid for on the basis of an approved estimated cost; or on the basis of actual cost plus _____ (%) percent for overhead and profit on work performed by Contractor's own forces, and actual cost to the Contractor of subcontractor work, plus _____ (%) percent for overhead and profit on such subcontract work. The contractor is required to provide labor rates for the members of their workforce and that of their subcontractors.

The Contractor must supply backup data for all cost plus work. The supporting data supplied by the Contractor shall include but is not limited to the following: time sheets, material bills, subcontractor bills, equipment usage, a schedule of labor rates, State and Federal Tax payments, insurance payments, equipment rates, fringe benefit payments and all compulsory payments.

It is further agreed that for work eliminated, an estimated cost of work plus _____ (%) percent on work omitted by the subcontractors shall be credited back to the owner.

7. COMMENCEMENT AND COMPLETION OF THE CONTRACT WORK

THE UNDERSIGNED understands that the time to complete the work is of the essence and agrees, upon award of contract, to commence and subject to authorized adjustments, complete the contract work in _____ calendar days.

8. ADDENDUM/BULLETIN RECEIPT (Insert addendum/bulletin number and date)

We acknowledge receipt of the following Addenda/Bulletins:

<u>No.</u>	<u>Date</u>	<u>No.</u>	<u>Date</u>
()	_____	()	_____
()	_____	()	_____
()	_____	()	_____

9. SUBCONTRACTORS

<u>Subcontractor Trade</u>	<u>Name and Address of Subcontractor</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

10. SIGNATURE

(If Corporation Affix Corporate Seal)

Legal Name of Corporation (Print)

Name and Title of Signatory (Print)

STATE OF _____

COUNTY OF _____

I _____ hereby being duly sworn, states that the information provided in this Proposal are in all respects true.

Authorized Signature

Sworn and subscribed to
before me this _____ day of _____, 20

Notary Public (Signature & Seal)

THE P.O. ADDRESS OF THE BIDDER

Street No.

City, State & Zip Code

<u>NAME</u>		<u>ADDRESS</u>
_____	President	_____

Paterson Public Schools

Elevator Replacement
Dale Avenue School

Secretary

PROJECT MANUAL

Project	Roof Replacement PS-19 Elementary School 31 James Street Paterson, NJ 07502
Owner	PATERSON PUBLIC SCHOOLS 90 Delaware Avenue Paterson, NJ 07503
Architects	CTS Group Architecture Planning P.A. 17 Commerce Street, Chatham, NJ 07928-2703

May 2025

Document 000100

TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS		No. of Pages
000100	Table of Contents	2
000115	List of Drawing Sheets	1
 DIVISION 1 – GENERAL REQUIREMENTS		
011000	Summary of Work	2
012100	Allowances	3
012200	Unit Prices	2
012300	Alternates	2
015000	Temporary Facilities and Controls	6
 DIVISION 2 – EXISTING CONDITIONS		
024119	Selective Demolition	5
 DIVISION 3- CONCRETE (NOT USED)		
 DIVISION 4 – MASONRY		
049020	Masonry Restoration	5
 DIVISION 5 METALS (NOT USED)		
 DIVISION 6 - WOOD AND PLASTICS		
061000	Rough Carpentry	5
 DIVISION 7 - THERMAL AND MOISTURE PROTECTION		
071416	Cold Fluid-Applied Reinforced Membrane Flashing System	10
073113	Asphalt Shingles	6
075419	TPA Single Ply Roofing	11
076200	Sheet Metal Flashing and Trim	10
079200	Joint Sealants	6

DIVISION 8 – OPENINGS

081113	Hollow Metal Doors and Frames	9
082550	Flush FRP Doors	5
085200	Wood Windows	6
087100	Door Hardware	17

DIVISION 9 - FINISHES

099100	Painting	8
--------	----------	---

DIVISION 16 – ELECTRICAL

264113	Lightning Protection	3
--------	----------------------	---

End of Table of Contents

DOCUMENT 000115 - LIST OF DRAWING SHEETS

1.1 LIST OF DRAWINGS

- A. List of Drawings: Drawings consist of the following Contract Drawings and other drawings of type indicated:

T-101	TITLE SHEET
ARCHITECTURAL	
A-101	ROOF PLAN
A-201	NORTH & SOUTH BUILDING ELEVATIONS
A-202	EAST & WEST BUILDING ELEVATIONS
A-301	ROOF DETAILS
A-302	ROOF DETAILS
A-401	CONCRETE & MASONRY DETAILS
A-501	DOOR SCHEDULE & DETAILS

END OF DOCUMENT 000115

SECTION 011000 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Project consists of the Roof Replacement at the following school in Paterson, New Jersey.
 - 1. PS-19 Project Location: 31 James Street, Paterson, NJ.
- B. Owner: Paterson Public Schools, 90 Delaware Avenue, Paterson, New Jersey.
- C. Contract Documents, dated May, 2025 were prepared by CTS Group Architecture Planning PA, 17 Commerce Street, Chatham, NJ 07928.
- D. The Work consists of:

PS-19 Roof Replacement: The work includes the removal of the existing Asphalt Shingle roof down to existing roof deck, installing new wood decking over existing decking, and installing a new Asphalt Shingle Roof System. Removal of additional flat roof system down to decking, installing new decking and new TPA single ply roofing system is also included. All associated flashings, underlayments, and ice and water shield are included. Additionally, minor brick mortar joint pointing, masonry painting and painting of wood cornice is also in the scope of the work. The roof area is approximately 10,600SF. Replacement of shingle roof at separate gymnasium building is also included in this project.

Lightning protection is also required and specified. Contractor is to retain sub-contractor who is certified in lightning protection and perform assessment, design, and provide a complete system.

Replacement of existing exterior doors and frames with new FRP doors including at the separated Gymnasium building.

Raking and Re-pointing areas of deteriorated masonry joints as identified on drawings.

Removal and replacement of deteriorated concrete stair, this work will be performed as an Add Alternate, see section 012300 – Alternates for more information.

- E. The Work will be awarded to and constructed under a single overall prime contract. The contractor is responsible for providing all temporary protection and means of removing demolished material and other equipment to do the work in a safe manner and protect the sidewalk areas, egresses, existing building, etc.

1.3 WORK UNDER OTHER CONTRACTS

- A. Cooperate fully with any separate contractors so that work under those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

1.4 CONTRACTOR USE OF PREMISES

- A. General: The owner will continue to occupy the building during the summer months. The contractor is required to provide any additional protection as required to insure the safety of the occupants during removals and installation.
- B. The contractor will provide safe and clean areas at entrances and exits and provide additional sidewalk scaffolding if necessary to insure the safety of occupants and pedestrians.

1.5 PHASING AND SEQUENCING

- A. The work is to be done in a timely manner. Any work procedures that is of high risk is to be performed when students and faculty are not present in the building. It is the contractor's responsibility to inform and coordinate with the client any shutdowns of areas to insure the safety of the occupants and pedestrians. Work is to be done during the summer months when school is not in session.
- B. The contractor shall prepare a construction schedule for review and approval by the owner and architect.
 - 1. SAFETY: The contractor is responsible for the site safety and of the school occupants, workers and the existing building. Any work performed by the contractor or their sub-contractors that requires the evacuation of parts or the entire building for any length of time must be coordinated with the owner/architect with enough advance time to minimize disruption to the school's operation.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances.
 - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
 - 2. Contingency allowances.
- C. Related Sections include the following:
 - 1. Divisions 2 through 9 Sections for items of Work covered by allowances.

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

- A. Coordinate allowance items with other portions of the Work.

1.6 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials, under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.7 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Contractor's overhead, profit, and related costs for products under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.
- C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.
- D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.8 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
 - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
 - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
 - 3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
 - 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. **Allowance No. 1**

1. **Allowance No. 1:** Repair of existing wood Architectural features. This allowance will be used in the event that existing wood Architectural features will require repair beyond preparation for painting as indicated on the Contract Documents.
 - a. Amount: \$5,000

B. **Allowance No. 2**

1. **Allowance No. 2:** Additional brick mortar pointing. This allowance will be used in the event that additional brick pointing will be required beyond those areas indicated on the Contract Drawings. Additional areas will be inspected and verified by the Architect.
 - a. Amount: \$5,000

END OF SECTION 012100

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
 - 1. Section 012100 "Allowances" for Allowances to be increased or decreased per Unit Prices based on actual usage.

1.3 DEFINITIONS

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

1.4 PROCEDURES

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1: Additional brick joint repointing.

1. Description: Brick joint repointing beyond the areas indicated on the drawings.
2. Unit of Measurement: Square foot.

END OF SECTION 012200

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. **ALTERNATE NO. 1**

1. **Alternate No. 1:** Indicate the amount to be Added to the Contract to provide vinyl-clad wood windows as indicated on the drawings and as specified in Section 085200 "Wood Windows". Alternate to include additional framing, blocking and trim as required to install windows.

B. **ALTERNATE NO. 2**

1. **Alternate No. 2:** Indicate the amount to be Added to the Contract remove existing failing concrete stair and landing at James Street and replace in kind with new concrete stair and landing with metal handrails as detailed on drawings.

END OF SECTION 012300

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

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 requirements for temporary utilities, support facilities, and security and protection facilities.
- B. This section includes Health and Safety requirements.

1.3 REFERENCES

- A. OSHA Respirable Crystalline Silica 1926.1153.
- B. OSHA Fact Sheet, OSHA's Crystalline Silica Rule: Construction.
- C. Title 12. Department of Labor Chapter 100. Safety and Health Standards for Public Employees Subchapter 13. Indoor Air Quality Standard N.J.A.C. 12:100-13.1 (2007).
- D. Public Employer's Guide and Model Written Program for The Indoor Air Quality Standard (N.J.A.C. 12:100-13) (2007).
- E. New Jersey Department of Health and Senior Services, Public Employees Occupational Safety and Health Program document: "Renovation & Construction in Schools Controlling Health and Safety Hazards".

1.4 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction management personnel, Architect, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.5 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 - 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- C. Health and Safety Plan: Submit a Health and Safety Plan for review and approval by Newark Public Schools. The plan must address all aspects of maintaining the health and safety of the building occupants during the course of construction.
 - 1. Comply with all requirements of the Contract for Construction, "Section K – Protection of Persons and Property."
 - 2. Comply with all requirements of documents listed above under References, including:
 - a. OSHA Crystalline Silica Standard for Construction under 29 CFR 1926.1153.
 - b. Public Employer's Guide and Model Written Program for The Indoor Air Quality Standard (N.J.A.C. 12:100-13) (2007).
 - c. New Jersey Department of Health and Senior Services, Public Employees Occupational Safety and Health Program document: "Renovation & Construction in Schools Controlling Health and Safety Hazards".
 - 3. The Contractor shall be responsible to maintain and supervise all safety precautions and programs in connection with the work.
 - 4. The Health and Safety Plan must address control of dust and debris. Identify all control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. At a minimum, the Contractor must:
 - a. Take all precautions to ensure that no dust/ debris enters the building.
 - b. Ensure that all windows are closed near the construction area.
 - c. Provide tarps or plastic sheets over any/all windows, louvers, mechanical intakes, etc. in the vicinity of the work area.
 - d. Ensure that debris, dirt, and dust be kept to a minimum and shall be confined to the immediate construction area and shall be cleaned and cleared from the site on a daily basis.
 - e. At the end of each day, review and inspect the interior spaces adjacent to the areas of work, and clean those areas as required.

1.6 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections:
 - 1. Arrange and pay for Air Monitoring Tests to be conducted prior to any demolition and construction activities to establish a baseline for indoor air quality. Test for the presence of silica dust. When all construction operations are completed, re-test indoor air quality to ensure that the air quality has not changed from the baseline. If the re-test results do not match the baseline air quality, the Contractor shall take whatever measures are required to bring the air quality level to the baseline air quality level. Provide all reports and certification for results of Air Monitor Testing.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide concrete bases for supporting posts.
- B. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil (0.25-mm) minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.
- C. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches (914 by 1624 mm).
- D. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

- A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 - 1. Store combustible materials apart from building.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- B. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- C. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
 - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed.
 - a. Maintain negative air pressure within work area using HEPA-equipped air-filtration units.
 - 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
 - 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- D. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
- E. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.3 SUPPORT FACILITIES INSTALLATION

- A. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements as outlined in the "General Conditions for Construction Contracts."
- D. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
- E. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- C. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- D. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- E. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction.
- F. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
- G. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.
- H. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are property of Contractor.
 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in NPS "General Conditions for Construction Contracts."

END OF SECTION 015000

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected portions of building or structure.
 - 2. Salvage of existing items to be reused.
- B. Related Requirements:
 - 1. Division 01 Section "Summary" for restrictions on the use of the premises, Owner-occupancy requirements, and phasing requirements.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.

3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection, especially at the parapet removal/roof location.

1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 2. Use of elevator and stairs.
 3. Coordination of Owner's continuing occupancy of portions of existing building.
- C. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- D. Predemolition Photographs or Video: Submit before Work begins.
- E. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.
- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.8 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, the Contractor shall immediately notify Owner and Architect. The Owner will take further action and direct the Contractor accordingly.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches.
 5. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 6. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 7. Dispose of demolished items and materials promptly.
- B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight. See Division 07 Roofing Sections for new roofing requirements.
1. Remove existing roof membrane, flashings, copings, and roof accessories. Remove roofing system down to substrate, unless otherwise noted.
 2. Remove existing asphalt shingles down to substrate, unless otherwise noted.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.8 SELECTIVE DEMOLITION SCHEDULE

- A. Existing roofing to Be Removed: Remove all roofing membrane, surfacing, coverboards, insulation, fasteners, asphalt, pitch, adhesives, etc. where noted on the drawings. Remove existing asphalt shingles down to substrate, where noted.
- B. Existing metal copings, gravel stops, fascias, and blocking to be removed where noted.

END OF SECTION 024119

SECTION 049020 - MASONRY RESTORATION

PART 1 – GENERAL

1.01 SUMMARY

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes restoration of brick masonry as follows:
 - 1. Pre-restoration samples and testing.
 - 2. Repointing brick mortar joints where indicated on the drawings.
 - 3. Scaffolding as required to perform masonry restoration work is to be provided by the Contractor, including all required permits, fees, and signed and sealed shop drawings.
- B. Related Sections include the following:
 - 1. Division 1 Section "Special Project Requirements" for special preservation considerations.
 - 2. Division 1 Section "Historic Treatment Procedures" for dismantling instructions.

1.03 DEFINITIONS

- A. Low-Pressure Spray: 100 to 400 psi (690 to 2750 kPa); 4 to 6 gpm (0.25 to 0.4 L/s).
- B. Medium-Pressure Spray: 400 to 500 psi (2750 to 3428 kPa); 4 to 6 gpm (0.25 to 0.4 L/s).
- C. High-Pressure Spray: over 500 psi; Not Permitted.

1.04 SUBMITTALS

- A. Product Data: For each type of product indicated. Include recommendations for application and use. Include test data substantiating that products comply with requirements.
- B. Samples for Verification: Before erecting mockup, submit samples of the following:
 - 1. Each type of sand used for pointing mortar.
 - a. For blended sands, provide samples of each component and blend.

- b. Identify sources, both supplier and quarry, of each type of sand.
 2. Each type of pointing mortar in the form of sample mortar strips, 6 inches (150 mm) long by 1/2 inch (13 mm) wide, set in aluminum or plastic channels.
 - a. Include with each sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.
 - b. Mortar should be pre-mixed.
- C. Qualification Data: For restoration specialists including restoration firm, field supervisors, chemical manufacturer and patching compound manufacturer.
- D. Restoration Program: For each phase of restoration process, provide detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of restoration work including protection of surrounding materials on building and Project site.
 1. Include methods for keeping pointing mortar damp during curing period.
 2. If materials and methods other than those indicated are proposed for any phase of restoration work, provide a written description, including evidence of successful use on comparable projects, and a testing program to demonstrate their effectiveness for this Project.

1.05 QUALITY ASSURANCE

- A. Restoration Specialist Qualifications: Engage an experienced masonry restoration firm to perform work of this Section. Firm shall have completed work on three projects within the past five years similar in material, design, and extent to that indicated for this Project, listed on the State or national Registers of Historic Places or on local Landmark Registers, with a record of successful in-service performance.
 1. Field Supervision: Restoration specialist firms shall maintain experienced full-time fluent English-speaking supervisors on Project site during times that brick masonry restoration is in progress. Supervisors shall not be changed during Project except for causes beyond the control of restoration specialist firm.
 2. Restoration Worker Qualifications: Persons who are experienced and specialize in restoration work of types they will be performing.
- B. Source Limitations: Obtain each type of material for masonry restoration (face brick, cement, sand, etc.) from one source with resources to provide materials of consistent quality in appearance and physical properties.
- C. Pre-Construction Testing Service: Engage a qualified independent conservator to test the following.
 1. Existing Mortar: Indicating mortar composition for each type of brick, and stone, mortar and indicating replacement mortar recipe including sources for mortar components.

- D. Regulatory Requirements: work of this Section shall be carried out in accordance with Federal State, and local codes and requirements including regarding testing, treatment, containment, collection, transport, disposal and discharge of hazardous wastes and cleaning effluent of any other agency having jurisdiction. In all cases, the more restrictive of any applicable requirements(s) shall be followed.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- B. Store pre-mixed mortar on elevated platforms, under cover and in a dry location.
- C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- E. Store lime putty covered with water in sealed containers.
- F. Store sand where grading and other required characteristics can be maintained and contamination avoided.

1.07 PROJECT CONDITIONS

- A. Repoint mortar joints only when air temperature is between and 40 and 90 deg F (4 and 32 deg C) and is predicted to remain so for at least 7 days after completion of work.
- B. Hot-Weather Requirements: Protect mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above.

1.08 SEQUENCING AND SCHEDULING

- A. Order replacement materials at earliest possible date, to avoid delaying completion of the Work.
- B. Order pre-mixed mortar for repointing mortar immediately after approval of Samples based on pre-construction conservator's mortar recipe. Take delivery of and store at Project site a sufficient quantity of pre-mixed mortar to complete Project.

PART 2.00 - PRODUCTS

2.01 MORTAR MATERIALS: For Pre-Mixed, Pre-Bagged Mortar

- A. Portland Cement: ASTM C 150, Type I.
 - 1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Mortar Sand: ASTM C 144, unless otherwise indicated.
 - 1. Color: Provide natural sand based on Owner's testing.
 - 2. For pointing mortar, provide sand with rounded edges.
 - 3. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands, if necessary, to achieve suitable match.
- D. Water: Potable.

2.02 MORTAR MIXES

- A. Preparing Lime Putty: Slake quicklime and prepare lime putty according to appendix to ASTM C 5 and manufacturer's written instructions.
- B. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
 - 1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.
- C. Colored Mortar: Produce mortar of color required by using selected ingredients. Do not alter specified proportions, based on Conservator's testing, without Architect's approval.
- D. Do not use admixtures of any kind in mortar, unless otherwise indicated.
- E. Mortar Proportions: Pre-mixed, pre-bagged mortar materials as determined by mortar analysis and replication recipe by Qualified Independent Conservator, per paragraph 1.05.E.
 - 1. Rebuilding (Setting) Mortar: Comply with ASTM C 270, Proportion Specification, Type N, unless otherwise indicated, with cementitious material limited to portland cement and lime.

PART 3.00 - EXECUTION

3.01 PROTECTION

- A. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm resulting from masonry restoration work, including removals and new infill work.
 - 1. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of restoration and cleaning work.
- B. Prevent mortar from staining face of surrounding masonry and other surfaces.

3.02 REPOINTING MASONRY

- A. Rake out and repoint all mortar joints to the following extent:
 - 1. All joints in areas indicated.
- B. Do not rake out and repoint joints where not required.
- C. Rake out joints as follows:
 - 1. Remove mortar from joints to depth of 2 times joint width, but not less than 1/2 inch (13 mm) or not less than that required to expose sound, unweathered mortar.
 - 2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 - 3. Do not spall edges of masonry units or widen joints. Replace or patch damaged masonry units as directed by Architect.
 - a. Use of power-operated grinders is permitted with Architect's written approval based on submission by Contractor of a satisfactory quality-control program and **demonstrated** ability of operators to use tools without damaging masonry. Quality-control program shall include provisions for supervising performance and preventing damage due to worker fatigue.
 - b. Do not use power operated grinders on joints less than 3/16 inches wide and less than 4 inches long, including all brick masonry head joints.
 - c. Cut out center of mortar bed joints using angle grinders with diamond-impregnated metal blades. Remove remaining mortar by hand with chisel and mallet. Strictly adhere to written quality-control program.
- D. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.
- E. Point joints as follows:
 - 1. Rinse masonry-joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen masonry-joint surfaces before pointing.
 - 2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch (9 mm) until a uniform depth is formed. Fully compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.

3. After low areas have been filled to same depth as remaining joints, point all joints by placing mortar in layers not greater than 3/8 inch (9 mm). Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing bricks have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar over edges onto exposed masonry surfaces or to featheredge mortar.
 4. When mortar is thumbprint hard, tool joints to match original appearance of joints. Remove excess mortar from edge of joint by brushing.
- F. Cure mortar by maintaining in thoroughly damp condition for at least 72 hours including weekends and holidays.
1. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
 2. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.
- G. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

3.03 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, spray applied at low pressure.
1. Do not use metal scrapers or brushes.
 2. Do not use acidic or alkaline cleaners.
- B. Wash adjacent woodwork and other non-masonry surfaces. Use detergent and soft brushes or cloths.
- C. Clean masonry debris from roof; remove debris from roof drains and associated piping. Rinse off roof and flush out roof drains.
- D. Sweep and rake adjacent pavement and grounds to remove masonry debris. Where necessary, pressure wash surfaces to remove mortar, dust, dirt, and stains.

3.04 FIELD QUALITY CONTROL

- A. Inspectors: Owner may engage qualified independent inspectors to perform inspections and prepare test reports. Allow inspectors use of lift devices and scaffolding, as needed, to perform inspections.
- B. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of scaffolding, as needed, to observe progress and quality of portion of the Work completed.

- C. Notify inspectors and Architect's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until inspectors and Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

END OF SECTION 049020

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Framing with dimension lumber.
 - 2. Wood blocking, cants, and nailers.
 - 3. Plywood sheathing.

1.3 DEFINITIONS

- A. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
 - 2. NLGA: National Lumber Grades Authority.
 - 3. RIS: Redwood Inspection Service.
 - 4. SPIB: The Southern Pine Inspection Bureau.
 - 5. WCLIB: West Coast Lumber Inspection Bureau.
 - 6. WWPA: Western Wood Products Association.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
3. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWPA C2, except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).
 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all rough carpentry, unless otherwise indicated.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood).
 1. Use Exterior type for exterior locations and where indicated.
- B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.
- C. Application: Treat items indicated on Drawings, and the following:
 1. Concealed blocking.
 2. Roof construction.

2.4 FIRE-RETARDANT-TREATED PLYWOOD

- A. General: Use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.

1. Use treatment that does not promote corrosion of metal fasteners.
 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
- C. Kiln-dry material after treatment to a maximum moisture content of 15 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- D. Identify fire-retardant-treated plywood with appropriate classification marking of qualified testing agency.
- E. Application: Treat all plywood unless otherwise indicated.

2.5 DIMENSION LUMBER FRAMING

- A. Joists, Rafters, and Other Framing: Select Structural, No. 1 grade.
1. Species:
 - a. Hem-fir (north); NLGA.
 - b. Southern pine; SPIB.
 - c. Douglas fir-larch; WCLIB or WWPA.
 - d. Southern pine or mixed southern pine; SPIB.
 - e. Spruce-pine-fir; NLGA.
 - f. Douglas fir-south; WWPA.
 - g. Hem-fir; WCLIB or WWPA.
 - h. Douglas fir-larch (north); NLGA.
 - i. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

2.6 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
1. Blocking.
 2. Nailers.
 3. Cants.
- B. For concealed boards, provide lumber with 15 percent maximum moisture content and any of the following species and grades:
1. Mixed southern pine, No. 2 grade; SPIB.
 2. Hem-fir or hem-fir (north), Construction or 2 Common grade; NLGA, WCLIB, or WWPA.
 3. Spruce-pine-fir (south) or spruce-pine-fir, Construction or 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.
 4. Eastern softwoods, No. 2 Common grade; NeLMA.
 5. Northern species, No. 2 Common grade; NLGA.
 6. Western woods, Construction or No. 2 Common grade; WCLIB or WWPA.

- C. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.7 ROOF SHEATHING

- A. Plywood Sheathing: Either DOC PS 1 or DOC PS 2, Exterior, Structural I sheathing.
 - 1. Span Rating: Not less than 16/0.
 - 2. Nominal Thickness: As indicated on the drawings.

2.8 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Grade A1 or A4).

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- D. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 - 1. Use inorganic boron for items that are continuously protected from liquid water.
 - 2. Use copper naphthenate for items not continuously protected from liquid water.
- E. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
- F. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

3.2 RAFTER FRAMING INSTALLATION

- A. Rafters: Notch to fit exterior wall plates and use metal framing anchors. Double rafters to form headers and trimmers at openings in roof framing, if any, and support with metal hangers. Where rafters abut at ridge, place directly opposite each other and nail to ridge member or use metal ridge hangers. Sister new rafters to existing where indicated and as detailed.

3.3 WOOD BLOCKING AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

- C. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

3.4 PROTECTION

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

END OF SECTION 061000

SECTION 071416 - COLD FLUID-APPLIED REINFORCED MEMBRANE FLASHING SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cold Fluid-Applied Reinforced Membrane Flashing System, where indicated on the drawings.

B. Related Documents: The Contract Documents, as defined in Section 011000 - Summary of Work, apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.

C. Related Sections:

1. Section 076200: Sheet Metal Flashing and Trim

1.2 SYSTEM DESCRIPTION

A. Cold fluid-applied reinforced flashing membrane with integral color or optional colored topcoat, used to create a watertight condition where a waterproofing membrane terminates, is interrupted, or intersects an area or projection having a marked change in slope or direction.

1. Flashings shall be considered a continuation of the field membrane, turned up onto surfaces in a different plane from the field of the roof or waterproofing membrane, and installed as a separate operation. This condition can occur at gravel stops, curbs, parapets, walls, gutters, expansion joints, vents, drains, pipes, and other penetrations.
2. All flashing membrane materials shall have a superior coefficient of expansion, to allow for differential movement between the horizontal and vertical surface of the flashed penetration or projection.
3. Flashing membrane system **MUST** provide fast-drying primers to allow substrate preparation, priming and membrane application to be completed in the same day.
4. The use of cold fluid-applied reinforced membrane materials will be required for all flashings.

1.3 SECTION INCLUDES

- A. Substrate preparation, cleaning, leveling and patching.
- B. Cold fluid-applied flashing installation.
- C. Sheet metal work.

- D. Warranty requirements.

1.4 REFERENCES

- A. American Society for Testing and Materials (ASTM) C 836 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane.
- B. Factory Mutual Research Corporation (FMRC) 4450/4470 - Roof Assembly Classification and Loss Prevention Data Sheets 1-28, 1-29, 1-49 & 1-54 (current edition).
- C. Underwriters' Laboratories, Inc. (UL) 790 - Standard Test for Fire Resistance of Roof Covering Materials.
- D. National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual.
- E. American Society of Civil Engineers ASCE 7 most current adopted version.

1.5 PERFORMANCE REQUIREMENTS

- A. Provide and installed roof flashing system that does not permit the passage of water and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7.
- B. Provide all primary flashing materials that are physically and chemically compatible with roofing system when installed in accordance with manufacturer's current application requirements.

1.6 SUBMITTALS FOR REVIEW

- A. Membrane System Product Data: Provide current standard printed product literature indicating characteristics of membrane flashing materials, components, and accessories product specification and installation.
- B. Product Samples: Submit product samples of membrane and flashing materials showing color, texture, thickness and surfacing representative of the proposed system for review and approval by the Architect.
- C. Submit copies of current Material Safety Data Sheets (MSDS) for all components of the work.
- D. Membrane Shop Drawings: Submit shop drawings of cold fluid-applied reinforced polyurethane system showing all a project plan, size, flashing details, and attachment for review and approval by the Architect.

1.7 QUALITY ASSURANCE

- A. Membrane Manufacturer: Company specializing in manufacturing fully reinforced cold fluid applied liquid resin flashing membrane systems with a minimum of ten (10) years of

documented applications in the United States. Membrane Manufacturer shall submit the following certifications for review:

1. Substrates and conditions are acceptable for purpose of providing specified warranty.
 2. Materials supplied shall meet the specified requirements.
- B. Applicator: Contractor specializing in performing the work of this section with (3) years documented experience and approved by system manufacturer for warranted membrane installation. Applicator shall submit the following certification for review:
1. Applicator shall submit documentation from the membrane manufacturer to verify contractor's status as an approved applicator for warranted installations.
- C. Final Inspection: Manufacturer's representative shall provide a comprehensive final inspection after completion of the flashing system. All application errors must be addressed and final punch list completed.

1.8 PRE-INSTALLATION CONFERENCE

- A. Prior to scheduled commencement of the flashing installation and associated work, conduct a meeting at project site with the installer, architect, owner, manufacturers representative and any other persons directly involved with the performance of the work. The installer shall record decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to flashing work.

1.9 REGULATORY REQUIREMENTS

- A. Conform to applicable building and jurisdictional codes for roof assembly and/or provide minimum wind and fire resistance requirements as follows:
1. Factory Mutual Global:
 - a. Products and assemblies in the work of this Specification shall be secured to meet construction requirements of Class 1-90 including FM Global Property Loss Prevention Data Sheets 1-28 and 1-29 (current edition).
 2. Underwriters' Laboratory (UL):
 - a. Products and assemblies in the work of this Specification shall provide fire resistance to meet construction requirements of UL Class A.
 3. Comply with requirements of OSHA, NIOSH or local governing authority for work place safety.

1.10 DELIVERY, STORAGE, AND PROTECTION

- A. The Contractor together with the Owner or his designated Representative shall define a storage area for all components. The area shall be cool, dry, out of direct sunlight, and in accordance

with manufacturer recommendations and relevant regulatory agencies. Materials shall not be stored in quantities that will exceed design loads, damage substrate materials, hinder installation or drainage.

- B. Store solvent-bearing solutions, resins, additives, inhibitors or adhesives in accordance with the MSDS and/or local fire authority. After partial use of materials replace lids promptly and tightly to prevent contamination
- C. Use breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material is to be installed.
- D. Roll goods shall be stored horizontally on platforms sufficiently elevated to prevent contact with water and other contaminants. DO NOT use rolls that are wet, dirty or have damaged ends.
- E. During cold weather, materials shall be stored above 55°F (12.6°C) a minimum of 24 hours prior to application.
- F. Follow manufacturer's directions for protection of materials prior to and during installation. Do not use materials that have been damaged to the point that they will not perform as specified. Fleece reinforcing materials must be clean, dry and free of all contaminants.
- G. Copies of all current MSDS for all components shall be kept on site. Provide any and all crew members with appropriate safety data information and training as it relates to the specific chemical compound he or she may be expected to deal with. Each crew member shall be fully aware of first-aid measures to be undertaken in case of incidents. Comply with requirements of OSHA, NIOSH or local governing authority for work place safety.

1.11 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply flashing membrane during or with the threat of inclement weather.
- B. Application of cold fluid-applied reinforced polyurethane flashing membrane may proceed while air temperature is between 40°F (5°C) and 85°F (30°C) providing the substrate is a minimum of 5°F above the dew point.
- C. When ambient temperatures are at or expected to fall below 50°F (10°C), or reach 85°F (30°C) or higher, follow Membrane System Manufacturer's recommendations for weather related additives and application procedures.
- D. Ensure that substrate materials are dry and free of contaminants. DO NOT commence with the application unless substrate conditions are suitable. Contractor shall demonstrate that substrate conditions are suitable for the application of the materials.
- E. When disposing of all refuse or unused materials, observe all EPA, OSHA or local disposal requirements.

1.12 COORDINATION & PROTECTION

- A. Coordinate the work with the installation of associated metal flashings, accessories, appurtenances, etc. as the work of this section proceeds.
- B. Building components shall be protected adequately (with tarp or other suitable material) from soil, stains, or spills at all hoisting points and areas of application. Contractor shall be responsible for preventing damage from any operation under its Contract. Any such damage shall be repaired at Contractor's expense to Owner's satisfaction or be restored to original condition.
- C. Provide barricades, retaining ropes, safety elements (active/passive) and any appropriate signage required by OSHA, NIOSH, and NSC and/or the Owner or designated Representative.
- D. Protect finished flashing membrane from damage by other trades by the use of a cushioning layer such as 1" thick expanded polystyrene insulation and an impact layer such as ½" thick exterior-grade plywood.
- E. Do not allow waste products containing petroleum, grease, acid, solvents, vegetable or mineral oil, animal oil, animal fat, etc. or direct steam venting to come into direct contact with the membrane unless approved by manufacturer's chemical resistance chart.

1.13 WARRANTY

- A. **Manufacturer's Premier Warranty:** Provide (20) year manufacturer's premier warranty under provisions of this section. This warranty provides for cost of labor and materials for loss of watertightness, limited to amounts necessary to effect repairs necessitated by either defective material or defects in related installation workmanship, with no dollar limitation ("NDL").
- B. **Waterproofing Contractor's Warranty:** Provide 5 year "Applicator Maintenance Warranty" covering workmanship for all work of this section including installation of membrane, flashings, metal work, and roofing/waterproofing accessories.
- C. Submit (2) executed copies of both the manufacturer and applicator warranties for the periods stipulated, starting from the date of substantial completion. Each warranty must be signed by an authorized representative of the issuing company.

PART 2 - PRODUCTS

2.1 GENERAL

- A. The products herein specified are totally pre-engineered products of the listed manufacturer and establish criteria for the approval of substitutions. Products must be part of a virtually odorless, pre-engineered, low VOC fully reinforced cold liquid applied polymeric resin flashing membrane system, equivalent in function, quality, composition and method of application to be considered for approval as an "Approved Substitute". Substitute materials must meet or exceed the physical performance characteristics of the specified materials. PMMA or single component primers or resin systems will not be accepted. A minimum 165 g/m² fleece reinforcement is required.

2.2 MEMBRANE

- A. Two-component, cold fluid-applied reinforced membrane with non-woven reinforcing, for a finished dry film membrane thickness of .080 inch nominal per ply; integral color finish as selected by owner from manufacturer's standard palette of colors; conforming to ASTM C 836.
 - 1. Basis-of-Design: CertainTeed SmartFlash Liquid-Applied Flashing, by CertainTeed Corporation.
- B. Subject to compliance with project requirements, manufacturers offering products which may be incorporated in the Work include the following:
 - 1. Kemperol 2K-PUR, by Kemper Systems
 - 2. Protect Roofing and Waterproofing System, manufactured by Applied Liquid Technologies, LLC.
 - 3. PermaFlash, manufactured by Johns Manville.
 - 4. Parapro 123 Flashing System, by Siplast
 - 5. W.R. Grace & Co.
- C. Physical Properties:

Property	Value	Test Method
Color	Gray-Green	-
Physical state	Cures to solid	-
Nominal thickness (165 fleece)	70 mils	-
Tensile strength @ break	120 lb/in	ASTM D-751
Elongation	50%	ASTM D-751
Tearing strength	5.0 lbs	ASTM D-751
Puncture resistance	140 lbf	FTMS 101-2031
Dimensional stability	0.1%	ASTM D-1204
Water absorption	2.2%	ASTM D-471
Surface hardness	Shore A 85	ASTM D-2240
Water vapor transmission	0.04 perms	ASTM E-96
Usage time*	30 minutes	-
Rainproof after*	2 hours	-
Solid to walk on after*	24 hours	-
Solid to drive on with air rubber tires after*	48 hours	-
Surfacing to be applied between*	16-48 hours	
Overburden may be applied after	2 days	-
Completely hardened after	3 days	-
Crack spanning	2mm/0.08 inch	-
Resistance to temperatures up to (short term)	250°C/482°F	-
*all times are approximate and depend upon air flow, humidity and temperature.		

2.3 FLASHINGS

- A. Membrane Flashings: A composite of the same resin material as field membrane with 165 g/m² fleece reinforcement.

2.4 SUBSTRATE PRIMERS AND RESIN ADDITIVES

- A. Polyurethane Primer: Two-component, solvent-free polyurethane resin for use in improving adhesion of membrane to wood, metal and bituminous substrate surfaces, as provided by the following manufacturer:
 - 1. CertainTeed SmartFlash R-Primer.
- B. Epoxy Primer: Two-component, solvent-free epoxy resin for use in improving adhesion of membrane to cementitious/masonry substrate surfaces, as provided by the following manufacturer:
 - 1. CertainTeed SmartFlash EP Primer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify substrate is structurally supported, secure and sound.

3.2 FLASHING SUBSTRATE PREPARATION

- A. General: Surfaces to be prepared as a substrate for the new waterproofing system as follows:
 - 1. The contractor shall determine the condition of the existing substrate. All defects in the substrate shall be corrected before new waterproofing work commences.
 - 2. Prepare flashing substrates as required for application of new waterproofing membrane flashings.
 - 3. All substrates must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and/or resin to the substrate.
 - 4. Substrate shall have a maximum moisture content of six (6) percent or 75% relative humidity, and be prepared as required to provide adhesion of the membrane to substrate with a minimum bond strength of 116 psi (0.8 N/mm²) for roofing applications.
 - 5. The final substrate for waterproofing shall be clean, dry, free of loose, spalled or weak material including coatings, mineral aggregate, and flood coat/gravel surfacing, oil, grease, contaminants, abrupt changes in level, waterproofing agents, curing compounds, and free of projections which could damage membrane materials.

B. Steel/Metal:

1. All metal surfaces shall be cleaned in accordance with SSPC - SP3, abraded, and wiped with solvent as required by Membrane Manufacturer. Extend preparation maximum 1/8 inch (3 mm) beyond the specified termination of the membrane flashing materials and notch to provide a rust-stop where required.

C. Other Flashing Surfaces:

1. Remove all contaminants and prepare substrate as required by Membrane Manufacturer and the Owner or his designated Representative.

3.3 FLASHING PRIMER APPLICATION

- A. Apply proprietary two component fast-curing MMA primer on all substrates as required or recommended by the cold fluid-applied Membrane Manufacturer.
- B. For substrates requiring primer, apply two component fast-curing MMA primer with a lambswool roller at the minimum consumption of 0.037 kg/sf (0.4 kg/m²) or as recommended by the Membrane Manufacturer and allow to cure for 45 minutes minimum.

3.4 FLASHING SUBSTRATE LEVELING & REPAIR

- A. Provide Membrane Manufacturers proprietary resin-mortar for leveling, patching and repairs of substrate as recommended by the Membrane Manufacturer.
- B. Resin-mortar should be placed after priming substrate with Membrane Manufacturers proprietary primer and in lifts no greater than the maximum thicknesses indicated by the Membrane Manufacturer. Trowel into place and allow to harden. If additional lifts will be required, broadcast top surface of the placed resin-mortar with dry quartz silica while the resin-mortar is wet. Place next lift once the resin-mortar has cured.

3.5 FLASHING MEMBRANE INSTALLATION & STAGING

- A. If flashing work is interrupted for more than 12-hours, use Flashing Membrane Manufacturer's proprietary cleaner/activator to clean and reactivate applied primer, resin or membrane transition areas. Activator should be allowed a minimum of 20-minutes evaporation time after application and covered within 60-minutes of application or as recommended by the Membrane Manufacturer.
- B. For all flashing to flashing tie-in locations, provide a minimum overlap of 4 inches (10 cm), reinforcing and resin.

3.6 FLASHING MEMBRANE APPLICATION

- A. General: This product to be used as indicated on plans and details.

1. Install all flashings in accordance with details or as recommended by Membrane Manufacturer.
2. Provide minimum vertical height of 8 inches (20 cm) for all flashing terminations wherever possible. Flashing height shall be at least as high as the potential water level that could be reached as a result of a deluging rain and/or poor slope.
3. Do not flash over existing through-wall flashings, weep holes and overflow scuppers.
4. All flashing shall be terminated as required by the Membrane Manufacturer. Cap flashings or counter flashings may be constructed of metal, stone, tile or other materials properly installed in accordance with industry-accepted practice.

B. Liquid Applied Flashing:

1. Mix and apply cold fluid-applied reinforced membrane flashing in strict accordance with written instructions of Membrane Manufacturer.
2. Using a lambswool roller, apply an even layer of cold fluid-applied resin at the minimum consumption of 0.19 kg/sf (2.0 kg/m²) or as recommended by the Membrane Manufacturer and allow to cure for 45 minutes minimum.
3. Work Membrane Manufacturer's proprietary reinforcement into the wet resin, removing trapped air, using the lambswool roller. Maintain 2-inches (5 cm) minimum overlap at all side and butt laps of reinforcement and extend flashing a minimum of 12-inches (30 cm) horizontally onto deck.
4. Apply an even topcoat of cold fluid-applied resin at the minimum consumption of 0.12 kg/sf (1.3 kg/m²) or as recommended by the Membrane Manufacturer.
5. Allow completed membrane to cure as recommended by the Membrane Manufacturer prior to continuing application or applying loads. Fluid-applied membrane must be rainproof after approximately 60-minutes, and capable of carrying a load, i.e., be walked-on, in approximately 2-hours.
6. Walls and Bases:
 - a. Flash all walls and base flashings using cold fluid-applied reinforced membrane. Wherever possible extend flashing up and over tops of walls and bases so the membrane terminates on the opposite vertical face of the building element.

3.7 PROTECTION

- A. Upon completion of new work (including all associated work), institute appropriate procedures for surveillance and protection of finished work during remainder of construction period. Protect all areas where flashing membrane has been installed.

3.8 CLEAN-UP

- A. All work areas are to be kept clean, clear and free of debris at all times. Do not allow trash, waste, or debris to collect on the roof. These items shall be removed from the roof on a daily basis.

- B. All tools and unused materials must be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements.
- C. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.
- D. Properly clean the finished roof surface after completion, and make sure the drains and gutters are not clogged.
- E. Clean and restore all damaged surfaces to their original condition.

END OF SECTION 071416

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Asphalt shingles.
- 2. Underlayment.

- B. Related Sections:

- 1. Section 076200 "Sheet Metal Flashing and Trim" for metal flashings.

1.3 DEFINITION

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include dimensions of individual components, profiles, textures, and colors.
- B. Samples for Initial Selection: For each type of asphalt shingle and hip cap shingles indicated. Two full-size shingles showing the full range of variations expected in characteristics noted above.
- C. Samples for Verification: For the following products, of sizes indicated, to verify color selected:
 - 1. Asphalt Shingle: Full size.
 - 2. Hip Cap Shingles: Full size.
 - 3. Self-Adhering Underlayment: 12 inches (300 mm) square.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of asphalt shingle to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Source Limitations: Obtain hip cap shingles **felt underlayment and self-adhering sheet underlayment** from single source from single manufacturer.
- C. Quality Assurance: Identify each bundle of shingles with appropriate markings of applicable testing and inspecting agency.
 - 1. Fire-Test-Response Classification: Provide shingles classified according to ASTM E 108 or UL 790 and listed by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - 2. Wind-Resistance-Test Characteristics: Where wind-resistant shingles are indicated, provide products identical to those that have passed tests according to ASTM D 3161 or UL 997.
- D. Preinstallation Conference: Conduct conference at Project site.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store roofing materials in a dry, well-ventilated, weathertight location according to asphalt shingle manufacturer's written instructions. Store underlayment rolls on end on pallets or other raised surfaces. Do not double stack rolls.
 - 1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.
- B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

1.9 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install asphalt shingles until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
 - 1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

1.10 WARRANTY

- A. Special Warranty: Standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials **or workmanship** within specified warranty period.
1. Material Warranty Period: Lifetime from date of Substantial Completion, prorated, with first **12** years non-prorated.
 2. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds up to **100 mph (45 m/s)** for **10** years from date of Substantial Completion.
 3. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor **10** years from date of Substantial Completion.
 4. Workmanship Warranty Period: **10** years from date of Substantial Completion.
- B. Special Project Warranty: Roofing Installer's Warranty, or warranty form at end of this Section, signed by roofing Installer, covering the Work of this Section, in which roofing Installer agrees to repair or replace components of asphalt shingle roofing that fail in materials or workmanship within specified warranty period.
1. Warranty Period: **Five** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, manufacturers offering asphalt shingles that may be incorporated in the Work include, but are not limited to, the following:
1. Atlas Roofing Corp.
 2. Bird, Inc.
 3. (The) Celotex Corporation.
 4. CertainTeed Corporation.
 5. Custom Roofing Company.
 6. Elk Corporation of America.
 7. GAF Building Materials Corporation.
 8. Georgia-Pacific Corp.
 9. Owens-Corning Fiberglas Corp.
 10. Tamko Asphalt Products, Inc.

2.2 PRODUCTS

- A. Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
1. Waterproof Underlayment:
 - a. WinterGuard; CertainTeed Corporation.
 - b. Bituthene Ice and Water Shield; Grace: W.R. Grace & Co.
 - c. Nordshield Ice and WaterGard; Nord Bitumi US, Inc.
 - d. F210; Northern Elastomeric, Inc.
 - e. Polyguard Deck Guard; Polyguard Products, Inc.

- f. Polyken 640 Underlayment Membrane; Polyken Technologies; Kendall Co. Division.
 - g. QSC-707; Quaker Construction Products, Inc.
 - h. Moisture Guard; Tamko Asphalt Products, Inc.
 - i. Weather Watch; GAF Building Materials Corporation.
 - j. Jiffy Seal Ice and Water Guard; Protecto Wrap Co.
 - k. Ice Guard Membrane No. 108-AG; Royston Laboratories, Inc.
- B. Asphalt Shingles: Laminated-Strip Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
1. **Basis-of-Design Product:** Subject to compliance with requirements, provide GAF Lifetime Designer Series or comparable product by one of the following:
 - a. CertainTeed Corporation.
 - b. Elk Premium Building Products, Inc.; an ElkCorp company.
 - c. Emco Building Products Corp.
 - d. IKO.
 - e. Owens Corning.
 - f. TAMKO Roofing Products, Inc.
 2. Butt Edge: Straight cut.
 3. Strip Size: Manufacturer's standard.
 4. Algae Resistance: Granules treated to resist algae discoloration.
 5. Color and Blends: As selected by Architect from manufacturer's full range.
- C. Sheet Metal Materials: Furnish the following sheet metal materials:
1. Aluminum Sheets: ASTM B 209 (ASTM B 209M), alloy 3003 H14 with mill finish, minimum 0.024 inch (0.6 mm) thick, unless otherwise indicated.
- D. Metal Drip Edge: Brake-formed sheet metal with at least a 2-inch (50-mm) roof deck flange and a 1-1/2-inch (38-mm) fascia flange with a 3/8-inch (9.6-mm) drip at lower edge. Furnish in lengths of 8 or 10 feet (2.5 or 3 m).
1. Material: Aluminum sheets.
- E. Metal Flashing: Job-cut to sizes and configurations required.
1. Material: Aluminum sheets.
- F. Vent Pipe Flashing: Premanufactured flashing boots.
- G. Felt Underlayment: ASTM D 226 or ASTM D 4869, Type I.
- H. Waterproof Underlayment: Minimum 40-mil- (1-mm-) thick, self-adhering, polymer-modified, bituminous sheet membrane, complying with ASTM D 1970.
- I. Asphalt Plastic Cement: ASTM D 4586.
- J. Nails: Aluminum or hot-dip galvanized steel conventional roofing nails of sufficient length to penetrate 3/4 inch (19 mm) into solid decking or at least 1/8 inch (3 mm) through plywood sheathing.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through asphalt shingles.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 EXECUTION

- A. Clean substrates of projections and cover knotholes or other minor voids in substrate with sheet metal flashing.
- B. Coordinate installation with flashings and other adjoining work to ensure proper sequencing.
- C. Installation: Comply with manufacturer's instructions and recommendations but not less than those recommended by ARMA's "Residential Asphalt Roofing Manual" or "The NRCA Steep Roofing Manual."
- D. Waterproof Underlayment: Apply waterproof underlayment at eaves. Cover deck from eaves to at least 36 inches (600 mm) inside exterior wall line.
 - 1. In addition to eaves, apply waterproof underlayment in place of felt underlayment at valleys, hips, and at intersections of vertical dormer walls and roof.
- E. Single-Layer Felt Underlayment: Install single layer of felt underlayment on roof deck perpendicular to roof slope on parallel courses. Lap sides a minimum of 2 inches (50 mm) over underlying course. Lap ends a minimum of 4 inches (100 mm). Stagger end laps between succeeding courses at least 72 inches (1830 mm). Fasten with roofing nails.
 - 1. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment. Lap sides of felt over self-adhering underlayment not less than 3 inches (75 mm) in direction to shed water. Lap ends of felt not less than 6 inches (150 mm) over self-adhering sheet underlayment.
- F. Flashing: Install metal flashing and trim according to details and recommendations of the "Asphalt Roofing" section of "The NRCA Steep Roofing Manual" and ARMA's "Residential Asphalt Roofing Manual." Remove and reinstall siding as required.
- G. Shingles: Install shingles, beginning at roof's lower edge, with a starter strip. Fasten shingles in the desired weather exposure pattern with number of fasteners per shingle as recommended by manufacturer. Cut and fit shingles at valleys, ridges, and edges to provide maximum weather protection. Provide same weather exposure at ridges as specified for roof.

1. Pattern: 1/2 shingle spacing offset at succeeding courses.
- H. Replace damaged materials installed under this Section with new materials that meet specified requirements.

END OF SECTION 073113

SECTION 075419 – TPA SINGLE PLY ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Adhered thermoplastic TPA roofing system on wood deck, including:
2. Roof insulation cover board.

B. Related Sections:

1. Division 06 Section "Rough Carpentry" for wood nailers and blocking.
2. Division 07 Section "Sheet Metal Flashing and Trim" for shop-formed sheet metal items including roof drainage system items, roof penetration flashings, base and counterflashings and reglets.
3. Division 07 Section "Roof Accessories" for manufactured roof curbs and supports, hatches, and manufactured penetration flashings.
4. Division 07 Section "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

C. Allowances: Refer to Division 01 Section "Allowances" for description of Work in this Section affected by allowances.

1.2 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

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

1. Base flashings and membrane terminations.
 - a. Indicate details meet requirements of NRCA required by this Section.

2. Roof plan showing types and orientation of roof deck and orientation of membrane roofing and fastening spacings and patterns for mechanically fastened membrane roofing if applicable.
3. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.

1.4 INFORMATIONAL SUBMITTALS

- A. Contractor's Product Certificate: Submit certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers' names, with statement indicating that products to be provided meet the requirements of the Contract Documents.
- B. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
 1. Submit evidence of compliance with performance requirements.
 2. Product Compatibility: Indicate manufacturer has verified compatibility of roofing system components, including but not limited to: Roofing membrane, flashing sheets, adhesives, and sealants.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.
- D. Warranties: Unexecuted sample copies of special warranties.
- E. Inspection Reports: Daily reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions taken to correct defective work.

1.5 CLOSEOUT SUBMITTALS

- A. Executed copies of warranties.
- B. Maintenance Data: To include in maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Architect, and employees, and qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.
- B. Manufacturer Qualifications: Approved manufacturer listed in this Section, UL listed for roofing systems comparable to that specified for this Project, with minimum five years'

experience in manufacture of thermoplastic roof membrane products in successful use in similar applications.

1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
 - a. Product data, including certified independent test data indicating compliance with requirements.
 - b. Samples of each component.
 - c. Sample submittal from similar project.
 - d. Project references: Minimum of five installations of specified products not less than five years old, with Owner and Architect contact information.
 - e. Sample warranty.
 2. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.
 3. Approved manufacturers must meet separate requirements of Submittals Article.
- C. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:
1. An authorized full-time technical employee of the manufacturer.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site access to manufacturer's written recommendations and instructions for installation of products.
- E. Preinstallation Roofing Conference: Conduct conference at Project site.
1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 2. Review drawings and specifications.
 3. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 4. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 5. Examine substrate conditions and finishes for compliance with requirements, including flatness and fastening.

6. Review structural loading limitations of roof deck during and after roofing.
7. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
8. Review governing regulations and requirements for insurance and certificates if applicable.
9. Review temporary protection requirements for roofing system during and after installation.
10. Review roof observation and repair procedures after roofing installation.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.8 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 1. Provide tie-offs at end of each day's work to cover exposed roofing and insulation with a course of roofing sheet securely in place with joints and edges sealed.
 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.

3. Remove temporary plugs from roof drains at end of each day.
4. Remove and discard temporary seals before beginning work on adjoining roofing.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer/Product: The roof system specified in this Section is based upon products of Tremco, Inc., Beachwood, OH, (800) 562-2728, www.tremcoroofing.com that are named in other Part 2 articles. Provide specified products or comparable products of one of the following:
 1. Tremco Inc – Basis of Design
 2. Garland Inc.
 3. SR Products
- B. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
 1. Accelerated Weathering: Roofing system shall withstand 10,000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
 2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D 3746/C 3746M, ASTM D 4272/D 4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- B. SPRI Wind Design Standard: Manufacture and install copings and roof-edge flashings tested according to SPRI ES-1 and capable of resisting the following design pressures:
 1. Wind Zone 1: For velocity pressures of 21 to 30 lbf/sq. ft. (1.00 to 1.44 kPa): 60-lbf/sq. ft. (2.87-kPa) perimeter uplift force, 90-lbf/sq. ft. (4.31-kPa) corner uplift force, and 30-lbf/sq. ft. (1.44-kPa) outward force.
- C. Flashings and Fastening: Comply with requirements of Division 07 Sections "Sheet Metal Flashing and Trim" and "Roof Specialties." Provide base flashings, perimeter flashings, detail flashings and component materials and installation techniques that comply with requirements and recommendations of the following:

1. NRCA Roofing Manual (Sixth Edition) for construction details and recommendations.
 2. SMACNA Architectural Sheet Metal Manual (Seventh Edition) for construction details.
- D. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- E. Solar Reflectance Index: Not less than 78 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.
- F. Energy Performance: Roofing system shall have an initial solar reflectance index of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1.

2.3 MATERIALS, GENERAL

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

2.4 ROOFING MEMBRANE MATERIALS

- A. Sheathing Paper: Red-rosin type, minimum 3 lb./100 sq. ft. (0.16 kg/sq. m).
- B. TPA Roof Membrane:
1. Thermoplastic TPA sheet, internally fabric reinforced and fleece backed, ASTM D 4434 Type IV; Energy Star qualified, CRRC listed, and California Title 24 Energy Code compliant.
 - a. Basis of design product: Tremco, TPA FB Single Ply Roof Membrane.
 - b. Tensile Strength at 0 deg. F (-18 deg. C), minimum, ASTM D 751: 350 lbf/in (1550 N).
 - c. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D 751: 100 lbf (440 N).
 - d. Elongation at 0 deg. F (-18 deg. C), minimum at fabric break, ASTM D 751: 33 percent.
 - e. Minimum Thickness, nominal, ASTM D 751: 60 mils (1.5 mm).
 - f. Color: White.
 - g. Solar Reflectance Index (SRI), ASTM E 1980: 108 (White, initial); 84 (White, 3-year aged).
 - h. Recycled Content, minimum: 25 percent preconsumer.
- C. Membrane Flashing: Manufacturer's standard smooth-backed sheet flashing of same material, type, reinforcement, thickness, and color as sheet membrane.

2.5 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use, and compatible with membrane roofing.
 - 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Membrane Adhesive:
 - 1. Bonding adhesive, contact-type solvent-based low VOC, for bonding TPA non-fleece-backed single ply membranes and flashings to substrates.
 - a. Basis of design product: Tremco, TPA LV Single Ply Bonding Adhesive.
 - b. VOC, maximum, ASTM D3960: <200 g/L.
- C. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch (25 mm by 3 mm) thick; with anchors.
- D. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch (25 mm wide by 1.3 mm) thick, prepunched.
- E. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening components to substrate, and acceptable to membrane roofing system manufacturer.
- F. Termination Joint Sealant: Silicone, S, NS, 25 or 50, NT: Single-component, nonsag, plus 25 to 50 percent and minus 25 to 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT, and compatible with adjacent materials.
- G. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- H. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.6 ROOF INSULATION MATERIALS

- A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from insulation manufacturer's standard sizes, suitable for application, and of thicknesses indicated.
- B. Roof Insulation: Provide roof insulation product in thicknesses indicated in Part 3 as follows:
 - 1. Polyisocyanurate board insulation, ASTM C 1289 Type II Class 1 CFC- and HCFC-free, with recycled content glass-fiber mat facer on both major surfaces.
 - a. Compressive Strength, ASTM C1621: Grade 2: 20 psi (138 kPa).

- b. Conditioned Thermal Resistance at 75 deg. F (24 deg. C): 14.4 at 2.5 inches (50.8 mm) thick.
- C. Cover Board:
 - 1. Glass-mat-faced gypsum panel, ASTM C 1177/C 1177M.
 - a. Thickness: 1/4 inch.
- D. Roof Insulation Adhesive:
 - 1. Cold fluid-applied bead-applied low-rise adhesive, two-component solvent-free low odor elastomeric urethane, formulated to adhere roof insulation to substrate.
 - a. Flame Spread Index, ASTM E 84: 10.
 - b. Smoke Developed Index, ASTM E 84: 30.
 - c. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 0 g/L.
 - d. Tensile Strength, minimum, ASTM D 412: 250 psi (1724 kPa).
 - e. Peel Adhesion, minimum, ASTM D 903: 17 lbf/in (2.98 kN/m).
 - f. Flexibility, 70 deg. F (39 deg. C), ASTM D 816: Pass.
- E. Insulation Cant Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- F. Wood Cant Strips: Comply with requirements in Division 06 carpentry section.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
 - 2. Wood Roof Deck: Verify that deck is sound and dry and securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch (1.6 mm) out of plane relative to adjoining deck.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.3 INSTALLATION, GENERAL

- A. Install roofing system in accordance with manufacturer's written instructions and approved details.
- B. NRCA Installation Details: Install roofing system in accordance with applicable NRCA Manual Plates and NRCA recommendations.

3.4 INSULATION INSTALLATION

- A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches (68 mm) or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches (150 mm) in each direction.
 - 1. Flat Insulation System on Sloped Roof Deck: Install insulation at minimum thickness as follows:
 - a. Total thickness: 1 inch.
- D. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- E. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
 - 1. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.

- F. Mechanically Fastened Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
 - 1. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.
- G. Cover Boards: Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction. Loosely butt cover boards together.
 - 1. Secure cover boards to resist uplift pressure at corners, perimeter, and field of roof.
 - 2. Adhere cover boards by setting in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining cover board in place.

3.5 ADHERED MEMBRANE ROOFING INSTALLATION

- A. Adhere membrane roofing over area to receive roofing and install according to membrane roofing system manufacturer's written instructions.
- B. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- C. Water-Based Bonding Adhesive: Apply to substrate at rate required by manufacturer. Install membrane immediately into adhesive, avoiding any air entrapment; do not allow adhesive to dry. Roll membrane into wet adhesive. Do not apply adhesive to splice area of membrane.
- D. In addition to adhering, mechanically fasten membrane roofing securely at terminations, penetrations, and perimeter of roofing.
- E. Apply membrane roofing with side laps shingled with slope of roof deck where possible.
- F. Welded Seams: Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.
 - 1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet membrane.
 - 2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
 - 3. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.
- G. Spread sealant bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.

3.6 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.7 FIELD QUALITY CONTROL

- A. Roofing Inspector: Contractor will engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- C. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.
- D. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.8 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements; repair substrates; and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075419

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Formed Products:
 - a. Formed roof drainage sheet metal fabrications.
 - b. Formed low-slope roof sheet metal fabrications.
 - c. Formed wall sheet metal fabrications.

- B. Related Sections:

- 1. Division 7 Section "TPA Single Ply Roofing" for installing sheet metal flashing and trim integral with TPA roofing.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Fabricate and install roof edge flashing and copings capable of resisting the following forces according to recommendations in FMG Loss Prevention Data Sheet 1-49:
 - 1. Wind Zone 1: For velocity pressures of 21 to 30 lbf/sq. ft. (1.00 to 1.44 kPa): 60-lbf/sq. ft. (2.87-kPa) perimeter uplift force, 90-lbf/sq. ft. (4.31-kPa) corner uplift force, and 30-lbf/sq. ft. (1.44-kPa) outward force.
- C. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

- B. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work. Include the following:
1. Identification of material, thickness, weight, and finish for each item and location in Project.
 2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
 3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 4. Details of termination points and assemblies, including fixed points.
 5. Details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction.
 6. Details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings as applicable.
 7. Details of special conditions.
 8. Details of connections to adjoining work.
 9. Detail formed flashing and trim at a scale of not less than 1-1/2 inches per 12 inches (1:10) .
- C. Samples for Initial Selection: For each type of sheet metal flashing, trim, and accessory indicated with factory-applied color finishes involving color selection.
- D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
1. Sheet Metal Flashing: 12 inches (300 mm) long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
 2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches (300 mm) long and in required profile. Include fasteners and other exposed accessories.
 3. Accessories and Miscellaneous Materials: Full-size Sample.
 4. Anodized Aluminum Samples: Samples to show full range to be expected for each color required.
- E. Qualification Data: For qualified fabricator.
- F. Maintenance Data: For sheet metal flashing, trim, and accessories to include in maintenance manuals.
- G. Warranty: Sample of special warranty.
- 1.5 QUALITY ASSURANCE
- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.
- C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

1. Build mockup of typical roof edge, including fascia and fascia trim, approximately 4 feet long, including supporting construction cleats, seams, attachments, and accessories.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
2. Review methods and procedures related to sheet metal flashing and trim.
3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
4. Review special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect sheet metal flashing.
5. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth, flat surface.
 1. As-Milled Finish: Mill One-side bright mill.
 2. Exposed Coil-Coated Finish:
 - a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 3. Color: As selected by Architect from manufacturer's full range.

2.2 UNDERLAYMENT MATERIALS

- A. Polyethylene Sheet: 6-mil- (0.15-mm-) thick polyethylene sheet complying with ASTM D 4397.
- B. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
- C. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils (0.76 to 1.0 mm) thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
 - 1. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F (116 deg C).
 - 2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F (29 deg C).
 - 3. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle Coatings & Waterproofing Inc.; CCW WIP 300HT.
 - b. Grace Construction Products, a unit of W. R. Grace & Co.; Ultra.
 - c. Henry Company; Blueskin PE200 HT.
 - d. Metal-Fab Manufacturing, LLC; MetShield.
 - e. Owens Corning; WeatherLock Metal High Temperature Underlayment.
- D. Slip Sheet: Building paper, 3-lb/100 sq. ft. (0.16-kg/sq. m) minimum, rosin sized.

2.3 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.
 - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
 - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
 - 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- D. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

- E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- G. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.4 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
 - 1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 - 2. Obtain field measurements for accurate fit before shop fabrication.
 - 3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 - 4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.
- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
- C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."
- D. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.
- E. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
- F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- G. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" and by FMG Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured.
- H. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- I. Do not use graphite pencils to mark metal surfaces.

2.5 ROOF DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- (2400-mm-) long sections. Furnish flat-stock gutter brackets and flat-stock gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter thickness.
1. Gutter Profile: As detailed.
 2. Expansion Joints: Lap type.
 3. Gutters with Girth up to 15 Inches (380 mm): Fabricate from the following materials:
 - a. Aluminum: 0.032 inch (0.81 mm) thick.
- B. Downspouts: Fabricate rectangular downspouts complete with mitered elbows. Furnish with metal hangers, from same material as downspouts, and anchors.
1. Fabricated Hanger Style: SMACNA figure designation 1-35B.
 2. Fabricate from the following materials:
 - a. Aluminum: 0.024 inch (0.61 mm) thick.
- C. Parapet Scuppers: Fabricate scuppers to dimensions required, with closure flange trim to exterior, 4-inch- (100-mm-) wide wall flanges to interior, and base extending 4 inches (100 mm) beyond cant or tapered strip into field of roof. Fabricate from the following materials:
1. Aluminum: 0.040 inch (1.02 mm) thick.

2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing (Gravel Stop) and Fascia Cap: Fabricate in minimum 96-inch- (2400-mm-) long, but not exceeding 12-foot- (3.6-m-) long sections. Furnish with 6-inch- (150-mm-) wide, joint cover plates. Shop fabricate interior and exterior corners.
1. Joint Style: Butted with expansion space and 6-inch- (150-mm-) wide, concealed backup plate.
 2. Fabricate from the Following Materials:
 - a. Aluminum: 0.050 inch (1.27 mm) thick.
- B. Copings: Fabricate in minimum 96-inch- (2400-mm-) long, but not exceeding 10-foot- (3-m-) long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, seal, and solder or weld watertight.
1. Coping Profile: As detailed.
 2. Joint Style: Butt, with 12-inch- (300-mm-) wide, concealed backup plate and 6-inch- (150-mm-) wide, exposed cover plates.
 3. Fabricate from the following materials:
 - a. Aluminum: 0.050 inch (1.27 mm) thick.
- C. Base Flashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:

1. Aluminum: 0.040 inch (1.02 mm) thick.
- D. Counterflashing: Shop fabricate interior and exterior corners. Fabricate from the following materials:
1. Aluminum: 0.032 inch (0.81 mm) thick.
- E. Flashing Receivers: Fabricate from the following materials:
1. Aluminum: 0.032 inch (0.81 mm) thick.
- F. Roof-Penetration Flashing: Fabricate from the following materials:
1. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch (0.46 mm) thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.
1. Verify compliance with requirements for installation tolerances of substrates.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

- A. General: Install underlayment as indicated on Drawings.
- B. Polyethylene Sheet: Install polyethylene sheet with adhesive for anchorage to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped and taped joints of not less than 2 inches (50 mm).
- C. Felt Underlayment: Install felt underlayment with adhesive for temporary anchorage to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches (50 mm).
- D. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Apply primer if required by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer rather than nails for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps with roller. Cover underlayment within 14 days.

3.3 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 3. Space cleats not more than 12 inches (300 mm) apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
 4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
 5. Install sealant tape where indicated.
 6. Torch cutting of sheet metal flashing and trim is not permitted.
 7. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
1. Coat back side of uncoated aluminum and stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate metal decking not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Seal joints as shown and as required for watertight construction.
1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
 2. Prepare joints and apply sealants to comply with requirements in Division 7 Section "Joint Sealants."

3.4 ROOF DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.
- B. Hanging Gutters: Join sections with riveted and soldered joints. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.
 - 1. Fasten gutter spacers to front and back of gutter.
 - 2. Anchor gutter with gutter brackets or straps spaced not more than **24 inches (600 mm)** apart to roof deck, unless otherwise indicated, and loosely lock to front gutter bead.
- C. Downspouts: Join sections with 1-1/2-inch (38-mm) telescoping joints.
 - 1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches (1500 mm) o.c. in between.
 - 2. Provide elbows at base of downspout to direct water away from building.
 - 3. Connect downspouts to underground drainage system indicated.
- D. Parapet Scuppers: Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
 - 1. Anchor scupper closure trim flange to exterior wall and seal with elastomeric sealant to scupper.
 - 2. Loosely lock front edge of scupper with conductor head.
 - 3. Seal with elastomeric sealant exterior wall scupper flanges into back of conductor head.

3.5 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch (75-mm) centers.
- C. Copings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated.
 - 1. Interlock exterior and interior bottom edge of coping with continuous cleat anchored to substrate at 24-inch (600-mm) centers.
- D. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches (100 mm) over base flashing. Install stainless-steel draw band and tighten.
- E. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches (100 mm) over base flashing. Lap counterflashing joints a minimum of

4 inches (100 mm) and bed with sealant. Secure in a waterproof manner by means of snap-in installation and sealant or lead wedges and sealant

- F. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.6 WALL FLASHING INSTALLATION

- A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.
- B. Reglets: Installation of reglets is specified in Division 4 Section "Unit Masonry Assemblies."

3.7 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
- B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

3.8 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.
- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.
- E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Preparing sealant substrate surfaces.
2. Sealant and backing.

B. Related Sections:

1. Division 7 Section "TPA Single Ply Roofing" for sealants used with TPA Single Ply Roofing products.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM C717 - Standard Terminology of Building Seals and Sealants.
2. ASTM C834 - Specification for Latex Sealants.
3. ASTM C920 - Specification for Elastomeric Joint Sealants.
4. ASTM D1056 - Flexible Cellular Material- Sponge or Expanded Rubber.

B. Federal Specifications (FS):

1. FS SS-S-200 - Sealing Compounds, Two Component, Elastomeric, Polymer Type, Jet-Fuel Resistant, Cold Applied.
2. FS TT-S-1657 - Sealing Compound, Single Component Butyl Rubber Based Solvent Release Type (for Buildings and other Types of Construction).

1.4 SUBMITTALS

A. Technical Submissions:

1. Product Data: Product chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing Work of this Section with minimum 5 years documented experience.
- B. Mockups: Provide mockups for installing backer rod and sealant in existing stone panel system. Use materials and installation methods specified in this Section.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Transport, handle, store, and protect products.
- B. Deliver Products in manufacturer's original unopened containers or packages with labels intact, identifying product and manufacturer, date of manufacture, lot number, shelf life, curing time, and mixing instructions, where applicable.
- C. Store and handle materials to prevent deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.7 PROJECT CONDITIONS OR SITE CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
 - 2. When joint substrates are wet.
 - 3. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.8 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with project requirements, manufacturers offering specified items which may be incorporated into the work include the following:

1. Bostik, Inc, Huntingdon Valley, PA, (800) 523-2678, (125) 674-5600.
2. Dow Corning, Midland, MI (517) 496-4000.
3. Emseal Corporation Ltd., Westborough, MA (800)-526-8365.
4. GE Silicones, Waterford, NY (518) 233-3330.
5. Mameco International, Cleveland, OH, (800) 321-6412, (216) 752-4400.
6. W.R. Meadows, Inc, Elgin, IL (800) 342-5976, (847) 683-4500.
7. Nomaco, Inc., Zebulon, NC, (919) 269-6500.
8. Pecora Corporation, Harleysville, PA, (800) 523-6688, (215) 723-6051.
9. Sika Corporation, Lyndhurst, NJ, (800) 933-7452, (201) 933-8800.
10. Sonneborn Building Products Div. ChemRex, Inc., Shakopee, MN (800) 243-6739, (612) 496-6000.
11. Tremco, Beachwood, OH, (800) 852-3821, (216) 292-5000.
12. USG Corp., Chicago, IL (800) 874-4968, (312) 606-4000.

2.2 BUILDING SEALANTS (See Sealant Schedule at the end of this Section for specific use of sealants.)

- A. Urethanes:

1. Type 1: Two-Part Urethane: Self-Leveling, ASTM C920, Type M, Grade P, Class 25.
 - a. Chem-Calk CC-550, by Bostik.
 - b. Vulkem 245, by Mameco.
 - c. Vulkem 255, Wide-Joint, by Mameco.
 - d. NR-200 Urexpam, by Pecora Corporation.
 - e. Sikaflex-2c NS/SL, by Sika Corporation.
2. Type 2: Two-Part Urethane: Non-Sag, ASTM C920, Type M, Grade NS, Class 25.
 - a. Chem-Calk 500, by Bostik.
 - b. Vulkem 227, by Mameco.
 - c. Dynatrol II, by Pecora Corporation.
 - d. Sikaflex-2c NS/SL, by Sika Corporation.
 - e. Sonolastic NP 2, by Sonneborn Building Products, ChemRex Inc.
3. Type 3: One-Part Urethane: Self-Leveling, ASTM C920, Type S, Grade P, Class 25.
 - a. Vulkem 45, by Mameco.
 - b. Urexpam NR-201, by Pecora Corporation.
 - c. Sonolastic SL1, by Sonneborn Building Products, ChemRex Inc.
 - d. Sikaflex 1C-SL by Sika.
4. Type 4: One-Part Urethane: Non-Sag, ASTM C920, Type S, Grade NS, Class 25.

- a. Chem-Calk 900, by Bostik.
- b. Vulkem 116, by Mameco.
- c. Sonolastic NP I, by Sonneborn Building Products, ChemRex Inc.
- d. Sikaflex 1A by Sika.

B. Preformed Compressible & Non-Compressible Fillers:

1. Type 1: Backer Rod - Closed cell polyethylene foam:

- a. HBR Backer Rod, by Nomaco.
- b. #92 Greenrod, by Nomaco.
- c. Sonofoam Closed-Cell Backer Rod, Sonneborn Building Products, ChemRex Inc.

2. Type 2: Backer Rod - Open cell polyurethane foam:

- a. Denver Foam, by Backer Rod Mfg Inc.
- b. Foam Pack II, by Nomaco.

C. Bond Breaker Tape: Polyethylene tape of plastic as recommended by sealant manufacturer, to be applied to sealant-contact surfaces where bond to substrate of joint filler must be avoided for proper performance of sealant.

2.3 COLORS

- A. Generally use sealant colors matching color of material joint is located in.
- B. Where a joint occurs between two materials of differing colors and Contractor cannot determine which material to match, contact Architect for selection.

2.4 ACCESSORIES

- A. Joint Cleaner: Provide type of joint cleaning compound recommended by sealant manufacturer for joint surfaces to be cleaned.
- B. Primer: As recommended by sealant manufacturer.
- C. Masking tape and similar accessories to protect surfaces from damage.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
 1. Verify that joint widths are in conformance with sealant manufacturer allowable limits.
 2. Verify that contaminants capable of interfering with adhesion have been cleaned from joint and joint properly prepared.

- B. Report in writing to the Owner prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- C. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the Owner.

3.2 PREPARATION

- A. Prepare and size joints in accordance with manufacturer's instructions. Clean substrates of dirt, laitance, dust, or mortar using solvent, abrasion, or sandblasting as recommended by manufacturer. Remove loose materials and foreign matter which might impair adhesion of sealant.
- B. Verify that joint backing and release tapes are compatible with sealant. Verify sealant is suitable for substrate. Verify that sealant is paintable if painted finish is indicated.
- C. Protect materials surrounding work of this Section from damage or disfiguration.

3.3 INSTALLATION

- A. Install sealant in accordance with manufacturer's published instructions.
- B. Prime or seal joint surfaces where recommended by sealant manufacturer. Do not allow primer or sealer to spill or migrate onto adjoining surfaces.
- C. Install backer rod and bond breaker tape where required by manufacturer.
- D. Install preformed compressible and non-compressible fillers in accordance with manufacturer's published instructions.
- E. Install sealants to depths recommended by sealant manufacturer in uniform, continuous ribbons free of air pockets, foreign embedded matter, ridges, and sags, "wetting" joint bond surfaces equally on both sides.
- F. Tool joints concave unless shown otherwise. Where horizontal joints are between a horizontal surface and a vertical surface, fill joint to form slight cove so that joint will not trap moisture and foreign matter. Dry tool joints. Do not use soap, water, or solvent to tool joints.

3.4 CURING

- A. Cure sealants in compliance with manufacturer's published instructions.

3.5 CLEANING

- A. Remove excess and spillage of sealants promptly as the work progresses, using materials and methods as recommended by sealant and substrate manufacturers. Clean adjoining surfaces to eliminate evidence of spillage without damage to adjoining surfaces or finishes.

3.6 SEALANT SCHEDULE

A. Exterior Joints:

1. Perimeters of exterior openings where frames and other metal surfaces meet exterior masonry surfaces.
 - a. Sealant Urethane Type 2.
2. Coping joints, coping-to-facade joints, cornice and wash, or horizontal surface joints not subject to foot or vehicular traffic.
 - a. Sealant Urethane Type 4.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Standard hollow metal doors and frames, with borrowed lites, transoms, and glazing where indicated.

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.
- B. Standard Hollow Metal Work: Hollow metal work fabricated according to ANSI/SDI A250.8.
- C. Custom Hollow Metal Work: Hollow metal work fabricated according to ANSI/NAAMM-HMMA 861.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, fire-resistance rating, and finishes.
- B. Shop Drawings: Include the following:
 - 1. Elevations of each door design.
 - 2. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 3. Locations of reinforcement and preparations for hardware.
 - 4. Details of each different wall opening condition.
 - 5. Details of anchorages, joints, field splices, and connections.
 - 6. Details of accessories.
 - 7. Details of moldings, removable stops, and glazing.
- C. Other Action Submittals:
 - 1. Schedule: Provide a schedule of hollow metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with door hardware schedule.

- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of hollow metal door and frame assembly.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain hollow metal work from single source from single manufacturer.
- B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing according to NFPA 252.
- C. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9. Label each individual glazed lite.
- D. Smoke-Control Door Assemblies: Comply with NFPA 105 or UL 1784.
- E. Preinstallation Conference: Conduct conference at Project site.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.
 - 1. Provide additional protection to prevent damage to finish of factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch- (102-mm-) high wood blocking. Do not store in a manner that traps excess humidity.
 - 1. Provide minimum 1/4-inch (6-mm) space between each stacked door to permit air circulation.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.8 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Amweld Building Products, LLC.
 2. Benchmark; a division of Therma-Tru Corporation.
 3. Ceco Door Products; an Assa Abloy Group company.
 4. Curries Company; an Assa Abloy Group company.
 5. Kewanee Corporation (The).
 6. Mesker Door Inc.
 7. Pioneer Industries, Inc.
 8. Security Metal Products Corp.
 9. Steelcraft; an Ingersoll-Rand company.
 10. Windsor Republic Doors.

2.2 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum A40 (ZF120) metallic coating.
- D. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z (12G) coating designation; mill phosphatized.
1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- F. Grout: ASTM C 476, except with a maximum slump of 4 inches (102 mm), as measured according to ASTM C 143/C 143M.
- G. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. (96- to 192-kg/cu. m) density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
- H. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil (0.4-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.3 EXTERIOR HOLLOW-METAL DOORS AND FRAMES

- A. Construct exterior doors and frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Heavy-Duty Doors and Frames: SDI A250.8, Level 2.
 - 1. Physical Performance: Level B according to SDI A250.4.
 - 2. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches (44.5 mm.)
 - c. Face: Metallic-coated steel sheet, minimum thickness of 0.042 inch (1.0 mm), with minimum A40 (ZF120) coating.
 - d. Edge Construction: Model 1, Full Flush.
 - e. Core: Manufacturer's standard insulated door, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core at manufacturer's discretion (as required to meet thermal resistance indicated below).
 - 1) Thermal-Rated Doors: Provide doors fabricated with thermal-resistance value (R-value) of not less than 2.1 deg F x h x sq. ft./Btu (0.370 K x sq. m/W) when tested according to ASTM C 1363.
 - 3. Frames:
 - a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm), with minimum A40 (ZF120) coating.
 - b. Construction: Full profile welded.
 - 4. Exposed Finish: Prime.

2.4 BORROWED LITES

- A. Hollow-metal frames of metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm).
- B. Construction: Full profile welded.

2.5 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch (1.0 mm) thick, with corrugated or perforated straps not less than 2 inches (50 mm) wide by 10 inches (250 mm) long; or wire anchors not less than 0.177 inch (4.5 mm) thick.
 - 2. Post-installed Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch-(9.5-mm-) diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

2.6 GLAZING

- A. General: High performance, Low-E, clear, shop-glazed 1" thick insulated panels. All panels to be bedded in silicone sealant. Quality complying with ASTM C 1036.
- B. Glass Type - Insulated Tempered Glass Units with Security Film, Low E: Double pane units with inner pane of clear tempered glass and outer pane of clear tempered glass. Coating on inner side of outer panel. Security film of a minimum 0.007 inch (0.1778 mm) on the inner side of the inner panel.
 - 1. Glass Thickness, Inner: 1/4 inch (6 mm). Glass Thickness, Outer: 1/4 inch (6 mm).
 - 2. Visible Reflectance: Maximum 15 percent.
 - 3. Visible Transmittance: Minimum 65 percent.
 - 4. Unit Thickness: 1 inch (25 mm) thick units. 1/4 inch (6 mm) thick, clear inner pane. 1/4 inch (6 mm) thick, tinted outer pane. 1/2 inch (12 mm) air space between panes.

2.7 STOPS AND MOLDINGS

- A. Moldings for Glazed Lites in Doors: Minimum 0.032 inch (0.8 mm) thick, fabricated from same material as door face sheet in which they are installed.
- B. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated.
- C. Loose Stops for Glazed Lites in Frames: Minimum 0.032 inch (0.8 mm) thick, fabricated from same material as frames in which they are installed.

2.8 DOOR HARDWARE

- A. Refer to section 087100 – Door Hardware.

2.9 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117.
- C. Hollow Metal Doors:
 - 1. Steel-Stiffened Door Cores: Provide minimum thickness 0.026 inch (0.66 mm), steel vertical stiffeners of same material as face sheets extending full-door height, with vertical webs spaced not more than 6 inches (152 mm) apart. Spot weld to face sheets no more than 5 inches (127 mm) o.c. Fill spaces between stiffeners with glass- or mineral-fiber insulation.
 - 2. Vertical Edges for Single-Acting Doors: Provide beveled or square edges at manufacturer's discretion.
 - 3. Top Edge Closures: Close top edges of doors with inverted closures of same material as face sheets.

4. Bottom Edge Closures: Close bottom edges of doors with end closures or channels of same material as face sheets.
 5. Glazed Lites: Factory cut openings in doors.
 6. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch (19 mm) beyond edge of door on which astragal is mounted.
- D. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
 2. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
 3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 4. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
 5. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
 6. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Masonry Type: Locate anchors not more than 18 inches (457 mm) from top and bottom of frame. Space anchors not more than 32 inches (813 mm) o.c. and as follows:
 - 1) Two anchors per jamb up to 60 inches (1524 mm) high.
 - 2) Three anchors per jamb from 60 to 90 inches (1524 to 2286 mm) high.
 - 3) Four anchors per jamb from 90 to 120 inches (2286 to 3048 mm) high.
 - 4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches (610 mm) or fraction thereof above 120 inches (3048 mm) high.
 7. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- E. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.
- F. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified on the drawings.
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
 2. Reinforce doors and frames to receive non-templated, mortised and surface-mounted door hardware.
 3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
- G. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.

1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow metal work.
2. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
3. Provide loose stops and moldings on inside of hollow metal work.
4. Coordinate rabbet width between fixed and removable stops with type of glazing and type of installation indicated.

2.10 STEEL FINISHES

- A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
 1. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 2. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
 3. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.

4. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a perpendicular line from head to floor.
- C. Drill and tap doors and frames to receive non-templated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11.
1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. At fire-protection-rated openings, install frames according to NFPA 80.
 - b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - c. Install frames with removable glazing stops located on secure side of opening.
 - d. Install door silencers in frames before grouting.
 - e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - f. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
 2. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
 3. In-Place Masonry Construction: Secure frames in place with post-installed expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
 4. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.
- C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
1. Non-Fire-Rated Standard Steel Doors:
 - a. Between Door and Frame Jambs and Head: 1/8 inch (3 mm) plus or minus 1/16 inch (1.6 mm).

- b. Between Edges of Pairs of Doors: 1/8 inch (3 mm) plus or minus 1/16 inch (1.6 mm).
 - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch (9.5 mm).
 - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch (19 mm).
2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
- D. Glazing: Comply with hollow metal manufacturer's written instructions.
- 1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches (230 mm) o.c. and not more than 2 inches (50 mm) o.c. from each corner.

3.4 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow metal work immediately after installation.
- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- D. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 081113

SECTION 082550 – FLUSH FRP DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Flush FRP Entrance Doors.
2. Provide door assemblies that have been designed and fabricated to comply with specified performance requirements as demonstrated by testing manufacturer's corresponding standard systems.

B. Related Sections:

1. Section 082550 – Hollow Metal Doors and Frames
2. Section 087100 – Door Hardware

1.3 PREINSTALLATION MEETINGS

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

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of door. Include details of core and edge construction and trim for openings.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
 1. Dimensions and locations of subframe.
 2. Dimensions and locations of mortises and holes for hardware.
 3. Dimensions and locations of cutouts.
- C. Samples for initial selection:
 1. FRP Fiberglass Face Samples: Submit samples of manufacturer's fiberglass face for A/E approval and for initial color selection by A/E.

1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For special warranty.
- B. Assurance/Control Submittals:
 - 1. Certificates: Manufacturer's certificate that Products meet or exceed specified requirements.
 - 2. Qualification Documentation: Submit documentation of experience indicating compliance with specified qualification requirements.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with AWI 1300 for Custom Grade.
- B. Qualifications:
 - 1. Manufacturer: Company specializing in manufacturing Products specified with minimum 5 years documented experience.
 - 2. Installer: Company specializing in performing the Work of this Section with minimum 5 years documented experience.
- C. Regulatory Requirements:
 - 1. Fire Door Construction: Conform to ASTM E 152.
 - 2. Installed Fire Rated Door Assembly: Conform to NFPA 80.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in plastic bags or cardboard cartons.
- C. Mark each door on bottom rail with opening number used on Shop Drawings.

1.8 WARRANTY

- A. Special Warranty:
 - 1. Include limited lifetime warranty coverage for failure of corner joinery, core deterioration, delamination of bubbling of door skin and corrosion of all fiberglass products. This coverage is for doors that are in its specified application in its original installation,
 - 2. FRP exterior face sheets shall have a warranty against corrosion for 10 years from date of acceptance.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with project requirements, provide FRP Flush Entrance Doors as manufactured by FRP Architectural Doors, Inc., (215) 244-1818; www.FRPARCH.com, or comparable product by one of the following:
1. Corrim Company, www.corrim.com.
 2. Weiland Doors, www.weilanddoors.com.
 3. Approved Equal Subject to compliance with product requirements and Owner's/Architect's approval of a requested substitution..

2.2 FRP FLUSH ENTRANCE DOORS

- A. Standard Wall Door Series FD25; 1-3/4" thick flush door with fiberglass reinforced polyester (FRP) face sheet.
1. Door trim, vision lights and internal sub-frame stiles and rails are constructed of extruded tubular aluminum shapes using billet aluminum grade 6063 and a T6 tempered alloy.
 2. Door perimeter edge trim, top, and bottom are applied to the doors sub-frame.
- B. Construction Components
1. Sub-Frame stiles and rails.
 - a. Top horizontal rails; full 6" rectangular tube with 1/8" wall thickness with tie-rod spline.
 - b. Bottom horizontal tails; full 2-1/2" rectangular tube with 1/8" wall thickness supports for mortise and tenon assembly. Tube extruded with a bottom tie-rod spline.
 - c. Lock and hinge vertical stiles; full 2-1/2" extrusion with integral edge trim.
 - d. Flange channel hardware reinforcing; full 2-1/2" with 1/8" wall thickness.
 - e. Lock and hinge stiles have integral locking edges that secure the face edge at the seams.
 - f. Corner joint assembled using monumental type mortise and tenon joinery with 3/8" tie-rods through splines.
 2. Perimeter trims are aluminum shapes and are finished to anodize as selected.
 - a. Top and bottom trims have tee-slot to accept weather seal. Bottom trim supplied with pile weather seal.
 - b. Lock and hinge edge stiles are beveled with tee-slot pile weather seal.
 3. Core Insulation: High density expanded polystyrene fitted to fill voids between stiles and rails off sub frame. Core to have compressive strength ASTM D1621-25psi density with a nominal R-value of 6.5.

4. Face Sheet to be fiberglass reinforced polyester (FRP) with an abuse resistant surface and U.V. additives to aid in the protection against normal weathering and normal usage.
 - a. Face Sheet to be .120 thickness.
 - b. Face Sheet color: To be selected from manufacturer's full color selections.
 - c. Texture: Manufacturer's standard pattern pebble embossed texture.
 5. Vision Light (cut outs) to be specifically made to accept 1" insulated glass thickness unless otherwise specified.
 6. Factory Hardware preparation options are required for reinforcing and preparations of mortised and concealed hardware. Coordinate with hardware schedule.
 - a. Non Fire-Rated: SLC solid stave lumber.
- C. Provide fire-rated labeled doors where indicated on Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Execution: Verification of existing conditions before starting work.
- B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
- C. Report in writing to Architect prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- D. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the Owner.

3.2 INSTALLATION

- A. General:
 1. Comply with manufacturer's written instructions.
 2. Do not install damaged components.
 3. Fit joints to produce hairline joints free of burrs and distortion.
 4. Rigidly secure non-movement joints.
 5. Seal joints watertight unless otherwise indicated.
- B. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.
- C. Install components plumb and true in alignment with established lines and grades, and without warp or rack.

3.3 ERECTION TOLERANCES

- A. Install FRP flush entrance doors to comply with the following maximum erection tolerances.
 - 1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet (3 mm in 3.7 m); 1/4 inch (6 mm) over total length.
 - 2. Alignment:
 - a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch (1.5 mm).
 - b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch (0.8 mm).

3.4 CONSTRUCTION

- A. Interface with Other Work:
 - 1. Coordinate frame installation with size, location, and installation.
 - 2. Coordinate with door opening construction, door frame, and door hardware installation.

3.5 ADJUSTING

- A. Operation: Re-hang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

3.6 PROTECTION

- A. Protect finished Work from damage.

END OF SECTION 082550

SECTION 085200 - WOOD WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes vinyl-clad wood windows.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review, discuss, and coordinate the interrelationship of wood windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes.
 - 3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
 - 4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.4 DEFINITIONS

- A. Performance class designations according to AAMA/WDMA 101/I.S.2/NAFS:
 - 1. AW: Architectural.
 - 2. HC: Heavy Commercial.
 - 3. C: Commercial.
 - 4. LC: Light Commercial.
 - 5. R: Residential.
- B. Performance grade number according to AAMA/WDMA 101/I.S.2/NAFS:
 - 1. Design pressure number in pounds force per square foot (pascals) used to determine the structural test pressure and water test pressure.
- C. Structural Test Pressure: For uniform load structural test, is equivalent to 150 percent of the design pressure.
- D. Minimum Test Size: Smallest size permitted for performance class (gateway test size). Products must be tested at minimum test size or at a size larger than minimum test size to comply with requirements for performance class.

1.5 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide wood windows capable of withstanding the effects of the following loads based on testing units representative of those indicated for Project that pass AAMA/WDMA 101/I.S.2/NAFS, Uniform Load Structural Test:
1. Design Wind Loads: Determine design wind loads applicable to Project from basic wind speed indicated in miles per hour (meters per second) at 33 feet (10 m) above grade, according to ASCE 7, Section 6.5, "Method 2-Analytical Procedure," based on mean roof heights above grade indicated on Drawings.
 - a. Basic Wind Speed: 85 mph (38 m/s).
 2. Deflection: Design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length or 3/4 inch (19 mm), whichever is less, at design pressure based on testing performed according to AAMA/WDMA 101/I.S.2/NAFS, Uniform Load Deflection Test or structural computations.

1.6 ACTION SUBMITTALS

- A. Product Data: Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and instructions for each type of wood window indicated.
- B. Shop Drawings: For wood windows.
1. Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.
- C. Samples for Initial Selection: For units with factory-applied color finishes. Color to be selected from manufacturer's complete line of colors.
1. Include similar Samples of accessories involving color selection.
 2. Include similar Samples of window sash section, minimum 18" x 18", complete with insulated glass panel and simulated divided lite Muntins as specified.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and fabricator .
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for each type, class, grade, and size of wood window. Test results based on use of downsized test units will not be accepted.
- C. Warranty: Special warranty specified in this Section.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An installer acceptable to wood window manufacturer for installation of units required for this Project.

1. Installer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
- B. Manufacturer Qualifications: A manufacturer capable of fabricating wood windows that meet or exceed performance requirements indicated and of documenting this performance by inclusion in lists and by labels, test reports, and calculations.
- C. Source Limitations: Obtain wood windows through one source from a single manufacturer.
- D. Fenestration Standard: Comply with AAMA/WDMA 101/I.S.2/NAFS, "North American Fenestration Standard Voluntary Performance Specification for Windows, Skylights and Glass Doors," for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
 1. Provide AAMA-certified wood windows with an attached label.
- E. Glazing Publications: Comply with published recommendations of glass manufacturers and with GANA's "Glazing Manual" unless more stringent requirements are indicated.
- F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.9 PROJECT CONDITIONS

- A. Field Measurements: Verify wood window openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.10 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace wood windows that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Failure to meet performance requirements.
 - b. Structural failures including excessive deflection, water leakage, air infiltration, or condensation.
 - c. Deterioration of wood, metals, vinyl, other materials, and finishes beyond normal weathering.
 - d. Failure of insulating glass.
 2. Warranty Period:
 - a. Window: 10 years from date of Substantial Completion.
 - b. Glazing: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Vinyl-Clad Fixed Wood Windows:
 - a. Andersen Windows, Andersen Corporation.
 - b. Weather Shield Mfg., Inc.

2.2 MATERIALS

- A. Frames and Sashes: Fine-grained wood lumber complying with AAMA/WDMA/CSA 101/I.S.2/A440; kiln dried to a moisture content of not more than 12 percent at time of fabrication; free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than **1/32 inch (0.8 mm)** deep by **2 inches (51 mm)** wide; water-repellent preservative treated.
1. Exterior Finish: Vinyl-clad wood.
 - a. Color: As selected by Architect from manufacturer's full range.
 2. Interior Finish: Manufacturer's standard factory-prime.
- B. Wood Trim and Glazing Stops: Material and finish to match frame members.
- C. Fasteners: Aluminum, nonmagnetic stainless steel, epoxy adhesive, or other materials warranted by manufacturer to be noncorrosive and compatible with wood window members, cladding, trim, hardware, anchors, and other components.
1. Exposed Fasteners: Unless unavoidable for applying hardware, do not use exposed fasteners. For application of hardware, use fasteners that match finish of member or hardware being fastened, as appropriate.
- D. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.
- E. Reinforcing Members: Aluminum, or nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.

2.3 GLASS TYPES

- A. Insulating-Glass Units: ASTM E 2190.

1. Glass: ASTM C 1036, Type 1, Class 1, q3.
 - a. Tint: Clear.
 - b. Kind: Fully tempered.
2. Lites: Two.
3. Filling: Fill space between glass lites with air.
4. Low-E Coating: Pyrolytic on second surface.

2.4 ACCESSORIES

- A. Dividers (False Muntins): Provide divider grilles in designs indicated for each sash lite.
 1. Quantity and Type: Three per sash, two permanently located at exterior and interior lites and one permanently located between insulating-glass lites (simulated divided lites).
 2. Material: Match window.
 3. Pattern: As indicated on Drawings.
 4. Profile: to match existing windows.

2.5 FABRICATION

- A. Fabricate wood windows in sizes indicated. Include a complete system for assembling components and anchoring windows.
- B. Glaze wood windows in the factory.
- C. Mullions: Provide mullions and cover plates as shown, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated. Provide mullions and cover plates capable of withstanding design loads of window units.
- D. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.
- C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.

- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing windows, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.
- B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- C. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.3 ADJUSTING, CLEANING, AND PROTECTION

- A. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- B. Clean factory-glazed glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written recommendations.

END OF SECTION 085200

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Mechanical and electrified door hardware
2. Electronic access control system components

B. Section excludes:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 Section "Alternates" for alternates affecting this section.
2. Division 06 Section "Rough Carpentry"
3. Division 06 Section "Finish Carpentry"
4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
5. Division 08 Sections:
 - a. "Metal Doors and Frames"
 - b. "Flush FRP Doors"
6. Division 26 "Electrical" sections for connections to electrical power system and for low-voltage wiring.
7. Division 28 "Electronic Safety and Security" sections for coordination with other components of electronic access control system and fire alarm system.

1.02 REFERENCES

A. UL LLC

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Keying Systems and Nomenclature
4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association

1. NFPA 70 – National Electric Code
2. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives
3. NFPA 101 – Life Safety Code
4. NFPA 105 – Smoke and Draft Control Door Assemblies
5. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
 - a. Review drawings and Sections from related trades to verify compatibility with specified hardware.
 - b. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:

1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
 - a. Wiring Diagrams: For power, signal, and control wiring and including:
 - 1) Details of interface of electrified door hardware and building safety and security systems.
 - 2) Schematic diagram of systems that interface with electrified door hardware.
 - 3) Point-to-point wiring.
 - 4) Risers.
3. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.
 - a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
4. Door Hardware Schedule:
 - a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.

- b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
 - c. Indicate complete designations of each item required for each opening, include:
 - 1) Door Index: door number, heading number, and Architect's hardware set number.
 - 2) Quantity, type, style, function, size, and finish of each hardware item.
 - 3) Name and manufacturer of each item.
 - 4) Fastenings and other pertinent information.
 - 5) Location of each hardware set cross-referenced to indications on Drawings.
 - 6) Explanation of all abbreviations, symbols, and codes contained in schedule.
 - 7) Mounting locations for hardware.
 - 8) Door and frame sizes and materials.
 - 9) Degree of door swing and handing.
 - 10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.
5. Key Schedule:
- a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
 - b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
 - c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
 - d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
 - e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
 - f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.
- C. Informational Submittals:
- 1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
 - 2. Provide Product Data:
 - a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
 - b. Include warranties for specified door hardware.
- D. Closeout Submittals:
- 1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
 - a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
 - b. Catalog pages for each product.
 - c. Final approved hardware schedule edited to reflect conditions as installed.
 - d. Final keying schedule
 - e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.
 - f. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
 - a. Fire door assemblies, in compliance with NFPA 80.
 - b. Required egress door assemblies, in compliance with NFPA 101.

1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project's vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
 - a. For door hardware: DHI certified AHC or DHC.
 - b. Can provide installation and technical data to Architect and other related subcontractors.
 - c. Can inspect and verify components are in working order upon completion of installation.
 - d. Capable of producing wiring diagram and coordinating installation of electrified hardware with Architect and electrical engineers.
4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

B. Certifications:

1. Fire-Rated Door Openings:
 - a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
 - b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.
2. Smoke and Draft Control Door Assemblies:
 - a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
 - b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.
3. Electrified Door Hardware

- a. Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.
4. Accessibility Requirements:
 - a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.
- C. Pre-Installation Meetings
 1. Keying Conference
 - a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
 - 1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - 2) Preliminary key system schematic diagram.
 - 3) Requirements for key control system.
 - 4) Requirements for access control.
 - 5) Address for delivery of keys.
 2. Pre-installation Conference
 - a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Inspect and discuss preparatory work performed by other trades.
 - c. Inspect and discuss electrical roughing-in for electrified door hardware.
 - d. Review sequence of operation for each type of electrified door hardware.
 - e. Review required testing, inspecting, and certifying procedures.
 - f. Review questions or concerns related to proper installation and adjustment of door hardware.
 3. Electrified Hardware Coordination Conference:
 - a. Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.
- B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.
- C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
- D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

- F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.06 COORDINATION

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

1.07 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.
 - 1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
 - 2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.

1.08 MAINTENANCE

- A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.
- B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Approval of alternate manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category are only to be considered by official substitution request in accordance with section 01 25 00.
- B. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.
- C. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

A. Fabrication

1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer's recognized installation standards for application intended.
2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with "Metal Doors and Frames", "Flush Wood Doors", "Stile and Rail Wood Doors" to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.

B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

C. Cable and Connectors:

1. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with number and gage of wires enough to accommodate electric function of specified hardware.
2. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices.
3. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

2.03 CONTINUOUS HINGES

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Select
 - b. Roton

B. Requirements:

1. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
2. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
3. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
4. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
5. On fire-rated doors, provide aluminum geared continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.

6. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
7. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

2.04 CYLINDRICAL LOCKS – GRADE 1

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Schlage ND series
2. Acceptable Manufacturers and Products:
 - a. Sargent 11-Line
 - b. Corbin-Russwin CL3100 series

B. Requirements:

1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3-hour fire doors.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2-inch latch throw. Provide proper latch throw for UL listing at pairs.
4. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
5. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
7. Provide electrified options as scheduled in the hardware sets.
8. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.

2.05 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Von Duprin 99/33A series
2. Acceptable Manufacturers and Products:
 - a. Precision APEX 2000 series
 - b. Sargent 19-43-GL-80 series

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide grooved touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.

6. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
7. Provide flush end caps for exit devices.
8. Provide exit devices with manufacturer's approved strikes.
9. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
12. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
13. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
14. Provide electrified options as scheduled.
15. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
16. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.06 CYLINDERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Schlage Everest 29 Primus XP
2. Acceptable Manufacturers and Products:
 - a. Medeco 4
 - b. Mul-T-Lok MT5

B. Requirements:

1. Provide cylinders/cores, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.
2. Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.
 - a. High Security: dual-locking cylinder with permanent core requiring restricted, patented keyway. Dual-locking mechanism with interlocking finger pin(s) to check for patented features on keys.
3. Patent Protection: Cylinders/cores requiring use of restricted, patented keys, patent protected.
4. Nickel silver bottom pins.

2.07 KEYING

A. Scheduled System:

1. Existing factory registered system:

- a. Provide cylinders/cores keyed into Owner's existing factory registered keying system. Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

1. Construction Keying:

- a. Replaceable Construction Cores.
 - 1) Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
 - a) 3 construction control keys
 - b) 12 construction change (day) keys.
 - 2) Owner or Owner's Representative will replace temporary construction cores with permanent cores.

2. Permanent Keying:

- a. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
 - 1) Master Keying system as directed by the Owner.
- b. Forward biting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
- c. Provide keys with the following features:
 - 1) Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
 - 2) Patent Protection: Keys and blanks protected by one or more utility patent(s).
- d. Identification:
 - 1) Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
 - 2) Identification stamping provisions must be approved by the Architect and Owner.
 - 3) Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
 - 4) Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
 - 5) Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
- e. Quantity: Furnish in the following quantities.
 - 1) Change (Day) Keys: 3 per cylinder/core.
 - 2) Permanent Control Keys: 3.
 - 3) Master Keys: 6.

2.08 KEY CONTROL SYSTEM

A. Manufacturers:

- 1. Scheduled Manufacturer:
 - a. Telkee
- 2. Acceptable Manufacturers:
 - a. HPC
 - b. Lund

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
 - a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
 - b. Provide hinged-panel type cabinet for wall mounting.

2.09 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. LCN 4040XP series
2. Acceptable Manufacturers and Products:
 - a. Corbin-Russwin DC8000 series
 - b. Sargent 281 series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2-inch (38 mm) diameter piston with 5/8-inch (16 mm) diameter double heat-treated pinion journal. QR code with a direct link to maintenance instructions.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards. Provide snap-on cover clip, with plastic covers, that secures cover to spring tube.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck. Provide graphically labelled instructions on the closer body adjacent to each adjustment valve. Provide positive stop on reg valve that prevents reg screw from being backed out.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.10 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives

2. Acceptable Manufacturers:
 - a. Elmes
 - b. Burns

B. Requirements:

1. Provide push plates, push bars, pull plates, pulls, and hands-free reversible door pulls with diameter and length as scheduled.

2.11 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco

B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Size plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
3. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.12 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Zero International
2. Acceptable Manufacturers:
 - a. National Guard
 - b. Reese

B. Requirements:

1. Provide thresholds, weather-stripping, and gasketing systems as specified and per architectural details. Match finish of other items.
2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
4. Size thresholds 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Custom Steel Doors and Frames: HMMA 831.
 - 3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
 - 4. Installation Guide for Doors and Hardware: DHI TDH-007-20
- B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.
- C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
- F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.
- I. Lock Cylinders:
 - 1. Install construction cores to secure building and areas during construction period.
 - 2. Replace construction cores with permanent cores as indicated in keying section.
 - 3. Furnish permanent cores to Owner for installation.

- J. Wiring: Coordinate with Division 26, ELECTRICAL and Division 28 ELECTRONIC SAFETY AND SECURITY sections for:
 - 1. Conduit, junction boxes and wire pulls.
 - 2. Connections to and from power supplies to electrified hardware.
 - 3. Connections to fire/smoke alarm system and smoke evacuation system.
 - 4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
 - 5. Connections to panel interface modules, controllers, and gateways.
 - 6. Testing and labeling wires with Architect's opening number.
- K. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- L. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.
- M. Closer/holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
- N. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.
- O. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- P. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
- Q. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- R. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- S. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.03 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Spring Hinges: Adjust to achieve positive latching when door can close freely from an open position of 30 degrees.
 - 2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
 - 3. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

- B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.04 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items per manufacturer's instructions to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.05 DOOR HARDWARE SCHEDULE

- A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.
- B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.
- C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.
- D. Hardware Sets:

Abbreviation	Name
IVE	H.B. Ives
LCN	Lcn Commercial Division
SCE	Schlage Electronic Security
SCH	Schlage Lock Company
VON	Von Duprin
ZER	Zero International Inc

86055 OPT0310519 Version 2

Hardware Group No. 00

For use on Door #(s):

Provide each SGL door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1 EA	DOOR	TO BE REMOVED		

Hardware Group No. 01

For use on Door #(s): 01

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112HD EPT		628	IVE
2	EA	POWER TRANSFER	EPT10 CON		↗ 689	VON
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	ELEC PANIC HARDWARE	RX-LC-QEL-99-EO-CON 24 VDC		↗ 626	VON
1	EA	ELEC PANIC HARDWARE	RX-LC-QEL-99-NL-OP-110MD-CON 24 VDC		↗ 626	VON
1	EA	RIM CYLINDER	20-057 ICX		626	SCH
1	EA	MORTISE CYLINDER	20-061 ICX X K510-730 36-083 36-082-037 FOR MULLION		626	SCH
2	EA	PRIMUS CORE	20-740-XP		626	SCH
1	EA	DOOR PULL	VR910 DT STD		630	IVE
1	EA	DOOR PULL	VR910 NL STD		630	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH ST-1595		689	LCN
2	EA	MOUNTING PLATE	4040XP-18 SRT		689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30 SRT		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61 SRT		689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		630	IVE
2	EA	DOOR SWEEP	328AA		AA	ZER
1	EA	MULLION SEAL	8780NBK PSA		BK	ZER
1	EA	THRESHOLD	655A		A	ZER
2	EA	WIRE HARNESS	CON-XX-P LENGTH AS REQUIRED		↗	SCH
2	EA	WIRE HARNESS	CON-6W			SCH
1	EA	CARD READER	BY SECURITY		↗	
2	EA	DOOR CONTACT	679-05HM		↗ BLK	SCE
1	EA	POWER SUPPLY	PS902 900-4RL 120/240 VAC		↗ LGR	SCE
1	EA	GASKETING	BY FRAME MANUFACTURER			

OPERATIONAL DESCRIPTION: ALWAYS READY FOR IMMEDIATE EGRESS, ACCESS BY KEY OR CARD READER TO RETRACT LATCHBOLT, DOOR CONTACT AND REQUEST TO EXIT CONNECTED TO BUILDING SECURITY.

Hardware Group No. 02

For use on Door #(s):

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112HD		628	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB		689	VON
1	EA	PANIC HARDWARE	99-EO		626	VON
1	EA	PANIC HARDWARE	99-NL-OP-110MD		626	VON
1	EA	RIM CYLINDER	20-057 ICX		626	SCH

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	MORTISE CYLINDER	20-061 ICX X K510-730 36-083 36-082-037 FOR MULLION		626	SCH
2	EA	PRIMUS CORE	20-740-XP		626	SCH
1	EA	DOOR PULL	VR910 DT STD		630	IVE
1	EA	DOOR PULL	VR910 NL STD		630	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH		689	LCN
2	EA	PA MOUNTING PLATE	4040XP-18PA SRT		689	LCN
2	EA	CUSH SHOE SUPPORT	4040XP-30 SRT		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61 SRT		689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		630	IVE
2	EA	DOOR SWEEP	328AA		AA	ZER
1	EA	MULLION SEAL	8780NBK PSA		BK	ZER
1	EA	THRESHOLD	655A		A	ZER
2	EA	MOUNTING BRACKET	328SPB			ZER
1	EA	GASKETING	BY FRAME MANUFACTURER			

Hardware Group No. 03

For use on Door #(s):

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112HD		628	IVE
1	EA	PANIC HARDWARE	99-NL-OP-110MD		626	VON
1	EA	RIM CYLINDER	20-057 ICX		626	SCH
1	EA	PRIMUS CORE	20-740-XP		626	SCH
1	EA	DOOR PULL	VR910 NL STD		630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH ST-1595		689	LCN
1	EA	PA MOUNTING PLATE	4040XP-18PA SRT		689	LCN
1	EA	RAIN DRIP	142AA		AA	ZER
1	EA	DOOR SWEEP	328AA		AA	ZER
1	EA	GASKETING	328AA-S		AA	ZER
1	EA	THRESHOLD	655A		A	ZER
1	EA	MOUNTING BRACKET	328SPB			ZER

END OF SECTION

SECTION 099100 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes surface preparation and field painting of the following:
 - 1. Existing and new wood elements as noted on the drawings.
 - 2. Existing masonry (brick and stone) and concrete where noted on the drawings.
- B. This Section includes pre-restoration samples, testing, and mockups.
- C. Related Sections include the following:
 - 1. Division 4 Section "Masonry Restoration" for masonry restoration work requiring preparation, priming and finish painting.

1.3 DEFINITIONS

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
 - 1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
 - 2. Eggshell refers to low-sheen finish with a gloss range between 5 and 20 when measured at a 60-degree meter.
 - 3. Satin refers to low-sheen finish with a gloss range between 15 and 35 when measured at a 60-degree meter.
 - 4. Semigloss refers to medium-sheen finish with a gloss range between 30 and 65 when measured at a 60-degree meter.
 - 5. Full gloss refers to high-sheen finish with a gloss range more than 65 when measured at a 60-degree meter.

1.4 SUBMITTALS

- A. Product Data: For each paint system specified. Include block fillers and primers.
 - 1. Material List: Provide an inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 - 2. Manufacturer's Information: Provide manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating

- material proposed for use. Include statement of compatibility between all prime coats – including those on shop-primed and manufacturer-primed items and all finish coats.
3. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).

B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated.

D. Benchmark Sample (Mockups): Provide a full-coat benchmark finish sample for each type of coating and substrate required including exterior items indicated. Duplicate finish of approved sample Submittals. Final approval will be from benchmark samples.

1. Sample of wood trim.
2. Sample of masonry wall minimum 10' x 10'.

E. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to that indicated for this Project with a record of successful in-service performance.

B. Source Limitations: Obtain primers and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.
8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 PROJECT CONDITIONS

- A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 and 90 deg F.
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 and 95 deg F.
- C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

1.8 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.
 - 1. Quantity: Furnish the Owner with an additional 5 percent, but not less than 1 gal. or 1 case, as appropriate, of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in the paint schedules.
- B. Manufacturers Names: The following manufacturers are referred to in the paint schedules by use of shortened versions of their names, which are shown in parentheses:
 - 1. Benjamin Moore & Co. (Moore).
 - 2. Coronado Paint Company (Coronado).
 - 3. ICI Paint Stores, Inc. (Dulux Paint).
 - 4. KEIM Mineral Coatings of America, Inc.
 - 5. Kelly-Moore Paint Co. (Kelly-Moore).
 - 6. M.A. Bruder & Sons, Inc. (M.A.B. Paint).
 - 7. PPG Industries, Inc. (Pittsburgh Paints).
 - 8. Sherwin-Williams Co. (Sherwin-Williams).
 - 9. TNEMEC (TNEMEC Company).

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide primers, undercoats, and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
 - 1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.
- C. Colors: Provide color selections made by the Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with the Applicator present, under which painting will be performed for compliance with paint application requirements.
 - 1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
 - 2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 - 1. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

- A. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning.
 - 1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- B. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
 - 1. Provide barrier coats over incompatible primers or remove and reprime.

2. Masonry Materials: Prepare masonry surfaces to be painted. Remove loose paint from existing masonry down to a stable substrate. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents.
 - a. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's written instructions.
 3. Existing Wood: Remove all loose paint down to stable substrate. Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 4. New Wood:
 - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 - b. Prime, stain, or seal wood to be painted immediately on delivery.
- C. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 3. Use only thinners approved by paint manufacturer and only within recommended limits.
- D. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the schedules.
 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 3. Provide finish coats that are compatible with primers used.
 4. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
 5. Sand lightly between each succeeding enamel or varnish coat.

- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
 2. Omit primer on metal surfaces that have been shop primed and touchup painted.
 3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.
- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.
 2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.
- E. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.
- F. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- G. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 FIELD QUALITY CONTROL

- A. The Owner reserves the right to invoke the following test procedure at any time and as often as the Owner deems necessary during the period when paint is being applied:

1. The Owner may engage the services of an independent testing agency to sample the paint material being used. Samples of material delivered to the Project will be taken, identified, sealed, and certified in the presence of the Contractor.
2. The testing agency may perform appropriate tests for the following characteristics as required by the Owner:
 - a. Quantitative material analysis.
 - b. Abrasion resistance.
 - c. Apparent reflectivity.
 - d. Flexibility.
 - e. Washability.
 - f. Absorption.
 - g. Accelerated weathering.
 - h. Dry opacity.
 - i. Accelerated yellowness.
 - j. Recoating.
 - k. Skinning.
 - l. Color retention.
 - m. Alkali and mildew resistance.
3. The Owner may direct the Contractor to stop painting if test results show material being used does not comply with specified requirements. The Contractor shall remove noncomplying paint from the site, pay for testing, and repaint surfaces previously coated with the rejected paint. If necessary, the Contractor may be required to remove rejected paint from previously painted surfaces if, on repainting with specified paint, the 2 coatings are incompatible.

3.5 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.
 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.6 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.
- B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
 1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.7 EXTERIOR PAINT SCHEDULE

- A. Provide one prime coat and two finish coats in thicknesses as indicated below. Primer is not required on shop-primed and manufacturer-primed items.
- B. Wood Trim: Provide the following finish systems over new and existing wood, and composite trim.
 - 1. Semi-Gloss, Alkyd Finish System:
 - a. Prime Coat: Sherwin Williams (A-100) Exterior Oil Based Stain Blocking Wood Primer.
 - b. Intermediate Coat: Sherwin Williams Super Paint.
 - c. Topcoat: Sherwin Williams Super Paint.
- C. Masonry and Concrete: Provide the following finish systems over exterior masonry and concrete where noted.
 - 1. Spot-Prime all new unpainted and/or bare exposed masonry: KEIM Contact Plus – Silicon Based Primer; 1 coat applied at a dry film thickness as recommended by the manufacturer.
 - 2. Finish: KEIM Soldalit Exterior All-Surface Mineral Silicate Finish; 2 coats applied at a dry film thickness as recommended by the manufacturer.

END OF SECTION 099100

SECTION 264113 - LIGHTNING PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes lightning protection system for the existing school structure. This section shall act as a guide for construction procedures, standards, materials and installation quality for lightning protection. The contractor shall be responsible for a complete lightning protection system for the entire building to include system design, coordination, testing, etc. as required by authorities having jurisdiction.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For air terminals and mounting accessories.
 - 1. Layout of the lightning protection system, along with details of the components to be used in the installation.
 - 2. Include indications for use of raceway, data on how concealment requirements will be met, and calculations required by NFPA 780 for bonding of grounded and isolated metal bodies.
- C. Qualification Data: For qualified Installer and manufacturer. Include data on listing or certification by UL.
- D. Certification, signed by Contractor, that roof adhesive is approved by manufacturer of roofing material.
- E. Field quality-control reports.
- F. Comply with recommendations in NFPA 780, Annex D, "Inspection and Maintenance of Lightning Protection Systems," for maintenance of the lightning protection system.
- G. Other Informational Submittals: Plans showing dimensioned as-built locations of grounding features, including the following:
 - 1. Ground rods.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Certified by UL, trained and approved for installation of units required for this Project.
- B. System Certificate:
 - 1. UL Master Label.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 780, "Definitions" Article.

1.4 COORDINATION

- A. Coordinate installation of lightning protection with installation of other building systems and components, including electrical wiring, supporting structures and building materials, metal bodies requiring bonding to lightning protection components, and building finishes.
- B. Coordinate installation of air terminals attached to roof systems with roofing manufacturer and Installer.
- C. Flashings of through-roof assemblies shall comply with roofing manufacturers' specifications.

PART 2 - PRODUCTS

2.1 LIGHTNING PROTECTION SYSTEM COMPONENTS

- A. Comply with UL 96 and NFPA 780.
- B. Roof-Mounted Air Terminals: NFPA 780, Class I, copper, unless otherwise indicated.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Harger.
 - b. Heary Bros. Lightning Protection Co. Inc.
 - c. Independent Protection Co.
 - d. Preferred Lightning Protection.
 - e. Robbins Lightning, Inc.
 - f. Thompson Lightning Protection, Inc.
 - 2. Air Terminals shall be less than 24 inches (600 mm) long.
 - 3. Single-Membrane, Roof-Mounted Air Terminals: Designed specifically for single-membrane roof system materials. Comply with requirements in Division 7 roofing Sections.
- C. Main and Bonding Conductors: Copper.
- D. Ground Rods: Copper-clad steel, sectional type; 3/4 inch (19 mm) in diameter by 10 feet (3 m) long.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install lightning protection components and systems according to UL 96A and NFPA 780.
- B. Install conductors with direct paths from air terminals to ground connections. Avoid sharp bends.
- C. Conceal the following conductors:
 - 1. Down conductors.

2. Interior conductors.
 3. Conductors within normal view of exterior locations at grade within 200 feet (60 m) of building.
- D. Cable Connections: Use exothermic-welded connections for all conductor splices and connections between conductors and other components.
1. Exception: In single-ply membrane roofing, exothermic-welded connections may be used only below the roof level.
- E. Air Terminals on Single-Ply Membrane Roofing: Comply with roofing membrane and adhesive manufacturer's written instructions.
- F. Bond lightning protection components with intermediate-level interconnection loop conductors to grounded metal bodies of building at 60-foot (18-m) intervals.

3.2 CORROSION PROTECTION

- A. Do not combine materials that can form an electrolytic couple that will accelerate corrosion in the presence of moisture unless moisture is permanently excluded from junction of such materials.
- B. Use conductors with protective coatings where conditions cause deterioration or corrosion of conductors.

3.3 FIELD QUALITY CONTROL

- A. Notify Architect at least 48 hours in advance of inspection before concealing lightning protection components.
- B. UL Inspection: Meet requirements to obtain a UL Master Label for system.

END OF SECTION 264113

PATERSON PS-19

ROOF REPLACEMENT - BID SET

31 JAMES STREET
PATERSON, NJ 07602

OWNER:
PATERSON PUBLIC SCHOOLS
90 DELAWARE AVENUE
PATERSON, NJ 07603

ARCHITECT:
CTS GROUP
ARCHITECTURE / PLANNING PA
11 COMMERCE STREET
CHATHAM, NEW JERSEY 07928
(973) 635-5900

GENERAL NOTES:

- A. VERIFICATION OF DIMENSIONS: BEFORE PROCEEDING WITH THE WORK CHECK AND VERIFY DIMENSIONS, SIZES, ETC. WITH FIELD CONDITIONS, THE WORK OF VARIOUS TRADES, REVIEWED SHOP DRAWINGS AND MATERIALS DATA, ADDENDA, CLARIFICATION DRAWINGS, AND CHANGE ORDERS. COMMENCEMENT OF WORK SHALL BE INTERPRETED AS INDICATION THAT THE ABOVE LISTED ITEMS HAVE BEEN VERIFIED AND COORDINATED.
- B. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING. BIDS SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS.
- C. DRAWINGS AND SPECIFICATIONS, TAKEN TOGETHER DESCRIBE THE DESIGN FOR THIS PROJECT. THE DRAWINGS AND SPECIFICATIONS ARE MEANT TO BE COMPLIMENTARY TO EACH OTHER.
- D. DRAWINGS SHOW EXTENT, LOCATION, DIMENSIONS, RELATIONSHIPS AMONG VARIOUS PARTS, AND QUANTITY OF ITEMS. IN CASE OF CONFLICT WITH THE SPECIFICATION IN THESE MATTERS, THE DRAWINGS SHALL GOVERN. WORKMANSHIP IN CASE OF CONFLICT WITH THE DRAWINGS IN THESE MATTERS, THE SPECIFICATIONS SHALL GOVERN.
- E. THAT WHICH IS SHOWN ON THE DRAWINGS BUT NOT IN THE SPECIFICATIONS SHALL BE PROVIDED AS IF SHOWN IN BOTH PLACES AND TO THE SAME STANDARD OF QUALITY FOR SIMILAR ITEMS.
- F. THAT WHICH IS SHOWN ON THE SPECIFICATIONS BUT NOT IN THE DRAWINGS SHALL BE PROVIDED AS IF SHOWN IN BOTH PLACES AND TO THE SAME STANDARD OF QUALITY FOR SIMILAR ITEMS.
- G. THE LARGER THE SCALE OF THE DRAWINGS THE MORE PRECEDENCE.
- H. RESTORE SURFACES, INCLUDING ADJACENT SURFACES, AT AREAS OF CUTTING AND PATCHING.
- I. THE INTENTION OF THE CONTRACT DOCUMENTS IS TO INCLUDE LABOR, MATERIALS, EQUIPMENT, AND OTHER ITEMS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK.
- J. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE OWNER, ARCHITECT, THEIR AGENTS AND EMPLOYEES FROM AND AGAINST ANY CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING FROM THE PERFORMANCES OF THE WORK.
- K. THE CONTRACTOR SHALL SECURE PERMITS FROM AGENCIES HAVING JURISDICTION AND AT COMPLETION SHALL SEE THAT THE PROJECT IS SIGNED OFF FROM THE BUILDING DEPARTMENT.
- L. WEATHER PROTECTION: THE CONTRACTOR SHALL AT ALL TIMES PROVIDE PROTECTION AGAINST THE RAIN, WIND, STORMS, FROST, HEAT, ETC., SO AS TO MAINTAIN EXPOSED PORTIONS OF THE BUILDING WORK, MATERIALS, APPARATUS, AND FIXTURES FROM INJURY OR DAMAGE.
- M. DAMAGE: WORK DAMAGED BY FAILURE TO PROVIDE PROTECTION SHALL BE REMOVED AND REPLACED WITH NEW WORK AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE MATERIALS AND WORKMANSHIP FROM THE DATE OF ACCEPTANCE AND SHALL REPLACE ANY DEFECTIVE WORK WITHIN THAT PERIOD WITHOUT EXPENSES TO THE OWNER AND PAY FOR DAMAGES TO OTHER PARTS OF THE BUILDING CAUSED BY REPAIR OF HIS WORK.
- N. CONTRACTOR IS RESPONSIBLE FOR PROTECTION, SCAFFOLDING, SWING SCAFFOLDING, LIFTS, ETC., AND OTHER DEVICES NECESSARY TO DO THE WORK INDICATED ON THE DRAWINGS AND SPECIFICATIONS.

SAFETY NOTES:

1. WORK TO BE DONE IN ACCORDANCE WITH THE NJICC & IBC NEW JERSEY EDITION 2021 BUILDING CODE & REGULATIONS OF ALL OTHER AGENCIES HAVING JURISDICTION.
2. WORK IS TO BE COORDINATED WITH PATERSON PUBLIC SCHOOLS AND PS-19 PRINCIPAL(S) AND CUSTODIAL STAFF(S).
3. STRUCTURAL: CONTRACTOR TO PROVIDE ADEQUATE TEMPORARY BRACING & SHORING WHEREVER ANY STRUCTURAL, REBUILDING, RECONSTRUCTION, AND DISASSEMBLY WORK IS INVOLVED.
4. MEANS OF EGRESS: EXISTING MEANS OF EGRESS FOR OCCUPANTS OF THE BUILDING SHALL BE MAINTAINED CLEAR AND FREE OF OBSTRUCTIONS, SUCH AS BUILDING MATERIALS, TOOLS, SCAFFOLDING, ETC.
5. LIMITED BUILDING MATERIALS MAY BE STORED AT THE SITE.
6. DUST CONTROL: DEBRIS, DIRT, AND DUST SHALL BE KEPT TO A MINIMUM AND SHALL BE CONFINED TO IMMEDIATE CONSTRUCTION AREA AND SHALL BE CLEANED AND CLEARED FROM SITE DAILY.
7. NOISE AFTER HOURS: CONSTRUCTION OPERATIONS WILL BE CONFINED TO NORMAL WORKING HOURS 8 AM - 5 PM MONDAYS THROUGH FRIDAYS, EXCEPT LEGAL HOLIDAYS.
8. CONTRACTOR SHALL PROPERLY PROTECT AND MAKE SAFE WORK PREMISES.

LIST OF DRAWINGS:

T-101	TITLE SHEET
A-101	ROOF PLAN
A-201	NORTH & SOUTH BUILDING ELEVATIONS
A-202	EAST & WEST BUILDING ELEVATIONS
A-301	ROOF DETAILS
A-302	ROOF DETAILS
A-401	CONCRETE & MASONRY DETAILS
A-501	DOOR SCHEDULE & DETAILS

LIGHTNING PROTECTION:

CONTRACTOR TO PROVIDE LIGHTNING PROTECTION IN ACCORDANCE WITH SPECIFICATION SECTION 26-413.

ALLOWANCES:

SEE SPECIFICATIONS SECTION 02100 "ALLOWANCES" FOR MORE INFORMATION.

ALTERNATE 1:

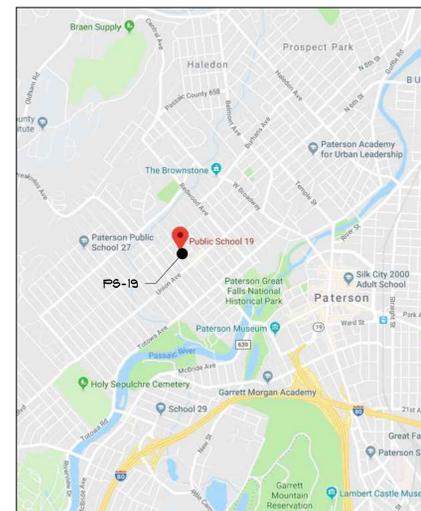
AT EXISTING LIGHT MONITOR, PROVIDE VINYL CLAD WOOD WINDOWS AND ASSOCIATED FRAMING, BLOCKING, ETC. SEE DETAILS AND SPECIFICATIONS.

ALTERNATE 2:

AT DAMAGED CONCRETE STAIR AND LANDING, REMOVE AND REPLACE WITH NEW CONCRETE STAIR, LANDING, WITH MTL. HANDRAILS AS DETAILED, SEE SHEET A401 AND SPECIFICATIONS.

ABBREVIATIONS:

Ø	AND	J.B.	JUNCTION BOX
∅	AT	J.T.	JOINT
ABV.	ABOVE	L.F.	LOW FRONT
ADJ.	ADJACENT	MATL.	MATERIAL
ALUM.	ALUMINUM	MAX.	MAXIMUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MFR.	MANUFACTURER
AP	ACCESS PANEL	MIN.	MINIMUM
APPROX.	APPROXIMATE, APPROXIMATELY	M.O.	MASONRY OPENING
B.O.	BOTTOM OF	MOD.	MODIFIED
B.D.	BOARD	MTD.	MOUNTED
BRG.	BEARING	N/A	NET APPLICABLE
BWP.	BRACED WALL PANEL	N.I.C.	NOT IN CONTRACT
CL	CENTERLINE	N.T.S.	NOT TO SCALE
CLR.	CLEAR	O.C.	ON CENTER
CMU	CONCRETE MASONRY UNIT	O.D.	OUTSIDE DIAMETER
COL.	COLUMN	OP'G	OPENING
COL.S.	COLUMNS	OPP.	OPPOSITE
CONC.	CONCRETE	PART.	PARTITION, PARTIAL
CONT.	CONTINUOUS	PLYUD.	PLYWOOD
C.P.	CONDUIT PIPING	P.T.	PRESSURE TREATED
C.R.D.	CANOPY ROOF DRAIN	PTD	PAINTED
CUST.	CUSTOM	RE	PLATE
DIA.	DIAMETER	R.D.	ROOF DRAIN
DIM.	DIMENSION	REF.	REFER, REFERENCE
DTL.	DETAIL	REQ'D	REQUIRED
DWG.	DRAWING	R.O.	ROUGH OPENING
E.C.	ELECTRICAL CONDUIT	S.B.	SPLICE BOX
ELEC.	ELECTRIC, ELECTRICAL	SQ.	SQUARE
EQ.	EQUAL	SQ. FT.	SQUARE FEET
EXP. JT., E.J.	EXPANSION JOINT	SQ. IN.	SQUARE INCHES
EXH.	EXHAUST	S.S.	STAINLESS STEEL
EXIST.	EXISTING	SHT.	SHEET
E.T.R.	EXISTING TO REMAIN	SHTS.	SHEETS
FE.	FIRE EXTINGUISHER	SIM.	SIMILAR
FL.	FLOOR	SPEC'S	SPECIFICATIONS
FLR.	FLOOR	STR.	STRUCTURE, STRUCTURAL
GA.	GAUGE	STL.	STEEL
G.C.	GENERAL CONTRACTOR	T&G	TONGUE AND GROOVE
G.W.B.	GYPSUM WALL BOARD	THICK, THK.	THICKNESS
HP.	HIGH POINT	THRESH.	THRESHOLD
HT.	HEIGHT	T.O.	TOP OF
HVAC	HEATING, VENTILATION & AIR CONDITIONING	TYP.	TYPICAL
I.D.	INSULATION	UNL.	UNLESS OTHERWISE NOTED
INT.	INTERIOR	VERT.	VERTICAL
		V.I.F.	VERIFY IN FIELD
		V.T.R.	VENT THROUGH ROOF
		W	WIDE
		W/	WITH
		WD.	WOOD



LOCATION MAP



SIGNATURES:

NAME _____ DATE _____ NAME _____ DATE _____

SUPERINTENDENT

BOARD PRESIDENT

James J. Greener, AIA
NJ LIC. No.: 21A00045600
NY LIC. No.: 02659

William C. Stach, AIA
NJ LIC. No.: 11026000
NY LIC. No.: 043383

Architecture/Planning, P.A.
17 Commerce Street, Suite 200
Paterson, NJ 07601-3550

Member of
The American Institute of Architects
CTS GROUP

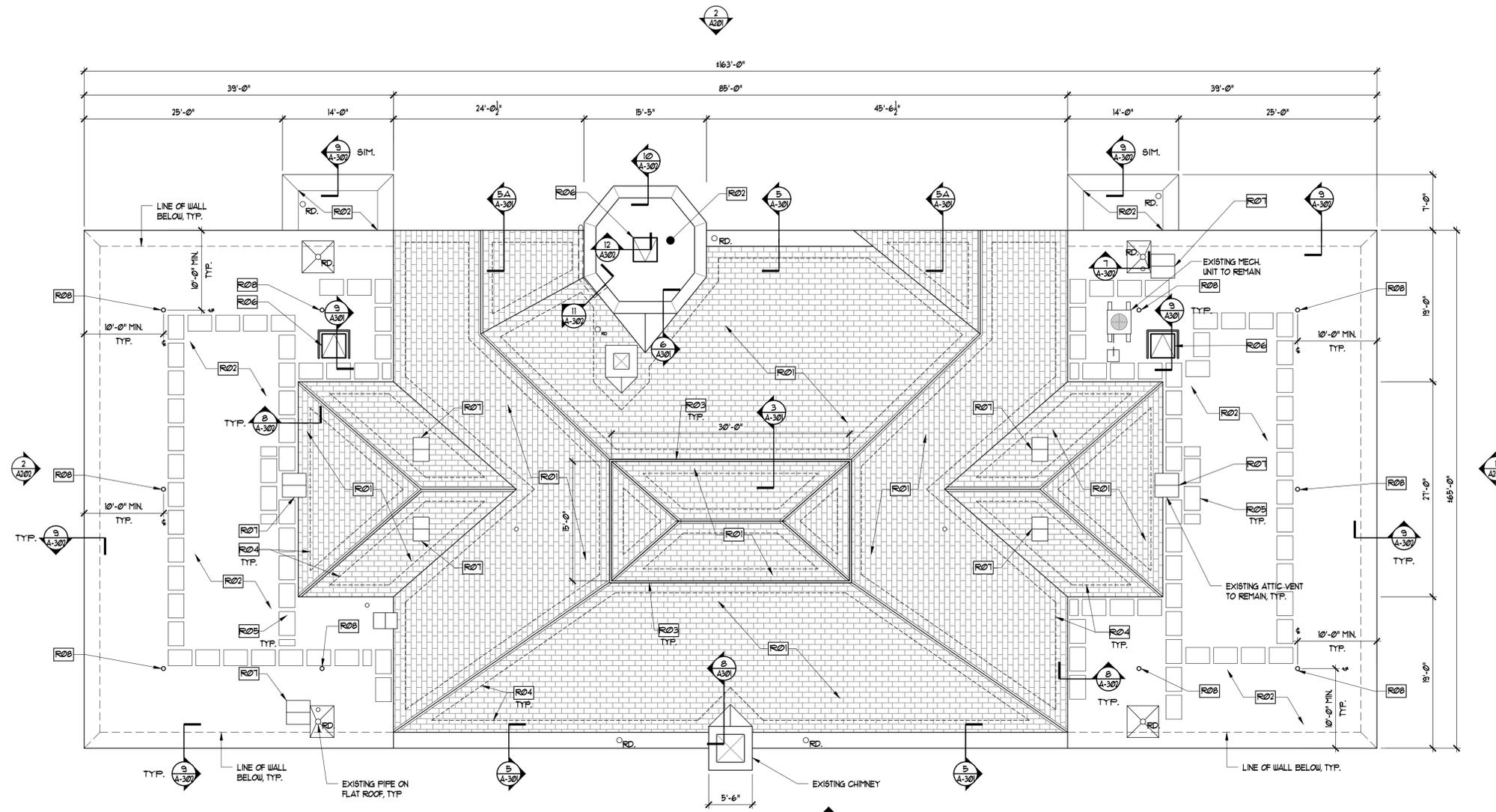
Revision

ROOF REPLACEMENT
PATERSON PS-19
31 JAMES STREET
PATERSON, NJ 07602

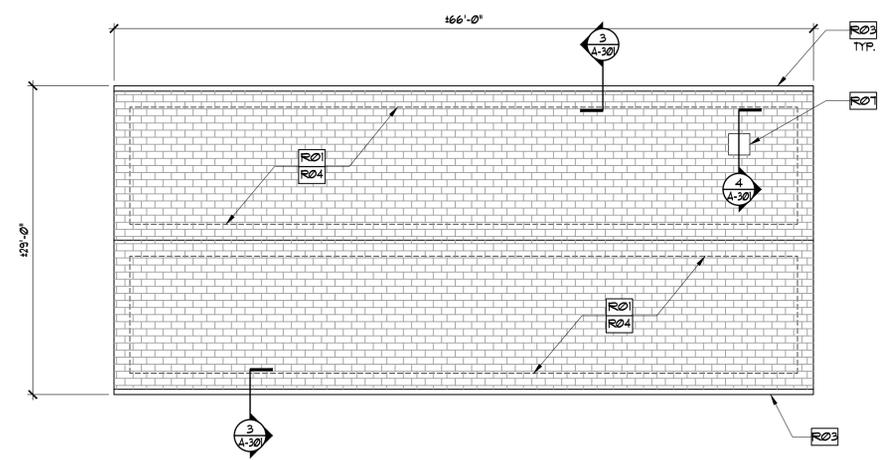
T-101 TITLE SHEET

Proj. No. _____
Date 5/2/25
CPS
W0655

BID SET



1 MAIN ROOF PLAN
A101 1/8" = 1'-0"



2 GYMNASIUM ROOF PLAN
A101 1/8" = 1'-0"

GENERAL ROOF NOTES:

1. AT DAMAGED / BUBBLED SHINGLES: REMOVE EXISTING WOOD DECKING AND REPLACE W/ 3/4" FLYWOOD SHEATHING. SISTER EXISTING ROOF JOISTS W/ 2x8" WOOD JOISTS. FLASH IN NEW 30 LB. ROOFING FELT AND PROVIDE SHINGLES TO MATCH EXISTING.
2. AT YANKEE GUTTER: PROVIDE 1/2" FLYWOOD SHEATHING AND ASSOCIATED BLOCKING AS DETAILED TO MODIFY GUTTER SLOPE AND DIRECT WATER TO THE DOWNSPOUTS. PROVIDE RESINUS FLASHING MEMBRANE AS DETAILED TO COAT THE MODIFIED GUTTER.
3. AT COFFER VALLEY AND CRICKETS PROVIDE RESINUS FLASHING MEMBRANE AS DETAILED.
4. LIGHTNING PROTECTION: CONTRACTOR TO PROVIDE LIGHTNING PROTECTION IN ACCORDANCE WITH SPECIFICATION SECTION 26.4113.
5. ALLOWANCES: SEE SPECIFICATIONS SECTION 012100 "ALLOWANCES" FOR MORE INFORMATION.
6. ALTERNATE 1: AT EXISTING LIGHT MONITOR, PROVIDE VINYL CLAD WOOD WINDOWS AND ASSOCIATED FRAMING, BLOCKING, ETC. SEE DETAILS AND SPECIFICATIONS.

KEYED ROOF SCOPE OF WORK NOTES:

- R01 REMOVE EXST. SHINGLE ROOF SYSTEM, PROVIDE 5/8" W.D. DECKING OVER EXISTING W.D. DECKING AND PROVIDE NEW SHINGLE ROOF SYSTEM AS DETAILED.
- R02 REMOVE EXISTING FLAT ROOF SYSTEM DOWN TO WOOD ROOF DECK AND PROVIDE 5/8" W.D. DECKING OVER EXISTING W.D. DECKING. PROVIDE NEW TPO/TPA ROOF SYSTEM AS DETAILED.
- R03 PROVIDE GUTTER AS DETAILED.
- R04 PROVIDE ICE AND WATER SHIELD 3'-0" FROM ROOF EDGE, HIP, VALLEY, HEADHOUSE, AND PENETRATIONS.
- R05 PROVIDE NEW WALKWAY PADS AS DETAILED, SEE 3/A-302
- R06 REMOVE EXISTING ROOF HATCH AND REPLACE WITH NEW TRANSLUCENT DOME ROOF HATCH WITH NEW ATTIC LADDER AND GUARDRAILS AS DETAILED, SEE 9/A301.
- R07 PREPARE AND PAINT EXISTING METAL ATTIC VENTS WITH RUST INHIBITIVE PRIMER & PAINT, COLOR SELECTED BY PATERSON PUBLIC SCHOOLS.
- R08 PROVIDE FALL ARREST ANCHOR, SEE DETAIL 10/A301.

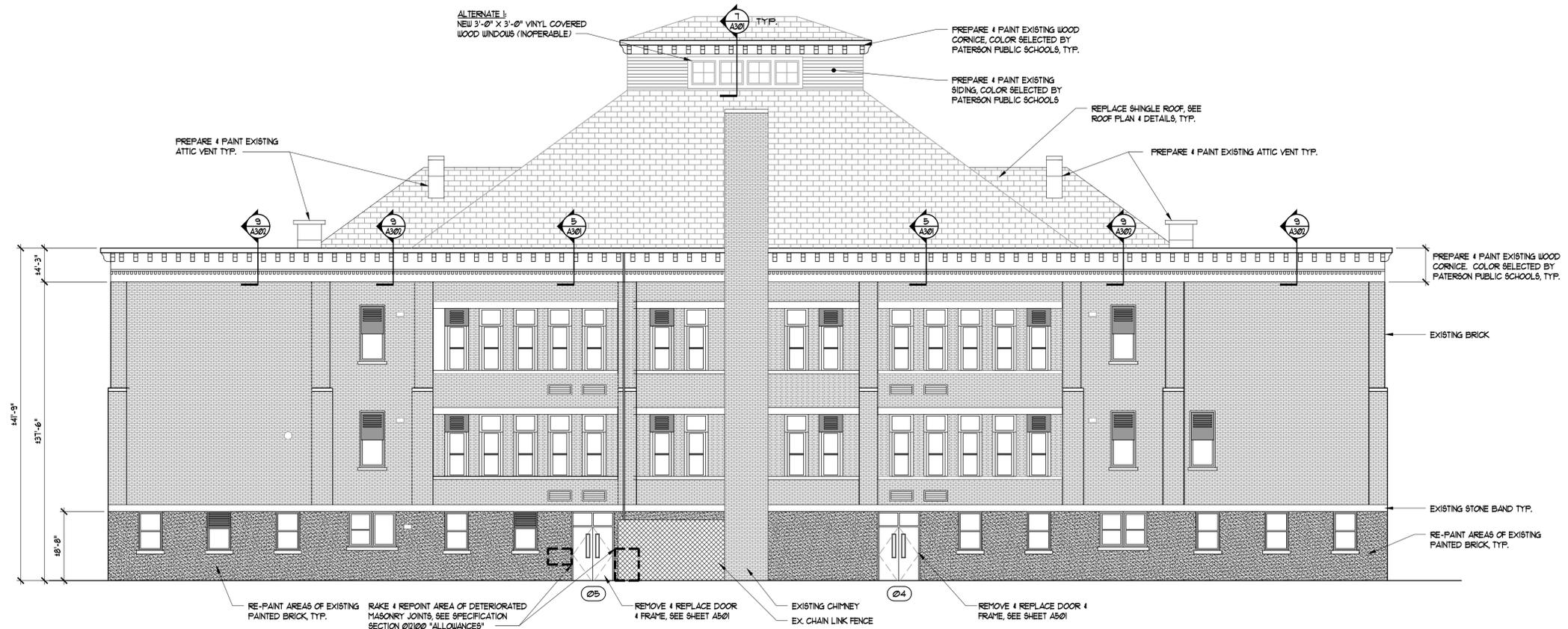
James J. Greener, AIA
NJ LIC. No.: 21A00045600
NY LIC. No.: 026859
William C. Stack, AIA
NJ LIC. No.: 1026000
NY LIC. No.: 043383

Architecture/Planning, P.A.
17 Commerce Suburban, NJ 07028-9335-5000
Member of
The American Institute of Architects

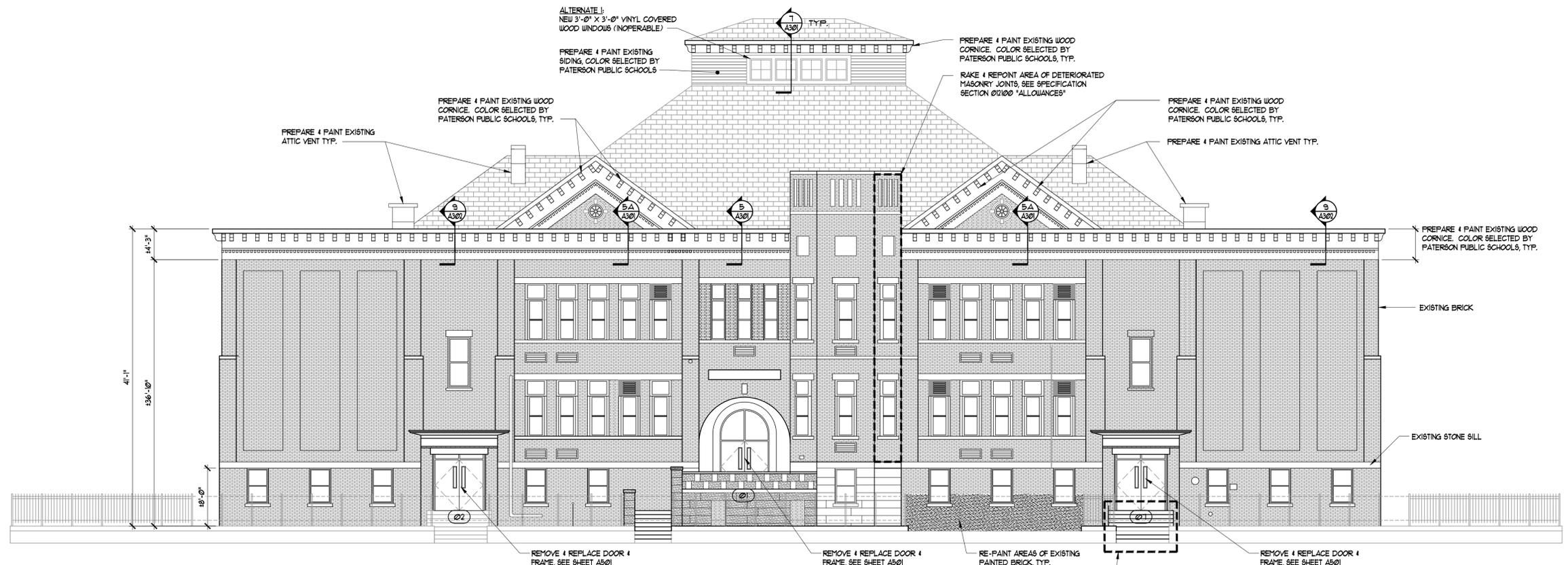
CTS GROUP

**ROOF REPLACEMENT
PATERSON PS-19**
31 JAMES STREET
PATERSON, NJ 07150

A-10 ROOF PLAN
Proj. No. _____
Drawn By: CFS
Date: 5/2/25
Created By: W065



1 NORTH ROOF ELEVATION
A-201 1/8" = 1'-0"



2 SOUTH ELEVATION
A-201 1/8" = 1'-0"

LIGHTNING PROTECTION:
CONTRACTOR TO PROVIDE LIGHTNING PROTECTION IN ACCORDANCE WITH SPECIFICATION SECTION 26.413.

James J. Greiner, AIA
NJ LIC. No.: 21A00045600
NY LIC. No.: 026559
William C. Stach, AIA
NJ LIC. No.: 1026000
NY LIC. No.: 043283

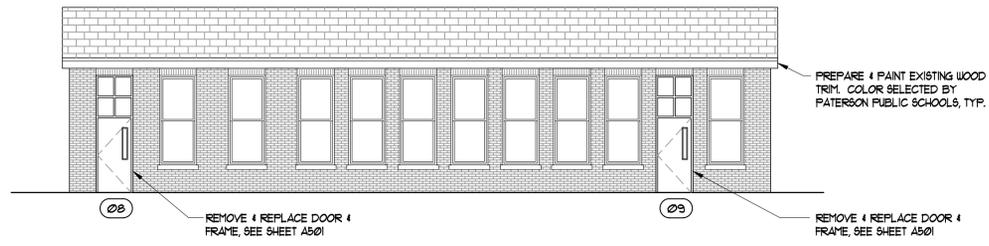
Architecture/Planning, P.A.
17 Commerce Street, Suite 200
Paterson, NJ 07651-5500
Member of
The American Institute of Architects

CTSGROUP

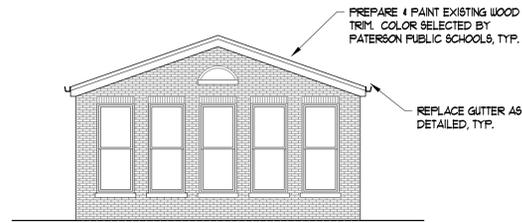
ROOF REPLACEMENT
PATERSON PS-19
31 JAMES STREET
PATERSON, NJ 07650

A-201 NORTH AND SOUTH
ELEVATIONS
Proj. No. CFS
Date 5/2/25
Created By WCS

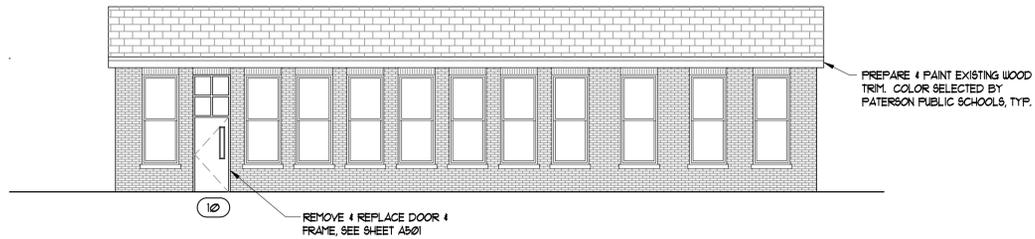
BID SET



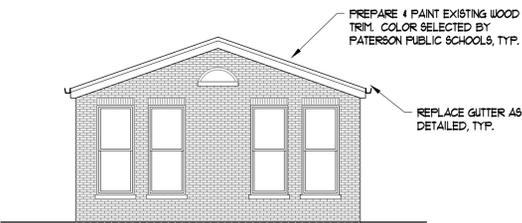
3 GYMNASIUM BLDG ELEVATION
A-202 1/8" = 1'-0"



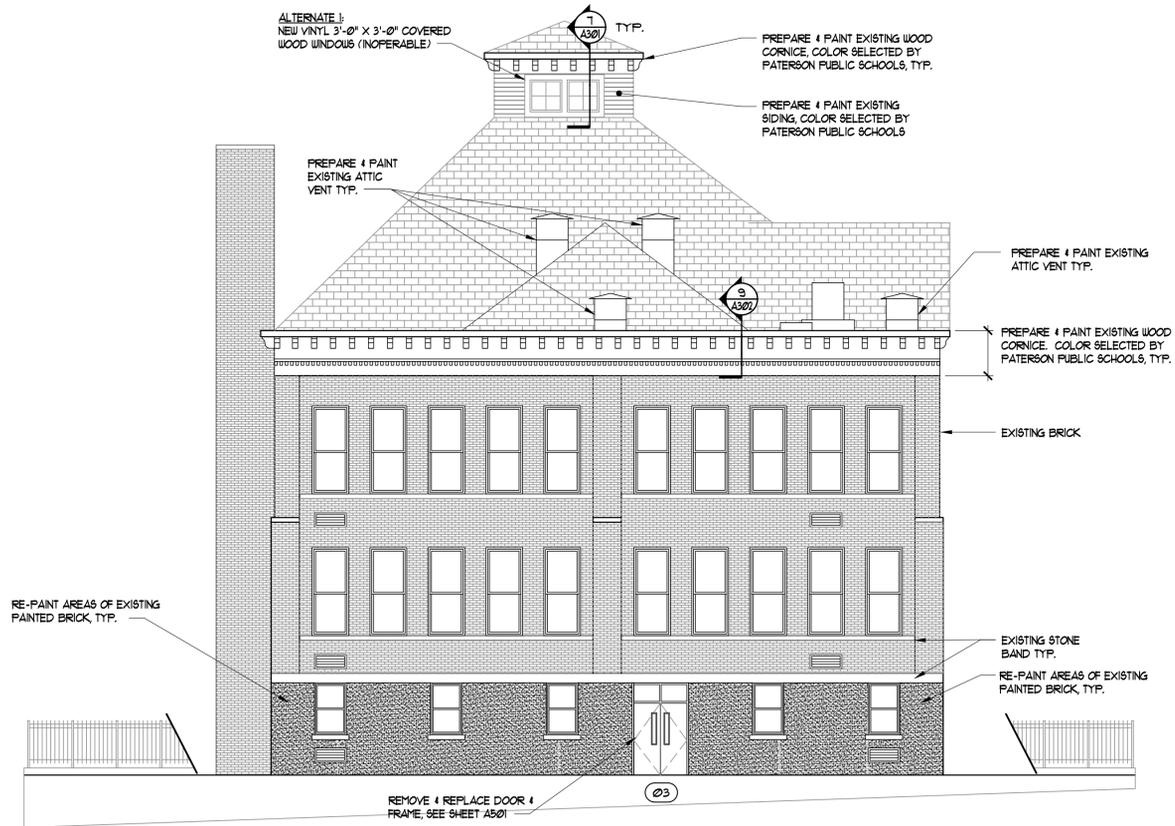
4 GYMNASIUM BLDG ELEVATION
A-202 1/8" = 1'-0"



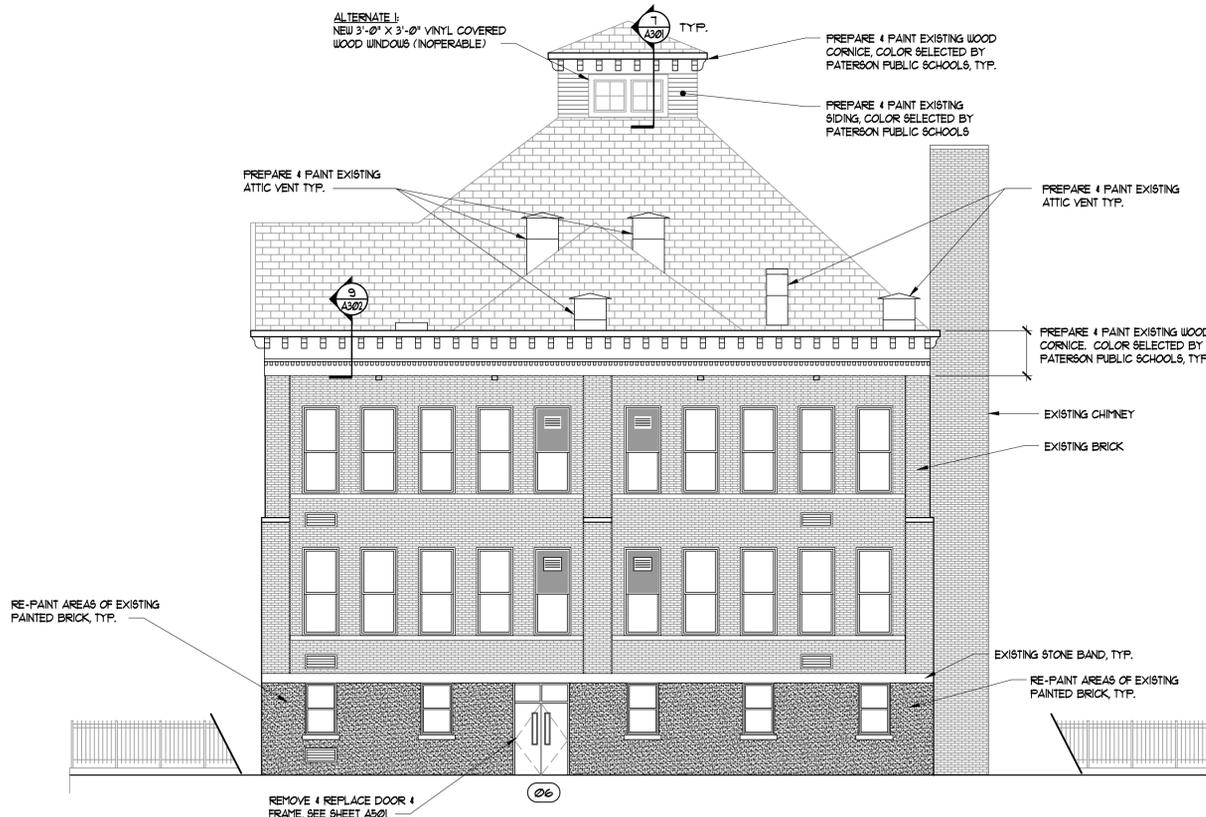
5 GYMNASIUM BLDG ELEVATION
A-202 1/8" = 1'-0"



6 GYMNASIUM BLDG ELEVATION
A-202 1/8" = 1'-0"



1 WEST ELEVATION
A-202 1/8" = 1'-0"



2 EAST ELEVATION
A-202 1/8" = 1'-0"

LIGHTNING PROTECTION:
CONTRACTOR TO PROVIDE LIGHTNING PROTECTION IN ACCORDANCE WITH SPECIFICATION SECTION 26.413.

James J. Greiner, AIA
NJ LIC. No.: 21A00045600
NY LIC. No.: 026559

William C. Stack, AIA
NJ LIC. No.: 10268000
NY LIC. No.: 043383

Architecture/Planning, P.A.
17 Commerce St., Suite 200
Paterson, NJ 07651-5500

Member of
The American Institute of Architects

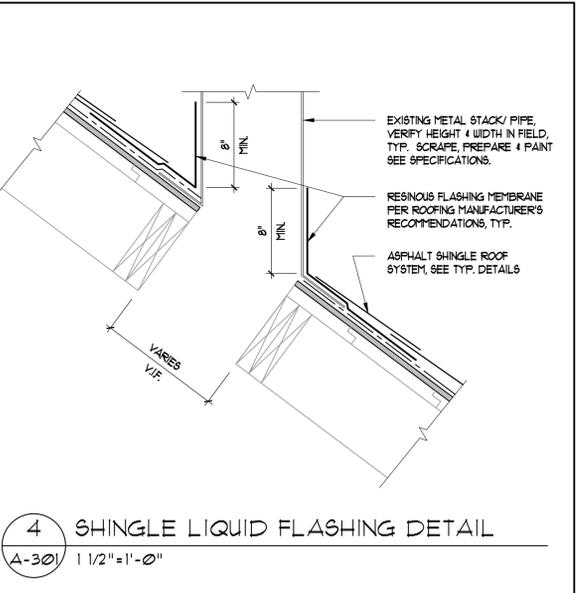
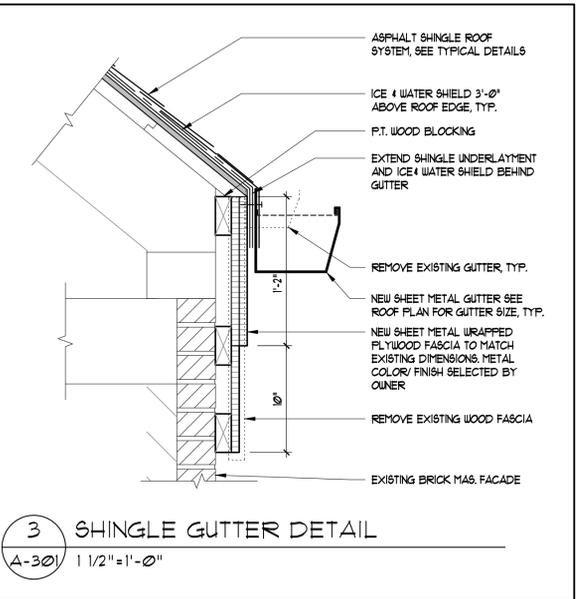
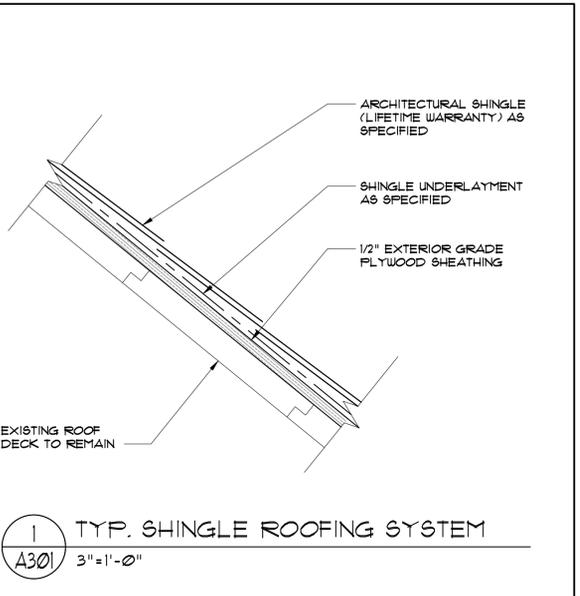
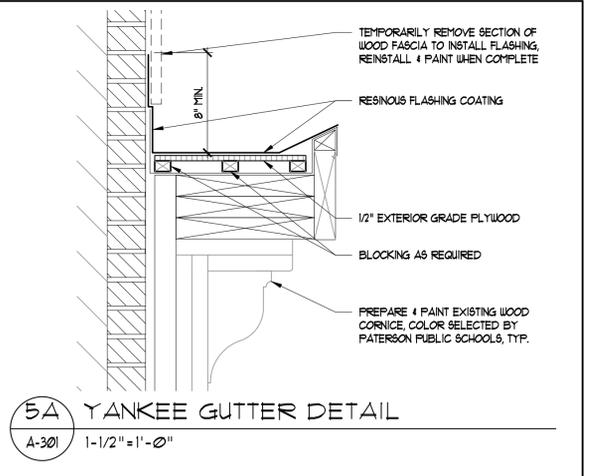
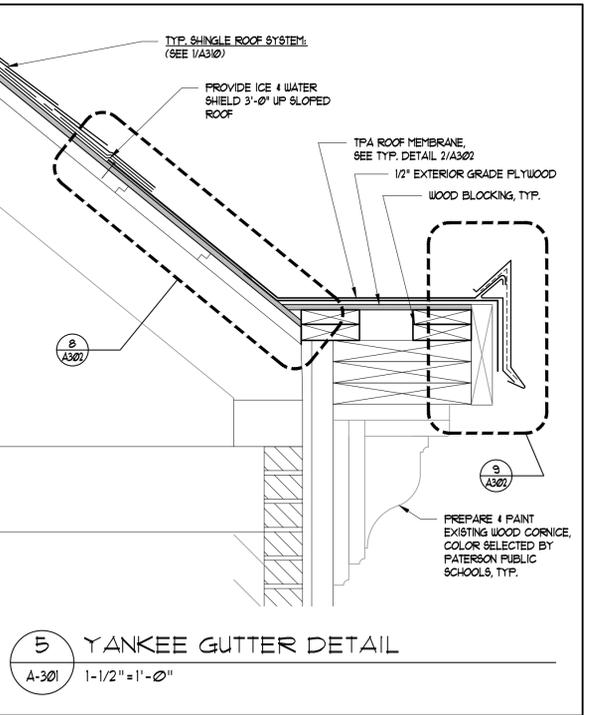
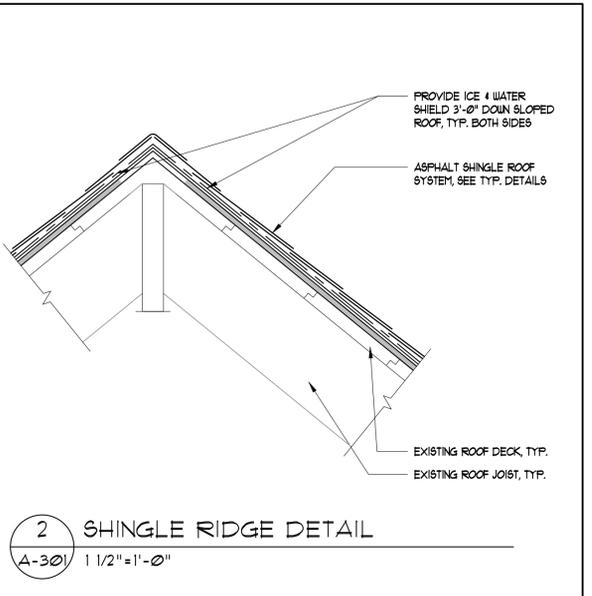
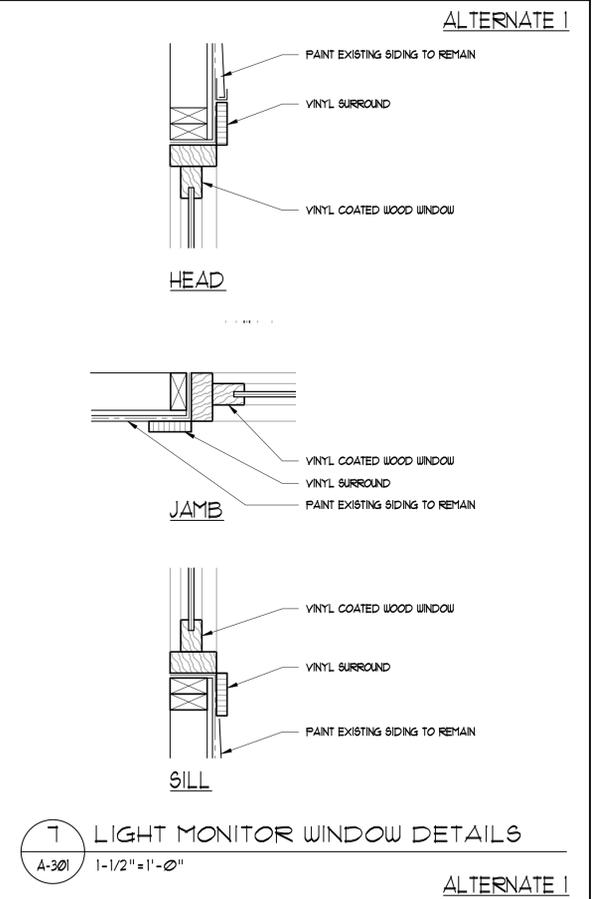
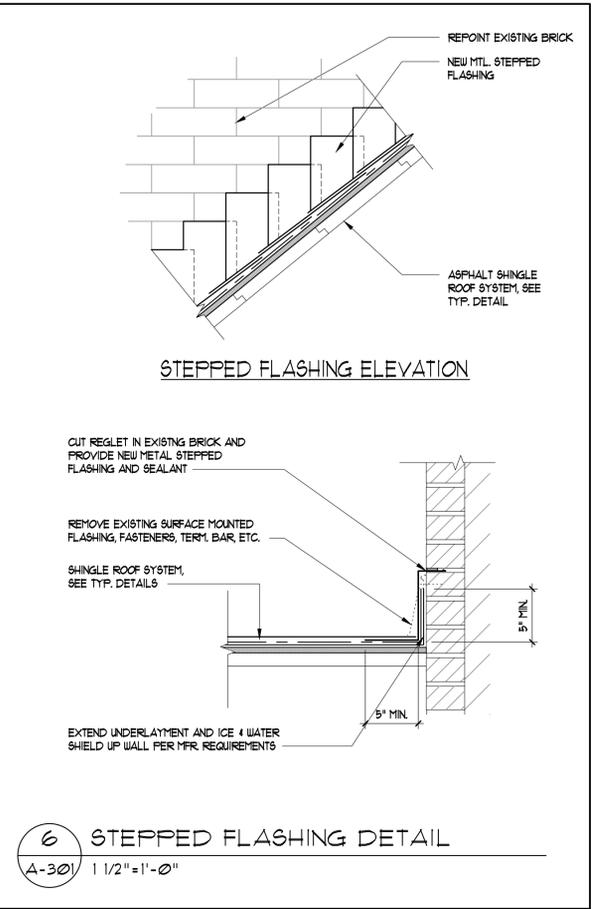
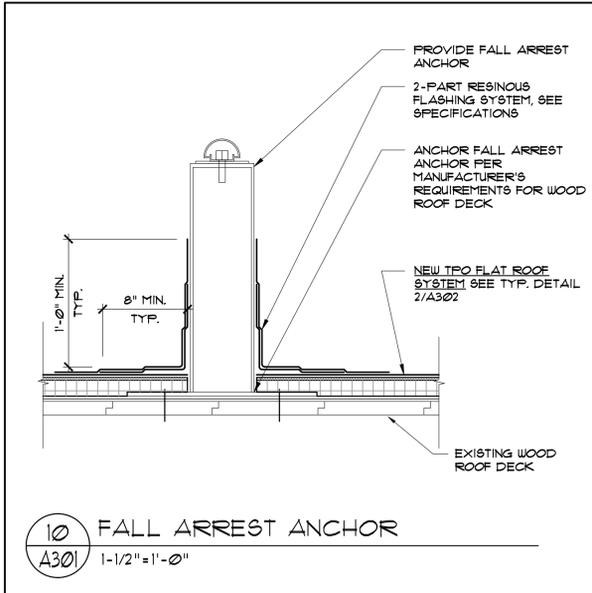
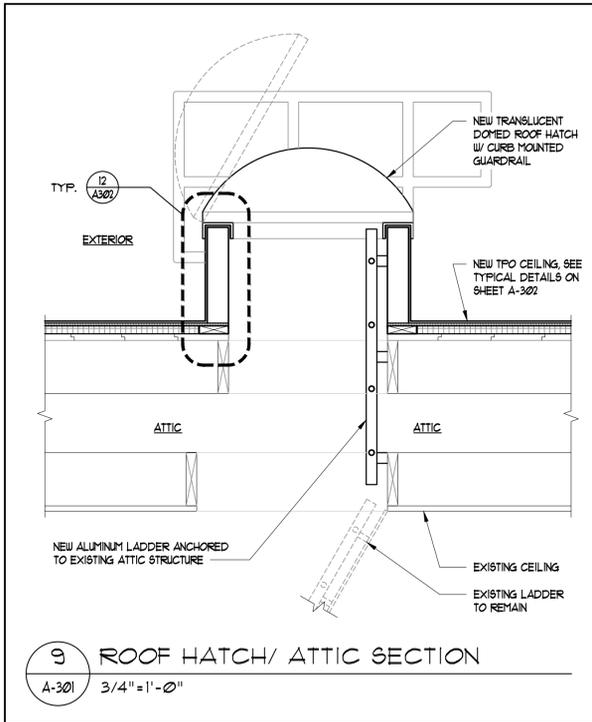
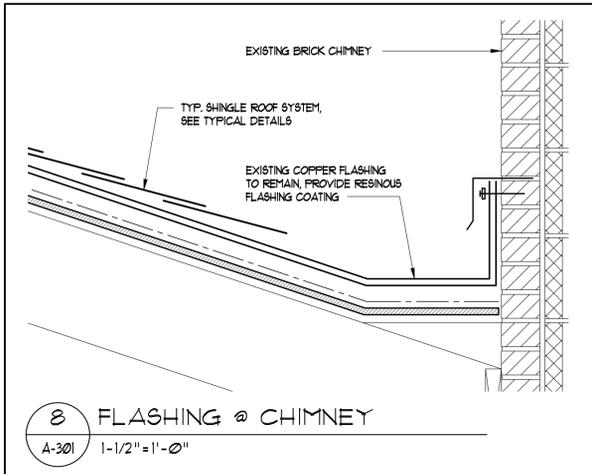
CTS GROUP

ROOF REPLACEMENT
PATERSON PS-19
31 JAMES STREET
PATERSON, NJ 07650

A-202 EAST AND WEST ELEVATIONS

Proj. No. 966
Drawn By: CFS
Date: 5/2/25
Checked By: WCS

BID SET



James J. Greiner, AIA
NJ LIC. No.: 21A00045600
NY LIC. No.: 026859

William C. Stack, AIA
NJ LIC. No.: 10268000
NY LIC. No.: 043383

Architecture/Planning, P.A.
17 Commerce Street, Suite 200
Newark, NJ 07102-3500

Member of
The American Institute of Architects

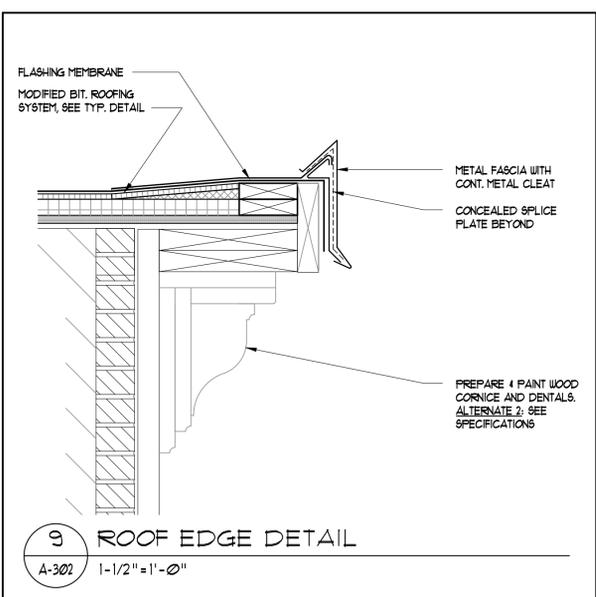
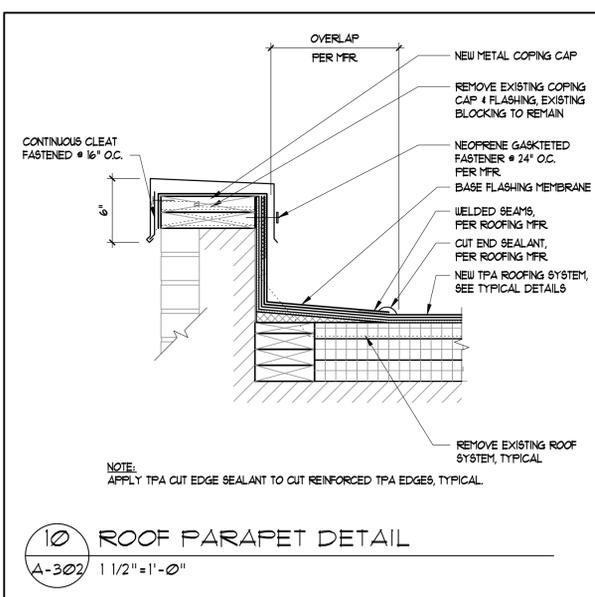
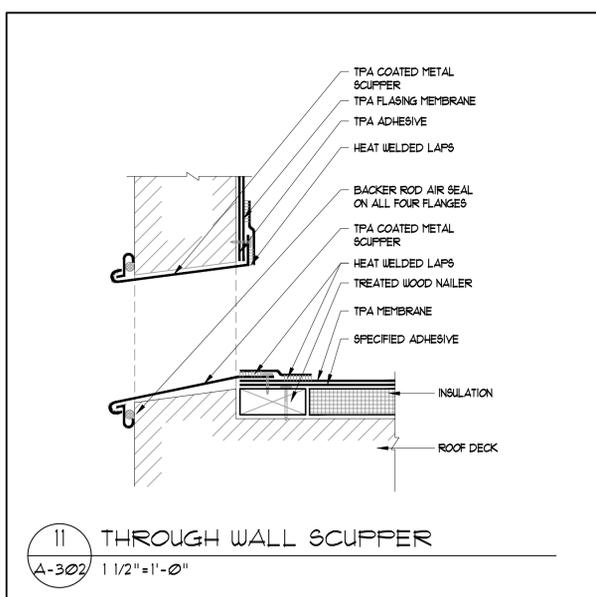
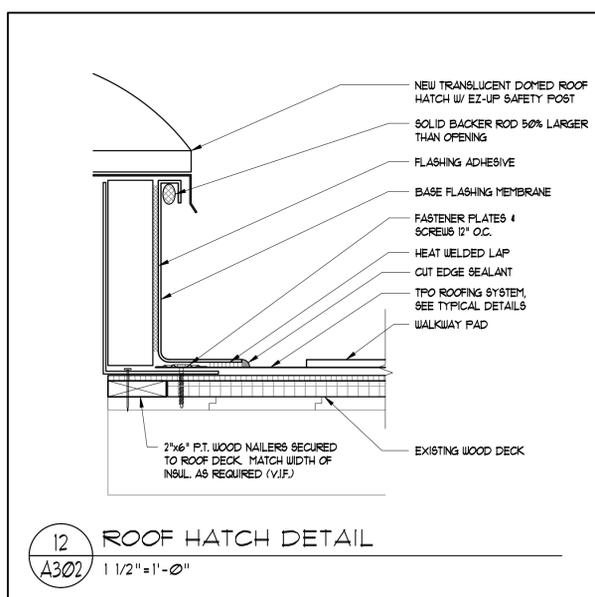
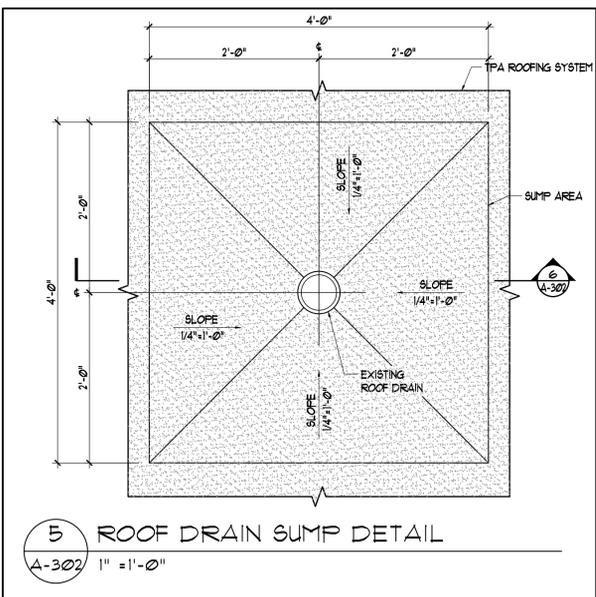
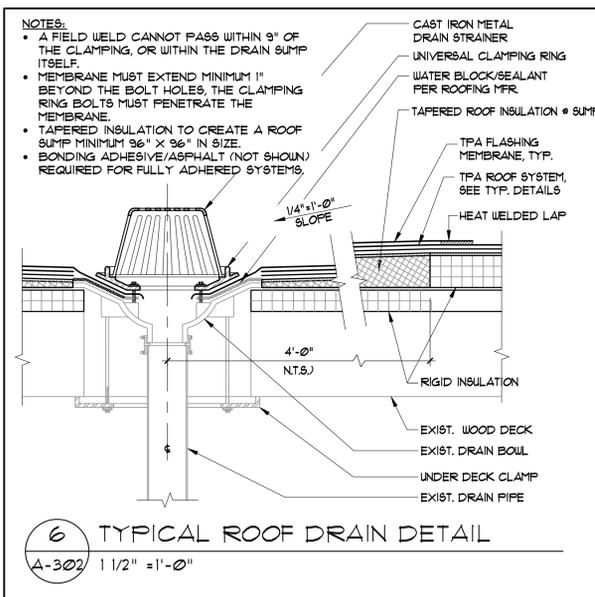
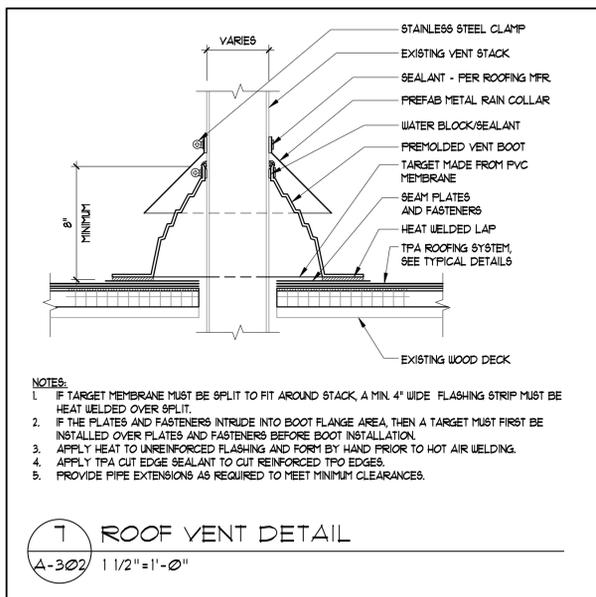
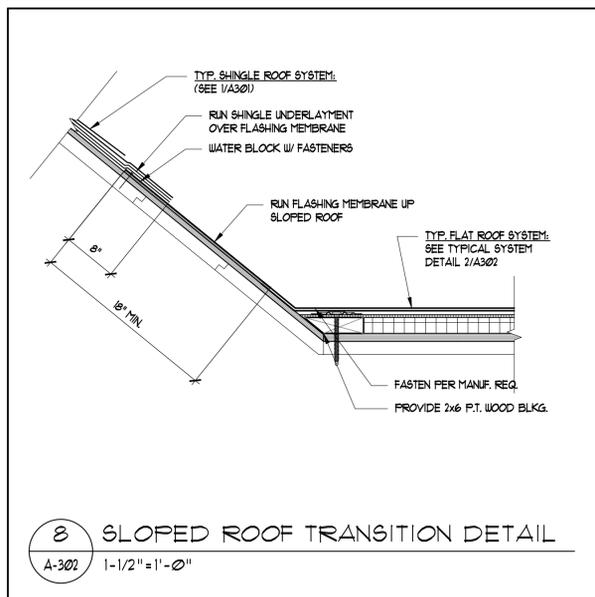
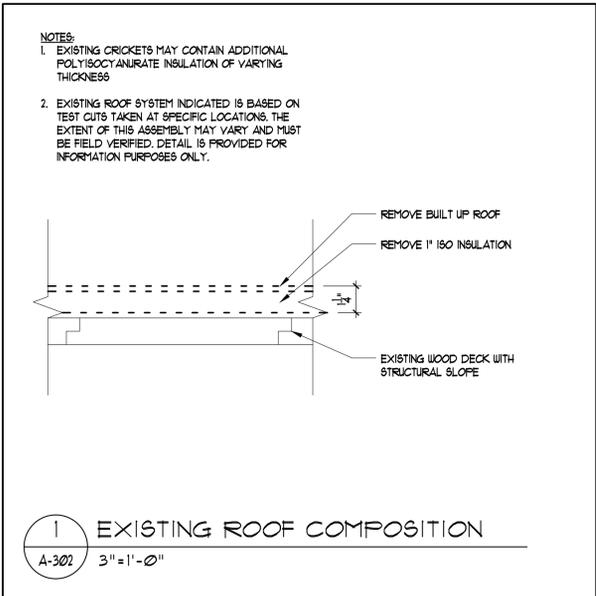
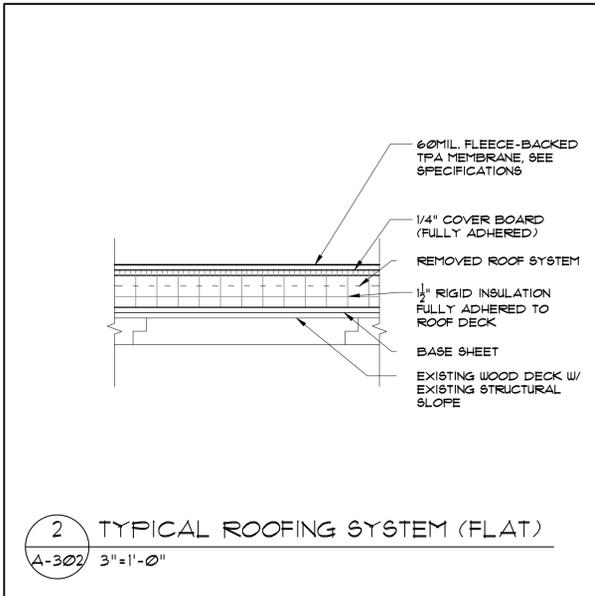
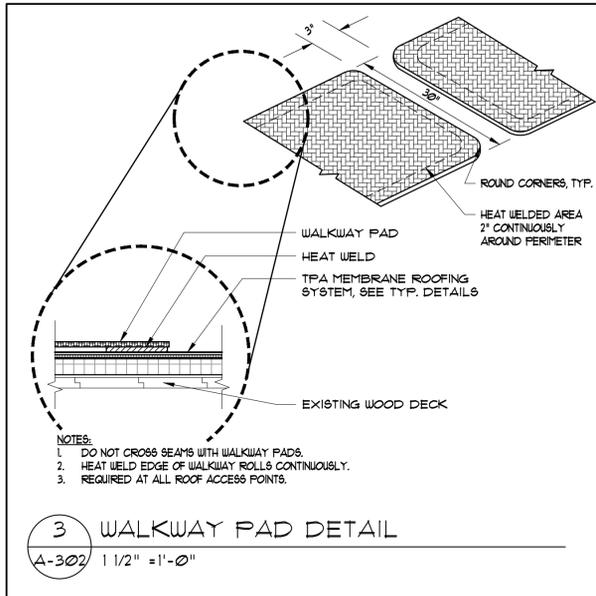
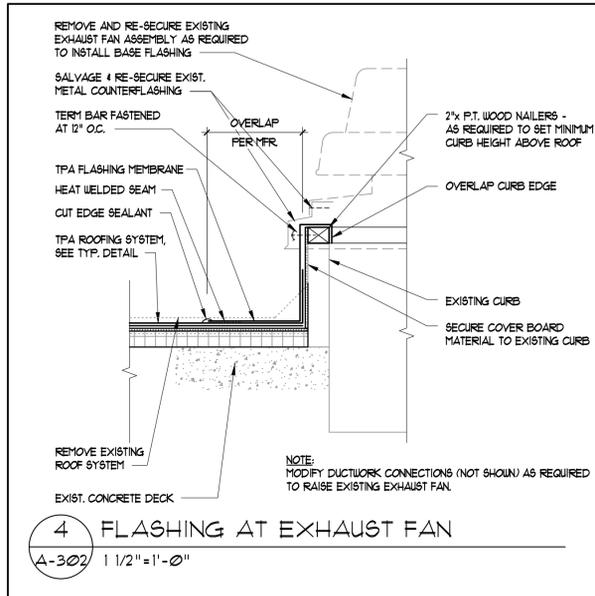
CTS GROUP

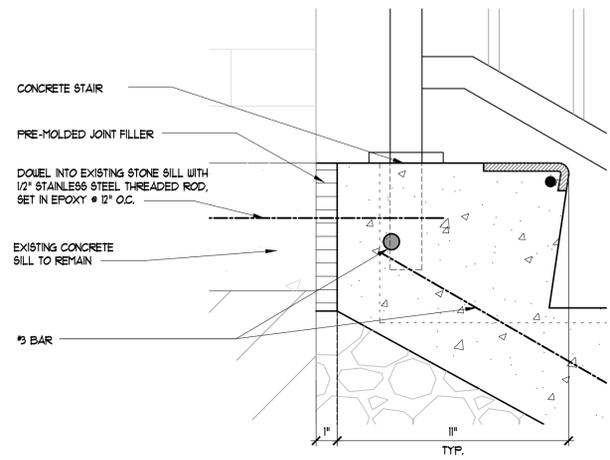
ROOF REPLACEMENT
PATERSON PS-19
31 JAMES STREET
PATERSON, NJ 07650

A-301 ROOF DETAILS

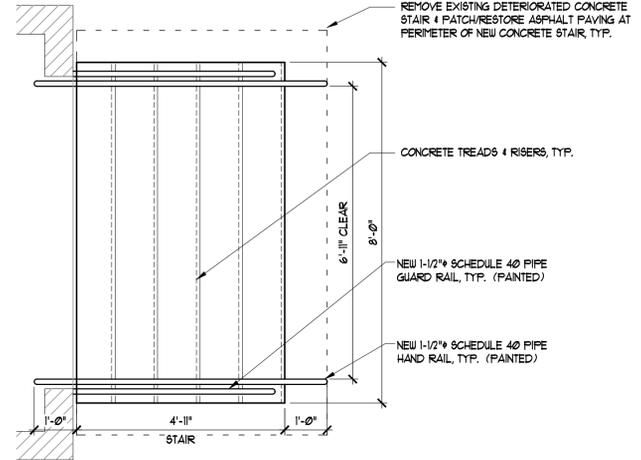
Proj. No. 966
Date 5/2/25
Drawn By CFS
Checked By W065

BID SET

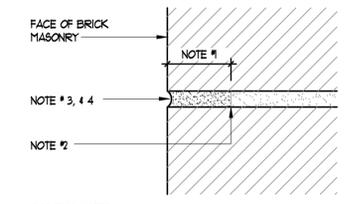




7 SOFT JOINT DETAIL @ EXIST. SILL
 A-401 3"=1'-0"
 ALTERNATE 2, SEE SPECIFICATIONS

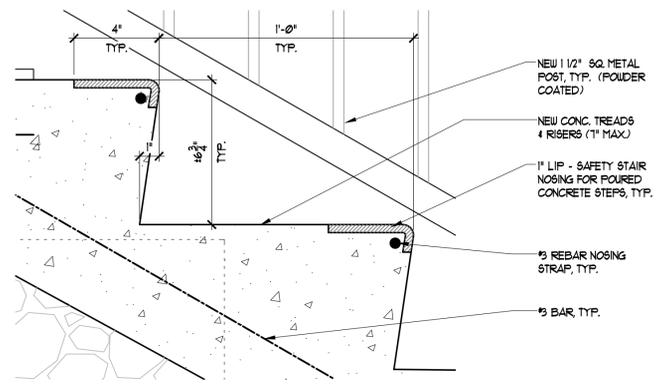


4 STAIR PLAN - ALTERNATE 2
 A-401 1/2"=1'-0"
 ALTERNATE 2, SEE SPECIFICATIONS

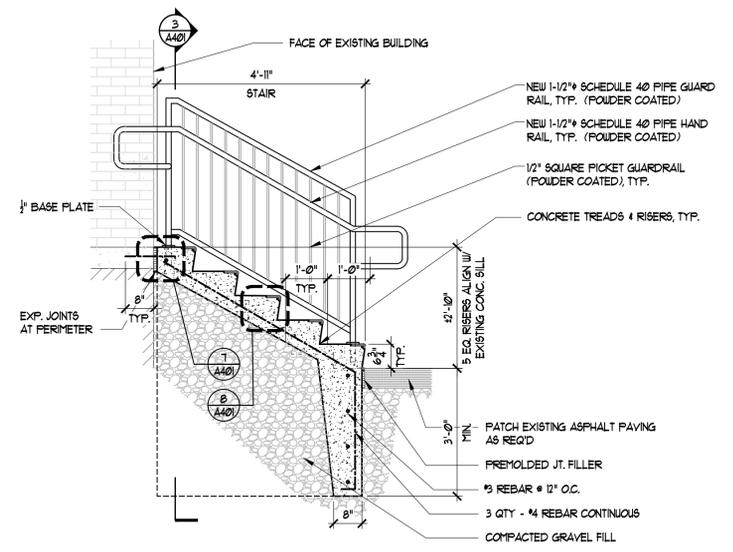


POINTING NOTES:
 NOTE #1: CAREFULLY CUT AND REMOVE EXISTING MORTAR AT HORIZONTAL AND VERTICAL JOINTS TO A DEPTH OF 1/2" OR SOUND MORTAR WHICHEVER IS GREATER.
 NOTE #2: TRIM REMAINING MORTAR SQUARE AND PERPENDICULAR TO THE FACADE. CLEAN OUT JOINTS.
 NOTE #3: INSTALL POINTING MORTAR (AS SPECIFIED IN CONSERVATORS REPORT) TO MATCH EXISTING IN COLOR, TEXTURE, HARDNESS, AND ABSORPTION. INSTALL IN 3/8" DEEP (MAX) LAYERS.
 NOTE #4: TOOL NEW MORTAR JOINT TO A CONCAVE FINISH TO MATCH ORIGINAL.

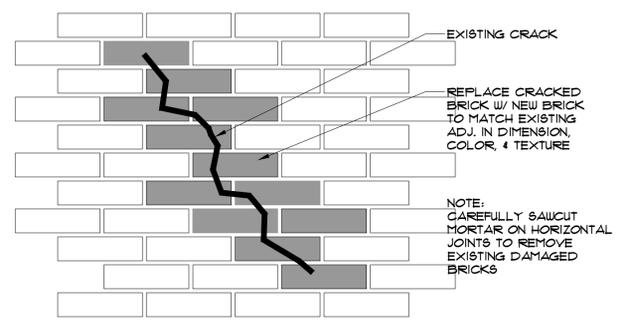
1 POINTING DETAIL
 A-401 N.T.S.



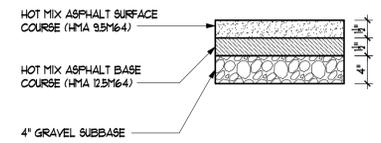
8 ENLARGED TREAD STAIR DETAIL
 A-401 3"=1'-0"
 ALTERNATE 2, SEE SPECIFICATIONS



5 STAIR SECTION - ALTERNATE 2
 A-401 1/2"=1'-0"
 ALTERNATE 2, SEE SPECIFICATIONS

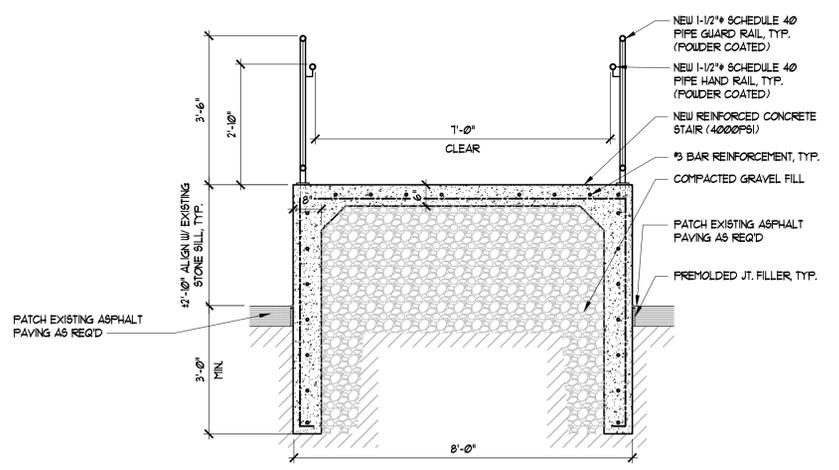


2 CRACK DETAIL
 A-401 1 1/2" = 1'-0"

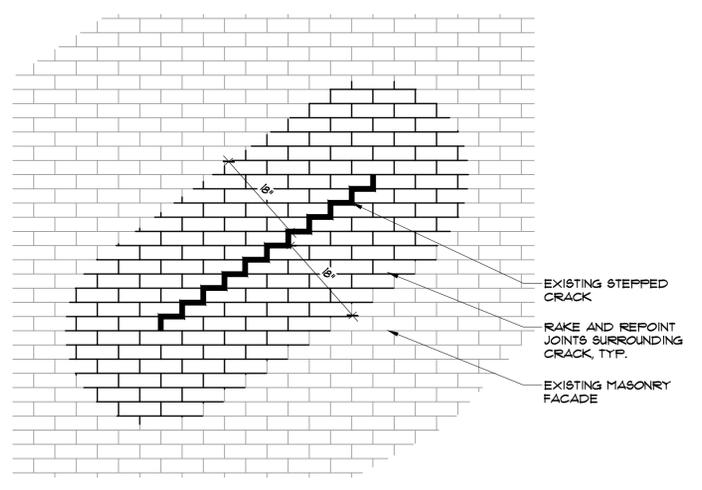


9 ASPHALT PAVING DETAIL
 A401 N.T.S.
 ALTERNATE 2, SEE SPECIFICATIONS

- SUBBASE SHALL BE FIRM & APPROVED BY THE ENGINEER OR HIS REPRESENTATIVE PRIOR TO PAVING.
- ALL CONSTRUCTION METHODS & MATERIALS SHALL CONFORM TO NJ DOT 1989 STANDARDS, SPECIFICATIONS, & INSPECTIONS.
- THE CONTRACTOR SHALL PREPARE THE EXIST. SURFACE, INCL. BUT NOT LTD. TO REMOVAL OF DEBRIS & VEGETATION, PROVIDING POWER & HAND BROOMING, & ADJUSTING MANHOLES & WATER BOXES, ALL TO THE SATISFACTION OF THE ENGINEER.
- THE CONTRACTOR SHALL PAVE INTERSECTION TO THE POINT OF TANGENCY OF THE RADIUS RETURN OR AS DIRECTED BY THE ENGINEER.
- UNIT PRICE BIDS SHALL INCL. BUT ARE NOT LTD. TO ALL LABOR, EQUIPMENT, MATERIALS & TOOLS TO PERFORM THE CONSTRUCTION AS INDICATED ABOVE IN A WORKMANLIKE MANNER.



6 STAIR SECTION - ALTERNATE 2
 A-401 1/2"=1'-0"
 ALTERNATE 2, SEE SPECIFICATIONS



3 STEPPED CRACK DETAIL
 A-401 3/4" = 1'-0"

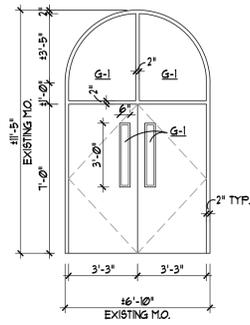
James J. Greener, AIA
 NJ LIC. No.: 21A00045600
 NY LIC. No.: 026559
 William C. Stach, AIA
 NJ LIC. No.: 11026000
 NY LIC. No.: 033583

Architecture/Planning, P.A.
 17 Commerce Street, Suite 200
 Newark, NJ 07102-3550
 Member of
 The American Institute of Architects

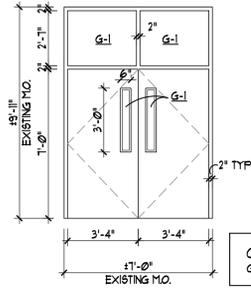
CTS GROUP

ROOF REPLACEMENT PATERSON PS-19
 31 JAMES STREET
 PATERSON, NJ 07650

A-401 CONCRETE & MASONRY DETAILS
 Proj. No. CFS
 Date 5/2/25
 Drawn By
 Created By
 WCS

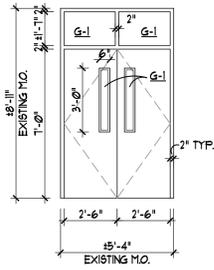


DOOR TYPE A
1/4" = 1'-0"

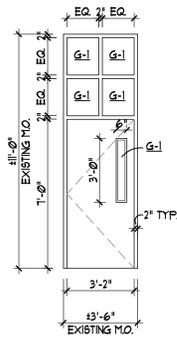


DOOR TYPE B
1/4" = 1'-0"

GLASS TYPES:
G-1 - LAMINATED GLASS



DOOR TYPE C
1/4" = 1'-0"



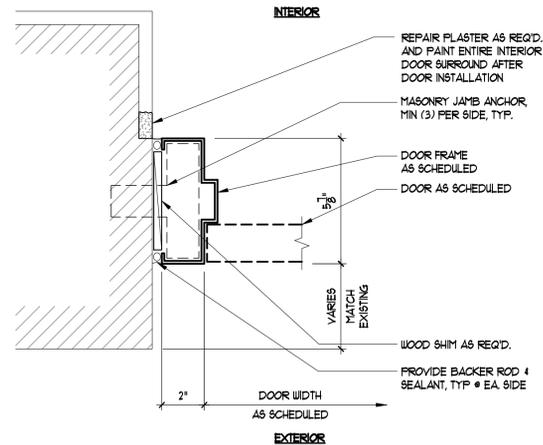
DOOR TYPE D
1/4" = 1'-0"

GLASS TYPES:
G-1 - LAMINATED GLASS

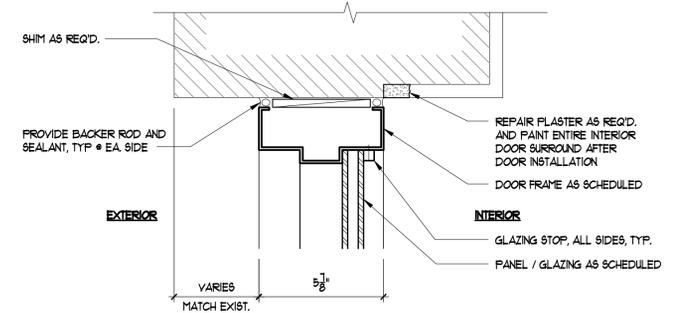
DOOR NO.	DESCRIPTION / LOCATION	MASONRY OPENING		SIZE			DOOR			FRAME		DETAIL REFERENCE			RATED	HARDWARE SET	SIGNAGE	REMARKS
		WIDTH	HEIGHT	WIDTH	HEIGHT	THICKNESS	ELEVATION	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	HEAD	JAMB				
GROUND FLOOR																		
01	JAMES STREET - MAIN ENTRANCE	6'-10"	11'-5"	(2) 3'-0"	11'-0"	1-3/4"	A	FRP	FACTORY FINISH	A	HM. (GALV.)	PRIME & PAINT	HI	J1	S1		01	
02	JAMES STREET - EGRESS DOOR	1'-0"	9'-11"	(2) 3'-4"	11'-0"	1-3/4"	B	FRP	FACTORY FINISH	B	HM. (GALV.)	PRIME & PAINT	HI	J1	S1		02	
03	PATERSON AVE - EGRESS DOOR	5'-4"	0'-11"	(2) 2'-4"	1'-0"	1-3/4"	C	FRP	FACTORY FINISH	C	HM. (GALV.)	PRIME & PAINT	HI	J1	S1		02	
04	REAR ELEVATION - EGRESS DOOR	5'-4"	0'-11"	(2) 2'-4"	1'-0"	1-3/4"	C	FRP	FACTORY FINISH	C	HM. (GALV.)	PRIME & PAINT	HI	J1	S1		02	
05	REAR ELEVATION - EGRESS DOOR	5'-4"	0'-11"	(2) 2'-4"	1'-0"	1-3/4"	C	FRP	FACTORY FINISH	C	HM. (GALV.)	PRIME & PAINT	HI	J1	S1		02	
06	MANCHESTER AVE - EGRESS DOOR	5'-4"	0'-11"	(2) 2'-4"	1'-0"	1-3/4"	C	FRP	FACTORY FINISH	C	HM. (GALV.)	PRIME & PAINT	HI	J1	S1		02	
07	JAMES STREET - EGRESS DOOR	1'-0"	9'-11"	(2) 3'-4"	1'-0"	1-3/4"	B	FRP	FACTORY FINISH	B	HM. (GALV.)	PRIME & PAINT	HI	J1	S1		02	
GYMNASIUM																		
08	GYMNASIUM - ENTRANCE	3'-6"	11'-0"	3'-3"	1'-0"	1-3/4"	D	FRP	FACTORY FINISH	D	HM. (GALV.)	PRIME & PAINT	HI	J1	S1		03	
09	GYMNASIUM - ENTRANCE	3'-6"	11'-0"	3'-3"	1'-0"	1-3/4"	D	FRP	FACTORY FINISH	D	HM. (GALV.)	PRIME & PAINT	HI	J1	S1		03	
10	GYMNASIUM - REAR	3'-6"	11'-0"	3'-3"	1'-0"	1-3/4"	D	FRP	FACTORY FINISH	D	HM. (GALV.)	PRIME & PAINT	HI	J1	S1		03	

GENERAL NOTES:

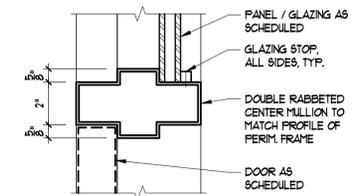
- A. DOOR AND FRAME PAINT COLORS TO BE SELECTED BY PATERSON PUBLIC SCHOOLS.
- B. SEE DOOR ELEVATIONS AND SPECIFICATIONS FOR GLASS TYPES
- C. VERIFY EXIST MASONRY OPENING A/O FRAME DIMS. IN THE FIELD PRIOR TO SUBMITTING SHOP DRAWINGS TO PROJECT AVE FOR REVIEW.
- D. PROVIDE DOOR IDENTIFICATION SIGNAGE AT ALL DOORS, COORDINATE WITH DISTRICT SIGNAGE STANDARDS.



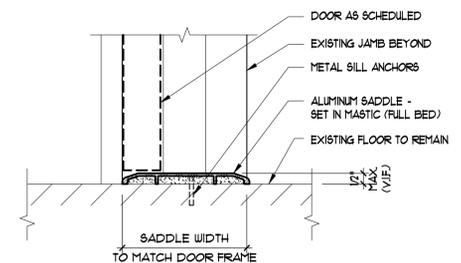
4 JAMB DETAIL - J1
A-501 3" = 1'-0"



1 HEAD DETAIL - H1
A-501 3" = 1'-0"



2 TRANSOM DETAIL
A-501 3" = 1'-0"



3 SILL DETAIL - S1
A-501 3" = 1'-0"