BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

REQUEST FOR PROPOSALS

Item Description: ZUCCOLO RECREATION CENTER ROOF REPLACEMENT

Procurement/MinuteTraq #: 44926

Date to be opened: 5/20/2024

Issuing Department: Department of Public Property

QUESTIONS

- Please direct questions related to the bidding process, how to fill out forms, and how to submit a bid (Pages 1-8) to the Purchasing Department.
    - Email: purchasing@providenceri.gov
        - Please use the subject line "**Solicitation Question**"
- Please direct questions relative to the Minority and Women's Business Enterprise Program and the corresponding forms (Pages 9-13) to the MBE/WBE Outreach Director for the City of Providence, Grace Diaz
    - Email: gdiaz@providenceri.gov
        - Please use subject line "**MBE WBE Forms**"
- Please direct questions relative to the specifications outlined (beginning on page 14) to the issuing department's subject matter expert:
    - Name: Dan Kittridge
    - Title: Capital Improvements Projects Manager
    - Email Address: dkittridge@providenceri.gov

Pre-bid Conference

There will be a Mandatory Pre-Bid Conference
Date of Pre-Bid Conference: 5/6/24 Time: 10:00 am
Location: Zuccolo Recreation Center, 18 Gesler St, Providence, RI

Deadline for questions submissions:
Questions are due Monday, May 13 by 5 pm.

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

INSTRUCTIONS FOR SUBMISSION

Meeting Date: 5/20/2024

Bids may be submitted up to **2:15 P.M.** on the above meeting date at the **Department of the City Clerk. Room 311, City Hall. 25 Dorrance Street, Providence.** At 2:15 P.M. all bids will be publicly opened and read at the Board of Contract Meeting in Conference Room 305, on the 3rd floor of City Hall.

- Bidders must submit **2 copies** of their bid in sealed envelopes or packages labeled with the captioned **Item Description** and the **City Department to which the solicitation and bid are related and must include the company name and address on the envelope as well**. (On page 1).
- If required by the Department, please keep the original bid bond and check in only one of the envelopes.
- Communications to the Board of Contract and Supply that are not competitive sealed bids (i.e. product information/samples) should have "**NOT A BID**" written on the envelope or wrapper.
- Only use form versions and templates included in this solicitation. If you have an old version of a form do not recycle it for use in this bid.
- The bid envelope and information relative to the bid must be addressed to:

Board of Contract and Supply
Department of the City Clerk – City Hall, Room 311
25 Dorrance Street
Providence, RI 02903

****PLEASE NOTE: This bid may include details regarding information that you will need to provide (such as proof of licenses) to the issuing department before the formalization of an award.**

This information is NOT requested to be provided in your initial bid by design.

All bids submitted to the City Clerk become public record. Failure to follow instructions could result in information considered private being posted to the city's Open Meetings Portal and made available as a public record. The City has made a conscious effort to avoid the posting of sensitive information on the City's Open Meetings Portal, by requesting that such sensitive information be submitted to the issuing department only at their request.

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID PACKAGE CHECKLIST

Digital forms are available in the City of Providence Purchasing Department Office or online at **http://www.providenceri.gov/purchasing/how-to-submit-a-bid/**

The bid package **MUST** include the following, in this order:

- Bid Form 1: Bidder's Blank as the cover page/ 1st page (s*ee page **6** of this document*)
- Bid Form 2: Certification of Bidder as 2nd page (s*ee page **7** of this document*)
- Bid Form 3: Certificate Regarding Public Records (s*ee page **8** of this document)*
- Bid Form 4: Affidavit of City Vendor (*see pages **9 and 10** of this document*)
- Forms from the Minority and Women Business Enterprise Program: Based on Bidder Category. S*ee forms and instructions enclosed (pages **11-12**) or on: https://www.providenceri.gov/purchasing/minority-women-owned-business-mbewbe-procurement-program/*

***Please note: MBE/WBE forms must be completed for EVERY bid submitted and must be inclusive of ALL required signatures. Forms without all required signatures will be considered incomplete.**

- Bidder's Proposal/Packet: Formal response to the specifications outlined in this RFP, including pricing information and details related to the good(s) or service(s) being provided. Please be mindful of formatting responses as requested to ensure clarity.
- Financial Assurance, *if requested* (a*s indicated on page 5 of this document under "Bid Terms")*
- Addenda (If Any) - Must Be Acknowledged on Bid Form
- Product Information for Items Submitted as 'Or Equal' to Specified Materials
- City of Providence CDBG Program Federal Construction Contract Provisions for Contracts over $100,000 (**Attachment B**): provide filled-out forms with bid.
    - **Forms must also be provided for each and every subcontractor** providing labor on the project.

All of the above listed documents are REQUIRED. (With the exception of financial assurances, which are only required if specified on page 5.)

******Failure to meet specified deadlines, follow specific submission instructions, or enclose all required documents with all applicable signatures will result in disqualification, or in an inability to appropriately evaluate bids.***

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

NOTICE TO VENDORS

1. The Board of Contract and Supply will make the award to the lowest qualified and responsible bidder.
2. In determining the lowest responsible bidder, cash discounts based on preferable payment terms will not be considered.
3. Where prices are the same, the Board of Contract and Supply reserves the right to award to one bidder, or to split the award.
4. No proposal will be accepted if the bid is made in collusion with any other bidder.
5. Bids may be submitted on an "equal in quality" basis. The City reserves the right to decide equality. Bidders must indicate brand or the make being offered and submit detailed specifications if other than brand requested.
6. A bidder who is an out-of-state corporation shall qualify or register to transact business in this State, in accordance with the Rhode Island Business Corporation Act, RIGL Sec. 7-1.2-1401, et seq.
7. The Board of Contract and Supply reserves the right to reject any and all bids.
8. Competing bids may be viewed in person at the Department of the City Clerk, City Hall, Providence, immediately upon the conclusion of the formal Board of Contract and Supply meeting during which the bids were unsealed/opened. Bids may also be accessed electronically on the internet via the City's Open Meetings Portal.
9. As the City of Providence is exempt from the payment of Federal Excise Taxes and Rhode Island Sales Tax, prices quoted are not to include these taxes.
10. In case of error in the extension of prices quoted, the unit price will govern.
11. The contractor will **NOT** be permitted to: a) assign or underlet the contract, or b) assign either legally or equitably any monies or any claim thereto without the previous written consent of the City Purchasing Director.
12. Delivery dates must be shown in the bid. If no delivery date is specified, it will be assumed that an immediate delivery from stock will be made.
13. A certificate of insurance will normally be required of a successful vendor.
14. For many contracts involving construction, alteration and/or repair work, State law provisions concerning payment of prevailing wage rates apply (RIGL Sec. 37-13-1 et seq.)
15. No goods should be delivered, or work started without a Purchase Order.
16. **Submit 2 copies of the bid to the City Clerk, unless the specification section of this document indicates otherwise.**
17. Bidder must certify that it does not unlawfully discriminate on the basis of race, color, national origin, gender, gender identity or expression, sexual orientation and/or religion in its business and hiring practices and that all of its employees are lawfully employed under all applicable federal, state and local laws, rules and regulations. (See Bid Form 2.)

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID TERMS

1. Financial assurances may be required in order to be a successful bidder for Commodity or Construction and Service contracts. If either of the first two checkboxes below is checked, the specified assurance **must accompany** a bid, or the bid will not be considered by the Board of Contract and Supply. The third checkbox indicates the lowest responsible bidder will be contacted and required to post a bond to be awarded the contract.

   a) ☐ A certified check for **$**_____ must be deposited with the City Clerk as a guarantee that the Contract will be signed and delivered by the bidder.

   b) ☒ A bid bond in the amount of **five** per centum (5%) of the proposed total price, must be deposited with the City Clerk as a guarantee that the contract will be signed and delivered by the bidder; and the amount of such bid bond shall be retained for the use of the City as liquidated damages in case of default. Any person signing a bid bond as an attorney-in-fact shall include with the bid bond an original, or a photocopy or facsimile of an original, power of attorney.

   c) ☒ A performance and payment bond with a satisfactory surety company will be posted by the bidder in a sum equal to one hundred per centum (100%) of the awarded contract.

   d) ☐ No financial assurance is necessary for this item.

2. Awards will be made within **ninety (90) days of bid opening**. All bid prices will be considered firm, unless qualified otherwise. Requests for price increases will not be honored.
3. Failure to deliver within the time quoted or failure to meet specifications may result in default in accordance with the general specifications. It is agreed that deliveries and/or completion are subject to strikes, lockouts, accidents, and Acts of God.

The following entry applies only for COMMODITY BID TERMS:

4. Payment for partial delivery will not be allowed except when provided for in blanket or term contracts.

The following entries apply only for CONSTRUCTION AND SERVICE BID TERMS:

5. Only one shipping charge will be applied in the event of partial deliveries for blanket or term contracts.
6. Prior to commencing performance under the contract, the successful bidder shall attest to compliance with the provisions of the Rhode Island Worker's Compensation Act, RIGL 28-29-1, et seq. If exempt from compliance, the successful bidder shall submit a sworn Affidavit by a corporate officer to that effect, which shall accompany the signed contract.
7. Prior to commencing performance under the contract, the successful bidder shall, submit a certificate of insurance, in a form and in an amount satisfactory to the City.

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID FORM 1: Bidders Blank

1. Bids must meet the attached specifications. Any exceptions or modifications must be noted and fully explained.
2. Bidder's responses must be in ink or typewritten, and all blanks on the bid form should be completed.
3. The price or prices proposed should be stated both in **WRITING** and in **FIGURES**, and any proposal not so stated may be rejected. **Contracts exceeding twelve months must specify annual costs for each year.**
4. Bids **SHOULD BE TOTALED** so that the final cost is clearly stated (unless submitting a unit price bid), however **each item should be priced individually**. Do not group items. Awards may be made on the basis of ***total*** bid or by ***individual items***.
5. All bids **MUST BE SIGNED IN INK.**

Name of Bidder (Firm or Individual):

Contact Name:

Business Address:

Business Phone #:

Contact Email Address:

Agrees to bid on (Write the "Item Description" here):

If the bidder's company is based in a state *other than Rhode Island*, list name and contact information for a local agent for service of process that ***is located within Rhode Island***

Delivery Date (if applicable):

Name of Surety Company (if applicable):

Total Amount in Writing*:

Total Amount in Figures*:

If you are submitting a unit price bid, please insert "Unit Price Bid"

Use additional pages if necessary for additional bidding details.

Signature of Representation

Title

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID FORM 2: Certification of Bidder
(Non-Discrimination/Hiring)

Upon behalf of_____ (Firm or Individual Bidding),

I,_____(Name of Person Making Certification),

being its_____(Title or "Self"), hereby certify that:

1. Bidder does not unlawfully discriminate on the basis of race, color, national origin, gender, sexual orientation and/or religion in its business and hiring practices.
2. All of Bidder's employees have been hired in compliance with all applicable federal, state and local laws, rules and regulations.

I affirm by signing below that I am duly authorized on behalf of Bidder, on this_____day of_____20____.

_____
Signature of Representation

_____
Printed Name

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID FORM 3: Certificate Regarding Public Records

Upon behalf of_____ (Firm or Individual Bidding),

I,_____(Name of Person Making Certification),

being its_____(Title or "Self"), hereby certify an

understanding that:

1. All bids submitted in response to Requests for Proposals (RFP's) and Requests for Qualification (RFQ's), documents contained within, and the details outlined on those documents become public record upon receipt by the City Clerk's office and opening at the corresponding Board of Contract and Supply (BOCS) meeting.
2. The Purchasing Department and the issuing department for this RFP/RFQ have made a conscious effort to request that sensitive/personal information be submitted directly to the issuing department and only at request if verification of specific details is critical the evaluation of a vendor's bid.
3. The requested supplemental information may be crucial to evaluating bids. Failure to provide such details may result in disqualification, or an inability to appropriately evaluate bids.
4. If sensitive information that has not been requested is enclosed or if a bidder opts to enclose the defined supplemental information prior to the issuing department's request in the bidding packet submitted to the City Clerk, the City of Providence has no obligation to redact those details and bears no liability associated with the information becoming public record.
5. The City of Providence observes a public and transparent bidding process. Information required in the bidding packet may not be submitted directly to the issuing department at the discretion of the bidder in order to protect other information, such as pricing terms, from becoming public. Bidders who make such an attempt will be disqualified.

I affirm by signing below that I am duly authorized on behalf of Bidder, on

this_____day of_____20___.

_____

Signature of Representation

_____

Printed Name

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID FORM 4: Affidavit of City Vendor

Per our Code of Ordinances Sec. 21.-28.1 (e), this form applies to a) the business, b) any political action committee whose name includes the name of the business, c) all persons holding ten (10) percent or greater equity interest or five thousand dollars ($5,000.00) or greater cash value interest in the business at any time during the reporting period, d) all executive officers of the business entity, e) any spouse or dependent child of any individual identified in a) though d) above.

Executive officers who are not residents of the state of Rhode Island are exempted from this requirement.

Per R.I.G.L. § 36-14-2, "Business" means a sole proprietorship, partnership, firm, corporation, holding company, joint stock company, receivership, trust, or any other entity recognized in law through which business for profit or not for profit is conducted.

Name of the person making this affidavit: _____

Position in the "Business" _____

Name of Entity _____

Address: _____

Phone number: _____

The number of persons or entities in your entity that are required to report under Sec. 21.-28.1 (e): _____

Read the following paragraph and answer one of the options:

Within the 12 month period preceding the date of this bid submission with the City of Providence, or with respect to the contracts that are not in writing within the 12 month period preceding the date of notification that the contract has reached the $100,000 threshold, have you made campaign contributions within a calendar year to (please list all persons or entities required under Sec. 21.-28.1 (e)).

a. Members of the Providence City Council? ☐ Yes ☐ No
   - If Yes, please complete the following:
     Recipient(s) of the Contribution:
     Contribution Date(s): Contribution Amount(s):

b. Candidates for election or reelection to the Providence City Council? ☐ Yes ☐ No
   - If Yes, please complete the following:
     Recipient(s) of the Contribution:
     Contribution Date(s): Contribution Amount(s):

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

c. The Mayor of Providence? ☐ Yes ☐ No
- If Yes, please complete the following:
  Recipient(s) of the Contribution:
  Contribution Date(s): Contribution Amount(s):

d. Candidates for election or reelection to the office of Mayor of Providence? ☐ Yes ☐ No
- If Yes, please complete the following:
  Recipient(s) of the Contribution:
  Contribution Date(s): Contribution Amount(s):

_____
Signed under the pains and penalties of perjury.

_____
Position

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

MBE/WBE Participation Plan

Please complete separate forms for each MBE/WBE subcontractor/supplier to be utilized on the solicitation.

Bidder's Name:	
Bidder's Address:	
Point of Contact:	
Telephone:	
Email:	
Procurement #:	
Project Name:	
Which one of the following describes your business' status in terms of Minority and/or Woman Owned Business Enterprise certification with the State of Rhode Island? (Check all that apply).	☐ MBE ☐ WBE ☐ Neither MBE nor WBE

This form is intended to capture commitments between the prime contractor/vendor and MBE/WBE subcontractors and suppliers, including a description of the work to be performed and the percentage of the work as submitted to the prime contractor/vendor. Please note that all MBE/WBE subcontractors/suppliers must be certified by the Office of Diversity, Equity and Opportunity at the time of bid. The MBE/WBE Directory can be found here. Please visit, the City's MBE/WBE page for details of the program (e.g. instructions and requirements).

- **Nonprofit organizations are not required to complete the rest of this form.**
- **Construction projects unable to identify subcontractors prior to bid submission (e.g. Design Build) are required to provide updates to the MBE/WBE Outreach Office**

Name of Subcontractor/Supplier:					
Type of RI Certification:	☐ MBE ☐ WBE ☐ Neither				
Address:					
Point of Contact:					
Telephone:					
Email:					
Detailed Description of Work to Be Performed by Subcontractor or Materials to be Supplied by Supplier Per the Scope of Work provided in the RFP					
Total Contract Value ($):		Subcontract Value ($):		Participation Rate (%):	
Anticipated Date of Performance:					

I certify under penalty of perjury that the forgoing statements are true and correct.

Prime Contractor/Vendor Signature	**Title**	**Date**
Subcontractor/Supplier Signature	**Title**	**Date**

***If you did not meet the 20% MBE/WBE combined participation goal, submit a Waiver Request Form.**

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

MBE/WBE Waiver Request Form

Fill out this form only if you did not meet the 20% MBE/WBE participation goal.
State-certified MBE or WBE Prime Bidders are NOT REQUIRED to fill out this form.

Submit this form to the City of Providence MBE/WBE Outreach Director, Grace Diaz, at gdiaz@providenceri.gov, for review **prior to bid submission.** This waiver applies only to the current bid which you are submitting to the City of Providence and does not apply to other bids your company may submit in the future. **In case a waiver is needed, City Department Directors should not** recommend a bidder for an award if this form is not included, absent or is not signed by the city of Providence MBE/WBE director**.**

Prime Bidder: _____ Contact Email and Phone_____
Company Name, Address: _____ Trade _____
Project /Item Description (as seen on RFP):

_____

_____

To receive a waiver, you must list the certified MBE and/or WBE companies you contacted, the name of the primary individual with whom you interacted, and the reason the MBE/WBE company could not participate on this project.

MBE/WBE Company Name	Individual's Name	Company Name	Why did you choose not to work with this company?

I acknowledge the City of Providence's goal of a combined MBE/WBE participation is 20% of the total bid value. I am requesting a waiver of _____ % MBE/WBE (20% minus the value of **Box F** on the Subcontractor Disclosure Form). If an opportunity is identified to subcontract any task associated with the fulfillment of this contract, a good faith effort will be made to select MBE/WBE certified businesses as partners.

Signature of Prime Contractor / or Duly Authorized Representative	Printed Name	Date Signed
Signature of City of Providence MBE/WBE Outreach Director / or Duly Authorized Representative	Printed Name of City of Providence MBE/WBE Outreach Director	Date Signed

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

BID PACKAGE SPECIFICATIONS

Background Information

The City of Providence is seeking quotes from responsible vendors for replacement of the roof at the Zuccolo Recreation Center at 18 Gesler St. The building's roof is well past its life and in serious need of replacement as it is allowing water infiltration into the building causing extensive damage to paint and other finishes. The City has engaged Studio Jaed to develop a new roof design, the documents from which form the basis of design.

Scope of Work

Vendors are requested to provide quotes for replacement of the roof at Zuccolo Recreation Center. The roof area is approximately 8500 sq ft (see drawings), including a barrel roof over the center's gym and flat ballasted roof sections over the rest of the building. The city seeks to replace the current roofing system with a new, long life (30+ year) roofing system which will be durable and require minimal maintenance. This work will include the following items, as laid out in the attached drawing package and specifications including, but not limited to: Demolition of the existing roof membrane system, Installation of a new roofing system including flashing, insulation, new fluid membrane, and sealing around all penetrations, and Installation of a new roof hatch and permanently affixed ladders to enable future roof access for inspection. The total scope of work and requirements for work performed are documented in the attached drawing package and specifications.

The recreation center will remain active during the period of construction, except when work absolutely necessitates closure of the building. The winning bidder will coordinate this work with the owner to minimize the impact to the occupants of the recreation center. To facilitate a minimal impact on important summer programming, the earliest date demolition work may begin is August 16, 2024.

The contractor will be responsible for timely removal of all construction debris and demolished materials from the site. Hazardous materials testing did not identify any asbestos, lead, or other dangerous materials in the existing roof systems.

A pre-bid conference will be held on May 6, 2024 (two weeks after advertisement) at 10 am on site for prospective bidders to inspect the area and ask questions of the design team and the City's representative.

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

PROVISIONS OF THIS PROJECT

- Upon the Issuance of the Award from the Board of Contract – the City shall issue a Contract to be executed by the City and the vendor incorporating the bid specifications. All Provisions of the Specifications are binding.
- Any Permits Required by the City of Providence and/or State of Rhode Island Shall be Obtained by the Vendor – Permit Fees by the City of Providence Shall be Waived – the State ADA Fee Must be Paid
- This project qualifies for prevailing wages per the Davis Bacon Act (HUD). Federal certified payrolls will need to be submitted to the owner for all hours worked on site for this project. The Wage Decision for this project shall be as recorded on the Bid Date and is available at https://sam.gov/content/wage-determinations. Weekly Certified payrolls must be Submitted with Pay Requests Including Monthly Utilization Form
- An Insurance Certificate Shall be Submitted to the City Within 10 Days of Award
- A Copy of the Vendors Contractor's License Must be Submitted within 10 Days of Award
- All On-Site Personnel Shall be Licensed (If Required) and Shall have Proof of All Licenses Required by the State of Rhode Island to Perform the Work Required
- Pay Requests Must be Submitted on Approved AIA Billing Documents (City will Provide if Needed)
- All Subcontractors Shall be Listed on the Bid Form – All Insurance & Payroll Requirements Apply
    - General Contractor Shall be the Insurance Certificate Holder and the City Shall be Named as 'Additionally Insured' with Respect to Liability Insurance
- A Submittal Log Must be Submitted within 10 Days of Award

CLOSE OUT DOCUMENTS

- Prior to Final Payment the Vendor Shall Provide the Following:
    - Copies of Permits Signed off and Approved (If Any)
    - Operating Manuals and Warranties Shall Be Transferred and/or Delivered
    - Full and Completed As-Built Drawings Shall be Submitted for Approval
    - Training Shall be Provided to City Personnel (If Required)
    - Certification by Manufacturers Representative (If Required)

QUALIFICATIONS

Qualifications will be evaluated on the basis of similar project experience for:

a. Completion of similar projects within the last 5 years.
b. Size and dollar value of similar completed projects.
c. Contractor's performance with similar projects. (references will be checked)
d. Relevant experience of individuals assigned to the project.

Questions regarding this bid package shall be submitted via e-mail to **The Providence Purchasing Department** at purchasing@providenceri.gov and **Dan Kittridge, Capital Improvement Project Manager** at dkittridge@providenceri.gov , no later than 12:00pm on Monday, April 29, 2023.

Dan Kittridge is the project contact and can be reached at 401-473-8418

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

SUPPLEMENTAL INFORMATION

If the issuing department for this RFP determines that your firm's bid is best suited to accommodate their need, you will be asked to provide proof of the following prior to formalizing an award.

An inability to provide the outlined items at the request of the department may lead to the disqualification of your bid.

This information is <u>NOT</u> requested to be provided in your initial bid that you will submit to the City Clerk's office by the "date to be opened" noted on page 1. This list only serves as a list of items that your firm should be ready to provide on request.

<u>All bids submitted to the City Clerk become public record</u>. Failure to follow instructions could result in information considered private being posted to the city's Open Meetings Portal and made available as a public record.

You must be able to provide:

- Business Tax ID will be requested after an award is approved by the Board of Contract and Supply.
- Proof of Insurance.
- Certificate of Good Standing with the Rhode Island Secretary of State.
- Contractor Licenses

BOARD OF CONTRACT AND SUPPLY
CITY OF PROVIDENCE, RHODE ISLAND

CITY OF PROVIDENCE STANDARD TERMS & CONDITIONS

1. The terms "you" and "your" contained herein refer to the person or entity that is a party to the agreement with the City of Providence ("the City") and to such person's or entity's employees, officers, and agents.
2. The Request For Proposals ("RFP") and these Standard Terms and Conditions together constitute the entire agreement of the parties ("the Agreement") with regard to any and all matters. By your submission of a bid proposal or response to the City's RFP, you accept these Standard Terms & Conditions and agree that they supersede any conflicting provisions provided by bid or in any terms and conditions contained or linked within a bid and/or response. Changes in the terms and conditions of the Agreement, or the scope of work thereunder, may only be made by a writing signed by the parties.
3. You are an independent contractor and in no way does this Agreement render you an employee or agent of the City or entitle you to fringe benefits, workers' compensation, pension obligations, retirement or any other employment benefits. The City shall not deduct federal or state income taxes, social security or Medicare withholdings, or any other taxes required to be deducted by an employer, and this is your responsibility to yourself and your employees and agents.
4. You shall not assign your rights and obligations under this Agreement without the prior written consent of the City. Any assignment without prior written consent of the City shall be voidable at the election of the City. The City retains the right to refuse any and all assignments in the City's sole and absolute discretion.
5. Invoices submitted to the City shall be payable sixty (60) days from the time of receipt by the City. Invoices shall include support documentation necessary to evidence completion of the work being invoiced. The City may request any other reasonable documentation in support of an invoice.

   The time for payment shall not commence, and invoices shall not be processed for payment, until you provide reasonably sufficient support documentation. In no circumstances shall the City be obligated to pay or shall you be entitled to receive interest on any overdue invoice or payment. In no circumstances shall the City be obligated to pay any costs associated with your collection of an outstanding invoice.
6. For contracts involving construction, alteration, and/or repair work, the provisions of applicable state labor law concerning payment of prevailing wage rates (R.I. Gen. Laws §§ 37-13-1 et seq., as amended) and the City's First Source Ordinance (Providence Code of Ordinances §§ 21-91 et seq., as amended) apply.
7. With regard to any issues, claims, or controversies that may arise under this Agreement, the City shall not be required to submit to dispute resolution or mandatory/binding arbitration. Nothing prevents the parties from mutually agreeing to settle any disputes using mediation or non-binding arbitration.
8. To the fullest extent permitted by law, you shall indemnify, defend, and hold harmless the City, its employees, officers, agents, and assigns from and against any and all claims, damages, losses, allegations, demands, actions, causes of action, suits, obligations, fines, penalties, judgments, liabilities, costs and expenses, including but not limited to attorneys' fees, of any nature whatsoever arising out of, in connection with, or resulting from the performance of the work provided in the Agreement.
9. You shall maintain throughout the term of this Agreement the insurance coverage that is required by the RFP or, if none is required in the RFP, insurance coverage that is considered in your industry to be commercially reasonable, and you agree to name the City as an additional insured on your general liability policy and on any umbrella policy you carry.
10. The City shall not subject itself to any contractual limitations on liability. The City shall have the time permitted within the applicable statute of limitations, and no less, to bring or assert any and all causes of action, suits, claims or demands the City may have arising out of, in connection with, or resulting from the performance of the work provided in the Agreement, and in no event does the City agree to limit your liability to the price of the Agreement or any other monetary limit.

11. The City may terminate this Agreement upon five (5) days' written notice to you if you fail to observe any of the terms and conditions of this Agreement, or if the City believes your ability to perform the terms and conditions of this Agreement has been materially impaired in any way, including but in no way limited to loss of insurance coverage, lapsing of a surety bond, if required, declaration of bankruptcy, or appointment of a receiver. In the event of termination by the City, you shall be entitled to just and equitable compensation for any satisfactory work completed and expenses incurred up to the date of termination.
12. Written notice hereunder shall be deemed to have been duly served if delivered in person to the individual or member of the firm or entity or to an officer of the entity for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known by the party providing notice.
13. In no event shall the Agreement automatically renew or be extended without a writing signed by the parties.
14. You agree that products produced or resulting from the performance of the Agreement are the sole property of the City and may not be used by you without the express written permission of the City.
15. For any Agreement involving the sharing or exchange of data involving potentially confidential and/or personal information, you shall comply with any and all state and/or federal laws or regulations applicable to confidential and/or personal information you receive from the City, including but not limited to the Rhode Island Identity Theft Protection Act, R.I. Gen. Laws § 11-49.3-1, during the term of the Agreement. You shall implement and maintain appropriate physical, technical, and administrative security measures for the protection of, and to prevent access to, use, or disclosure of, confidential and/or personal information. In the event of a breach of such information, you shall notify the City of such breach immediately, but in no event later than twenty-four (24) hours after discovery of such breach.
16. The Agreement is governed by the laws of the State of Rhode Island. You expressly submit yourself to and agree that any and all actions arising out of, in connection with, or resulting from the performance of the Agreement or relationship between the parties shall occur solely in the venue and jurisdiction of the State of Rhode Island or the federal court located in Rhode Island.
17. The failure of the City to require performance of any provision shall not affect the City's right to require performance at any time thereafter, nor shall a waiver of any breach or default of this Agreement constitute a waiver of any subsequent breach or default or a waiver of the provision itself.
18. If any term or provision of this Agreement, or the application thereof to any person or circumstance shall, in any extent, be invalid or unenforceable, the remainder of this Agreement shall not be affected thereby, and each term and provision shall be valid and enforceable to the fullest extent permitted by law.

Project Drawings

Project Specifications

CITY OF PROVIDENCE CDBG PROGRAM
FEDERAL CONSTRUCTION CONTRACT PROVISIONS
FOR CONTRACTS EXCEEDING $100,000

Building Vibrant Neighborhoods

Department of Planning & Development
Division of Housing & Community Development
444 Westminster Street, Suite 3A
Providence, Rhode Island 02903

DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT

INFORMATION FOR BIDDERS
PLEASE READ CAREFULLY!

TO BE CONSIDERED A RESPONSIVE BIDDER
YOUR BID SUBMISSION MUST CONTAIN A BID GUARANTEE EQUIVALENT TO FIVE PERCENT OF THE BID PRICE AND THE FOLLOWING SIGNED AND COMPLETED CERTIFICATIONS:

For Contracts Between $10,000 and $100,000

1. **CERTIFICATION OF CONTRACTOR REGARDING SEGREGATED FACILITIES**
2. **CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY**
3. **MBE/WBE FORMS**

For Contracts Exceeding $100,000

1. **CERTIFICATION OF CONTRACTOR REGARDING SEGREGATED FACILITIES**
2. **CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY**
3. **SECTION 3 AFFIRMATIVE ACTION PLAN**
4. **CONTRACTOR'S DBE/SUBCONTRACTOR UTILIZATION FORM**

= Federal Construction Contract Provisions Exceeding $100,000

Additional certifications by subcontractors prior to the start of work date

1. **For all subcontracts exceeding $10,000; Certification of Subcontractor Regarding Segregated Facilities and Certification of Subcontractor Regarding Equal Employment Opportunity**

2. **For all subcontracts exceeding $100,000; Section 3 Affirmative Action Plan, and Contractor's DBE/Subcontractor Utilization Form.**

3. **MBE/WBE Subcontractor Disclosure Form**

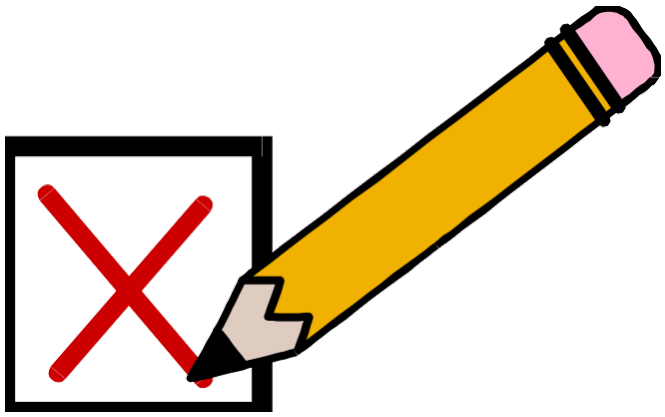
4. **MBE/WBE Waiver Request Form**

Submission of Section 3 Utilization Report for Contracts Exceeding $100,000

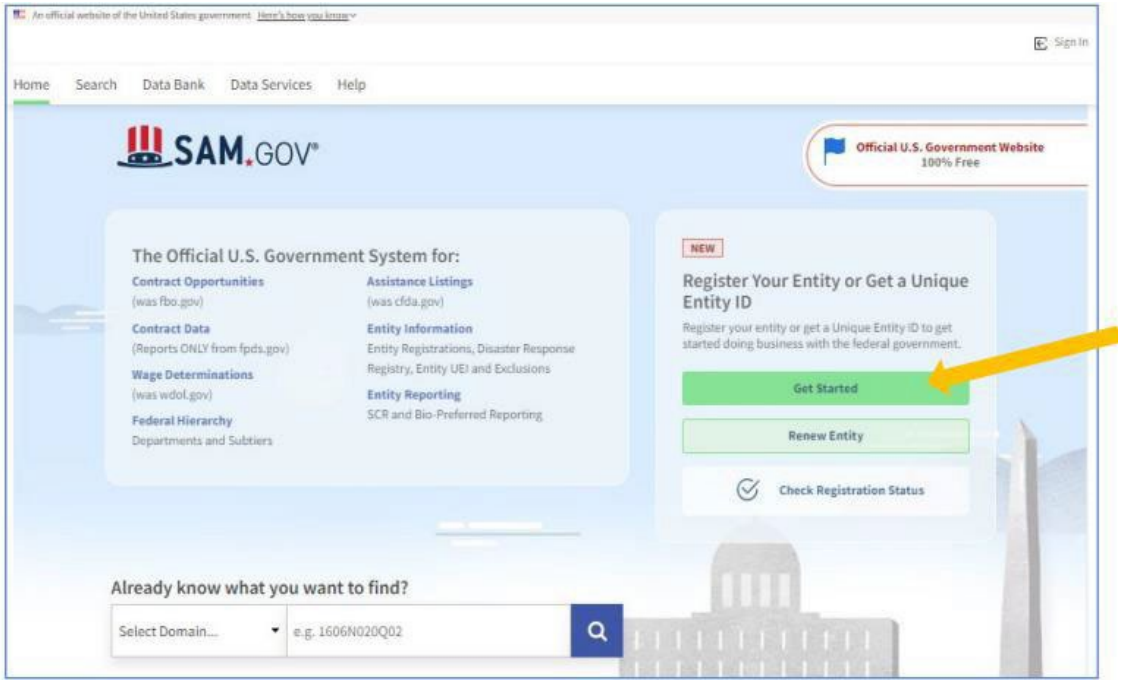
Prime Contractors must submit a Section 3 Utilization Report to the CDBG grantee or their designee prior to final payment of CDBG funds for the project. This Report must include all Section 3 Employees of both the Contractor and all Subcontractors according to the terms of the Section 3 Affirmative Action Plan.

CERTIFICATIONS FOR PRIME BIDDER

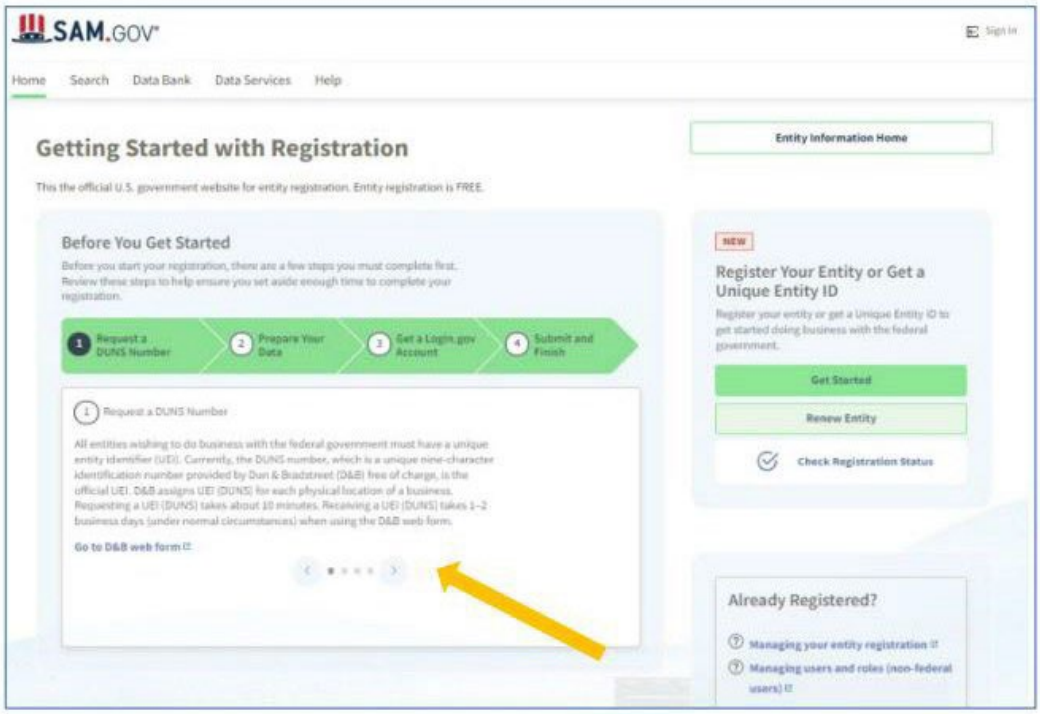
Must be submitted with Bid



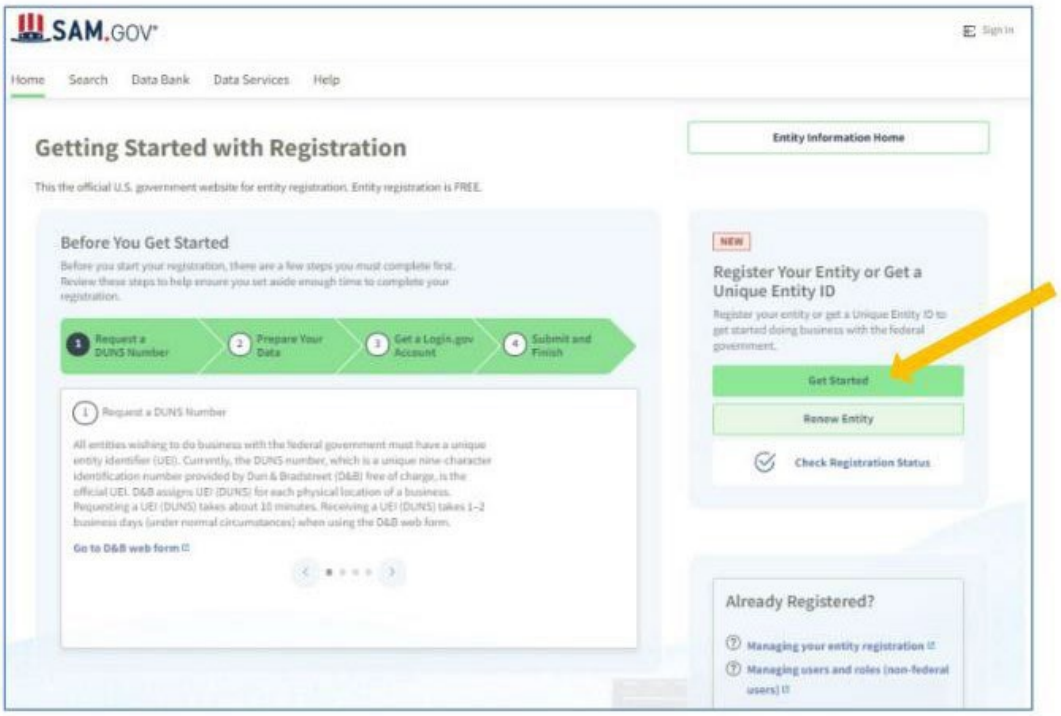
How to Register in SAM & Obtain a Unique Entity ID (SAM)
1: Getting Started There are four steps that you will need to complete: 1) Request a DUNS Number; 2) Prepare Your Data; 3) Get a Login.gov Account; 4) Submit and Finish.
Go to www.sam.gov and click on "Get Started".



Next, review the steps that must be complete prior to registration



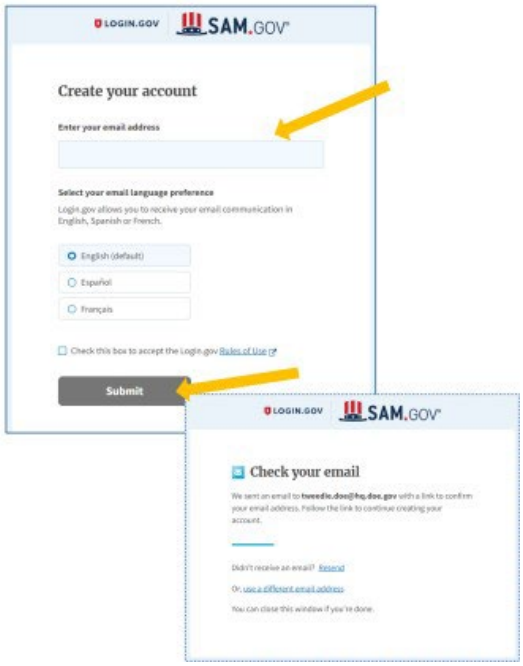
Once a DUNS number has been obtained and all core data about your entity has been gathered, click "Get Started" to create a Login. gov account

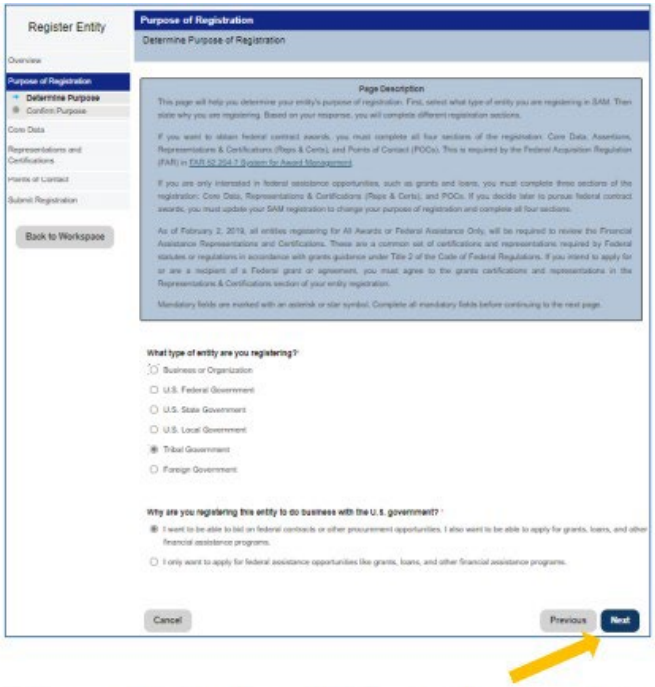


2: Create a Login.gov account

After completing the steps from the previous page, and clicking on "Get Started", you will be directed to Login.gov. Here, click on "Create an account" to create a login.gov account. This account enables you to sign safely and securely into your SAM account.

Enter your email address, accept the Rules of Use, then click on the "Submit" button. Once you submit your email address, you should see a message to check your email.





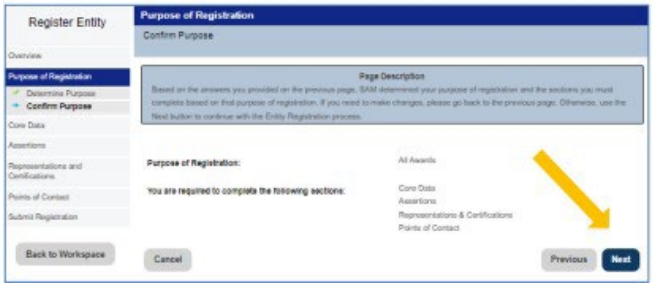
You will now begin the entity registration process, starting with identifying the purpose for registering your entity.

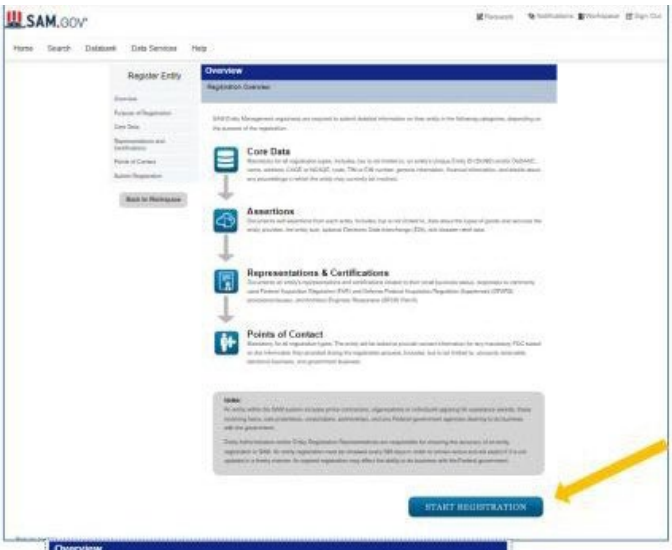
Tip: Read the "Page Description" thoroughly. The following sections and required information are specific to the selections made on this page.

Note: The options shown here were selected for the purpose of this guide.

Click on "Next" to advance.

Based on your selections in the previous sub-section, the subsequent screen will list the required sections that you will need to complete. Confirm the purpose of registration and click "Next" when ready.



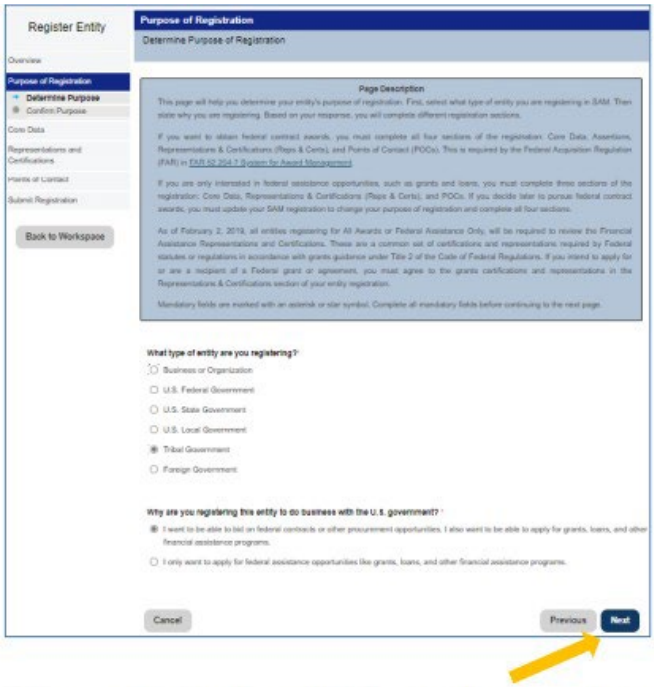


When you click on "Register Entity" in the previous screen, you will see this screen that outlines the next important steps to register your entity. After reviewing, click "Start Registration".

After clicking "Start Registration" in the previous step, the screen shown at left will appear, outlining the information you'll need to provide to register your entity.

- Your Unique Entity ID (DUNS), Legal Business Name, and Physical Address for your Entity.
- Your Taxpayer Identification Number (TIN) and Taxpayer Name associated with your TIN.
- Your bank's routing number, and your bank account type, to set up Electronic Funds Transfer (EFT).

Click "CONTINUE" when ready.



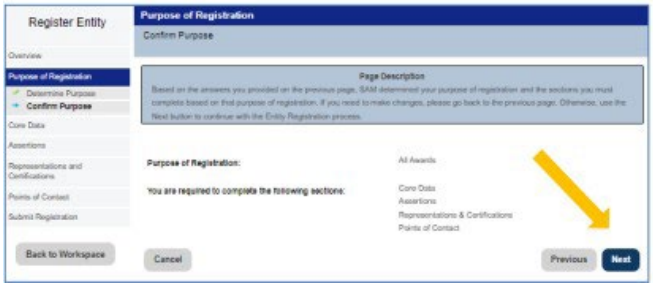
You will now begin the entity registration process, starting with identifying the purpose for registering your entity.

Tip: Read the "Page Description" thoroughly. The following sections and required information are specific to the selections made on this page.

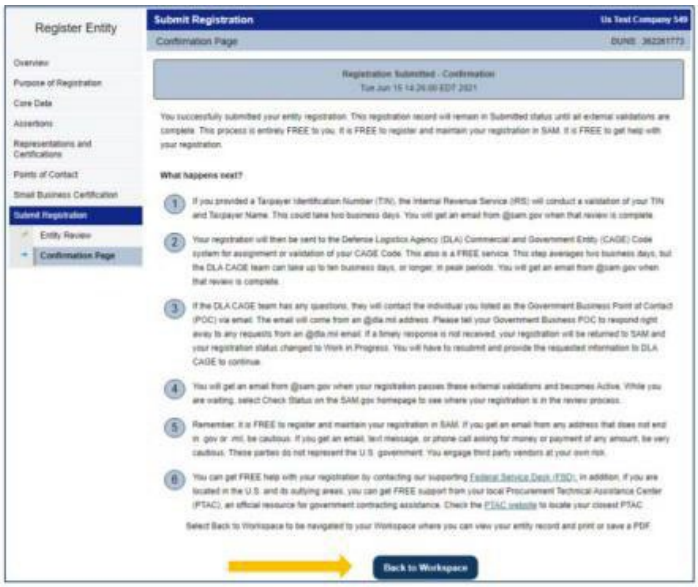
Note: The options shown here were selected for the purpose of this guide.

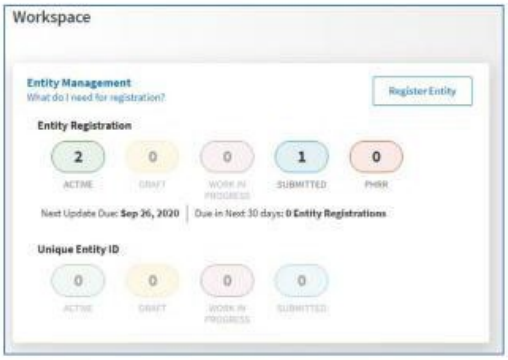
Click on "Next" to advance.

Based on your selections in the previous sub-section, the subsequent screen will list the required sections that you will need to complete. Confirm the purpose of registration and click "Next" when ready.



After submitting your entity registration, a confirmation page will display, providing next steps and the option to return to your SAM Workspace. Review "What happens next?" and then click "Back to Workspace" where you can review, print a copy, or save to PDF your entity record.





In your Workspace you can view your entity and track the registration status. Your registration will remain in the "Submitted" stage until it passes external validations, at which point the entity registration will become "Active".

Your entity's Unique Entity ID (SAM) is automatically assigned when the entity is put into the "Active" status after passing validation. You will then be able to view your Unique Entity ID (SAM) in your Workspace.

You can find help with registering your entity on SAM.gov here https://sam.gov/content/help where you can search the Knowledge Base, "Go to Incident" or "Go to Live Chat".

You may also contact the Federal Service Desk (FSD) by phone at 866-606-8220 Monday – Friday 8:00 a.m. to 8:00 p.m. Eastern Time.

DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT

Additional Submission by Prime Contractor prior to the start of work date

Name of Bidder (Prime Contractor) _____

Employer Identification Number (EIN) _____
(Is also known as Federal Tax Identification Number)

Is your business registered with System for Award Management? Yes___ No___

If NO, please register your business with System for Award Management.

Date of Registration_____

Name of Subcontractor _____

Employer Identification Number (EIN) _____
(Is also known as Federal Tax Identification Number)

Is your business registered with System for Award Management? Yes___ No___

If NO, please register your business with System for Award Management.

Date of Registration_____

_____
Name and Title of Authorized Representative (print or type)

_____ _____
Signature of Authorized Representative **Date**

DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT

CERTIFICATION OF CONTRACTOR REGARDING EQUAL EMPLOYMENT OPPORTUNITY

(For Prime Contracts Exceeding $100,000)

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any other of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause, and if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven (7) calendar days after bid opening. No contract shall be awarded unless such report is submitted.

CERTIFICATION BY BIDDER

Name and address of bidder

_____

_____

_____

1. Bidder has participated in a previous contract or subcontract subject to the EEO Clause.

____ Yes ____ No

2. Compliance reports were required to be filed in connection with such contract or subcontract.

____ Yes ____ No

3. Bidder has filed all compliance reports due under applicable instructions, including SF-100.

____ Yes ____ No

4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended?

____ Yes ____ No

_____
Name and Title of Authorized Representative (print or type)

_____ _____
Signature of Authorized Representative **Date**

DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT

CERTIFICATION OF CONTRACTOR REGARDING SEGREGATED FACILITIES

(For Prime Contracts Exceeding $100,000)

Name of Prime Contractor: _____

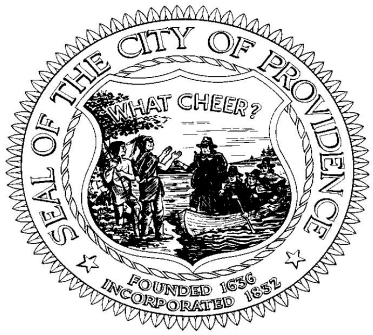
Project Name and Number: _____

The undersigned hereby certifies that:

No segregated facilities will be maintained as required by Title VI of the Civil Rights Act of 1964.

_____
Name and Title of Authorized Representative (print or type)

_____
Signature of Authorized Representative **Date**



DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT
SECTION 3 REQUIREMENTS

Each year the U.S. Department of Housing and Urban Development (HUD) invests billions of federal dollars into distressed communities for projects designed to build and rehabilitate housing, improve roads, develop community centers, and otherwise assist families achieve the American Dream.

The Section 3 regulation recognizes that HUD funding typically results in projects/activities that generate new employment, training and contracting opportunities. These economic opportunities can also positively impact the lives of local residents who live in the neighborhoods being redeveloped.

Section 3 of the Housing and Urban Development Act of 1968 [12 U.S.C. 1701u and 24 CFR Part 135] is HUD's legislative directive for providing preference to low- and very low-income residents of the local community (regardless of race or gender), and the businesses that substantially employ these persons, for new employment, training, and contracting opportunities resulting from HUD-funded projects.

As a condition of receiving HUD assistance recipients certify that they will comply with the requirements of Section 3 annually pursuant to 24 CFR 570.607(b).

Applicability of Section 3 to Community Planning & Development Assistance

Contractors or subcontractors that receive contracts in excess of **$100,000** for Section 3 covered projects/activities are **required to comply** with the Section 3. Accordingly, the recipient must attempt to reach the **Section 3 minimum numerical goals** found at 24 CFR Part 135.30 by:

→ 1) Awarding 10 percent of the total dollar amount of all covered construction contracts to Section 3 businesses; and

→ 2) Offering 30 percent of new employment opportunities to Section 3 businesses.

Recipients that fail to meet the minimum numerical goals above bear the burden of demonstrating why it was not possible to do so. Such justifications should describe the

efforts that were taken, barriers encountered, and other relevant information that will enable the Department to make a compliance determination.

Triggering the Requirements of Section 3

Section 3 is triggered when the normal completion of construction and rehabilitation projects creates the need for **new** employment, contracting, or training opportunities.
The Section 3 regulations should not be construed to mean that recipients are required to hire Section 3 residents or award contracts to Section 3 businesses other than what is needed to complete covered projects/activities. If the expenditure of covered funding does not result in new employment, contracting, or training opportunities, the requirements of Section 3 have not been triggered. However, each agency must still submit Section 3 annual reports indicating this information.

Recipient Responsibilities Pursuant to Section 3

Each recipient (and their covered contractors, subcontractors, or subrecipients) are required to comply with the requirements of Section 3 for employment, training, or contracting opportunities resulting from the expenditure of covered funding. This responsibility includes:

1. Implementing procedures to notify Section 3 residents and business concerns about training, employment, and contracting opportunities generated by Section 3 covered assistance;

2. Notifying potential contractors working on Section 3 covered projects of their responsibilities;

3. Incorporating the Section 3 Clause into all covered solicitations and contracts [see 24 CFR Part 135.38];

4. Facilitating the training and employment of Section 3 residents and the award of contracts to Section 3 business concerns;

5. Assisting and actively cooperating with the Department in making contractors and subcontractors comply;

6. Refraining from entering into contracts with contractors that are in violation of Section 3 regulations;

7. Documenting actions taken to comply with Section 3.

Section 3 Residents and Business Concerns

Section 3 Residents Are:

1. Residents of Public and Indian Housing; or

2. Individuals that reside in the metropolitan area or nonmetropolitan county in which the Section 3 covered assistance is expended and whose income do not exceed the local HUD income limits set forth for low- or very low-income households.

Section 3 Business Concerns Are One of the Following:

1. Businesses that are 51 percent or more owned by Section 3 residents; the business meets the definition of a resident-owned business, as set forth in HUD's regulations at 24 CFR 963.5.

2. The business demonstrates that at least 20 percent of its permanent full-time employees are Section 3 residents and the business either: (i) sponsored a minimum of 10 percent of its current Section 3 employees to attend a DOL or DOL-recognized, State Apprenticeship Agency-approved, registered apprenticeship or pre-apprenticeship training program that meets the requirements outlined in DOL's Employment Training Administration (ETA) Training and Employment Notice 13-121; or (ii) 10 percent of the employees of the business are participants or graduates of a DOL YouthBuild program.2

In accordance with the regulation, residents and businesses concerns seeking Section 3 preference shall certify, or submit evidence to the recipient, contractor, subcontractor or subrecipient (if requested) verifying that they meet the definitions provided above. Some examples include: proof of residency in a public housing authority; proof of federal subsidies for housing, food stamps, or unemployment benefits; and payroll data or other relevant business information.

For additional information, please visit the Section 3 website at: www.hud.gov/section3.

[1] See http://wdr.doleta.gov/directives/corr_doc.cfm?DOCN=5842.

[2] See http://www.doleta.gov/youth_services/youthbuild.cfm.

Section 3 Clause

A. The work to be performed under this contract, subcontract, memorandum of understanding, cooperative agreement or similar legally binding agreement, is subject to the requirements of section 3 of the Housing and Urban Development Act of 196 (Section 3). The purpose of Section 3 is to ensure, to the greatest extent feasible, that training, employment, contracting, and other economic opportunities generated by Section 3 covered financial assistance shall be directed to low- and very low-income residents of the neighborhood where the financial assistance is spent, particularly to those who are recipients of government assistance for housing, and to businesses that are either owned by low- or very low-income residents of the neighborhood where the financial assistance is spent, or substantially employ these persons.

B. The parties to this contract, subcontract, memorandum of understanding, cooperative agreement, or similar legally binding agreement agree to comply with HUD's regulations in 24 CFR part 135, which implement Section 3. As evidenced by their execution of this contract or subcontract memorandum of understanding, cooperative agreement or similar legally binding

agreement the parties certify that they are under no contractual or other impediment that would prevent them from complying with the requirements of 24 CFR part 135.

C. The contractor agrees to identify current employees on its payroll when the contract or subcontract was awarded who will be working on the Section 3 covered project or activity and certify that any vacant employment opportunities, including training positions, that are filled:

1. After the contractor is selected; and

2. With persons other than those that meet the definition of a Section 3 resident, were not filled to circumvent the contractor's Section 3 obligations.

D. The contractor agrees to maintain records documenting Section 3 residents that were hired to work on previous Section 3 covered projects or activities that were retained by the contractor for subsequent Section 3 covered projects or activities.

E. The contractor agrees to post signs advertising new employment, training, or Sub-contracting opportunities that will be available as a result of the Section 3 covered projects and activities in conspicuous places at the work site where potential applicants can review them.

F. The contractor agrees to hire, to the greatest extent feasible, Section 3 residents as 30 percent of new hires, or provide written justification to the recipient that is consistent with § 135.7(b)(4), describing why it was unable to meet minimum numerical hiring goals, despite its efforts to comply with the provisions of this clause.

G. The contractor agrees that in order for a Section 3 resident to be counted as a new hire, the resident must work a minimum of 50 percent of the average staff hours worked for the category of work for which they were hired throughout the duration of time that the category of work is performed on the covered project.

H. The contractor agrees to award, to the greatest extent feasible, 10 percent of the total dollar amount of subsequent subcontracts awarded in connection with the Section 3 covered project or activity to Section 3 businesses, or provide written justification that is consistent with § 135.7(b)(4) describing why it was unable to meet that goal, despite their efforts to comply with the provisions of this clause.

I. The contractor agrees to notify Section 3 residents and businesses about the availability of new employment, training, or contracting opportunities created as a result of the receipt of Section 3 covered financial assistance, as stipulated by the awarding agency.

J. The contractor agrees to verify the eligibility of prospective Section 3 residents and businesses for employment, training, or subcontracting opportunities, in accordance with the recipient's policies and procedures.

K. The contractor agrees to provide priority consideration to eligible residents and businesses in accordance with 24 CFR 135.37 or 24 CFR 135.57, as applicable.

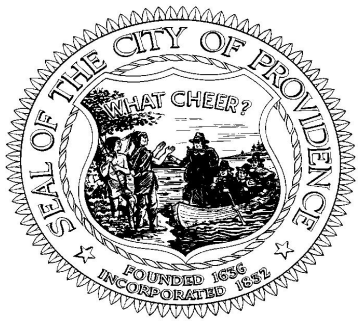
L. The contractor agrees to notify potential bidders on subcontracts that are associated with Section 3 covered projects and activities about the requirements of Section 3, and include this Section 3 clause in its entirety into every subcontract awarded.

M. The contractor agrees to impose sanctions upon any subcontractor that has violated the requirements of this clause in accordance with the awarding agency's Section 3 policies and procedures.

N. The contractor agrees to comply with all monitoring, reporting, recordkeeping, and other procedures specified by the awarding agency.

O. If applicable, the contractor agrees to notify each labor organization or representative of workers with which the recipient, sub-recipient, or contractor has a collective bargaining or similar labor agreement or other understanding, if any, about its obligation to comply with the requirements of Section 3 and ensure that new collective bargaining or similar labor agreements provide employment, registered apprenticeship, training, subcontracting, or other economic opportunities to Section 3 residents and businesses, and to post notices in conspicuous places at the work site advising the labor union, organization, or workers' representative of the contractor's commitments under this part.

P. Failure to comply with this clause shall result in the imposition of sanctions. Appropriate sanctions for noncompliance may include: Requiring additional certifications or assurances of compliance; termination or cancelation of the contract, subcontract, memorandum of understanding, cooperative agreement, or similar legally binding arrangement for default; refraining from entering into subsequent contracts, subcontracts, memoranda of understanding, cooperative agreements, or similar legally binding arrangement; repayment of funds, and withholding a portion of contract awards, subcontracts, memoranda of understanding, cooperative agreements, or similar legally binding arrangements.



DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT
SECTION 3 AFFIRMATIVE ACTION PLAN

(Prime Contractor)
[For Prime Contracts that exceed $100,000]

_____, Contractor, agrees to implement the following specific affirmative action steps directed at increasing the utilization of Section 3 Residents' and Section 3 Business Concerns within the Town/City/County of _____.

A. To ascertain from the locality's CDBG Program official the exact boundaries of the Section 3 Covered Project Area and where advantageous, seek the assistance of local officials in preparing and implementing the affirmative action plan.

B. To attempt to recruit from within the Town/City/County the necessary individuals to fill employment opportunities generated by Section 3 covered assistance through: local advertising media, signs placed at the proposed site for the project, and community organizations and public or private institutions operating within or serving the project area such as Service Employment and Redevelopment (SER), Opportunities Industrialization Center (OIC), Urban League, Concentrated Employment Program, Hometown Plan, or the U.S. Employment Service and providing preference for these opportunities in the following order:

(i) Section 3 Residents residing in the service area or neighborhood in which the Section 3 covered project is located;

(ii) Participants in HLJD Youthbuild Programs, and

(iii) Other Section 3 Residents.

C. To maintain a list of all lower income area residents who have applied either on their own or on referral from any source, and to employ such persons, if otherwise eligible and a vacancy exists.

D. To insert this Section 3 Affirmative Action Plan in all bid documents for contracts over $100,000, and to require all bidders on subcontracts over $100,000 to submit a Section 3

Affirmative Action Plan, including utilization goals and the specific steps planned to accomplish these goals.

E. To insure that subcontracts over $100,000 which are typically let on a negotiated rather than bid basis in areas other than Section 3 covered project areas, are also let on a negotiated basis, whenever feasible, when let in a Section 3 covered project area.

F. To formally contact unions, subcontractors and trade associations to secure their cooperation for this program.

G. To notify Section 3 residents and Section 3 business concerns about economic opportunities generated by Section 3 covered assistance and to award Section 3 covered contracts, to the greatest extent feasible, to Section 3 business concerns in the following order of preference:

(i) Section 3 business concerns that provide economic opportunities for Section 3 residents in the service area or neighborhood in which the Section 3 covered project is located;

(ii) Applicants selected to carry out HUD Youthbuild projects;

(iii) Other Section 3 business concerns.

H. To notify potential contractors about Section 3 requirements of this part, and incorporating the Section 3 clause in all solicitations and contracts.

I. To facilitate the training and employment of Section 3 residents and the award of contracts to Section 3 business concerns undertaking activities to reach the numerical goal established by HLJD.

J. To cooperate in obtaining the compliance of contractors and subcontractors with the requirements of Section 3.

K. To submit reports to DCD and HUD on the results of actions taken to provide training, jobs and contracts to Section 3 residents and Section 3 business concerns.

L. To appoint an executive official of the company or agency as Equal Employment Opportunity Officer to coordinate the implementation of this Section 3 Affirmative Action Plan.

M. To document utilization of Section 3 Employees on the covered project by having new employees, (including those of all subcontractors) from the Section 3 Area, complete the Section 3 Income Worksheet as provided by DCD

N. To complete a Section 3 Utilization Report and submit said report to DCD, HUD, or their designee prior to final payment for the covered project; This report will list all Section 3 Employees documented on the Section 3 Income Worksheets and be in the format provided by DCD.

O. To maintain records, including copies of correspondence, income verification memoranda, etc., which document that all levels of the above affirmative action steps have been taken.

CONTRACTOR CERTIFICATION

As officers and representative of: _____

(Name of Contractor)

On behalf of the Company, I have read and fully agree to the Section 3 Affirmative Action Plan, and become a party to the full implementation of this program.

_____

Name and Title of the Authorized Representative (print or type)

_____

Signature of Authorized Representative Date

CERTIFICATION FOR BUSINESS CONCERNS SEEKING SECTION 3 PREFERENCE IN CONTRACTING AND DEMONSTRATION OF CAPABILITY

Name of Business _____

Address of Business _____

Type of Business: ☐ Corporation ☐ Partnership
☐ Sole Proprietorship ☐ Joint Venture

Attached is the following documentation as evidence of status:

For Business claiming status as a Section 3 resident-owned enterprise:

☐ Copy of resident lease
☐ Copy of evidence of participation in a public assistance program
☐ Copy of receipt of public assistance
☐ Other evidence

For business entity as applicable:

☐ Copy of Articles of Incorporation
☐ Assumed Business Name Certificate
☐ List of owners/stockholders and % ownership of each
☐ Organization chart with names and titles and brief function statement
☐ Certificate of Good Standing
☐ Partnership Agreement
☐ Corporation Annual Report
☐ Latest Board minutes appointing officers
☐ Additional documentation

For business claiming Section 3 status by subcontracting 25 percent of the dollar awarded to qualified Section 3 business:

☐ List of subcontracted Section 3 business(es) and subcontract amount

For business claiming Section 3 status, claiming at least 30 percent of their workforce are currently Section 3 residents or were Section 3 eligible residents within 3 years of date of first employment with the business:

☐ List of all current full-time employees
☐ PHA/IHA Residential lease less than 3 years from day of employment
☐ List of employees claiming Section 3 status
☐ Other evidence of Section 3 status less than 3 years from date of employment

Evidence of ability to perform successfully under the terms and conditions of the proposed contract:

☐ Current financial statement
☐ Statement of ability to comply with public policy
☐ List of owned equipment
☐ List of all contracts for the past two years

_____ (Corporate Seal)
Authorizing Name and Signature

Attested by:_____

____ Original Submission

____ Revision # _____

CONTRACTOR'S DBE/SUBCONTRACTOR UTILIZATION FORM

All Bidders must furnish this form with their bid on Bid Opening day

Contractor: _____ **Telephone:** _____ **Ext.** _____

Contact Person: _____ **Fax:** _____

E-mail: _____

BID PRICE: $ _____ **BID DATE:** ____/____/____

PROJECT # _____ **PROJECT LOCATION:** _____

TOTAL ANTICIPATED DBE _____ **% PARTICIPATION FOR THIS SUBMISSION**

WBE•	DBE•	Non DBE	Firm Name	Item Number & Description of Work	Quantity	Cost per Unit/Item	Actual $ Value
						Subcontractor Total ›	
						DBE Total >	

NOTE: THIS INFORMATION IS USED TO TRACK AND REPORT ANTICIPATED DBE PARTICIPATION IN FEDERALLY FUNDED CDBG CONTRACTS. THE ANTICIPATED DBE AMOUNT IS VOLUNTARY AND WILL NOT BECOME A PART OF THE CONTRACTUAL TERMS.

Equal Opportunity Use:

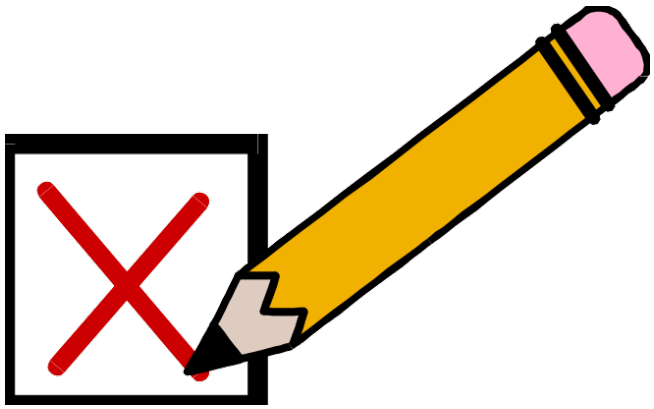
Form received: ___/___/___ Verified by: _____

cc: ☐ Contracts ☐ Other _____

For a complete list of certified firms and company designation (WBE/DBE) go to http://www.providenceri.gov

SECTION 3 UTILIZATION REPORT

Must be submitted by Prime Contractor
Prior to receiving final payment of CDBG funds



DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT

SECTION 3 UTILIZATION REPORT

(To be Completed for all Prime Contracts Exceeding $100,000)

A. SECTION 3 EMPLOYEE INFORMATION

Name of CDBG Grantee: _____

Name of Project: _____

CDBG Project Number: _____ **Wage Decision Number:** _____

Number of Section 3 Employees Utilized on Project by Prime Contractor: _____

Number of Section 3 Employees Utilized on Project by Subcontractors: _____

Total Number of Section 3 Employees Utilized on Project: _____

B. CERTIFICATION OF PRIME CONTRACTOR

As officer and representative of: _____
Name of Prime Contractor

Address: _____

_____

Telephone Number: _____

On behalf of the Company, I hereby certify that the above information is true and accurate and is reported fully as required by the Section 3 Affirmative Action Plan as part of the contract for this CDBG assisted construction project. It is further understood that final payment from the City of Providence CDBG Program for this project cannot be made until this Report is submitted to the CDBG Grantee or authorized designee.

_____

Name and Title of Authorized Representative **(print or type)**

_____

Signature of Authorized Representative **Date**

==========

= Federal Construction Contract Provisions Exceeding $100,000

DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT

DIRECTIONS FOR COMPLETION OF
SECTION 3 UTILIZATION REPORT

(For Prime Contracts Exceeding $100,000)

1. Determine if there has been Section 3 participation in the construction project.

a. If you hire <u>new</u> employees who <u>reside in the county where the construction is taking place</u> to work on the CDBG project, have them complete the one page Section 3 Income Worksheet and return it to you. Compare the Worksheet to the Section 3 Income Schedule provided you at the pre-construction conference to determine if they are Section 3 eligible.

b. Distribute copies of the Section 3 Income Worksheet to <u>all</u> subcontractors you engage for the project. Instruct them to have any <u>new</u> employees they hire who <u>reside in the county where the construction is taking place</u> complete the worksheet and have the subcontractors return the forms to you. Compare as in (a.), above to determine Section 3 eligibility.

2. Retain all Section 3 Income Worksheets with your project records.

3. Complete (A) Section 3 Employee Information area of the report.

a. Enter name of the community where the project is located.

b. Enter project name.

c. Enter CDBG Project Number & Federal Wage Decision Number. (Located in wage decision documents)

d. Enter number of Section 3 Employees you utilized on project.

e. Enter number of Section 3 Employees utilized by subcontractors on project

f. Enter total number (d + e) of Section 3 Employees utilized on project

4. Complete (B) Certification by Prime Contractor area of Report

a. List your name, address and telephone number of your company.

b. Print or type name and title of authorized company representative.

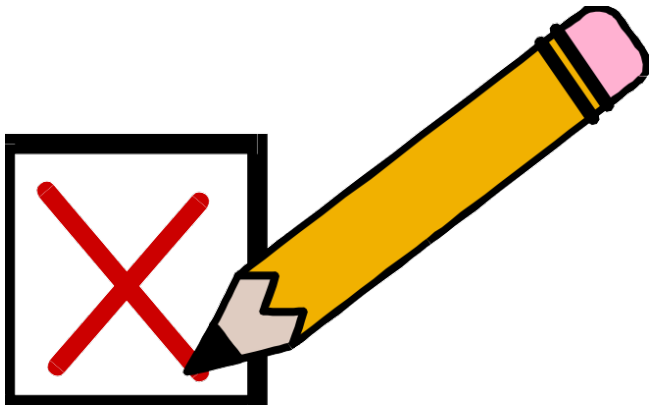
c. Have authorized representative sign and date Report.

IMPORTANT REMINDER!

Final payment of CDBG funds will not be made until Section 3 Utilization Report is submitted to CDBG grantee or designee

CERTIFICATIONS FOR SUBCONTRACTORS

Must be submitted by Prime Contractor
For each applicable Subcontractor prior to start of work



DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT

CERTIFICATION OF SUBCONTRACTOR REGARDING EQUAL EMPLOYMENT OPPORTUNITY

(For Subcontracts)
INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any other of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause, and if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven (7) calendar days after bid opening. No contract shall be awarded unless such report is submitted.

CERTIFICATION BY SUBCONTRACTOR

Name and address of subcontractor

_____

_____

_____

1. Bidder has participated in a previous contract or subcontract subject to the EEO Clause.

____ Yes ____ No

2. Compliance reports were required to be filed in connection with such contract or subcontract.

____ Yes ____ No

3. Bidder has filed all compliance reports due under applicable instructions, including SF-100.

____ Yes ____ No

4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended?

____ Yes ____ No

_____

Name and Title of Authorized Representative (print or type)

_____

Signature of Authorized Representative **Date**

DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT

CERTIFICATION OF SUBCONTRACTOR REGARDING SEGREGATED FACILITIES

(For Subcontracts)

Name of Subcontractor: _____

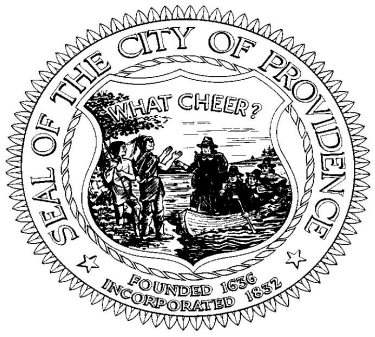
Project Name and Number: _____

The undersigned hereby certifies that:

No segregated facilities will be maintained as required by Title VI of the Civil Rights Act of 1964.

_____
Name and Title of Authorized Representative (print or type)

_____
Signature of Authorized Representative **Date**



DEPARTMENT OF PLANNING & DEVELOPMENT
DIVISION OF HOUSING & COMMUNITY DEVELOPMENT
SECTION 3 AFFIRMATIVE ACTION PLAN

(Subcontractor)
[For Subcontracts that exceed $100,000]

_____, Subcontractor, agrees to implement the following specific affirmative action steps directed at increasing the utilization of Section 3 Residents' and Section 3 Business Concerns within the Town/City/County of _____.

A. To ascertain from the locality's CDBG Program official the exact boundaries of the Section 3 Covered Project Area and where advantageous, seek the assistance of local officials in preparing and implementing the affirmative action plan.

B. To attempt to recruit from within the Town/City/County the necessary individuals to fill employment opportunities generated by Section 3 covered assistance through: local advertising media, signs placed at the proposed site for the project, and community organizations and public or private institutions operating within or serving the project area such as Service Employment and Redevelopment (SER), Opportunities Industrialization Center (OIC), Urban League, Concentrated Employment Program, Hometown Plan, or the U.S. Employment Service and providing preference for these opportunities in the following order:

(i) Section 3 Residents residing in the service area or neighborhood in which the Section 3 covered project is located;

(ii) Participants in HLJD Youthbuild Programs, and

(iii) Other Section 3 Residents.

C. To maintain a list of all lower income area residents who have applied either on their own or on referral from any source, and to employ such persons, if otherwise eligible and a vacancy exists.

D. To insert this Section 3 Affirmative Action Plan in all bid documents for contracts over $100,000, and to require all bidders on subcontracts over $100,000 to submit a Section 3

Affirmative Action Plan, including utilization goals and the specific steps planned to accomplish these goals.

E. To insure that subcontracts over $100,000 which are typically let on a negotiated rather than bid basis in areas other than Section 3 covered project areas, are also let on a negotiated basis, whenever feasible, when let in a Section 3 covered project area.

F. To formally contact unions, subcontractors and trade associations to secure their cooperation for this program.

G. To notify Section 3 residents and Section 3 business concerns about economic opportunities generated by Section 3 covered assistance and to award Section 3 covered contracts, to the greatest extent feasible, to Section 3 business concerns in the following order of preference:

(i) Section 3 business concerns that provide economic opportunities for Section 3 residents
in the service area or neighborhood in which the Section 3 covered project is located;

(ii) Applicants selected to carry out HUD Youthbuild projects;

(iii) Other Section 3 business concerns.

H. To notify potential contractors about Section 3 requirements of this part, and incorporating the Section 3 clause in all solicitations and contracts.

I. To facilitate the training and employment of Section 3 residents and the award of contracts to Section 3 business concerns undertaking activities to reach the numerical goal established by HLJD.

J. To cooperate in obtaining the compliance of contractors and subcontractors with the requirements of Section 3.

K. To submit reports to DCD and HUD on the results of actions taken to provide training, jobs and contracts to Section 3 residents and Section 3 business concerns.

L. To appoint an executive official of the company or agency as Equal Employment Opportunity Officer to coordinate the implementation of this Section 3 Affirmative Action Plan.

M. To document utilization of Section 3 Employees on the covered project by obtaining income information from new project area employees on the Section 3 Income Worksheet.

N. To provide all Section 3 Income Worksheets to the prime contractor for inclusion in the Section 3 Utilization Report prior to receipt of final payment of CDBG funds.

O. To maintain records, including copies of correspondence, income verification memoranda, etc., which document that all levels of the above affirmative action steps have been taken.

SUBCONTRACTOR CERTIFICATION

As officers and representative of: _____
(Name of Subcontractor)

On behalf of the Company, I have read and fully agree to the Section 3 Affirmative Action Plan, and become a party to the full implementation of this program.

_____
Name and Title of the Authorized Representative (print or type)

_____ _____
Signature of Authorized Representative Date

FEDERAL REQUIREMENTS

1. TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

(P.L. 88-352), as amended, (42 USC 2000d) and the requirements imposed by the Regulations of the Department of Commerce (15 CFR Part 8) issued pursuant to that Title. In accordance therewith no person in the United States shall, on the grounds of race, handicap, color, sex, national origin or familial status be excluded from participation in, be denied the benefits or be otherwise subjected to discrimination under any program or activity which is paid for with federal funds. The Owner further adds that there shall not be any form of discrimination by any party in any CDBG contract on the basis of familial status, sexual orientation or sex.

2. REHABILATATION ACT OF 1973

29 USC 794, Executive Order 11914, Section 504. No otherwise qualified handicapped individual shall, solely by reason of his/her handicap, be denied the benefits of, be excluded from participation in, or be subjected to discrimination under any program or activity receiving federal financial assistance.

3. SECTION 202 OF EXECUTIVE ORDER 11246

A. Activities and contracts not subject to Section 202

(Applicable to Federally assisted construction contracts and related subcontracts of $10,000 and under.)

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

1. The contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor shall take affirmative action to ensure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex**,** or national origin. Such action 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.

2. The contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this non-discrimination clause. The Contractor shall state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

3. Contractors shall incorporate foregoing requirements in all subcontracts.

B. Activities and contracts subject to Section 202

Applicable to Federally assisted construction contracts and related subcontracts exceeding $10,000

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

1.a) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action 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 setting forth the provisions of this nondiscrimination clause.

b) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration without regard to race, color, religion, sex, or national origin.

c) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Contract Compliance Officer advising the said labor union or workers' representative of the contractor's commitment under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

d) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

e) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the Department and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

f) In the event of the contractor's noncompliance with the non-discrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

g) The contractor will include the provisions of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the Department may direct as a means of enforcing such provision, including sanctions for non-compliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Department the contractor may request the United States to enter into such litigation to protect the interest of the United States.

2. The applicant hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on -the credit of the Federal Government pursuant to a grant, contract, loan insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

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

a) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin, such action sham 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 setting forth the provisions of this nondiscrimination clause.

b) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor; state that all qualified applicants WM receive considerations for employment without regard to race, color, religion, sex, or national origin.

c) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract of understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and- applicants for employment.

d) The contractor will comply with all provisions of Executive, Order 11246 of September 24, 1965, and the rules, regulations, and relevant orders of the Secretary of Labor.

e) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for 'purposes of investigation to ascertain compliance with such rules, regulations, and orders.

f) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

g) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the Untied States to enter into -such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, that the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract. Or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity

clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of labor pursuant to Part IL Subpart D of the Executive order. In addition, the applicant agrees that if it fails or refuses to comply within these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

3. CERTIFICATION OF NONSEGREGATED FACILITIES AS REQUIRED BY THE MAY 19, 1967, ORDER (32 F.R. 74390 ON ELIMINATION OF SEGREGATED FACILITIES, BY THE SECRETARY OF LABOR

Prior to the award of any construction contract or subcontract exceeding $10,000, the Contractor shall submit signed Certification of Nonsegregated Facilities Forms for him/herself and all subcontractors.

4. THE AGE DISCRIMINATION ACT OF 1975

No person in the United States shall, on the basis of age, be excluded from participation or be denied the benefits of, or be subjected to discrimination under, any program or activity undertaken with federal funds.

5. SECTION 109 OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974

No person in the United States shall on the ground of race, color, national origin, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under Title I of the Housing and Community Development Act of 1974.

6. SECTION 3 OF THE HOUSING AND URBAN DEVELOPMENT ACT OF 1968

In connection with the planning and carrying out of any project assisted with CDBG funds, and to the greatest extent feasible, opportunities for training and employment should be given to lower-income persons residing within the unit of local government in which the project is located, and contracts for work in connection with the project should be awarded to eligible business concerns which are located in, or owned in substantial part by persons residing -in, the same unit of local government in which the project is located. And that this contract, or any subcontracts, must adhere to and contain what is referred to as the Section 3 Clause, and which follows in its entirety:

Section 3 Clause:

a) The work to be performed under this contracts subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 170lu

(section 3). 'Me purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low-and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

b) The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

c) The contract agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. 'Me contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.

f) Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default and debarment or suspension from future HUD assisted contracts.

g) With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education assistance Act (25 U.S.C 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of

sections 3 and 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with sec 7(b).

7. LABOR STANDARDS

a) Davis-Bacon Act as amended (40 U.S.C 276a - 276a-5.) All laborers and mechanics employed by contractors or subcontractors, including employees of other governments, on construction work assisted under this contract, and subject to the provisions of the federal acts and regulations listed in this paragraph, shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act.

b) Contract Work Hours and Safely Standards Act (40 U.S.C. 327-333). All laborers and mechanics employed by contractors or subcontractors shall receive overtime compensation in accordance with and subject to the provisions of the Contract Work Hours and Safety Standards Act, and the contractors and subcontractors shall comply with all regulations issued pursuant to these acts and with other applicable Federal laws and regulations pertaining to labor standards.

c) Copeland Anti-Kickback Act requires that workers be paid at least once a week, and without any deductions or rebates except permissible deductions.

8. TITLE IV OF THE LEAD BASED PAINT POISONING PREVENTION ACT

LEAD-BASED PAINT HAZARDS -The use of lead-based paint, that is any paint containing more than 1%- lead by weight, is strictly prohibited from use on any interior surface or exterior surface in any building being rehabilitated with funding from the Community Development program. Additionally, any evidence of a health hazard, which is, defined as cracking, scaling, peeling and loose lead-based paint must be treated to prevent the ingestion of the contaminated paint. It is further necessary to assume that any of the above conditions constitute an immediate or potential hazard and must be corrected using appropriate methods.

9. THE UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION POLICIES ACT OF 1970

(P.L. 91-646 as amended), 15 CFR Part 916 including amendments thereto and regulations there under, as provided by 1. M.R.SA 901 et seq. The Contractor and Grantee will ensure that all work performed under this Agreement will be done in accordance with this act.

10. THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (P.l. 90-190); THE NATIONAL HISTORIC PRESERVATION ACT OF 1966 (80 Stat 915, 16 USC 470); AND EXECUTIVE ORDER NO. 11593 OF MAY 31, 1971.

The chief executive officer of the Grantee consents to assume the status of a responsible Federal official under the National Environmental Policy Act of 1969 (NEPA) and other provisions of Federal law, as specified in 24 CTR 58, which further the purposes of NEPA in the areas of historic preservation, noise control floodplains, coastal zones and wetlands, air

quality, water quality, wildlife, endangered species, solid waste disposal, and environmental effects abroad.

The chief executive officer is authorized and consents on behalf of the Grantee and himself to accept the jurisdiction of the federal courts for the purpose of enforcement of his responsibilities as such an official.

11. THE FLOOD DISASTER PROTECTION ACT OF 1963 (P.L 93-234), AS AMENDED.

The Grantee will fulfill any flood insurance requirements under this Act and any regulations issued there under which NOAA may issue.

12. ARCHITECTURAL BARRIERS ACT (P.L 90-480), 42 USC 4151, AS AMENDED, and the regulations issued or to be issued there under, prescribing standards for the design and construction of any building or facility intended to be accessible to the public or which may result in the employment of handicapped persons therein.

13. THE CLEAN AIR ACT AS AMENDED, 42 USC 1857 ED SEQ.9 THE FEDERAL WATER POLLUTION CONTROL ACT, AS AMENDED, 33 USC 1251 et seq. and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended from time to time.

In no event shall any amount of the assistance provided under this Agreement be utilized with respect to a facility, which has given rise to a conviction under section 113(c) (1) of the Clean Air Act or section 309(c) of the Federal Water Pollution Control Act.

14. MINORITY BUSINESS ENTERPRISES

Referenced in Executive Order #11625, OMEB Circular A-102 Attachment 0 Procurement Standards. Grantees are to give priority to Minority Business Enterprises in purchase of supplies, equipment, construction, and services.

15. CDBG CERTIFICATION

Grantee shall provide any certification required under Sections 104(b), 106(d)(5) or under any other provision of Title I of the Housing and Community Development Act of 1974 as amended through 1983, including Amendments made by the Housing and Urban Rural Recovery Act of 1983, and shall comply with the terms of such certifications.

16. SECTION 319 OF PUBLIC LAW 101-121

The grantee shall comply with the requirements of Section 319 of Public Law 101-121 regarding government wide restrictions on lobbying.

SPECIAL CONDITIONS PERTAINING TO HAZARDS, SAFETY STANDARDS AND ACCIDENT PREVENTION

A. Lead-Based Paint Hazards

(Applicable to contracts for construction or rehabilitation of residential structures) The construction or rehabilitation of residential structures is subject to the HUD Lead-Based Paint regulations, 24 CFR Part 35. The contractor and Subcontractors shall comply with the provisions for the elimination of lead-based paint hazards under sub-part B of said regulations. The Owner will be responsible for the inspections and certifications required under Section 35.14(f) thereof.

B. Use of Explosives

When the use of explosives is necessary for the prosecution of the work, the Contractor shall observe all local, state and federal laws in purchasing and handling explosives. The Contractor shall take all necessary precautions to protect completed work, neighboring property, water lines, or other underground structures. Where there is danger to structures or property from blasting, the charges shall be reduced and the material shall be covered with suitable timber, steel or rope mats. The Contractor shall notify all owners of public utility property of intention to use explosives at least eight hours before blasting is done, close to such property. Any supervision of direction of use of explosives by the Engineer does not in any way reduce the responsibility of the Contractor or his Surety for damages that may be caused by such use.

C. Danger Signals and Safely Devices

The Contractor shall make all necessary precautions to guard against damages to property and injury to persons. He shall put up and maintain in good condition, sufficient red or warning lights at night, suitable barricades and other devices necessary to protect the public. In case the Contractor fails or neglects to take such precautions, the Owner may have such lights and barricades installed and charge the cost of this work to the Contractor. Such action by the Owner does not relieve the Contractor of any liability incurred under these specifications or contract.

Applicability

The Project of Program to which the Construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A.1. (i) Minimum Wages. All laborers and mechanics employed or working up on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction of development of the project) will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers of mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification or work actually performed, without regard to skill, excepts as provided in 29 CFR Part 5.5 (a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFT part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contact shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their

representatives, and HUD or its designee on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1) (b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withhold from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much that the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or

under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract. HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic record relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b) (2) (B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonable anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) or the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits ins enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a) (3) (i). except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site *http://www.dol.gov/esa/whd/forms/wh347instr.htm* or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide

them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less that the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a property executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph AA.3. (ii)(b) of this section.

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code. (iii) The contractor of subcontractor shall make the records required under paragraph A.3. (i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.

4. (i) Apprentices and Trainees. Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in

his or her first 90 days of probationary employment as an apprentice in such an apprentice program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the age determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the even the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less that the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and

participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirement of Executive Order 11246, s amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor will insert in any subcontract the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all contract clauses in 29 CFR Part 5.5

7. Contracts termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor as provided in 29 CFR 5.12

8. Compliance with Davis-Bacon and Related Act Requirements. All ruling and interpretations of the Davis-Bacon and Related Act contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering in to this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act of 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty to making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration transaction", provides in part: "Whoever, for the purpose of …influencing in any way the action of such

Administration…makes, utter of publishes any statement, knowing the same to be false…shall be fined not more than $5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work I excess of forty hours I such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) or this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of $25 for each calendar day on which such individual was required or permitted to work in excess of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages for liquidated damages. HUD or its designees shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold of cause to be withheld form any moneys payable on account of work performed by the contractor or subcontractor under any such contract or nay other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidates damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety

(1) No laborer or mechanic shall be required to work in surrounding or under working conditions that are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly Part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96). 40 USC 3701 et seq.

(3) The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

CITY OF PROVIDENCE
DEPARTMENT OF PUBLIC PROPERTY

ZUCCOLO RECREATION CENTER
ROOF REPLACEMENT

18 GESLER
Providence, RI 02909

FEBRUARY 2024

Prepared By:

StudioJAED Architects & Engineers
42 Weybosset Street
Suite 403
Providence, RI 02903
Phone # (401)-648-0884

SECTION 00 01 10

TABLE OF CONTENTS

2.05 DIVISION 06 -- WOOD, PLASTICS, AND COMPOSITES

A. 06 10 00 - Rough Carpentry

2.06 DIVISION 07 -- THERMAL AND MOISTURE PROTECTION

A. 07 01 50 - Preparation for Re-Roofing
B. 07 22 00 - Roof Insulation
C. 07 54 24 – PVC Thermoplastic Adhered Sheet Roofing Systems w/SSM Rib
D. 07 55 00 - Modified Bituminous Membrane Roofing
E. 07 62 00 - Sheet Metal Flashing and Trim
F. 07 71 00 - Roof Specialties
G. 07 72 00 - Roof Accessories
H. 07 72 33 – Roof Hatches
I. 07 92 00 - Joint Sealants

END OF SECTION

SECTION 00 11 13

ADVERTISEMENT FOR BIDS

1. The City of Providence Board of Contract and Supply: Request for Proposal
   a. The publicly available RFP prepared by the city contains procurement and contracting requirements such as the following:
      1) Pre-Bid Conference dates and locations
      2) WMBE participation requirements
      3) Instructions for bid submissions
      4) Bid forms & Bid Package Checklist
      5) Bid Terms and Conditions

   b. If there are any discrepancies or conflicts between the general conditions of these specifications and the procurement and contracting requirements in the RFP, then the information in the RFP will override.

END OF SECTION

SECTION 00 31 00
AVAILABLE PROJECT INFORMATION

PART 1 GENERAL

1.01 EXISTING CONDITIONS

A. Hazardous Material Survey: Entitled VORTEX Asbestos Containing Building Material Report and Lead Paint Walls and Ceiling Inspection Report, attached herein.

B. Roof Core Test Report: Entitled GARLAND COMPANY

C. Tapered Insulation Plan

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 10 00
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: City of Providence, Zuccolo Recreation Center Roof Replacement.

B. Owner's Name: City of Providence.

C. Architect's Name: StudioJAED Architects & Engineers.

D. The Project consists of the low slope and barrel vault roof replacement at Zuccolo Recreation Center.

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price

1.03 DESCRIPTION OF ALTERATIONS WORK

A. Scope of work is as indicated on the drawings and as noted below:
   1. Existing roof assembly, roof edge and roof accessory removal.
   2. Replacement with new roof assembly, edge metal, and accessories.

1.04 ADDITIONAL PROJECT REQUIREMENTS

A. The Contractor is responsible for all required applications, reviews, permits, and associated fees. All fees shall be included in the Contractor's bid proposal.

1.05 WORK BY OWNER

A. Owner reserves the right to complete work or award separate contracts for work in and around the work area during this contract.

1.06 OWNER OCCUPANCY

A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.

B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

C. Schedule the Work to accommodate Owner occupancy.

1.07 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on Drawings.
   1. Locate and conduct construction activities in ways that will limit disturbance to site.

B. Arrange use of site and premises to allow:
   1. Owner occupancy.
   2. Work by Others.
   3. Use of site and premises by the public.

C. Provide access to and from site as required by law and by Owner:
   1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit.

D. Contractor shall be required to provide temporary sanitary facilities.

E. Existing building spaces may not be used for storage.

F. Time Restrictions:
   1. Days/Hours of construction shall be limited to Monday thru Friday, 7:00 am to 5:00 pm. Work outside of these hours must be coordinated in advance with the Owner/City..

G. Utility Outages and Shutdown:

1. Limit disruption of utility services to hours the building is unoccupied.
2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.
3. Prevent accidental disruption of utility services to other facilities.

1.08 WORK SEQUENCE

A. Coordinate construction schedule and operations with Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 20 00
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures for preparation and submittal of applications for progress payments.

B. Documentation of changes in Contract Price and Contract Time.

C. Change procedures.

D. Correlation of Contractor submittals based on changes.

E. Procedures for preparation and submittal of application for final payment.

1.02 SCHEDULE OF VALUES

A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.

B. Forms filled out by hand will not be accepted.

C. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.

D. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization.

E. Revise schedule to list approved Change Orders, with each Application For Payment.

1.03 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.

C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.

D. Forms filled out by hand will not be accepted.

E. For each item, provide a column for listing each of the following:
   1. Item Number.
   2. Description of work.
   3. Scheduled Values.
   4. Previous Applications.
   5. Work in Place and Stored Materials under this Application.
   6. Authorized Change Orders.
   7. Total Completed and Stored to Date of Application.
   8. Percentage of Completion.
   9. Balance to Finish.
   10. Retainage.

F. Execute certification by signature of authorized officer.

G. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.

H. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.

I. Submit one copy of each Application for Payment electronically.

J. Include the following with the application:
   1. Transmittal letter as specified for submittals in Section 01 30 00.
   2. Construction progress schedule, revised and current as specified in Section 01 30 00.
   3. Current construction photographs specified in Section 01 30 00.

4. Partial release of liens from major subcontractors and vendors.
5. Affidavits attesting to off-site stored products.

K. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.04 MODIFICATION PROCEDURES

A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to the Contract Documents.

B. For minor changes not involving an adjustment to the Contract Price or Contract Time, Architect will issue instructions directly to Contractor.

C. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
1. The document will describe the required changes and will designate method of determining any change in Contract Price or Contract Time.
2. Promptly execute the change.

D. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 5 days.

E. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 60 00.

F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
3. For pre-determined unit prices and quantities, the amount will based on the fixed unit prices.
4. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.

G. Substantiation of Costs: Provide full information required for evaluation.
1. On request, provide the following data:
   a. Quantities of products, labor, and equipment.
   b. Taxes, insurance, and bonds.
   c. Overhead and profit.
   d. Justification for any change in Contract Time.
   e. Credit for deletions from Contract, similarly documented.
2. Support each claim for additional costs with additional information:
   a. Origin and date of claim.
   b. Dates and times work was performed, and by whom.
   c. Time records and wage rates paid.
   d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

H. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.

J. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

K. Promptly enter changes in Project Record Documents.

1.05 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Price, previous payments, and sum remaining due.

B. Application for Final Payment will not be considered until the following have been accomplished:
1. All closeout procedures specified in Section 01 70 00.

1.06 INITIAL PROGRESS PAYMENT PROCEDURES

A. The following items must be complete and submitted to the owner prior to acceptance and/or payment of the initial application for payment:
1. Approved Schedule of Values
2. Complete listing of Subcontractors
3. Contractors Safety Plan
4. Emergency Action Plan and Emergency Contacts
5. Contractors Certificate of Insurance
6. Contractors Submittal Schedule
7. Approved Contractor's Construction Schedule (Preliminary if not final)

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 22 00
UNIT PRICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. List of unit prices, for use in preparing Bids.

B. Measurement and payment criteria applicable to Work performed under a unit price payment method.

1.02 RELATED REQUIREMENTS

A. Document 00 43 22 - Unit Prices Form: List of Unit Prices as supplement to Bid Form

1.03 COSTS INCLUDED

A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.04 UNIT QUANTITIES SPECIFIED

A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.05 MEASUREMENT OF QUANTITIES

A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.

B. Take all measurements and compute quantities. Measurements and quantities will be verified by Architect.

C. Assist by providing necessary equipment, workers, and survey personnel as required.

D. Measurement by Area: Measured by square dimension using mean length and width or radius.

1.06 PAYMENT

A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.

1.07 SCHEDULE OF UNIT PRICES

A. Item: Concrete Deck Repair; Section 030100.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 25 00
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

A. Requests for substitution must be made ten days prior to bid. Requests for substitution made after the bid may be considered by the Owner/Architect at their discretion and only under extra-ordinary conditions that could not be determined during the bidding period.

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

1.03 SUMMARY

A. This Section includes administrative and procedural requirements for handling requests for substitutions.

B. Related Sections: The following Divisions contain requirements that relate to this Section:
   1. Division 01 specifies that applicability of industry standards to products specified.
   2. Division 01 specifies requirements for submitting the Contractor's Construction Schedule and the Submittal Schedule.
   3. Division 01 specifies requirements governing the Contractor's selection of products and product options.

1.04 DEFINITIONS

A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents

B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor. The following are not considered to be requests for substitutions:
   1. Revisions to the Contract Documents requested by the Owner or Architect.
   2. Specified options of products and construction methods included in the Contract Documents.
   3. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.05 SUBMITTALS

A. Substitution Request Submittal: Substitution requests will only be considered during the bidding period. Substitutions will not be considered after the bids are accepted.
   1. Submit three copies of each request for substitution for consideration. Submit requests in the form and according to procedures required for change order proposals and utilizing the CSI Substitution Request Form 13.1A. The contractor is solely responsible for obtaining the required forms to submit before the stated time period expires.
   2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
   3. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
      a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors that will be necessary to accomodate the proposed substitution.
      b. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability , and visual effect.

c. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
d. Samples, where applicable or requested.
e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed subsitution on overall Contract Time.
f. Cost information, including a proposal of the net change, if any in the Contract Sum.
g. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.
h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

4. Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. The Architect will notify the Contractor of acceptance or rejection of the substitution within two weeks of receipt of the request, or one week of receipt of additional information or documentation, whichever is later.
   a. Use the product specified if the Architect cannot make a decision on the use of a proposed substitute within the time allocated.

PART 2 PRODUCTS

2.01 SUBSTITUTIONS

A. Conditions: The Architect will receive and consider the Contractor's request for substitution when the following conditions are satisfied, as determined by the Architect. If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.
   1. Revisions to the Contract Documents are not required.
   2. Proposed changes are in keeping with the general intent of the Contract Documents.
   3. The request is timely, fully documented, and properly submitted.
   4. The specified product or method of construction cannot be provided within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
   5. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner's additional responsiblities may include compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.
   6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
   7. The specified product or method of construction cannot be provided ina amanner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
   8. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.

B. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
2. Agrees to provide the same warranty for the substitution as for the specified product.
3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
5. Waives claims for additional costs or time extension that may subsequently become apparent.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. Contractor's Substitution Request documentation must include the following:
      a. Project Information:
         1) Official project name and number, and any additional required identifiers established in Contract Documents.
         2) Owner's, Architect's, and Contractor's names.
      b. Substitution Request Information:
         1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
         2) Indication of whether the substitution is for cause or convenience.
         3) Issue date.
         4) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
         5) Description of Substitution.
         6) Reason why the specified item cannot be provided.
         7) Differences between proposed substitution and specified item.
         8) Description of how proposed substitution affects other parts of work.
      c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
         1) Physical characteristics.
         2) In-service performance.
         3) Expected durability.
         4) Visual effect.
         5) Sustainable design features.
         6) Warranties.
         7) Other salient features and requirements.
         8) Include, as appropriate or requested, the following types of documentation for proposed substitution and for specified product in order to expedite review:
            (a) Product Data:
            (b) Samples.
            (c) Certificates, test, reports or similar qualification data.
            (d) Drawings, when required to show impact on adjacent construction elements.
      d. Impact of Substitution:
         1) Savings to Owner for accepting substitution.
         2) Change to Contract Time due to accepting substitution.

D. Limit each request to a single proposed substitution item.
   1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Owner will consider requests for substitutions only if submitted at least 10 days prior to the date for receipt of bids.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Under extra-ordinary conditions, submit request for Substitution for Cause immedately upon discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

B. Substitutions will not be considered under one or more of the following circumstances:
   1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
   2. Without a separate written request.
   3. When acceptance will require revisions to Contract Documents.

3.04 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

END OF SECTION

SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 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.

1.02 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on the project including, but not limited to, the following:
   1. General project coordination procedures.
   2. Coordination Drawings.
   3. Administrative and supervisory personnel.
   4. Project meetings.

B. Related Sections
   1. Division 01 Section "Closeout Procedures" for coordinating Contract closeout.

C. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.

1.03 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information from each other during construction.

1.04 COORDINATION

A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
   1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
   2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.

B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
   1. Prepare similar memoranda for the Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of the Contractor's Construction Schedule.
   2. Preparation of the Schedule of Values.
   3. Installation and removal of temporary facilities and controls.
   4. Delivery and processing of submittals.
   5. Progress meetings.
   6. Pre-installation conferences.
   7. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.05 REQUESTS FOR INFORMATION (RFIS)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
   1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
   2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
   1. Project name
   2. Project number
   3. Date
   4. Name of Contractor
   5. Name of Architect
   6. RFI number, numbered sequentially
   7. RFI subject
   8. Specification Section number and title and related paragraphs, as appropriate
   9. Drawing number and detail references, as appropriate
   10. Field dimensions and conditions, as appropriate
   11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI
   12. Contractor's signature
   13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
      a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within [10] ten days of receipt of the RFI response

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

D. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log bi-weekly.

1.06 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
   1. Indicate relationship of components shown on separate Shop Drawings.
   2. Indicate required installation sequences.
   3. Refer to Division 15 Section "Basic Mechanical Materials and Methods" and Division 16 Section "Basic Electrical Materials and Methods" for specific Coordination Drawing requirements for mechanical and electrical installations.

B. Staff Names: Within 15 days of starting construction operations, submit a list of principal staff
   1. assignments, including superintendent and other personnel in attendance at the Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to the Project.

2. Post copies of list in the Project meeting room, in temporary field office, and by each temporary telephone.

1.07 PROJECT MEETINGS

A. General: Meetings shall be schedule by the Owner and shall be conducted at the Project site, unless otherwise indicated.
   1. Attendees: Architect shall inform participants and others involved, and individuals whose presence is required, of date and time of each meeting.
   2. Agenda: Contractor shall prepare the meeting agenda and distribute the agenda to all invited attendees.
   3. Minutes: Contractor shall record significant discussions and agreements achieved and distribute the meeting minutes to everyone concerned within 5 days of the meeting.

B. Preconstruction Conference: Owner shall schedule a preconstruction conference before starting Construction. Conference shall be held at the conference at the Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
   1. Attendees: Authorized representatives of the Owner, the Architect and their consultants, the Contractor and its superintendent, and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
   2. Agenda: Discuss items of significance that could affect progress, including the following:
      a. Tentative construction schedule
      b. Phasing
      c. Critical work sequencing
      d. Designation of responsible personnel
      e. Procedures for processing field decisions and Change Orders
      f. Procedures for processing Applications for Payment
      g. Distribution of the Contract Documents
      h. Submittal procedures
      i. Preparation of Record Documents
      j. Use of the premises
      k. Responsibility for temporary facilities and controls
      l. Parking availability
      m. Office, work, and storage areas
      n. Equipment deliveries and priorities
      o. First aid
      p. Security
      q. Progress cleaning
      r. Working hours

C. Progress Meetings:Owner shall schedule the Progress Meetings at bi-weekly intervals.
   1. Agenda:
      a. Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of the Project.
      b. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to the Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
         1) Contractor shall issue a three-week look ahead schedule in advance of each Progress Meeting.

2) Contractor shall revised the Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. At a minimum, the updated Construction Schedule shall be issued with each Application for Payment.

c. Review present and future needs of each entity present, including the following:
   1) Interface requirements
   2) Sequence of operations
   3) Status of submittals
   4) Deliveries
   5) Off-site fabrication
   6) Access
   7) Site utilization
   8) Temporary facilities and controls
   9) Work hours
   10) Hazards and risks
   11) Progress cleaning
   12) Quality and work standard
   13) Change Orders
   14) Documentation of information for payment requests

2. Reporting: Contractor to record minutes and distribute copies within five days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

SECTION 01 32 00
CONSTRUCTION PROGRESS

PART 1 - GENERAL

1.01 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.

1.02 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Preliminary Construction Schedule.
   2. Contractor's Construction Schedule.
   3. Submittals Schedule.
   4. Daily construction reports.
   5. Material location reports.
   6. Field condition reports.
   7. Preconstruction Photographs
   8. Construction photographs.

B. Related Sections include the following:
   1. Division 01 Section "Payment Procedures" for submitting the Schedule of Values.
   2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
   3. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
   4. Division 01 Section "Closeout Procedures" for submitting construction photographs as Project Record Documents at Project closeout.

1.03 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
   1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
   2. Predecessor activity is an activity that must be completed before a given activity can be started.

B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

C. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Event: The starting or ending point of an activity.

E. Float: The measure of leeway in starting and completing an activity.
   1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
   2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
   3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

F. Major Area: A story of construction, a separate building, or a similar significant construction element.

G. Milestone: A key or critical point in time for reference or measurement.

H. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.

I. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.04 SUBMITTALS

A. Qualification Data: For firms and persons specified in "Quality Assurance" Article and in-house scheduling personnel 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.

B. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tubular format:
   1. Scheduled date for first submittal.
   2. Specification Section number and title.
   3. Submittal category (action or informational).
   4. Name of subcontractor.
   5. Description of the Work covered.

C. Contractor's Construction Schedule: Submit three printed copies of initial schedule, one a reproducible print and one a blue- or black-line print, large enough to show entire schedule for entire construction period.

D. CPM Reports: Concurrent with CPM schedule, submit three printed copies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float.
   1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
   2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
   3. Total Float Report: List of all activities sorted in ascending order of total float.

E. Photographic Documentation:
   1. Preconstruction Photographs: Before commencement of demolition, take color, digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
   2. Periodic Construction Photographs: Take 12,coclor, digital photographs monthly with timing each month adjust to coinside with the cutoff date associated with each Application for Payment. Select vantage points to show stataus of construction and progress since last photgraphs wre taken.
      a. Digital Images: Submit a complete set of digital image electronic files to Monday.com board. Identify electronic media with date photographs were taken.

1.05 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting.

1.06 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.01 SUBMITTALS SCHEDULE

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
   1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
   2. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.02 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. CPM Schedule: Prepare Contractor's Construction Schedule using a CPM network analysis diagram.
   1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 15 days after date established for the Notice to Proceed..
   2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
   3. Use "one workday" as the unit of time.

B. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.
   1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in realtion to other activities. Include estimated time frames for the following activities:
      a. Preparation and processing of submittals
      b. Mobilization and demobilization
      c. Purchase of materials
      d. Delivery
      e. Fabrication
      f. Utility interruptions
      g. Installation
      h. Work by Owner that may affect or be affected by Contractor's activities
      i. Testing
   2. Processing: Process data to produce output data or a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
   3. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
      a. Subnetworks on separate sheets are permissible for activities clearly off the critical
      b. path.

C. Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting. Include the following:
   1. Identification of activities that have changed.
   2. Changes in early and late start dates.
   3. Changes in early and late finish dates.

4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time
    a. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

2.03 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
    1. List of subcontractors at Project site.
    2. List of separate contractors at Project site.
    3. Approximate count of personnel at Project site.
    4. High and low temperatures and general weather conditions.
    5. Accidents.
    6. Meetings and significant decisions.
    7. Unusual events (refer to special reports).
    8. Stoppages, delays, shortages, and losses.
    9. Meter readings and similar recordings.
    10. Emergency procedures.
    11. Orders and requests of authorities having jurisdiction.
    12. Change Orders received and implemented.
    13. Construction Change Directives received.
    14. Services connected and disconnected.
    15. Equipment or system tests and startups.
    16. Partial Completions and occupancies.
    17. Substantial Completions authorized.

B. Material Location Reports: At monthly intervals, prepare a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare a detailed report. Submit with a request for information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 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.

1.02 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
   1. Process designated submittals for the Project electronically through designated email system.

1.03 DEFINITIONS

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

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

C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

D. Email System: A method to transmit certain electronic submittals between the Contractor, Architect, and Owner, via email.
   1. For consistency, the standard file format will be PDF. Convert paper originals and other file formats to PDF prior to submission.
   2. In the event of system malfunction, submittals shall be processed in accordance with the Architect's instructions, until the system malfunction has been corrected.
   3. For this Project, process the following submittal types through the designated email system:
      a. Product Data.
      b. Shop Drawings.
      c. Product Schedules.
      d. Qualification Data.
      e. Certificates (Welding, Installer, Manufacturer, Product, and Material, as applicable).
      f. Test Reports (Material, Product, Preconstruction, Compatibility, and Field, as applicable).
      g. Research Reports.
      h. Warranty (sample).
      i. Design Data, including calculations.
      j. Coordination Drawings.
      k. Delegated-Design Services Certifications.
   4. For Samples, provide electronic submittal of Sample cover sheet, identifying location and actual delivery date of Samples. Deliver Samples to location (Architect's office, Project site, etc.) as directed by the Architect.
      a. Architect will identify delivery location(s) after receipt and review of Contractor's Submittal Schedule.

1.04 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit a schedule of submittals indicating scheduled date for each submission. Factor time required for review, ordering, manufacturing, fabrication, and delivery when establishing submission dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
   1. Submit concurrently with the first complete submittal of Contractor's construction schedule.
   2. Format: Arrange the following information in a tabular format:
      a. Specification Section number and title.
      b. A/E Number.
         1) Architect will furnish Contractor with unique "A/E Number" designation for each required submittal.
      c. Submittal category: Action; informal.
      d. Submittal type: Product Data, Shop Drawings, Samples, etc.
      e. Description of the Work covered.
      f. Scheduled date for first submittal.

1.05 COLOR SCHEDULE

A. Color Schedule: Within 30 days after date of Notice of Award, submit a complete list of proposed manufacturers and complete product designations (i.e. model, grade, series, product line, etc.) for each item requiring color selection by Architect.

1.06 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   2. Where indicated, submit all submittal items required for each Specification Section concurrently.
   3. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
      a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Processing Time: Allow sufficient time for submittal review, including time for resubmittals. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

C. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
   1. Include a cover sheet on each submittal item for identification. Do not combine different submittals under same cover sheet; only one submittal is to be provided per email.
      a. Cover Sheet: Use PDF version of sample form included in Project Manual. Complete each item on form, sign and date. Architect will furnish PDF version of sample form.
   2. Name submittal file as directed by Architect.
   3. Transmit each submittal via email using subject line as directed by Architect.
   4. Send submittal to designated Project-specific email address:
      a. Use the following email address: donnellyt@studiojaed.com.

D. Resubmittals: Make resubmittals in same form and, for non-electronic submittals, in the same number of copies as initial submittal.
   1. Note date and content of revision in label or title block and clearly indicate extent of revision.
   2. Resubmit submittals until they are marked with approval notation from Architect.

3. Refer to Supplementary Conditions for provisions allowing Owner to obtain reimbursement from the Contractor for amounts paid to the Architect for evaluation of certain resubmittals.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect.

PART 2 - PRODUCTS

2.01 SUBMITTAL PROCEDURES, GENERAL

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

2.02 ELECTRONIC SUBMITTAL PROCEDURES

A. Use the designated email system for submittals in this Article.
   1. Submit electronic submittals via email as PDF electronic files.
      a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
   1. Mark submittal to show which products and options are applicable.
   2. Include the following information, as applicable:
      a. Manufacturer's catalog cuts.
      b. Statement of compliance with specified referenced standards.
      c. Testing by recognized testing agency.
   3. For equipment, include the following in addition to the above, as applicable:
      a. Printed performance curves.
      b. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.
   1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
      a. Identification of products.
      b. Schedules.
      c. Compliance with specified standards.
      d. Notation of dimensions established by field measurement.
      e. Relationship and attachment to adjoining construction clearly indicated.
      f. Seal and signature of professional engineer if specified.

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

E. Certificates:
   1. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
5. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

F. Test Reports:
1. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
2. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
3. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
4. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
5. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

G. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

H. Warranty: Submit sample warranties as required in individual Specification Sections.

I. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

J. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."

K. Delegated-Design Services Certification: Submit certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.
2. In addition, for a project in New Jersey, provide three paper copies of certificate, signed and sealed (with raised seal) by the responsible design professional.

2.03 NON-ELECTRONIC SUBMITTAL PROCEDURES

A. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
    a. Generic description of Sample.
    b. Product name and name of manufacturer.
    c. Sample source.
    d. Number and title of applicable Specification Section.
3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available. Number of Samples: Submit three full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return one submittal with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
    a. Number of Samples: Submit three sets of Samples. Architect will return one set.
        1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

B. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
    1. Name, address, and telephone number of entity performing subcontract or supplying products
    2. Number and title of related Specification Section(s) covered by subcontract.
    3. Submit subcontract list in the following format:
        a. Number of Copies: Four paper copies of subcontractor list, unless otherwise indicated. Architect will return one copy.

C. Key Personnel Names: No later than 15 days after date of Notice of Award, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site.
    1. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including emergency, office, and cellular telephone numbers and email addresses.
        a. Number of Copies: Four paper copies of key personnel list, unless otherwise indicated.

D. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

E. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

2.04 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

B. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

PART 3 - EXECUTION

3.01 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Identify any deviations from Contract Document requirements. Mark cover sheet with approval before submitting to Architect.
   1. Sign and date statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.02 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will mark submittal appropriately to indicate action, as follows:
   1. Final Unrestricted Release: Where the submittal is marked "Approved," the Work covered by the submittal may proceed provided it complies with the Contract Documents. Final acceptance will depend on that compliance.
   2. Final-but-Restricted Release: Where the submittal is marked "Approved as Noted," the Work covered by the submittal may proceed provided it complies both with Architect's notations and corrections on the submittal and the Contract Documents. Final acceptance will depend on that compliance.
   3. Resubmit: Where the submittal is marked "Approved, Revise and Return Corrected Copies," the Work covered by the submittal may proceed provided it complies both with Architect's notations and corrections on the submittal and the Contract Documents. Revise submittal according to Architect's notations and corrections and return corrected copies. Final acceptance will depend on that compliance.
   4. Rejected: Where the submittal is marked "Rejected," do not proceed with the Work covered by the submittal. Prepare a new submittal for a product that complies with the Contract Documents.
   5. Incomplete - Resubmit: Where the submittal is marked "Incomplete, Submit Additional Information," do not proceed with the Work covered by the submittal. Prepare additional information requested, or required by the Contract Documents, that indicates compliance with requirements, and resubmit.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Limit information submitted to specific products indicated. Do not submit extraneous matter. Submittals containing excessive extraneous matter will be returned for resubmittal withou review.

F. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION

SECTION 01 35 53
SECURITY PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Security measures including formal security program, entry control, personnel identification, and miscellaneous restrictions.

B. Background check must be completed with the Bureau of Criminal Identification and Investigation prior to construction start.

1.02 RELATED REQUIREMENTS

A. Section 01 10 00 - Summary: Use of Premises and occupancy.

B. Section 01 50 00 - Temporary Facilities and Controls: Temporary lighting and barriers and enclosures.

1.03 SECURITY PROGRAM

A. Protect Work, existing premises and Owner's operations from theft, vandalism, and unauthorized entry.

B. A background check must be completed with the Bureau of Criminal Identification and Investigation prior to construction start.

C. Initiate program at project mobilization.

D. Initiate program in coordination with Owner's existing security system at project mobilization.

E. Maintain program throughout construction period until Owner acceptance precludes the need for Contractor security.

F. Maintain program throughout construction period until directed by Owner.

1.04 ENTRY CONTROL

A. Restrict entrance of persons and vehicles into Project site and existing facilities.

B. Allow entrance only to authorized persons with proper identification.

C. Owner will control entrance of persons and vehicles related to Owner's operations.

1.05 PERSONNEL IDENTIFICATION

A. Provide identification badge to each person authorized to enter premises.

B. Badge to Include: Personal photograph, name, expiration date and employer.

C. Maintain a list of accredited persons, submit copy to Owner on request.

D. Require return of badges at expiration of their employment on the Work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Control of installation.

B. Tolerances.

C. Testing and inspection services.

D. Manufacturers' field services.

1.02 RELATED REQUIREMENTS

A. Section 01 42 16 - Definitions.

PART 3 EXECUTION

2.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have Work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

2.02 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

2.03 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, as applicable, and to initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

2.04 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not conforming to specified requirements.

B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 42 16
DEFINITIONS

PART 1 GENERAL

1.01 SUMMARY

A. Other definitions are included in individual specification sections.

1.02 DEFINITIONS

A. Furnish: To supply, deliver, unload, and inspect for damage.

B. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use.

C. Product: Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.

D. Project Manual: The book-sized volume that includes the procurement requirements (if any), the contracting requirements, and the specifications.

E. Specifications: Same as Project Manual.

F. Provide: To furnish and install.

G. Supply: Same as Furnish.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary utilities.

B. Temporary sanitary facilities.

C. Temporary Controls: Barriers, enclosures, and fencing.

D. Security requirements.

E. Vehicular access and parking.

F. Waste removal facilities and services.

1.02 TEMPORARY UTILITIES

A. Owner will provide the following:
   1. Electrical power and metering, consisting of connection to existing facilities.
   2. Water supply, consisting of connection to existing facilities.
   3. Contractor shall be responsible to tie to existing utility services and make distribution to the construction site.

1.03 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required portable toilets and enclosures. Provide at time of project mobilization.

B. Maintain daily in clean and sanitary condition.

1.04 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades required by Owner and governing authorities for public rights-of-way and for public access to existing building.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

E. Traffic Controls: Coordinate with the Owner.

1.05 FENCING

A. Provide 6 foot high fence around on-grade storage areas; equip with vehicular and pedestrian gates with locks.

1.06 EXTERIOR ENCLOSURES

A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.07 INTERIOR ENCLOSURES

A. Provide temporary partitions as indicated and as otherwise required to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and and reinforced polyethyline with plywood overlay sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.08 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

B. Coordinate with Owner's security program.

C. Provide background check for any/all employees who enter building.

1.09 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Owner.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. Existing parking areas may be used for construction parking. Owner shall designate parking areas to be used by contractor.

1.10 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site daily.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.11 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary work.

C. Restore existing facilities used during construction to original condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Transportation, handling, storage and protection.

B. Product option requirements.

C. Substitution limitations and procedures.

1.02 RELATED REQUIREMENTS

A. Section 01 25 00 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

B. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.

1.03 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by the Contract Documents.

2.02 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

A. See Section 01 25 00 - Substitution Procedures.

B. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.

C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

D. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Will provide the same warranty for the substitution as for the specified product.

3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension that may subsequently become apparent.

E. Substitution Submittal Procedure:
1. Submit one electronic copy of request for substitution for consideration, including all required supporting materials. Limit each request to one proposed substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
3. Where color selections or physical comparison must be made, submit physical samples.
4. The Architect will notify Contractor in writing of decision to accept or reject request.

3.02 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

E. For exterior storage of fabricated products, place on sloped supports above ground.

F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

G. Comply with manufacturer's warranty conditions, if any.

H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

I. Prevent contact with material that may cause corrosion, discoloration, or staining.

J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 61 16

VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for VOC-Content-Restricted products.

1.02 RELATED REQUIREMENTS

A. Section 01 30 00 - Administrative Requirements: Submittal procedures.

1.03 DEFINITIONS

A. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
   1. Exterior and interior paints and coatings applied on site.
   2. Exterior and interior adhesives and sealants applied on site.

B. Interior of Building: Anywhere inside the exterior weather barrier.

C. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

D. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

1.05 QUALITY ASSURANCE

A. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
   1. Evidence of Compliance: Acceptable types of evidence are:
      a. Report of laboratory testing performed in accordance with requirements.

B. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 PRODUCTS

2.01 MATERIALS

A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.

B. VOC-Content-Restricted Products: VOC content not greater than required by the following:
   1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule.
   2. Joint Sealants: SCAQMD 1168 Rule.
   3. Paints and Coatings: Each color; most stringent of the following:
      a. 40 CFR 59, Subpart D.
      b. SCAQMD 1113 Rule.
      c. CARB (SCM).

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.

B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

SECTION 01 70 00
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Pre-installation meetings.

C. Cutting and patching.

D. Surveying for laying out the work.

E. Cleaning and protection.

F. Starting of systems and equipment.

G. Demonstration and instruction of Owner personnel.

1.02 RELATED REQUIREMENTS

A. Section 01 10 00 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.

B. Section 01 30 00 - Administrative Requirements: Submittals procedures.

C. Section 01 40 00 - Quality Requirements: Testing and inspection procedures.

D. Section 01 50 00 - Temporary Facilities and Controls: Temporary interior partitions.

E. Section 01 51 00 - Temporary Utilities: Temporary heating, cooling, and ventilating facilities.

F. Section 01 74 19 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.

G. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.

H. Section 01 81 13 - Sustainable Design Requirements

1.03 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.

1.05 PROJECT CONDITIONS

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
   1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
   2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.

F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

1.06 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate sections.

G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Architect four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
   1. Review conditions of examination, preparation and installation procedures.
   2. Review coordination with related work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

F. Utilize recognized engineering survey practices.

G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
   2. Grid or axis for structures.
   3. Building foundation, column locations, ground floor elevations.

H. Periodically verify layouts by same means.

I. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.

B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

F. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as shown.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.

C. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
   2. Relocate items indicated on drawings.

D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
   2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
   3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
      a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
      b. Provide temporary connections as required to maintain existing systems in service.
   4. Verify that abandoned services serve only abandoned facilities.
   5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

E. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.

F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
   1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
   2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.

3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.

G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

H. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

I. Clean existing systems and equipment.

J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

K. Do not begin new construction in alterations areas before demolition is complete.

L. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. Perform whatever cutting and patching is necessary to:
1. Complete the work.
2. Fit products together to integrate with other work.
3. Provide openings for penetration of mechanical, electrical, and other services.
4. Match work that has been cut to adjacent work.
5. Repair areas adjacent to cuts to required condition.
6. Repair new work damaged by subsequent work.
7. Remove samples of installed work for testing when requested.
8. Remove and replace defective and non-conforming work.

C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

D. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

E. Restore work with new products in accordance with requirements of Contract Documents.

F. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

G. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material , to full thickness of the penetrated element.

H. Patching:
1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
2. Match color, texture, and appearance.
3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.08 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

E. NE CHPS - For phased, occupied renovations HEPA vacuum the carpet daily in the occupied areas.

3.09 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Prohibit traffic from landscaped areas.

H. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.10 SYSTEM STARTUP

A. Coordinate schedule for start-up of various equipment and systems.

B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

D. Verify that wiring and support components for equipment are complete and tested.

E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

F. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.11 DEMONSTRATION AND INSTRUCTION

A. See Section 01 79 00 - Demonstration and Training.

3.12 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.13 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

E. Clean filters of operating equipment.

F. Clean debris from roofs, gutters, downspouts, and drainage systems.

G. Clean site; sweep paved areas, rake clean landscaped surfaces.

H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.14 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.

B. Notify Architect when work is considered ready for Substantial Completion.

C. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.

D. Owner will occupy all of the building as specified in Section 01 10 00.

E. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas.

F. Notify Architect when work is considered finally complete.

G. Complete items of work determined by Architect's final inspection.

END OF SECTION

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

D. Methods of trash/waste disposal that are not acceptable are:
   1. Burning on the project site.
   2. Burying on the project site.
   3. Dumping or burying on other property, public or private.
   4. Other illegal dumping or burying.

E. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

A. Section 01 30 00 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. Section 01 60 00 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.

C. Section 01 70 00 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.03 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

I. Return: To give back reusable items or unused products to vendors for credit.

J. Reuse: To reuse a construction waste material in some manner on the project site.

K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PROCEDURES

A. See Section 01 30 00 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. See Section 01 50 00 for additional requirements related to trash/waste collection and removal facilities and services.

C. See Section 01 60 00 for waste prevention requirements related to delivery, storage, and handling.

D. See Section 01 70 00 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.

C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.

D. Meetings: Discuss trash/waste management goals and issues at project meetings.
   1. Pre-bid meeting.
   2. Pre-construction meeting.
   3. Regular job-site meetings.

E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
   1. Provide containers as required.
   2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
   3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 01 76 10
TEMPORARY PROTECTIVE COVERINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary protective coverings for installed floors, walls, and other surfaces.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide materials that are easily removed without damage to the surfaces covered and with the following characteristics:
   1. Water resistant.
   2. Impact resistant.
   3. Slip resistant.

2.02 MATERIALS

A. Sheet Materials:
   1. Wood Hardboard: ANSI A135.4, tempered, 1/4 inch thick nominal.

B. Rolled Materials:
   1. Self-adhering polyethylene film.
   2. Recycled cellulose fiberboard paper.

C. Opening Protection Materials:
   1. Acrylic Platic Sheet

D. Tape: Type recommended by protective covering material manufacturer.

PART 3 EXECUTION

3.01 PREPARATION

A. Remove dirt and debris from surfaces to be protected.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Trim or overlap sheet materials to fit area to be covered.

C. Roll out and cut rolled materials to fit area to be covered.

D. Tape seams. Avoid taping directly to finished surfaces.

E. Stretch self-adhering film materials to completely cover surface.

F. Install door jamb protection to full height of opening.

3.03 REMOVAL

A. Remove protective coverings prior to Date of Substantial Completion. Reuse or recycle materials if possible.

END OF SECTION

SECTION 01 78 00
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Record Documents.

B. Operation and Maintenance Data.

C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Section 00 65 01 - Closeout Document Checklist: List of required submittals for closeout.

B. Section 00 72 13 - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.

C. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

D. Section 01 70 00 - Execution and Closeout Requirements: Contract closeout procedures.

E. Individual Product Sections: Specific requirements for operation and maintenance data.

F. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.

B. Operation and Maintenance Data:
   1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
   2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   4. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Changes made by Addenda and modifications.

F. Record Drawings : Legibly mark each item to record actual construction including:
   1. Field changes of dimension and detail.
   2. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

C. Maintenance Requirements: Include routine procedures and guide for preventative maintenance.

D. Include manufacturer's printed operation and maintenance instructions.

E. Additional Requirements: As specified in individual product specification sections.

3.04 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants,Contractorand subcontractors, with names of responsible parties.

F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.

I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

3.05 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

END OF SECTION

SECTION 02 41 00
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of ballast, roof assmebly, and associated building elements per drawings.

B. Legal disposal of demolished items.

1.02 RELATED REQUIREMENTS

A. Section 00 31 00 - Available Project Information: Existing building survey conducted by Owner; information about known hazardous materials.

B. Section 01 10 00 - Summary: Limitations on Contractor's use of site and premises.

C. Section 01 10 00 - Summary: Sequencing and staging requirements.

D. Section 01 60 00 - Product Requirements: Handling and storage of items removed for salvage and relocation.

E. Section 01 74 19 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

1.03 REFERENCE STANDARDS

A. 29 CFR 1926 - Safety and Health Regulations for Construction.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
   1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
   2. Identify demolition firm and submit qualifications.
   3. Include a summary of safety procedures.

C. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 QUALITY ASSURANCE

A. Demolition Firm: Company specializing in the type of work required.
   1. Minimum of 3 years of documented experience.

1.06 PROJECT CONDITIONS

A. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

PART 2 PRODUCTS

2.01 MATERIALS

A. Not used.

PART 3 EXECUTION

3.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Comply with applicable requirements of NFPA 241.

3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
4. Provide, erect, and maintain temporary barriers and security devices.
5. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
7. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
8. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Do not begin removal until built elements to be salvaged or relocated have been removed.

D. Protect existing structures and other elements that are not to be removed.
1. Provide bracing and shoring.
2. Prevent movement or settlement of adjacent structures.
3. Stop work immediately if adjacent structures appear to be in danger.

E. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

F. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.

G. Perform demolition in a manner that maximizes salvage and recycling of materials.
1. Comply with requirements of Section 01 74 19 - Waste Management.
2. Dismantle existing construction and separate materials.
3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.02 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on field observation and existing record documents only.
1. Verify that construction and utility arrangements are as shown.
2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of demolition work constitutes acceptance of existing conditions.

B. Separate areas in which demolition is being conducted from other areas that are still occupied.
1. Provide, erect, and maintain temporary dustproof partitions of construction.

C. Remove existing work as indicated and as required to accomplish new work.
1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
2. Remove items indicated on drawings.

D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
3. Verify that abandoned services serve only abandoned facilities before removal.

4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.

E. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

3.03 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Remove from site all materials not to be reused on site; .

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 04 01 00
MAINTENANCE OF MASONRY - MTI

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Replacement of brick units.

B. Retrofitting masonry veneer accessories.

1.02 RELATED REQUIREMENTS

A. Section 02 41 00 - Demolition.

B. Section 04 05 11 - Mortar and Masonry Grout.

C. Section 04 20 00 - Unit Masonry.

D. Section 07 21 00 - Thermal Insulation.

1.03 REFERENCE STANDARDS

A. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week prior to commencing work of this section.
   1. Review installation conditions and procedures, and coordinate with related work.

1.05 QUALITY ASSURANCE - MASONRY WORK

A. Restorer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver masonry neatly stacked and tied on pallets. Store clear of ground with adequate waterproof covering.

B. Deliver polymer resin materials in original factory-sealed containers with manufacturer's labels intact and legible with verification of product nomenclature, manufacturer's name, product identification and batch number, date of manufacture, and shelf life or expiration date. Do not use polymer resin materials that have exceeded shelf life.

C. Store materials in accordance with manufacturer's requirements and in covered, well-ventilated area protected from exposure to detrimental conditions including airborne contaminants, dirt, dust, sunlight, temperatures lower than 40 degrees F or greater than 100 degrees F, rainfall, sparks, or flame.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Match Existing.

2.02 MASONRY ACCESSORIES

2.03 MASONRY MATERIALS

A. Mortar and Grout: Section 04 05 11.

B. Brick: Section 04 20 00.

C. Foam Plastic Insulation Board: Section 07 21 00.

PART 3 EXECUTION

3.01 EXAMINATION

A. Ensure that existing construction and new work are ready to receive work of this section.

3.02 PREPARATION

A. Protect elements from damage due to restoration procedures.

B. Protect roof membrane and flashings from damage with 1/2-inch plywood laid on roof surfaces over full extent of work area and traffic route.

3.03 INSTALLATION

A. Install in accordance with manufacturer's written instructions.

B. Install foam plastic insulation boards. See Section 07 21 00.

3.04 REBUILDING

A. Cut out damaged and deteriorated masonry. Do not damage adjacent remaining materials.

B. Support structure as necessary in advance of cutting out units.

C. Where loose or unsound adjoining masonry is encountered, notify Architect, obtain Architect's approval, and remove or remediate as directed by Architect.

D. Build in new masonry units as specified in other sections.

E. Ensure that anchors are located and installed as indicated in contract documents and manufacturer's instructions.

F. Install tuckpoint retrofit weeps in mortar bed joints in accordance with manufacturer's instructions.

G. Install built-in masonry to match and align with existing work, with joints and coursing true and level and faces plumb and true to line. Build in openings, accessories, and fittings.

3.05 CLEANING

A. Immediately remove stains, efflorescence, or other excess resulting from work of this section.

B. Remove excess mortar, smears, and droppings as work proceeds and upon completion.

C. Clean surrounding surfaces.

END OF SECTION

SECTION 04 05 11
MORTAR AND MASONRY GROUT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mortar for masonry.

1.02 RELATED REQUIREMENTS

A. Section 04 20 00 - Unit Masonry: Installation of mortar and grout.

B. See Structural Drawings for additional Project Specifications.

1.03 REFERENCE STANDARDS

A. See Structural Drawings for Reference Standards.

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittal Procedures.

B. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C270 is to be used. Also include required environmental conditions and admixture limitations.

C. Samples: Submit two samples of mortar, illustrating mortar color and color range.

D. See Structural Drawings for additional Submittal Requirements.

1.05 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of the contract documents.

B. Refer to Structural Drawings for additional Quality Assurance requirements and Inspection requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.07 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 MORTAR AND GROUT APPLICATIONS

A. Mortar Mix Designs: ASTM C270, Property Specification.
   1. Exterior Masonry Pointing Mortar: Type O; color to match existing.
   2. Exterior Masonry Veneer: Type N.

2.02 MATERIALS

A. See Structural Drawings for material requirements.

PART 3 EXECUTION

3.01 GENERAL

A. See Structural Drawings for additional execution requirements.

3.02 INSTALLATION

A. Install mortar to requirements of section(s) in which masonry is specified.

3.03 GROUTING

A. Use either high-lift or low-lift grouting techniques, at Contractor's option, subject to other limitations of contract documents.

B. Low-Lift Grouting:
   1. Limit height of pours to 12 inches.
   2. Limit height of masonry to 16 inches above each pour.
   3. Pour grout only after vertical reinforcing is in place; place horizontal reinforcing as grout is poured. Prevent displacement of bars as grout is poured.
   4. Place grout for each pour continuously and consolidate immediately; do not interrupt pours for more than 1-1/2 hours.

C. High-Lift Grouting:
   1. Verify that horizontal and vertical reinforcement is in proper position and adequately secured before beginning pours.
   2. Place grout for spanning elements in single, continuous pour.

END OF SECTION

SECTION 04 20 00
UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Common Brick.

B. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 04 05 11 - Mortar and Masonry Grout.

B. Section 07 90 05 - Joint Sealers: Backing rod and sealant at control and expansion joints.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data for masonry units, mortar, and masonry accessories.

C. Samples: Submit four samples of brick units to illustrate color, texture, and extremes of color range.

D. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

E. See Structural Drawings for additional Submittal Requirements.

1.04 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of the contract documents.
   1. Maintain one copy of each document on project site.

B. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum ten years of documented experience.

C. Installer Qualifications: Company specializing in performing work of the type specified and with at least ten years of documented experience.

D. Refer to Structural Drawings for additional Quality Assurance requirements and Inspection requirements.

1.05 MOCK-UP

A. Construct a mock-up panel of size, detail and configuration indicated on the drawings. Mock-up shall include all components of the exterior wall construction.

B. Locate where directed.

C. The approved mock-up panel shall serve as the standard of quality for construction and shall remain in place until the building shell is complete and until directed to be removed by the Architect.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.

B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

1.08 EXTRA MATERIALS

A. See Section 01 60 00 - Product Requirements, for additional provisions.

B. Provide 50 of each size, color, and type of brick units for Owner use in maintenance of project.

PART 2 PRODUCTS

2.01 BRICK UNITS

A. Basis of Design:
   1. Yankee Hill, Spaulding Brick
      a. Size: Standard Modular.
      b. Substitutions: See section 01 60 00 - Product Requirements.
         1) Proposed substitutions must be submitted and approved prior to bid.

B. Facing Brick: ASTM C216, Type FBX, Grade SW.
   1. Type, color and texture: match existing.
   2. Nominal size: Modular
   3. Compressive strength: Min. 3,000 p.si., measured in accordance with ASTM C 67.

2.02 MORTAR AND GROUT MATERIALS

A. Mortar and grout: As specified in Section 04 05 11.

2.03 REINFORCEMENT AND ANCHORAGE

A. Manufacturers of Joint Reinforcement and Anchors:
   1. Blok-Lok Limited: www.blok-lok.com/#sle.
   2. Dur-O-Wal: www.dur-o-wal.com.
   3. Hohmann & Barnard, Inc: www.h-b.com.
   4. WIRE-BOND: www.wirebond.com/#sle.
   5. Substitutions: See Section 01 60 00 - Product Requirements.

B. Single Wythe Joint Reinforcement: Truss or Ladder type; ASTM A 82/A 82M steel wire, hot dip galvanized after fabrication to ASTM A 153/A 153M, Class B-2; 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.

C. Strap Anchors: Bent steel shapes configured as required for specific situations, 2 in width, 0.1875 in thick, lengths as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage from masonry face, corrugated for embedment in masonry joint, hot dip galvanized to ASTM A 153/A 153M, Class B-2 or stainless steel.
   1. Strap anchors may only be used where

2.04 FLASHINGS

A. Copper/Kraft Paper Flashings: 3 oz/sq ft sheet copper bonded to fiber reinforced asphalt treated Kraft paper.

B. Copper/Polymer Film or Fabric Flashing - Self-Adhering: 7 oz/sq ft copper sheet bonded on both sides to a sheet of polymer film that has a clear adhesive with a removable release liner.
   1. Manufacturers:
      a. Hohmann & Barnard, Inc; Copper-Fabrick SA: www.h-b.com/#sle.
      b. Substitutions: See Section 01 60 00 - Product Requirements.

C. Drip Edge: Stainless steel; angled drip with hemmed edge; compatible with membrane and adhesives.
   1. Manufacturers:
      a. Hohmann & Barnard, Inc; DP: www.h-b.com/#sle.
      b. Substitutions: See Section 01 60 00 - Product Requirements.

D. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

2.05 ACCESSORIES

A. Preformed Control Joints: Rubber or neoprene material.

1. Manufacturers:
   a. Dur-O-Wal: www.dur-o-wal.com.
   b. Hohmann & Barnard, Inc (including Dur-O-Wal brand); Product RS or VS: www.h-b.com/#sle.
   c. Substitutions: See Section 01 60 00 - Product Requirements.

B. Joint Filler: Closed cell polyethylene; polyurethane or rubber oversized 50 percent to joint width; self expanding; 1 inch wide design width x by maximum lengths available.
   1. Manufacturers:
      a. Dur-O-Wal: www.dur-o-wal.com.
      b. Hohmann & Barnard, Inc (including Dur -O-Wal brand): www.h-b.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Reglets: As specified on Section 07 62 00.

D. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
   1. Mortar Diverter: Panels designed for installation at flashing locations.
      a. Manufacturers:
         1) Advanced Building Products, Inc; Mortar Break DT: www.advancedbuildingproducts.com/#sle.
         2) Sandell Mfg.: Product Mor. Product: Mortar Web = Design Basis.
         3) Mortar Net Solutions; MortarNet: www.mortarnet.com/#sle.
         4) Substitutions: See Section 01 60 00 - Product Requirements.

E. Weeps: Open head.

F. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.06 MORTAR AND GROUT MIXES

A. Mortar and Grout mixes as specified in Section 04 05 11.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

A. Direct and coordinate placement of items supplied for installation under other sections.

B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Brick Units:
   1. Bond: Match existing.
   2. Vertical Coursing: Three units and three mortar joints to equal 8 inches.
   3. Mortar Joints: Concave.

3.04 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

C. Remove excess mortar and mortar smears as work progresses.

D. Interlock intersections and external corners.

E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

F. Set reglets as shown on plans.

G. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.05 WEEPS

A. Install weeps in veneer walls at 24 inches on center horizontally above opening, above through-wall flashing and at bottom of walls.

3.06 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

3.07 REINFORCEMENT AND ANCHORAGE - GENERAL

A. Embed ties and anchors in mortar joint and extend into masonry unit a minimum of 1-1/2 inches with at least 5/8 inch mortar cover to the outside face of the anchor.

3.08 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
   1. Extend flashings full width at such interruptions and at least 8 inches into adjacent masonry and turn up at least 2 inches to form watertight pan at non-masonry construction.
   2. Remove or cover protrusions or sharp edges that could puncture flashings.
   3. Seal lapped ends and penetrations of flashing before covering with mortar.

B. Terminate flashing up 8 inches minimum on vertical surface of backing:

C. Extend laminated flashings to within 1/2 inch of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.

D. Lap end joints of flashings at least 4 inches and seal watertight with mastic or elastic sealant, type as recommended by flashing manufacturer.

3.09 GROUTED COMPONENTS

A. Reinforce bond beams as shown on plans.

B. Lap splices minimum 40 bar diameters.

C. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

D. Place and consolidate grout fill without displacing reinforcing.

E. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

3.10 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control and expansion joints.

B. Form control joint with a sheet building paper bond breaker fitted to one side of the hollow contour end of the block unit. Fill the resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.

C. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

D. Size control joints as indicated on drawings; if not indicated, 3/8 inch wide and deep.

E. Locate per drawings; if not indicated, provide every 20' horizontally.

3.11 BUILT-IN WORK

A. As work progresses, install built-in metal door frames, glazed frames, fabricated metal frames, window frames, anchor bolts, plates, and boxes and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
   1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.

D. Do not build into masonry construction organic materials that are subject to deterioration.

3.12 TOLERANCES

A. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

B. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft.

C. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

D. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 20ft.

E. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft.

F. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.13 CUTTING AND FITTING

A. Cut and fit for chases, pipes, conduit, sleeves, and grounds. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.14 FIELD QUALITY CONTROL

A. Mortar Tests: Test each type of mortar in accordance with ASTM C780, testing with same frequency as masonry samples.

3.15 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.16 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

SECTION 05 12 00
STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural steel framing members.

B. Base plates, shear stud connectors and expansion joint plates.

C. Grouting under base plates.

1.02 RELATED REQUIREMENTS

A. Section 05 50 00 - Metal Fabrications: Steel fabrications affecting structural steel work.

1.03 REFERENCE STANDARDS

A. AISC Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.

B. AISC (MAN) - Steel Construction Manual.

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

D. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

F. ASTM A992/A992M - Standard Specification for Structural Steel Shapes.

G. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.

H. AWS D1.1/D1.1M - Structural Welding Code - Steel.

I. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Section 01 70 00 - Execution and Closeout Requirements: Contractor Points Requirements for the North East Collaborative for High Performance Schools (NECHPS).

C. Shop Drawings:
   1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.
   2. Connections not detailed.
   3. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths.

D. Manufacturer's Mill Certificate: Certify that products meet or exceed specified requirements.

E. Mill certification for pre-consumer and post-consumer recycled content percentage; request at time of order. Include total weight of material provided.

1.05 QUALITY ASSURANCE

A. Fabricate structural steel members in accordance with AISC (MAN) "Steel Construction Manual."

B. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and no more than 12 months before start of scheduled welding work.

C. Fabricator Qualifications: A qualified steel fabricator that is accredited by the International Accreditation Service (IAS) Fabricator Inspection Program for Structural Steel in accordance with IAS AC172.

D. Erector: Company specializing in performing the work of this section with minimum ten years of documented experience.

E. Design connections not detailed on drawings under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.

F. See Structural Drawings for additional Project Specifications. If Conflicting Project Specifications arise, the Project Specifications on the Structural Drawings govern.

PART 2 PRODUCTS

2.01 MATERIALS

A. Steel Angles, Plates, and Bars: ASTM A36/A36M.

B. Steel W Shapes and Tees: ASTM A992/A992M.

C. Rolled Steel Structural Shapes: ASTM A992/A992M.

D. Cold-Formed Structural Tubing: ASTM A500/A500M, Grade B.

E. Pipe: ASTM A53/A53M, Grade B, Finish Type E or S.

F. High Strength Bolts: ASTM A325N.

G. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

H. Grout: ASTM C1107/C1107M; Non-shrink; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
   2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch.

I. Shop and Touch-Up Primer: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.

J. Touch-Up Primer for Galvanized Surfaces: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION

A. Shop fabricate to greatest extent possible.

2.03 FINISH

A. Shop prime structural steel members. Do not prime surfaces that will be fireproofed.

B. All steel exposed to weather shall be painted with rust inhibitive primer and hot dipped galvanized.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

3.02 ERECTION

A. Erect structural steel in compliance with AISC Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.

B. Allow for erection loads and provide sufficient temporary bracing to maintain structure in safe condition, plumb, and in true alignment until completion of erection and installation of permanent bracing.

C. Do not field cut or alter structural members without approval of Engineer.

D. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

E. Grout solidly between column plates and bearing surfaces, complying with manufacturer's instructions for nonshrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees.

3.03 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

END OF SECTION

SECTION 05 31 00
STEEL DECKING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Roof deck.

B. Composite floor deck.

1.02 RELATED REQUIREMENTS

A. Section 05 12 00 - Structural Steel Framing.

B. Section 05 21 00 - Steel Joist Framing.

1.03 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

C. AWS D1.1/D1.1M - Structural Welding Code - Steel.

D. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel.

E. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172.

F. ICC-ES AC43 - Acceptance Criteria for Steel Deck Roof and Floor Systems.

G. SDI (DM) - Publication No.30, Design Manual for Composite Decks, Form Decks, and Roof Decks.

H. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic).

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittals procedures.

B. North East Collaborative for High Performance Schools (NECHPS) Submittals: Items necessary to document use of sustainable construction materials, products, and practices.

C. Product Data: Provide deck profile characteristics, dimensions, structural properties, and finishes.

D. Shop Drawings: Indicate deck plan, support locations, projections, openings, reinforcement, pertinent details, and accessories.

E. Certificates: Certify that products furnished meet or exceed specified requirements.

F. Mill certification for pre-consumer and post-consumer recycled content percentage; request at time of order. Include total weight of material provided.

1.05 QUALITY ASSURANCE

A. Design deck layout, spans, fastening, and joints under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.

B. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and AWS D1.3/D1.3M and dated no more than 12 months before start of scheduled welding work.

C. Fabricator Qualifications: A qualified steel fabricator that is accredited by the International Accreditation Service (IAS) Fabricator Inspection Program for Structural Steel in accordance with IAS AC172.

D. Installer Qualifications: Company specializing in performing the work of this Section with minimum ten years of experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Cut plastic wrap to encourage ventilation.

B. Separate sheets and store deck on dry wood sleepers; slope for positive drainage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Steel Deck:
   1. Canam Steel Corporation: www.canam-steeljoists.ws.
   2. Cordeck, Inc: www.cordeck.com/#sle.
   3. Nucor-Vulcraft Group: www.vulcraft.com/#sle.
   4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 STEEL DECK

A. All Deck Types: Select and design metal deck in accordance with SDI Design Manual.
   1. Calculate to structural working stress design and structural properties specified.

B. Roof Deck: Non-composite type, fluted steel sheet:
   1. Galvanized Steel Sheet: ASTM A653/A653M, Structural Steel (SS) Grade 33/230, with G90/Z275 galvanized coating.
   2. Minimum Base Metal Thickness: 20 gauge, 0.0359 inch.
   3. Nominal Height: 1-1/2 inch.

C. Composite Floor Deck: Fluted steel sheet embossed to interlock with concrete:
   1. Galvanized Steel Sheet: ASTM A653/A653M, Structural Steel (SS) Grade 33/230, with G90/Z275 galvanized coating.
   2. Span Design: Double.
   3. Minimum Base Metal Thickness: 20 gauge, 0.0359 inch.
   4. Nominal Height: 1-1/2 inches.
   5. Profile: Fluted; SDI NR.
   6. Formed Sheet Width: 24 inch.
   7. Side Joints: Lock seam.
   8. End Joints: Lapped, welded.

2.03 ACCESSORY MATERIALS

A. Welding Materials: AWS D1.1/D1.1M.

B. Mechanical Fasteners: Steel; hex washer head, self-drilling, self-tapping.
   1. Design Requirements for Sidelap Connections: Provide number and type of fasteners that comply with the applicable requirements of SDI (DM)SDI design method for roof deck and floor deck applications and ICC-ES AC43.

C. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, complying with VOC limitations of authorities having jurisdiction.

D. Flute Closures: Closed cell foam rubber, 1 inch thick; profiled to fit tight to the deck.

PART 3 EXECUTION

3.01 EXAMINATION

3.02 INSTALLATION

A. Erect metal deck in accordance with SDI Design Manual and manufacturer's instructions. Align and level.

B. On steel supports provide minimum 1-1/2 inch bearing.

C. Fasten deck to steel support members at ends and intermediate supports at 12 inches on center maximum, parallel with the deck flute and at each transverse flute using methods specified.

1. Welding: Use fusion welds through weld washers.

D. Clinch lock seam side laps.

E. Drive mechanical sidelap connectors completely through adjacent lapped sheets; positively engage adjacent sheets with minimum three-thread penetration.

F. At deck openings from 6 inches to 18 inches in size, provide 2 by 2 by 1/4 inch steel angle reinforcement. Place angles perpendicular to flutes; extend minimum two flutes beyond each side of opening and fusion weld to deck at each flute.

G. At floor edges, install concrete stops upturned to top surface of slab, to contain wet concrete. Provide stops of sufficient strength to remain stationary without distortion.

H. At openings between deck and walls, columns, and openings, provide sheet steel closures and angle flashings to close openings.

I. Close openings above walls and partitions perpendicular to deck flutes with single row of foam cell closures.

J. Immediately after welding deck and other metal components in position, coat welds, burned areas, and damaged surface coating, with touch-up primer.

END OF SECTION

SECTION 05 51 33
METAL LADDERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop-fabricated metal ladders.

1.02 RELATED REQUIREMENTS

A. Section 11 81 29 - Facility Fall Protection: Ladder safety systems.

1.03 REFERENCE STANDARDS

A. 29 CFR 1910.23 - Ladders.

B. 29 CFR 1926.1053 - Ladders.

C. ANSI A14.3 - American National Standard for Ladders -- Fixed -- Safety Requirements.

D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

E. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

F. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

G. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.

H. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.

I. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

J. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.

K. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength.

L. AWS D1.1/D1.1M - Structural Welding Code - Steel.

M. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172.

N. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer.

O. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic).

P. SSPC-SP 2 - Hand Tool Cleaning.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Shop Drawings:
   1. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

1.05 QUALITY ASSURANCE

A. Design _____ under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.

B. Fabricator Qualifications: A qualified steel fabricator that is accredited by IAS AC172.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.

C. Plates: ASTM A283/A283M.

D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.

E. Mechanical Fasteners: Same material or compatible with materials being fastened; type consistent with design and specified quality level.

F. Bolts, Nuts, and Washers: ASTM A307, plain.

G. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.

H. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

I. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

J. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Continuously seal joined members by intermittent welds and plastic filler.

D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FABRICATED LADDERS

A. Ladders: Steel; in compliance with ANSI A14.3; with mounting brackets and attachments; prime paint finish.
   1. Side Rails: 3/8 by 2 inches members spaced at 20 inches.
   2. Rungs: One inch diameter solid round bar spaced 12 inches on center.
   3. Space rungs 7 inches from wall surface.

2.04 FINISHES - STEEL

A. Prime paint steel items.
   1. Do not prime surfaces in direct contact with concrete.
   2. Do not prime surfaces where field welding is required.

B. Prepare surfaces to be primed in accordance with SSPC-SP2.

C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

D. Prime Painting: One coat.

E. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.

2.05 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Supply setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Perform field welding in accordance with AWS D1.1/D1.1M.

D. Obtain approval prior to site cutting or making adjustments not scheduled.

E. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preservative treated wood materials.

B. Wood nailers and curbs for roofing and items installed on roof.

1.02 RELATED REQUIREMENTS

A. Section 07 62 00 - Sheet Metal Flashing and Trim: Roof edge and wall flashings.

B. Section 07 55 00 - Modified Bituminous Membrane Roofing

C. Section 07 72 00 - Roof Accessories: Prefabricated roof curbs.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

D. AWPA U1 - Use Category System: User Specification for Treated Wood.

E. ICC-ES AC38 - Acceptance Criteria for Water-Resistive Barriers.

F. PS 2 - Performance Standard for Wood Structural Panels.

1.04 SUBMITTALS

A. See Section 01 33 00 - Administrative Requirements, for submittal procedures.

B. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Lumber: Comply with PS 20 and approved grading rules and inspection agencies.
   1. Lumber of other species or grades, or graded by other agencies, is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

B. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

1.06 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
   2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Grading Agency: Southern Pine Inspection Bureau, Inc. (SPIB).

B. Sizes: Nominal sizes as indicated on drawings, S4S.

C. Moisture Content: S-dry or MC19.

D. Miscellaneous Parapet Framing, Curbing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S No. 2 or Standard Grade.
   2. Boards: Standard or No. 3.

2.03 CONSTRUCTION PANELS

A. Roof Parapet and Wall Sheathing: Any PS 2 type, rated Structural I Sheathing. (If used to build-up roof edge walls)
   1. Bond Classification: Exterior. Marine grade.
   2. Span Rating: 60.
   3. Performance Category: 3/4 PERF CAT.

B. Other Applications:
   1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.
   2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
   3. Other Locations: PS 1, C-D Plugged or better.
   4. Electrical Component Mounting: APA rated plywood B-C sheathing, fire retardant treated.

2.04 ACCESSORIES

A. Fasteners and Anchors:
   1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M; or Stainless Steel for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

2.05 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
   2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

B. Fire Retardant Treatment:
   1. Manufacturers:
      a. Arch Wood Protection, Inc: www.wolmanizedwood.com/#sle.
      b. Hoover Treated Wood Products, Inc: www.frtw.com/#sle.
      c. Osmose, Inc: www.osmose.com/#sle.
      d. Substitutions: Not permitted.
   2. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
      b. Do not use treated wood in direct contact with the ground.

C. Preservative Treatment:
   1. Manufacturers:

a. Arch Wood Protection, Inc.: www.wolmanizedwood.com.
b. Viance, LLC: www.treatedwood.com.
c. Osmose, Inc: www.osmose.com.
d. Substitutions: Not permitted.

D. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft retention.
1. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
2. Treat lumber in contact with roofing, flashing, or waterproofing.
3. Treat lumber in contact with masonry or concrete.
4. Treat lumber less than 18 inches above grade.
a. Treat lumber in other locations as indicated.
5. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention.
a. Kiln dry plywood after treatment to maximum moisture content of 15 percent.
b. Treat plywood in contact with masonry or concrete.
c. Treat plywood in other locations as indicated.

PART 3 EXECUTION

3.01 PREPARATION

A. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

3.03 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

3.04 ROOF-RELATED CARPENTRY

A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

B. Provide wood curb at all roof openings except where prefabricated curbs are specified and where specifically indicated otherwise. Form corners by alternating lapping side members.

3.05 INSTALLATION OF ACCESSORIES AND MISCELLANEOUS WOOD

A. Coordinate curb installation with installation of decking and support of deck openings, roofing vapor retardant, parapet construction, and roof edge fascia.

3.06 INSTALLATION OF CONSTRUCTION PANELS

A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing. (If used to build-up roof edge walls)
1. Use sheathing clips between roof framing members.
2. Provide solid edge blocking between sheets.
3. Screw panels to framing; staples are not permitted.
4. Provide furring for ventilation under roof panel installation and over composite roof deck.

3.07 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

3.08 CLEANING

A. Waste Disposal:

1. Comply with applicable regulations.
2. Do not burn scrap on project site.
3. Do not burn scraps that have been pressure treated.
4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or “waste-to-energy” facilities.

B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.

C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 07 01 50

PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Remove the existing roofing layers per drawings, insulation, recovery board, base flashings, sheet metal, vent stack flashings, and legacy equipment and/or curbs completely in accordance with the drawings. Sweep and clean all debris off of the surface and adjacent areas.

B. All roof work shall be conducted within the contract time limits but in no case over areas where the building is occupied.

C. Remove and reinstall ALL rooftop equipment as necessary to extend the existing curb flashings to a minimum of 8 inches above the finished roof surface and 8 inches above the finished roof surface for all vents unleass noted otherwise. This shall include removal and re-installation of the existing exhaust fans, ventilators and all other equipment on areas to be re-roofed. Disconnect electric surface and controls and extend wiring / controls as necessary to achieve the required minimum heights.

1.02 PRE-INSTALLATION CONFERENCE

A. Review installation procedures and coordination required with related work.

1.03 ENVIRONMENTAL REQUIREMENTS

A. Do not remove existing roofing system when weather conditions threaten the integrity of the building contents or intended continued occupancy. Maintain continued temporary protection prior to installation of the new roofing system. Provide temporary weather protection to insure that the building is weather tight and that no damage occurs to the building, interior contents, furnishings, equipment and finished during re-roofing operations.

1.04 PROTECTION

A. It shall be the Contractor's responsibility to respond immediately to correction of roof leakage during construction. A four (4) hour time limit shall be given from the time of notification of emergency conditions. In the event of water penetration during rain or a storm, the Contractor shall provide for repair of the building contents and interior including, but not limited to, all interior contents, furnishings, equipment, building systems and finishes. If the Contractor does not respond or cannot be contacted, the Owner will affect repairs or emergency action and the Contractor shall be back charged for all expenses and damages, if any.

1.05 SCHEDULING

A. Schedule work to coincide with commencement of installation of new roofing system.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Temporary protection; Sheet Polyethylene. Provide weights or fasteners to retain sheeting in position.

B. Base Sheet: ASTM D-4601 Type II. Provide weights, adhesives or fasteners to retain sheeting in position.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Roofing Contractor to verify existing site conditions, including roof dimensions. The Owner and Architect assume no responsibility for the existing actual conditions that the Contractor may encounter during the course of work that can be reasonably foreseen during the Pre-Bid inspection. The building layout was taken from existing drawings. The Contractor shall verify all

dimensions and conditions in the field prior to demolition and notify the Architect should any conditions encountered vary from the Contract Documents.

B. Verify that existing roof surface is clear and ready for work.

3.02 MATERIALS REMOVAL

A. Remove all membrane, cant strips, insulation, expansion joints, base flashings, and any other items required for installation of the new roof. In addition, completely remove all nails and other debris to leave a smooth, even surface for re-roofing.

B. Under certain conditions, it will be necessary and desirable to incorporate one or more of the following methods for removal of dirt, silt, gravel, debris, roof membrane, and insulation from the roof surface in order to preserve the ecology, eliminate unsightly conditions, and protect the building surfaces:

C. Enclose chutes with protective shrouds on the building and ground surfaces.

D. All debris dumped from the roof shall be transported from the roof via chutes into dumpsters or trucks, and this debris shall be removed from the premises when vehicles are full at the Contractors cost. No debris shall be transported from the area being worked on over a previously finished roof without an underlayment of 3/4" plywood.

E. Perform all demolition and re-roofing work in such a manner as to not damage or affect the load carrying capacity of the existing structural system.

F. Contractor shall provide cut off (night tie in) at the end of each day's work.

G. All curbs are to be raised to a minimum height of 12” above the finished roof surface. Be sure to calculate tapered insulation + recovery board + new roof system when calculating blocking heights

H. All soil stacks must be raised a minimum of 12” above the finished roof surface. No soil stack may be sleeved with the joint facing to weather.

I. All abandoned drain lines must be capped with a threaded cap.

J. All mechanical and electrical equipment is to be disconnected by a licensed mechanical and electrical contractor and set aside until the roof is replaced. The units are to be reinstalled after work is complete and fed through a goose neck penetration. The roofing contractor must hire a certified mechanical and electrical contractor for all mechanical and electrical reclamation work and disconnect.

END OF SECTION

SECTION 07 22 00
ROOF INSULATION

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes roof insulation over the properly prepared substrate

B. Related Sections:
   1. Section 07 60 00 – Sheet Metal Flashing and Trim.

1.03 REFERENCES

A. American Society for Testing and materials (ASTM):
   1. ASTM A167 Standard Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip.
   2. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process.
   3. ASTM B29 Standard Specification for Refined Lead.
   4. ASTM B32 Standard Specification for Solder Metal.
   5. ASTM C165 Standard Test Method for Measuring Compressive Properties of Thermal Insulation.
   6. ASTM C208 Standard Specification for Cellulosic Fiber Insulation Board.
   7. ASTM C209 Standard Test Method for Cellulosic Fiber Insulating Board.
   8. ASTM C272 Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
   9. ASTM C1396 Standard Specification for Gypsum Wallboard.
   10. ASTM C518 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
   11. ASTM C578 Standard Specification for Perlite Thermal Insulation Board.
   12. ASTM C728 Standard Test Methods for Fire Test of Roof Coverings.
   13. ASTM C1289 Standard Specification for Faced Rigid Polyisocyanurate Thermal Insulation.
   14. ASTM D5 Standard Test Method for Penetration of Bituminous Materials.
   15. ASTM D36 Standard Test Method for Softening Point of Bitumen (Ring and Ball Apparatus).
   16. ASTM D312 Standard Specification for Asphalt Used in Roofing.
   17. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
   18. ASTM D1621 Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
   19. ASTM D1622 Standard Test Method for Apparent Density of Rigid Cellular Plastics.
   20. ASTM D1863 Standard Specification for Mineral Aggregate Used on Built-Up Roofs.
   21. ASTM D2126 Standard Test Method for Response off Rigid Cellular Plastics to Thermal Humid Aging.
   22. ASTM D2178 Standard Specification for Asphalt Glass Felts used in Roofing and Waterproofing.
   23. ASTM D4601 Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
   24. ASTM D5147 Standard Sampling and Testing Modified Bituminous Sheet Material.

B. Cast Iron Soil Pipe Institute, Washington, D.C. (CISPI)

C. Factory Mutual Research (FM):
   1. Roof Assembly Classifications.

D. National Roofing Contractors Association (NRCA):
   1. Roofing and Waterproofing Manual.
E. Underwriters Laboratories, Inc. (UL):
   1. Fire Hazard Classifications.
F. Warnock Hersey (WH):
   1. Fire Hazard Classifications.
G. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
H. Southern Pine Inspection Bureau, Pensacola, Florida (SPIB)
I. Insulation Board, Polyisocyanurate (FS HH-I-1972)

1.04 SUBMITTALS

A. Product Data: Provide manufacturer's specification data sheets for each product in accordance with Division 01 Section Submittal Procedures.
B. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type.
C. Provide a sample of each insulation type.
D. Shop Drawings
   1. Submit manufacturer's shop drawings indicating complete installation details of tapered insulation system, including identification of each insulation block, sequence of installation, layout, drain locations, roof slopes, thicknesses, crickets and saddles.
   2. Shop drawing shall include: Outline of roof, location of drains, complete board layout of tapered insulation components, thickness and the average "R" value for the completed insulation system.
E. Certification
   1. Submit roof manufacturer's certification that insulation fasteners furnished are acceptable to roof manufacturer.
   2. Submit roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.05 QUALITY ASSURANCE

A. Fire Classification, ASTM E-108.
B. Manufacturer's Certificate: Certify that roof system furnished is approved by Factory Mutual, Underwriters Laboratories, Warnock Hersey or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
C. Manufacturer's Certificate: Certify that the roof system is adhered/fastened properly to meet or exceed the requirements of FM.
D. Pre-installation meeting: Refer to Division 07 roofing specifications for pre-installation meeting requirements.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.
C. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins).

D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the site.

PART 2 – PRODUCTS

2.01 PRODUCTS, GENERAL

A. Basis of Design: Materials, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.

B. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions. Any substitutions must be submitted to the Architect ten (10) days prior to bid date.
   1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section. That specification section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.
   2. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Architect, Owner or Owner's Representative.
   3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
   4. The Owner's decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.02 VAPOR RETARDER

A. Repair concrete deck as necessary. Clean and prime concrete decks.

B. Install one ply of SBS tri-laminate base sheet over entire substrate adhered in solvent-free cold adhesive per manufacturers specifications. Shingle in direction of slope of roof to shed water on each roof area.

2.03 INSULATION MATERIALS

A. Thermal Insulation Properties and Approved Insulation Boards.
   1. Rigid Polyisocyanurate Roof Insulation; ASTM C1289:
      a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
      b. Thickness: One layer – 5.2" base layer (two (2) layers of 2.6")
      c. Compliances: UL, WH or FM
      d. Manufacturer: Viking Products Group / Hunter / Johns Manville
         1) Tapered Polyisocyanurate Roof Insulation; ASTM C1289:
            (a) Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
            (b) Thickness: Minimum ½" inch
            (c) Tapered Slope: 1/8":12"
            (d) Tapered Crickets/Saddles: 1/4":12"
            (e) Compliances: UL, WH or FM
            (f) Manufacturer: Viking Products Group / Hunter / Johns Manville
            (g) Gypsum Roof Board
               (1) Qualities: Nonstructural, noncombustible, homogenous composition panel.
               (2) Board Size: Four by eight feet (4'x8').

(3) Thickness: ½”
(4) Compliances: UL, WH or FM listed under Roofing Systems.
(5) Manufacturer: USG Securock / National Gypsum Dens-Deck Primed / DexCell

2.04 RELATED MATERIALS

A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of perlite or organic fiberboard, as per the approved manufacturer.
   1. Acceptable Manufacturers:
      a. Viking Products Group
      b. Johns Manville
      c. Hunter

B. Roof Deck Fasteners: Tru-Fast Twin-Loc or approved equal. Contractor is to confirm fastener type with pull tests prior to installation.

C. Insulation Adhesive: The Garland Company, Insul-Lock HR or pre-approved equal.

PART 3 – EXECUTION

3.01 EXECUTION, GENERAL

A. Comply with requirements of Division 01 Section “Common Execution Requirements.”

3.02 INSPECTOR OF SURFACES

A. Roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.
   1. Verify that work which penetrates roof deck has been completed.
   2. Verify that wood nailers are properly and securely installed.
   3. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
   4. Do not proceed until defects are corrected.
   5. Do not apply insulation until substrate is sufficiently dry.
   6. Broom clean substrate immediately prior to application.
   7. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.

3.03 INSTALLATION

A. A. Base Sheet attachment to Tectum Roof Deck
   1. 1. An ASTM D4601, Type II Fiberglass Base Sheet that has been approved by fastener manufacturer to meet specified wind uplift rating, shall be installed and attached to the tectum roof deck using Tru-Fast Twin Loc Roofing Fastener (as required per field pullout tests) and the following installation pattern:
      a. 9” o.c. x 9” o.c. staggered in three rows equally spaced in the field and with 4” laps for Zone 1 (field of roof)
      b. 7” o.c. x 7” o.c. staggered in three rows equally spaced in the field and with 4” laps for Zone 2 (perimeter of roof)
      c. 6” o.c. x 6” o.c. staggered in three rows equally spaced in the field and with 4” laps for Zone 3 (corner of roof)
      d. Zones 2 & 3 must extend onto the roof area a minimum distance equal to 10% of the building width.
   2. Attachment of Polysiocuyanurate Insulation/Coverboard System with Insulation Adhesive on Base Sheet Attached to Tectum Roof Deck / Vapor Barrier Concrete Deck
      a. Embed all layers of polyisocyanurate insulation boards in beads of Insu-Lock HR Insulation Adhesive at the rate and temperature recommended by insulation manufacturer. Stagger end joints of boards so all open joints will be eliminated. Walk in each piece of insulation and leave boards completely adhered to deck. Each

insulation board shall be butt firmly against adjoining panels. All open joints shall be eliminated.

3. Attachment to Steel Deck with Mechanical Fasteners
   a. Approved new insulation board shall be fully attached to the deck with an approved mechanical fastening system. As a minimum, the number of fasteners shall be in accordance with manufacturer's recommendation.
   b. Filler pieces of insulation require at least two fasteners per piece if size of insulation is less than four square feet.
   c. Spacing pattern of fasteners shall be per manufacturer's recommendations to meet the FM requirements. Placement of any fastener from edge of insulation board shall be a minimum of three inches, and a maximum of six (6) inches.
   d. Minimum penetration into deck shall be as recommended by the fastener manufacturer. There is a one (1) inch minimum for metal decks where not specified by the manufacturer.
4. Attachment with Insulation Adhesive
   a. New isolation (recovery) board is to be adhered to the surface of the new polyisocyanurate insulation.
   b. Ensure all surfaces are clean, dry, free of dirt, debris, oils, loose ore embedded gravel, unadhered coatings, deteriorated membrane and other contaminants that may inhibit adhesion.
   c. Apply insulation adhesive directly to the substrate using a ribbon pattern with three quarter (3/4") inch wide beads -12 inches o.c. in Zone 1, 6" o.c. in Zone 2 and 6" o.c. in Zone 3 - using either the manual applicator or an automatic applicator, at a rate of one (1) gallon per one hundred (150) square feet per cartridge. Spacing pattern of adhesive shall be per manufacturer's recommendations to meet the FM requirements.
   d. Immediately place isolation (recovery) boards into wet adhesive. Do not slide boards into place. Do not allow the adhesive to skin over before installing boards.
   e. Briefly step each board into place to ensure contact with the adhesive. Temporary weights must be utilized to ensure proper adhesion. Substrates with irregular surfaces may prevent the board from making positive contact with the adhesive. Relief cuts may be required to ensure proper contact.
   f. Additional installation instructions
      1) Approved insulation shall be tapered around roof drains and scuppers. Tapered insulation sump shall start with a thickness of one-half inch at drain bowl to the specified dimension from the center line of the drain. Install tapered insulation sump in such a way to provide proper slope for runoff. Shape insulation with tool as required so completed surface is smooth and flush with ring of drain. Under no circumstances will the membrane be left unsupported in an area greater that one quarter (1/4) inch. Install recovery board over tapered insulation sump as required.
      2) All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit a minimum of one quarter (1/4) inch away from the vertical surface.
      3) Install no more insulation at one time than can be roofed on the same day.
      4) Install temporary water cut-offs at completion of each day's work and remove upon resumption of work.
      5) Cant Strips/Tapered Edge Strips: Install preformed forty five (45) degree cant strip at junctures of vertical surfaces. Provide preformed, tapered edge strips at perimeter of edges of roof that do not terminate at vertical surfaces and/or indicated on the drawings.
      6) NOTE:
      7) The minimum pitch of all roofing surfaces is to be 1/4" per foot. All crickets to be minimum 1/2" per foot pitch.

5. E. General Installation Requirements
   a. Approved insulation shall be sumped and tapered around roof drains. Tapered insulation sump shall have a ½" per foot slope and start at the drain bowl to the specified dimension of two feet (U.N.O on the roof plan or per roof system manufacturer) from the center line of the drain. Install tapered insulation sump in such a way to provide proper slope for runoff. Shape insulation with tool as required so completed surface is smooth and flush with ring of drain. Under no circumstances will the membrane be left unsupported in an area greater than one quarter (¼) inch. Install recovery board over tapered insulation sump as required.
   b. Approved recovery board one-half (½") inch thickness shall be installed over base tapered insulation using hot asphalt at the rate of approximately thirty three (33) pounds per square.
   c. All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit a minimum of one quarter (¼) inch away from the vertical surface.
   d. Install no more insulation at one time than can be roofed on the same day.
   e. Install temporary water cut-offs at completion of each day's work and remove upon resumption of work. Install an envelope water stop at the edge of insulation to prevent water infiltration into new insulation/roof system.
   f. Cant Strips/Tapered Edge Strips: Install preformed fourty five (45) degree cant strips at junctures of vertical surfaces. Provide preformed, tapered edge strips at perimeter of edges of roof that do not terminate at vertical surfaces and/or indicated on the drawings. Tape joints of insulation as per manufacturer's requirements. The wall/cant juncture will be examined for air passage. If airflow is present, joint between cant and wall will be sealed with closed cell joint backing and joint sealant.

3.04 CLEANING

A. Remove debris and cartons from roof deck. Leave insulation clean and dry, ready to receive roofing membrane.

3.05 CONSTRUCTION WASTE MANAGEMENT

A. Remove and properly dispose of waste products generated during installation. Comply with requirements of authorities having jurisdiction.

END OF SECTION

SECTION 07 54 24

WPG PVC THERMOPLASTIC ADHERED WPG SHEET ROOFING SYSTEMS WITH SSM RIB.

PART 1 – GENERAL

1.1 DESCRIPTION

A. The WPG SSM Rib system combines the appearance of a standing seam metal roof with weather-resistant performance of WPG's proven thermoplastic PVC roof membranes.

1.2 SSM RIB

A. The WPG SSM Ribs are extruded components of PVC hot air welded to the WPG roof membrane. The ribs are provided in 10 foot lengths and connected to each other with a dowel insert. The ribs are extruded from the same compound used in the manufacturing of the WPG roof membrane.

1.3 SCOPE

A. Install a complete WPG PVC adhered roof system including membrane, SSM Rib, flashing and other WPG roof system components.

PART 2 – PRODUCTS

2.1 GENERAL

A. Performance: Provide roofing materials recognized to be of generic type indicated and tested to show compliance with indicated performances, or provide other similar materials certified in writing by manufacturer to be equal to, or better than, materials specified in every significant respect, and acceptable to Architect.

B. Compatibility: Provide products that are recommended by manufacturers to be fully compatible with indicated substrates, or provide separation materials as required to eliminate contact between incompatible materials.

2.2 SINGLE PLY MEMBRANE

A. Adhered Thermoplastic Membrane: PVC thermoplastic reinforced WPG WeldTite sheet roofing membrane complying with ASTM D 4434, Type III.

1. Polyester Reinforced
2. Thickness: 60 mil
3. Exposed Face Color: Gray
4. Physical Properties: Membrane shall have the following values when tested for the listed physical properties in accordance with the listed test methods.

PROPERTY	TEST METHOD	SPECIFICATION
Color		Gray
Thickness	ASTM D751	.060" , .080"
Thickness over Scrim	ASTM D7635	.030", .040"
Breaking Strength (lbf)	ASTM D751	325 x 324
Tear Strength (lbf)	ASTM D751	89 x 109
Seam Strength (lbf)	ASTM D751	295
Elongation	ASTM D751	50% x 42%
Heat Aging	ASTM D3045	> 90 %
Low Temp. Bend	ASTM D2136	Pass (-40°F)
Static Puncture Resistance	ASTM D5602	Pass
Dynamic Puncture Resistance	ASTM D5635	Pass
Permeance	ASTM E96	0.003 Perms
Dimensional Stability	ASTM D1204	0.3 %
Weight change after Water Immersion	ASTM D570	1.20 %
Accelerated Weathering	ASTM G155	Pass
Fungi Resistance	ASTM G-21	No Growth
Solar Reflectivity	ASTM C1549	.82 (white)
Emissivity	ASTM C1371	.91 (white)
SRI	ASTM E-1980	109 (white)

WPG PVC Roofing Membranes are thermoplastic in nature and exceed the requirements of ASTM D4434 standard specifications for polyvinyl chloride based sheet roofing.

2.3 MANUFACTURERS

A. Manufacturers: Subject to full compliance with requirements, provide a roof system of one of the following. The appearance of a manufacturer's name in no way relieves that manufacturer from full compliance with the requirements of this specification.

1. PVC Polyvinyl Chloride roof membrane
   a. Wise Product Group
      3800 East 91st Street
      Cleveland, Ohio 44105
      (800) 321-9336

2.4 MEMBRANE COATED METAL FLASHING

A. General: 24 gauge Galvanized sheet metal with a 25 mil thermoplastic membrane laminated on one side. The reverse side is to be coated with an anti-rust coating to protect it from moisture attack.

B. Color shall be grey.

2.5 AUXILIARY MATERIALS

A. Sheet Seaming System: Manufacturer's standard materials for lapped joints.

B. Cant Strips, Tapered Edge Strips, and Flashing Accessories: Types recommended by membrane manufacturer, including flashing adhesives and sealants.

C. Flashing Material: Manufacturer's standard system compatible with WPG WeldTite membrane. Provide pre-formed or manufactured pipe boots as indicated.

D. Membrane Adhesive: As recommended by membrane manufacturer for particular substrate and project conditions, formulated to withstand minimum 90-psf uplift force.
1. WPG Low Rise Foam Adhesive Spatter Application (fleece back membrane only)
2. WPG WB Substrate Adhesive
3. WPG Bonding Adhesive

E. WPG Preformed or Split Pipe Boots

F. Mechanical Fasteners: Metal plates, caps, accessory components, fastening devices, termination bars and adhesives to suit substrate and as recommended by membrane manufacturer. Provide stainless steel fasteners where indicated on the drawings.

G. Asphalt Primer: Provide roofing manufacturer's recommended procedure for preparation of existing roofing membrane.

H. Sealant: Standard one part, nonsag, solvent-release-curbing, polymerized butyl sealant complying with ASTM C 1085 and formulated minimum of 75 percent solids to be nonstaining, paintable and have a tack free time of 24 hours or less.

I. SSM Rib: a 1 3/4 x 1 1/2 inch x 10 feet WPG PVC thermoplastic component designed and installed to imitate the aesthetics of a standing seam metal roof system.

2.6 COVER BOARD

A. WPG ½" HS Coverboard, High Strength Polyisocyanurate Foam with coated Glass Facers distributed by WPG Roofing System.

B. USG Securock Roof Cover Board distributed by WPG Roofing System.

C. Georgia Pacific Corporation: Dens Deck, Dens Deck Prime distributed by WPG Roofing System.

2.7 INSULATING MATERIALS

A. WPG ISO: A closed cell polyisocyanurate foam core laminated to black (non-asphaltic), fiber-reinforced felt facers. Manufactured in accordance with ASTM C 1289, Type II, Class 1

PART 3 - EXECUTION

3.1 PREPARING SUBSTRATE

A. General: Comply with manufacturers' instructions to prepare substrate to receive single-ply membrane system.
1. Verify that penetrations, expansion joints, and blocking are in place, of the proper height, and secured and that replacement roof drains are properly clamped into position.

B. Clean Substrate of dust, debris, and other substances detrimental to single ply membrane system. Remove sharp projections.

C. Install cant strips, flashings, and accessory items as shown and as recommended by manufacturer.

D. Prime substrate where recommended by manufacturer of materials being installed.

E. Prevent compounds from entering and clogging drains and conductors and from spilling or migrating onto surfaces of other work.

3.2 INSTALLING INSULATION

A. General: Form cant strips, crickets, saddles, and tapered areas with additional material as shown and as required for proper drainage of membrane.
1. Stagger joints in one direction for each course. For multiple layers, stagger joints in both directions between courses with no gaps, to form a complete thermal envelope.
2. Provide tapered units to suit drainage pattern indicated.

B. Do not install more insulation in a day than can be covered with membrane before end of day or before start of inclement weather.

C. Secure roof insulation to existing substrate with hot steep asphalt or manufacturer's approved cold adhesive or approved fasteners and metal plates.

D. Secure addition layers of roof insulation with hot steep asphalt or manufacturer's approved cold adhesive in accordance with the insulation manufacturer's instructions for wind uplift criteria.

E. Secure recovery board with plates and fasteners or manufacturer's approved cold adhesive according to the insulation manufacturer's instructions for wind uplift criteria.

F. (Optional) Install base sheet with hot steep asphalt or cold adhesive according to the base sheet manufacturer's instructions for wind uplift criteria.

3.3 INSTALLING MEMBRANE

A. General: Follow Membrane Manufacturer's installation instructions for adhered membrane systems.

B. Membrane Placement and Seaming:
1. Roofing Membrane may be placed in any direction but typically are used in the maximum length possible. Position sheets as indicated on approved shop drawings.
2. All seams shall be done by lapping 2" selvedge edge over the non-selvedge edge of the previous roll. Fleeceback Membrane roll ends are butted and capped with 6" Trim Strip. Smoothback Membrane roll ends are overlapped a minimum of 4" and hot air welded.
3. When bonding the membrane to the substrate the field sheet must be firmly broomed into the Adhesive and then rolled with a heavy roller min. (100 lbs.) to insure proper adhesion.
4. All seams shall be made by the method of the hot-air welding procedure.
5. All seams shall be checked with a seam probe and voids repaired with the hot-air welding tool the same day they are made.
6. At the end of each working day seal off the new roof by lapping field membrane onto either the existing B.U.R. or the decking and affix in night seal. Remove and discard the lapped piece at commencement of the next work day.

3.4 MEMBRANE FLASHING

A. Cover all vertical surfaces with WPG MF/R flashing membrane or WPG clad coated metal consistent with WPG's standard details and architectural plans and specifications.

B. Weld and adhere the WPG MF/R flashing membrane to the field of the roof and the vertical surface. (NOTE: All vertical seams must be done by the hot-air welding method.)

3.5 INSTALLING MEMBRANE COATED METAL FLASHING

A. Metal flashing shall be formed as indicated on drawings. Flashing shall be secured as indicated on drawings and as directed by manufacturer's requirements. Joints are covered by

inch wide aluminum foil tape and then made watertight by heat welding a 8 inch wide membrane strip over the tape.

3.6 INSTALLING WALKWAY PAD

A. The WPG Walkway Pad shall be hot air welded to the field membrane by utilizing the hot air welding technique, or installed with WPG Bonding Adhesive.

B. Walkway rolls are to be cut in lengths as indicated on the drawings, but no longer than 10'sections, with minimum 2" spacing, between sections.

C. Walkway pads are to be positioned on the field of roof so as to not cover the hot air welded seams of the installed field membrane.

3.7 INSTALLING PREMOLDED BOOTS

A. WPG pipe flange applications require metal clamps to be installed with an approved caulking applied at the top of the vertical flashing.

3.8 INSTALLING SSM RIB

A. WPG SSM Ribs are typically installed parallel to the roof slope. The surface of the WPG Roof Membrane must be clean and dry prior to beginning the installation of the SSM Rib.

B. Determine the spacings for the SSM Rib. The standard pattern requires a rib installed inline with the WPG FB Roof Membrane selvedge edge overlap. This pattern spaces the ribs approximately 75" on center. Alternate rib spacing patterns between the membranes overlaps can be 1 rib spacings approximately 37 ½" on center or 2 ribs spacings approximately 25" on center.

C. Chalk a line for the rib edge with removable chalk. The WPG SSM Rib may also be placed along a straight edge plate or wood plank to keep the rib in a straight line while welding to the roof membrane.

D. Hot air weld the rib to the roof membrane insuring the WPG SSM Rib is installed in a straight line. Adequate time and labor must be allotted for installing the rib to insure the correct aesthetically appearance of the rib installation.

E. Ends WPG SSM Ribs are completed by hot air welding a piece of the roof membrane over the area.

3.9 PROTECTING ROOFING

A. After completing roofing, including associated work, institute appropriate procedures for surveillance and protection of roofing during remainder of construction period. At the time of Substantial Completion, make a final inspection of roofing and prepare a written report to Owner, describing nature and extent of deterioration or damage found.

B. Repair or replace (as required) deteriorated or defective work to a condition free of damage and deterioration by the time of Final Completion and according to the

requirements of the specified warranty.

PART4 - GUARANTEE

A. The roofing contractor shall furnish to the owner, the manufacturer's thirty (30) year guarantee of watertightness. The following minimum roof system requirements must be met in order to qualify for a warranty application

B. The roofing contractor shall complete and submit to WPG the standard Request for Guarantee form signed by a company officer prior to job start for project approval. WPG reserves the right to inspect the installed roofing system to assure quality workmanship and conformity to its standard details and specifications.

C. WPG may refuse to issue a warranty if there exists deviations from WPG's current specifications or details without prior written approval.

PART 5 - PRODUCT CAUTIONS & STORAGE

A. All materials shall be delivered to the job site in the original new, dry unopened packaging clearly indicating product type and manufacturer's name.

B. WPG Flashing Adhesive is flammable. Care should be taken in the handling and storage of these materials.

PART 6 – ROOF MAINTENANCE MANUAL

A. WPG Membrane will provide the Building Owner with a Roof Maintenance Guide and Inspection Manual along with the Roof System Warranty.

END OF SECTION

SECTION 07 55 00

MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 GENERAL

2.01 SECTION INCLUDES

A. Cold Applied 2-Ply Asphalt Roofing

2.02 RELATED SECTIONS

A. Section 07220 - Insulation & Coverboard: Insulation and fastening.

B. Section 07620 - Sheet Metal Flashing and Trim: Weather protection for base flashings.

2.03 REFERENCES

A. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.

B. ASTM D 312 - Standard Specification for Asphalt used in Roofing.

C. ASTM D 451 - Standard Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products.

D. ASTM D 1079 Standard Terminology Relating to Roofing, Waterproofing and Bituminous Materials.

E. ASTM D 1863 Standard Specification for Mineral Aggregate Used as a Protective Coating for Roofing.

F. ASTM D 2822 Standard Specification for Asphalt Roof Cement.

G. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.

H. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.

I. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings

J. Factory Mutual Research (FM): Roof Assembly Classifications.

K. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.

L. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.

M. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.

N. Warnock Hersey (WH): Fire Hazard Classifications.

O. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.

P. ASCE 7, Minimum Design Loads for Buildings and Other Structures

Q. UL - Fire Resistance Directory.

R. FM Approvals - Roof Coverings and/or RoofNav assembly database.

2.04 DESIGN / PERFORMANCE REQUIREMENTS

A. Perform work in accordance with all federal, state and local codes.

B. Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
   1. Factory Mutual Class A Rating.
   2. Underwriters Laboratory Class A Rating.
   3. Warnock Hersey Class A Rating.

C. Design Requirements:
   1. Uniform Wind Uplift Load Capacity
      a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
         1) Design Code: ASCE 7-16 ASD
         2) Importance Factor of: IV, 1
         3) Wind Speed: 142 mph
         4) Ultimate Pullout Value: N/A
         5) Exposure Category: C
         6) Design Roof Height: 25 feet.
         7) Minimum Building Width: 175 feet.
         8) Roof Pitch: 1/4:12
         9) Roof Area Design Uplift Pressure:
            (a) Zone 1' - Field of roof 36.1 psf FM 1-75
            (b) Zone 1 - Field of roof 56.0 psf FM 1-120
            (c) Zone 2 – Perimeter (Eaves, ridges, hips and rakes) 70.9 psf FM 1-150
            (d) Zone 3 - Corners 93.3 psf FM 1-195
            (e) Zone 4 – Wall Perimeter 37.0
            (f) Zone 5 – Wall Corner 43.7

2.05 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions.

C. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation, including notation of roof slopes and adhesion patterns of insulation and base modified bitumen membrane, prior to job start.

D. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins.

E. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

F. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.

G. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147. Testing must be performed at 77 deg. F. Tests at 0 deg. F will not be considered.

H. Manufacturer's Fire Compliance Certificate: Certify that the roof system furnished is approved by Factory Mutual (FM), Underwriters Laboratories (UL), Warnock Hersey (WH) or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.

I. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

2.06 QUALITY ASSURANCE

A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.

C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Contractor with manufacturer specified. Installer shall produce evidence of completing 5 projects of similar scope within a 50 mile radius of this project.

D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.

E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

2.07 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to commencing Work of this section.

B. Review installation procedures and coordination required with related Work.

C. Inspect and make notes of job conditions prior to installation:
   1. Record minutes of the conference and provide copies to all parties present.
   2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
   3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

2.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.

B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.

D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.

E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.

F. Adhesive storage shall be between the range of above 40 degree F (4 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

2.09 COORDINATION

A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

2.10 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

2.11 WARRANTY

A. Upon completion of the work, provide the Manufacturer's written and signed NDL Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installing contractor, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition.
   1. Warranty Period: (Base Bid)
      a. 30 years from date of acceptance.

B. Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
   1. Warranty Period:
      a. 2 years from date of acceptance.

PART 2 PRODUCTS

3.01 MANUFACTURERS

A. Basis of Design: The Garland Company, Inc.: 3800 E. 91st St.; Cleveland, OH 44105; Tel: 401-500-2901; Email: dwall@garlandind.com

B. Substitutions/pre-approved equals: Products proposed, as equal to the products specified in this Section shall be submitted in accordance with the specifications. Any substitutions must be submitted to the Owner ten (10) days prior to bid date.

C. A copy of the manufacturer’s standard specification section shall accompany proposals. That specification section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.

D. Include a list of three (3) projects of similar type and extent, located within a fifty-mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Architect, Owner or Owner’s Representative.

E. Equivalency of performance criteria, warranty terms, inspection services, submittal procedures, and contractual terms will constitute the basis of acceptance. The burden of proof of equivalency is the responsibility of the submitting contractor.

F. The Owner’s decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

3.02 COLD APPLIED 2-PLY MODIFIED BITUMINOUS ASPHALT ROOFING

A. Base (Ply) Sheets: One ply bonded to the prepared substrate with cold adhesive.

B. Cap (Ply) Sheet: One ply bonded to the prepared substrate with cold adhesive.

C. Flashing Base (Ply) Sheet: One ply bonded to the prepared substrate with cold adhesive.

D. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with cold adhesive.

E. Surfacing: Requires 30 day wait before applying.
   1. Surface Coatings: two (2) coats of aluminized coating

3.03 EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

A. Pitch pans, Rain Collars and Plumbing Sleeves shall be fabricated from 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.

B. Drain Flashings should be 4lb (1.8kg) sheet lead formed and rolled.

C. Fabricated Flashings: Fabricated flashings and trim are specified in Section 07620.
   1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the CDA Copper Development Association "Copper in Architecture - Handbook" as applicable.

PART 3 EXECUTION

4.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.

C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.

D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

4.02 PREPARATION

A. General: Clean surfaces thoroughly prior to installation.
   1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
   3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
   4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
   5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
   6. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

B. Poured reinforced concrete
   1. Shall be smooth, dry, clean and free of ice/frost, projections and depressions. Concrete shall be fully cured and the surface shall be broom cleaned and free of release/curing agents prior to commencement of work.
   2. Prepared concrete surfaces for roofing or insulation by priming with asphalt/concrete primer conforming to ASTM D 41. Apply at a rate of approx. 1 gallon/100 sq. ft. (.4 L/m2). All primed areas shall be fully dried before proceeding with the application of the roof system.

4.03 INSTALLATION - GENERAL

A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.

B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:

1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.
3. Use weighted lawn roller to fully embed all modified membrane field sheets to the substrate.

C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water

4.04 INSTALLATION COLD APPLIED ROOF SYSTEM

A. Base Ply: Cut cap ply sheets into 18 foot lengths and allow plies to relax before installing. Install in cold adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plies specified. Shingle in proper direction to shed water on each large area of roofing.
   1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
   2. Solidly bond to the base layers with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
   3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.
   4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
   5. Allow cold adhesive to set for 5 to 10 minutes before installing the top layer of modified membrane.
   6. Extend membrane 2 inches beyond top edge of all cants in full moppings of the cold adhesive as shown on the Drawings.

B. Cap Ply: Cut cap ply sheets into 18 foot lengths and allow plies to relax before installing. Install in cold adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plies specified. Shingle in proper direction to shed water on each large area of roofing.
   1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
   2. Solidly bond to the base layers with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
   3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.
   4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
   5. Allow cold adhesive to set for 5 to 10 minutes before installing the top layer of modified membrane.
   6. Extend membrane 2 inches beyond top edge of all cants in full moppings of the cold adhesive as shown on the Drawings.
   7. All side and end lap seams are to be hot air welded.

C. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.

D. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06114.
   1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.
   2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
   3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
   4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.

E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07620. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.

F. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.

G. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
   1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
   2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
   3. Adhere to the underlying base ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
   4. Solidly adhere the entire flashing ply to the substrate. Secure the tops of all flashings that are not run up and over curb through termination bar fastened at 6 inches (152 mm) O.C. and sealed at top.
   5. Seal all vertical laps of flashing ply with a three-course application of trowel-grade mastic and fiberglass mesh.
   6. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
   7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
   8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

H. Flashing Cap Ply: Install flashing cap sheets by the same application method used for the base ply.
   1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
   2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
   3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
   4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.

5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
6. All stripping shall be installed prior to flashing cap sheet installation.
7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.
9. All side and end lap seams are to be hot air welded.

I. Surface Coatings: Apply roof coatings in strict conformance with the manufacturer's recommended procedures.

4.05 INSTALLATION EDGE TREATMENT AND ROOF PENETRATION FLASHING

A. Surface Mounted Counterflashing:
1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm). Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
5. Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
6. Secure counterflashing set on butyl tape above flashing at 8 inches (203 mm) o.c. and caulk top of counterflashing.

B. Reglet Mounted Counterflashing:
1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches. Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
5. Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
6. Cut reglet in masonry one joint above flashing.
7. Secure reglet counterflashing with expansion fasteners and caulk reglet opening.

C. Base Flashing For Non-Supported Deck:
1. Inspect the nailer to assure proper attachment and configuration. The wood cant strip should be mechanically attached to the vertical and horizontal wood nailers.
2. Install compressible insulation in neoprene cradle between wall and vertical wood nailer.
3. Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
4. Install base flashing ply covering entire wall and wrapped to top of wood nailer with 6 inches (152 mm) on to field of the roof. Nail membrane at 8 inches (203 mm) o.c.
5. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
6. Attach counterflashing through wall flashing at a spacing of 24 inches (609 mm) o.c.

D. Exhaust Fan:
   1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
   2. Set cant in bitumen. Run all plies over cant a minimum of 2 inches (50 mm).
   3. Install base flashing ply covering curb with 6 inches (152 mm) on to field of the roof.
   4. Install a second ply of modified flashing ply installed over the base flashing ply, 9 inches (228 mm) on to field of the roof. Attach top of membrane to top of wood curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
   5. Install metal exhaust fan over the wood nailers and flashing to act as counterflashing. Fasten per manufacturer's recommendation.

E. Passive Vent/Air Intake:
   1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
   2. Set cant in bitumen. Run all plies over cant a minimum of 2 inches (50 mm).
   3. Install base flashing ply covering curb with 6 inches (152mm) on to the field of the roof.
   4. Install a second ply of modified flashing ply installed over the base flashing ply, 9 inches (228 mm) on to field of the roof. Attach top of membrane to top of wood curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
   5. Install passive vent/air intake over the wood nailers and flashing to act as counterflashing. Fasten per manufacturer's recommendations.

F. Roof Drain:
   1. Plug drain to prevent debris from entering plumbing.
   2. Taper insulation to drain minimum of 24 inches (609 mm) from center of drain.
   3. Run roof system plies over drain. Cut out plies inside drain bowl.
   4. Set lead/copper flashing (30 inch square minimum) in 1/4 inch bed of mastic. Run lead/copper into drain a minimum of 2 inches (50 mm). Prime lead/copper at a rate of 100 square feet per gallon and allow to dry.
   5. Install base flashing ply (40 inch square minimum) in bitumen.
   6. Install modified membrane (48 inch square minimum) in bitumen.
   7. Install clamping ring and assure that all plies are under the clamping ring.
   8. Remove drain plug and install strainer.

G. Plumbing Stack:
   1. Minimum stack height is 12 inches (609 mm).
   2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
   3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
   4. Install base flashing ply in bitumen.
   5. Install membrane in bitumen.
   6. Caulk the intersection of the membrane with elastomeric sealant.
   7. Turn sleeve a minimum of 1 inch (25 mm) down inside of stack.

H. Heat Stack:
   1. Minimum stack height is 12 inches (609 mm).
   2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
   3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
   4. Install base flashing ply in bitumen.
   5. Install modified membrane in bitumen.

6. Caulk the intersection of the membrane with elastomeric sealant.
7. Install new collar over cape. Weld collar or install stainless steel draw brand.

I. Pitch Pocket Umbrella:
1. Run all plies up to the penetration.
2. Place the pitch pocket over the penetration and prime all flanges.
3. Strip in flange of pitch pocket with one ply of base flashing ply. Extend 6 inches (152 mm) onto field of roof.
4. Install second layer of modified membrane extending 9 inches (228 mm) onto field of the roof.
5. Fill pitch pocket half full with non-shrink grout. Let this cure and top off with pourable sealant.
6. Caulk joint between roof system and pitch pocket with roof cement.
7. Place a watershedding type bonnet over the top of the pitch pocket and clamp the top with a drawband collar. Caulk the upper edge of the band with an elastomeric sealant.

J. Liquid Flashing:
1. Mask target area on roof membrane with tape.
2. Clean all non-porous areas with isopropyl alcohol.
3. Apply 32 wet mil base coat of liquid flashing over masked area.
4. Embed polyester reinforcement fabric into the base coat of the liquid flashing.
5. Apply 48-64 wet mil top coat of the liquid flashing material over the fabric extending 2 inches (51 mm) past the scrim in all directions.
6. Apply minerals immediately or allow the liquid flashing material to cure 15-30 days and then install reflective coating.

4.06 PROTECTION

A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.

B. Protect exposed surfaces of finished walls with tarps to prevent damage.

C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.

D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.

E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

4.07 FIELD QUALITY CONTROL

A. Inspection: Provide manufacturer's daily field observations and a final inspection upon completion of the Work.
1. Daily field observations shall be performed by a Technical Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve roofing installations for the manufacturer.
2. Daily roofing progress reports must include; photographic documentation of work in-progress and written statements of compliance with details/shop drawings, weather conditions, and any discrepancies found during inspection.
3. Progress reports must be published to an online database accessible to the Owner/Architect at no additional cost.
4. Provide a final report from the Technical Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.
5. Warranty shall be issued upon manufacturer's acceptance of the installation.

4.08 SCHEDULES

A. Base (Ply) Sheet:
   1. 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a dual fiberglass reinforced scrim, performance requirements according to ASTM D 5147.
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 7% XD 7%
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 7% XD 7%
      d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34.4 deg. C)

B. Cap (Ply) Sheet (30 Year Cap): (Base Bid)
   1. 160 mil SBS and SIS (Styrene-Butadiene-Styrene and Styrene-Isoprene-Styrene) rubber modified membrane incorporating post-consumer recycled rubber, fire retardant additives and reinforced with a fiberglass and polyester composite scrim. Surfaced with the highly reflective Sunburst white mineral. ASTM D 6162, Type III Grade G
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 700 lbf/in XD 750 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 122.5 kN/m XD 131.25 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 1300 lbf XD 1400 lbf
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 5783 N XD 6227 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6.0% XD 6.0%
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 6.0% XD 6.0%
      d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

C. Modified Cap (Ply) Sheet (40 Year Cap): (Add Alternate #1)
   1. 145 mil mineral surfaced, polyurethane modified roofing membrane with fire retardant characteristics, and dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade G
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 205 lbf/in XD 215 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 36.0 kN/m XD 38 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 1334 N XD 1334 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.7% XD 5.0%
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.7% XD 5.0%
      d. Low Temperature Flexibility, ASTM D 5147, Passes 0 deg. F (-18 deg. C)

D. Interply Adhesive):
   1. Rubberized, polymer modified cold process asphalt roofing bitumen V.O.C. compliant ASTM D 3019. Performance Requirements:
      a. Non-Volatile Content ASTM D 4479 70%
      b. Density ASTM D1475 8.9 lbs./gal.
      c. Viscosity Stormer ASTM D562 400-500 grams
      d. Flash Point ASTM D 93 100 deg. F min. (37 deg. C)

e. Slope: up to 3:12

E. Base (Ply) Sheet:
1. 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a dual fiberglass reinforced scrim, performance requirements according to ASTM D 5147.
a. Tensile Strength, ASTM D 5147
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
2) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39 kN/m
b. Tear Strength, ASTM D 5147
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
c. Elongation at Maximum Tensile, ASTM D 5147
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 7% XD 7%
2) 50 mm/min. @ 23 +/- 2 deg. C MD 7% XD 7%
d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34.4 deg. C)

F. Flashing Ply Adhesive:
1. Brush grade flashing adhesive.
a. Non-Volatile Content ASTM D 4479 70 min.
b. Density ASTM D 1475 8.6 lbs./gal. (1kg/l)
c. Flash Point ASTM D 93 100 deg. F (37 deg. C)

G. Flashing Cap (Ply) Sheet (30 Year Cap): (Base Bid)
1. 160 mil SBS and SIS (Styrene-Butadiene-Styrene and Styrene-Isoprene-Styrene) rubber modified membrane incorporating post-consumer recycled rubber, fire retardant additives and reinforced with a fiberglass and polyester composite scrim. Surfaced with the highly reflective Sunburst white mineral. ASTM D 6162, Type III Grade G
a. Tensile Strength, ASTM D 5147
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 700 lbf/in XD 750 lbf/in
2) 50 mm/min. @ 23 +/- 2 deg. C MD 122.5 kN/m XD 131.25 kN/m
3) Tear Strength, ASTM D 5147
(a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 1300 lbf XD 1400 lbf
(b) 50 mm/min. @ 23 +/- 2 deg. C MD 5783 N XD 6227 N
4) Elongation at Maximum Tensile, ASTM D 5147
(a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6.0% XD 6.0%
(b) 50 mm/min. @ 23 +/- 2 deg. C MD 6.0% XD 6.0%
5) Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

H. Flashing Modified Cap (Ply) Sheet (40 Year Cap): (Add Alternate #1)
1. 145 mil mineral surfaced, polyurethane modified roofing membrane with fire retardant characteristics, and dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade G
a. Tensile Strength, ASTM D 5147
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 205 lbf/in XD 215 lbf/in
2) 50 mm/min. @ 23 +/- 2 deg. C MD 36.0 kN/m XD 38 kN/m
b. Tear Strength, ASTM D 5147
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
2) 50 mm/min. @ 23 +/- 2 deg. C MD 1334 N XD 1334 N
c. Elongation at Maximum Tensile, ASTM D 5147
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.7% XD 5.0%
2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.7% XD 5.0%
3) Low Temperature Flexibility, ASTM D 5147, Passes 0 deg. F (-18 deg. C)

I. Surfacing:
1. Surface Coatings:

a. Surfacing:
   1) Garla-Brite: ASTM D 2824 aluminum coating non-fibered aluminum roof coating non-fibered aluminum roof coating having the following characteristics:
      (a) Flash Point 103 deg. F (39 deg. C) min.
      (b) Weight/Gallon 7.9 lbs./gal. (1.0 g/cm3)

END OF SECTION

SECTION 07 62 00

EDGE METAL, SHEET METAL FLASHING AND TRIM

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Provide all labor, equipment, and materials to fabricate and install the following.
   1. Edge strip and flashing
   2. Fascia, scuppers, and trim
   3. Expansion joint and area divider covers
   4. Fascia and edge material
   5. Related Sections:
      a. Division 07 Section Common Work Results for Thermal and Moisture Protection
   6. Related Work Specified Elsewhere:
      a. Division 06 Section - Rough Carpentry
      b. Division 07 Section - Modified Bituminous Membrane Roofing
      c. Division 07 Section - Roof Accessories

1.03 REFERENCES

A. American Society for Testing and Materials (ASTM)
   1. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
   2. ASTM B221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   3. American National Standards Institute and Single Ply Roofing Institute (ANSI/SPRI)
      a. ANSI/SPRI ES-1 Testing and Certification Listing of Shop Fabricated Edge Metal
   4. Warnock Hersey International, Inc., Middleton, WI (WH)
   5. Factory Mutual Research Corporation (FMRC)
   6. FM 1-49 Loss Prevention Data Sheet
   7. Underwriters Laboratories (UL)
   8. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
      a. 1993 Edition Architectural Sheet Metal Manual
   9. National Roofing Contractors Association (NRCA)
      a. Roofing and Waterproofing Manual
   10. American Society of Civil Engineers (ASCE)
      a. ASCE 7 Minimum Design Loads for Buildings and Other Structures

1.04 SUBMITTALS FOR REVIEW

A. Product Data:
   1. Provide manufacturer’s specification data sheets for each product.
   2. Metal material characteristics and installation recommendations.
   3. Submit color chart prior to material ordering and/or fabrication so that equivalent colors to those specified can be approved.
   4. Samples: Submit two (2) samples, illustrating typical metal edge, coping, gutters, fascia extenders for material and finish.
   5. Shop Drawings
      a. For manufactured and ANSI/SPRI ES-1 compliant shop fabricated gravel stops, fascia, scuppers, and all other sheet metal fabrications.
      b. Indicate material profile, jointing details, fastening methods, flashing, terminations, and installation details.

c. Indicate type, gauge and finish of metal

6. Specimen Warranty: Provide an unexecuted copy of the warranty specified for this Project, identifying the terms and conditions required of the Manufacturer and the Owner.

1.05 SUBMITTALS FOR INFORMATION

A. Design Loads: Any material submitted as equal to the specified material must be accompanied by a report signed and sealed by a professional engineer licensed in the state in which the installation is to take place. This report shall show that the submitted equal meets the wind uplift and perimeter attachment requirements according to ASCE 7 and that the submitted equal edge metal system is compliant with the ANSI/SPRI ES-1 standard. Substitution requests submitted without licensed engineer approval will be rejected for non-conformance.

B. Factory Mutual Research Corporation's (FMRC) wind uplift resistance classification: The roof perimeter flashing shall conform to the requirements as defined by the FMRC Loss Prevention Data Sheet 1-49.

C. A letter from the manufacturing company certifying that the materials furnished for this project are the same as represented in tests and supporting data.

D. Mill production reports certifying that the steel thicknesses are within allowable tolerances of the nominal or minimum thickness or gauge specified.

1. Certification of work progress inspection. Refer to Quality Assurance Article below.
2. Certifications.
   a. Submit roof manufacturer's certification that metal fasteners furnished are acceptable to roof manufacturer.
   b. Submit roof manufacturer's certification that metal furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.06 CONTRACT CLOSEOUT SUBMITTALS

A. General: Comply with Requirements of Section 01 78 00 – Closeout Submittals

B. Special Project Warranty: Provide specified warranty for the Project, executed by the authorized agent of the Manufacturer.

C. Roofing Maintenance Instructions. Provide a manual of manufacturer's recommendations for maintenance of installed roofing systems.

D. Insurance Certification: Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.07 QUALITY ASSURANCE

A. Engage an experienced roofing contractor specializing in sheet metal flashing work with a minimum of five (5) years experience.

B. Maintain a full-time supervisor/foreman who is on the job-site at all times during installation. Foreman must have a minimum of five (5) years experience with the installation of similar system to that specified.

C. Source Limitation: Obtain components from a single manufacturer. Secondary products which cannot be supplied by the specified manufacturer shall be approved in writing by the primary manufacturer prior to bidding.

D. Upon request fabricator/installer shall submit work experience and evidence of financial responsibility. The Owner's representative reserves the right to inspect fabrication facilities in determining qualifications.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible.

B. Stack pre-formed and pre-finished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

C. Prevent contact with materials which may cause discoloration or staining.

1.09 PROJECT CONDITIONS

A. Determine that work of other trades will not hamper or conflict with necessary fabrication and storage requirements for pre-formed metal edge system.

1.10 DESIGN AN DPERFORMANCE CRIERIA

A. Thermal expansion and contraction:
   1. Completed metal edge flashing system, shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.

1.11 WARRANTIES

A. Owner shall receive one (1) warranty from manufacturer of roofing materials covering all of the following criteria. Multiple warranties are not acceptable.
   1. Pre-finished metal material shall require a written thirty (30)- year non-prorated warranty covering fade, chalking and film integrity. The material shall not show a color change greater than 5 NBS color units per ASTM D2244 or chalking excess of 8 units per ASTM D659. If either occurs material shall be replaced per warranty, at no cost to the Owner.
   2. Changes: Changes or alterations in the edge metal system without prior written consent from the manufacturer shall render the system unacceptable for a warranty.
   3. Warranty shall commence on date of substantial completion or final payment, whichever is agreed by contract.
   4. The Contractor shall provide the Owner with a notarized written warranty assuring that all sheet metal work including caulking and fasteners to be watertight and secure for a period of two years from the date of final acceptance of the building. Warranty shall include all materials and workmanship required to repair any leaks that develop, and make good any damage to other work or equipment caused by such leaks or the repairs thereof.
   5. Installing roofing contractor shall be responsible for the installation of the edge metal system in general accordance with the membrane manufacturer's recommendations.
   6. Installing contractor shall certify that the edge metal system has been installed per the manufacturer's printed details and specifications.
   7. One manufacturer shall provide a single warranty for all accessory metal for flashings, metal edges and copings, along with the warranty for metal roof areas, membrane roof areas, and any transitions between two different material types.

PART 2 – PRODUCTS

2.01 PRODUCTS, GENERAL

A. Refer to Division 01 Section "Common Product Requirements."

B. Basis of Design: Materials, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.

C. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.

1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section.
2. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Architect, Owner or Owner's Representative.
3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
4. The Owner's decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.02 ACCEPTABLE MANUFACTURERS

A. The design is based upon roofing systems engineered and manufactured by
   1. The Garland Company
   2. 3800 East 91st Street
   3. Cleveland, Ohio 44105
   4. Telephone: (800) 762-8225
   5. Website: www.garlandco.com

2.03 MATERIALS

A. General: Product designations for the materials used in this section shall be based on performance characteristics of the R-Mer Edge/Force/Gutter metal edge system manufactured by The Garland Company, Cleveland, OH, and shall form the basis of the contract documents.

B. Materials: Minimum gauge thickness of Aluminum to be specified in accordance with Architectural Sheet Metal Manual, Sheet Metal and Air Conditioning Contractor's National Association, Inc. recommendations.

C. R-Mer Force Flash-less Snap-On Fascia Extruded Base Anchor
   1. Aluminum Kynar, ASTM B209, alloy 3105-H14, in thickness of .040" nom.
   2. Base Anchor and Anchor Splice Plates: 6005A-T61 extruded aluminum
   3. Compression Seal for top of anchor: TPE thermoplastic elastomer.
   4. Sealant for Flange: Green-Lock Sealant XL: Single-component high performance 100% solids, interior and exterior polyether joint sealant

D. Pitch pockets and plumbing sleeves shall be 20 oz. copper, and have all corners soldered, and a continuous 4" wide minimum deck flange at corners.

E. Miscellaneous Metals and Flashings:
   1. Surface Mounted Counterflashings: Kynar finished Aluminum, 0.040 inch thick.
   2. Equipment Slip Flashing: Mill finished Aluminum; 0.040 inch thick.
   3. Flat Stock - Custom Fabricated Trim: Kynar finished Aluminum, 0.040 inch thick.
   4. Solder for Stainless Steel: ASTM B 32, Grade Sn60, used with an acid flux of type recommended by stainless-steel sheet manufacturer; use a noncorrosive rosin flux over tinned surfaces.
   5. Solder for Copper: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.
   6. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened. Exposed fasteners shall have a neoprene or other suitable weatherproofing washer.
   7. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil dry film thickness per coat.
   8. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

9. Sealing Tape: Pressure sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.
10. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.
11. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.
12. Roofing Cement: ASTM D 4586, Type I, asbestos free, asphalt based.

F. Finishes
1. Exposed surfaces for coated panels:
a. Steel Finishes: fluorocarbon finish. Epoxy primer baked both sides, .2-.25 mils thickness as approved by finish coat manufacturer. Weathering finish as referred by National Coil Coaters Association (NCCA).
2. Color shall be as specified
a. Exposed and unexposed surfaces for mill finish flashing, fascia, and coping cap, shall be as shipped from the mil

2.04 RELATED MATERIALS AND ACCESSORIES

A. Metal Primer: Zinc chromate type.

B. Plastic Cement: ASTM D 4586

C. Sealant: Specified in Section 07900 or on drawings.

D. Underlayment: ASTM D2178, No 15 asphalt saturated roofing felt.

E. Self-Adhering Underlayment, one of the following:
1. 60 mil minimum transition strip
2. 45 mil high temperature underlayment with cross laminated polymer surface

F. Slip Sheet: Rosin sized building paper.

G. Fasteners:
1. Corrosion resistant screw fastener as recommended by metal manufacturer. Finish exposed fasteners same as flashing metal.
2. Fastening shall conform to Factory Mutual requirements or as stated on section details, whichever is more stringent.

H. Gutter and Downspout Anchorage Devices: Material as specified for system

PART 3 – EXECUTION

3.01 EXECUTION, GENERAL

A. Refer to Division 07 Section Common Work Results for Thermal and Moisture Protection.

3.02 PROTECTION

A. Isolate metal products from dissimilar metals, masonry or concrete with bituminous paint, tape, or slip sheet. Use gasketed fasteners where required to prevent corrosive reactions.

3.03 GENERAL

A. Secure fascia to wood nailers at the bottom edge with a continuous cleat.

B. Fastening of metal to walls and wood blocking shall comply with building code standards.

C. All accessories or other items essential to the completeness of sheet metal installation, whether specifically indicated or not, shall be provided and of the same material as item to which applied.

D. Allow sufficient clearances for expansion and contraction of linear metal components. Secure metal using fasteners as required by the system. Exposed face fastening will be rejected.

3.04 INSPECTION

A. Verify that curbs are solidly set and nailing strips located.

B. Perform field measurements prior to fabrication.

C. Coordinate work with work of other trades.

D. Verify that substrate is dry, clean and free of foreign matter.

E. Commencement of installation shall be considered acceptance of existing conditions.

3.05 MANUFACTURED SHEET METAL SYSTEMS

A. Furnish and install manufactured fascia and coping cap systems in strict accordance with manufacturer's printed instructions.

B. Provide factory-fabricated accessories including, but not limited to, fascia extenders, miters, scuppers, joint covers, etc. refer to Source limitation provision in Part 1.

3.06 SHOP-FABRICATED SHEET METAL

A. Metal work shall be shop fabricated to configurations and forms in accordance with recognized sheet metal practices.

B. Hem exposed edges.

C. Angle bottom edges of exposed vertical surfaces to form drip.

D. Lap corners with adjoining pieces fastened and set in sealant.

E. Form joints for gravel stop fascia system, coping cap with a 3/8" opening between sections. Back the opening with an internal drainage plate formed to the profile of fascia piece.

F. Install sheet metal to comply with referenced ANSI/SPRI, SMACNA and NRCA standards.

3.07 FLASHING MEMBRANE INSTALLATION

A. Scupper Through Roof Edge
   1. Install scupper box in a one fourth (1/4) inch bed of mastic. Assure all box seams are soldered and have minimum four (4) inch flange. Make sure all corners are closed and soldered. Attach scupper to perimeter blocking as drawn.
   2. Prime metal edge at a rate of one hundred (100) square feet per gallon and allow to dry.

B. Flash-less Snap-On Fascia Detail with Extruded Aluminum Base Anchor
   1. Position base ply of the Built-Up and/or Modified Roofing membrane over the roof edge covering nailers completely, fastening eight (8) inches on center. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations. Cap sheet shall stop at the edge of the roof and shall not turn over the edge of the nailer.
   2. Prior to installing the base anchor, assure a level plane is present. If not, shim the roof edge surface as required.
   3. Extruded base anchor: Apply two 1/4" beads of Green-Lock Sealant XL or equal on the bottom surface of the top flange of the extruded anchor.
   4. Set the extruded anchor on the edge and face fasten through pre-punched slots every 18 inches o.c. for 5.75 inch face fascia, and 18 inches o.c. staggered for any fascia size greater than 5.75 inches. Begin fastening 6 inches from ends.
   5. Install Green-Lock Sealant XL or equal at the ends of the base frame to prevent water from running between base anchor joints.
   6. Install compression seals every 40 inches on center in the slots located at the top of the extruded anchor.

7. Install fascia cover setting the top flange over the top flange and compression seals of the base anchor. Assure compression seals are in place during this process. Beginning on one end and working towards the opposite end, press downward firmly (do not rotate) until “snap” occurs and cover is engaged along entire length of miter.
8. Install splice plate at each end of the base anchor and fascia cover prior to the installation of the next adjacent ten foot piece.

3.08 CLEANING

A. Clean installed work in accordance with the manufacturer’s instructions.

B. Replace damaged work than cannot be restored by normal cleaning methods.

3.09 CONSTRUCTION WASTE MANAGEMENT

A. Remove and properly dispose of waste products generated. Comply with requirements of authorities having jurisdiction.

3.10 FINAL INSPECTION

A. At completion of installation and associated work, meet with Contractor, Architect, installer, installer of associated work, Owner, roofing system manufacturer’s representative, and other representatives directly concerned with performance of roofing system.

B. Inspect work and flashing of roof penetrations, walls, curbs, and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.

C. Repair or replace deteriorated or defective work found at time above inspection as required to a produce an installation which is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

D. Notify the Architect & Owner upon completion of corrections.

E. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

F. Immediately correct roof leakage during construction. If the Contractor does not respond within twenty-four (24) hours, the Owner will exercise rights to correct the Work under the terms of the Conditions of the Contract.

3.11 DEMONSTRATION AND TRAINING

A. At a time and date agreed to by the Owner, instruct the Owner’s facility manager, or other representative designated by the Owner, on the following procedures:
   1. Troubleshooting procedures
   2. Notification procedures for reporting leaks or other apparent roofing problems
   3. Maintenance
   4. The Owner’s obligations for maintaining the warranty in effect and force
   5. The Manufacturer’s obligations for maintaining the warranty in effect and force.

END OF SECTION

SECTION 07 71 00
ROOF SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufactured roof specialties, including copings, fascias, and gravel stops.

B. Roof control and expansion joint covers.

C. Roof Drains

1.02 RELATED REQUIREMENTS

A. Section 07 72 00 - Roof Accessories: Manufactured curbs, and roof hatches.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.

B. NRCA (RM) - The NRCA Roofing Manual.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Control and Expansion Joint Covers:
   1. Construction Specialties, Inc: www.c-sgroup.com/#sle.
   2. EMSEAL Joint Systems, Ltd; Emseal RoofJoint: www.emseal.com/#sle.
   3. GAF: www.gaf.com/#sle.
   4. Johns Manville: www.jm.com/#sle.

B. Roof Drains
   1. Zurn: www.zurn.com

C. Counterflashings:

2.02 COMPONENTS

A. Roof Edge Flashings: Factory fabricated to sizes required; corners mitered; concealed fasteners.
   1. Configuration: Fascia, cant, and edge securement for roof membrane.

B. Copings: Factory fabricated to sizes required; corners mitered; concealed fasteners.
   1. Configuration: Concealed continuous hold down cleat at both legs; internal splice piece at joints of same material, thickness, and finish as cap; concealed stainless steel fasteners.

C. Control and Expansion Joint Covers: Composite construction of 6 inch wide flexible EPDM flashing of white color with closed cell urethane foam backing, each edge seamed to aluminum sheet metal flanges, designed for nominal joint width of 1 inch. Include special formed corners, tees, intersections, and wall flashings, each sealed watertight.

D. Retrofit Roof Drain:Eaul to Zurn RD2150-FS Flat Sump Replacement Roof Drain Designed for renovation roof applications where existing roof drain bodies cannot be utilized. The RD2150-FS is designed to penetrate the old roof drain body, bonding securely to the inside of the drain pipe. The RD2150-FS is furnished with 16 gage Type 304 stainless steel flat sump body and neoprene gasket, complete with Dura-Coated cast iron clamp collar with integral gravel guard and heavy duty, Dura-Coated cast iron dome strainer.

E. Pipe and Penetration Flashing: Base of rounded aluminum, compatible with sheet metal roof systems, and capable of accomodating pipes sized between 3/8 inch and 12 inches.

F. Counterflashings: Factory fabricated and finished sheet metal that overlaps top edges of base flashing by at least 4 inches, and designed to snap into through-wall flashing or reglets with lapped joints.

G. Pipe Penetration Wall Seal: Seal for HVAC piping wall penetrations with wall mounted rigid plastic outlet cover and elastomeric wall seal gasket.

2.03 FINISHES

A. Color Anodized Finish: AAMA 611 AA-M12C22A42/44 Class I integrally or electrolytically colored anodic coating not less than 0.7 mil, 0.0007 inch thick.

2.04 ACCESSORIES

A. Sealant for Joints in Linear Components: As recommended by component manufacturer.

B. Adhesive for Anchoring to Roof Membrane: Compatible with roof membrane and approved by roof membrane manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.

3.02 INSTALLATION

A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.

B. Seal joints within components when required by component manufacturer.

C. Anchor components securely.

D. Comply with NRCA (RM) drawing details as noted:

E. Coordinate installation of components of this section with installation of roofing membrane and base flashings.

F. Coordinate installation of sealants and roofing cement with work of this section to ensure water tightness.

G. Coordinate installation of flashing flanges into reglets.

END OF SECTION

SECTION 07 72 00
ROOF ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufactured equipment rails, and pedestals.

B. Roof hatches.

C. Prefabricated roof curbs for HVAC equipment.

D. Non-penetrating pedestals.

E. Non-penetrating guard rail system.

1.02 RELATED REQUIREMENTS

A. Section 07 72 01 - Roof Hatch Rail System

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used.
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Maintenance requirements.

C. Warranty Documentation:
   1. Submit manufacturer warranty.
   2. Ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store products under cover and elevated above grade.

1.05 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURED CURBS

A. Manufacturers:
   1. AES Industries Inc: www.aescurb.com/#sle.
   2. The Pate Company: www.patecurbs.com/#sle.
   3. LMCurbs; Roof Curbs: www.lmcurbs.com/#sle.

B. Roof Curbs Mounting Assemblies: Factory fabricated hollow sheet metal construction, internally reinforced, and capable of supporting superimposed live and dead loads and designated equipment load with fully mitered and sealed corner joints welded or mechanically fastened, and integral counterflashing with top and edges formed to shed water.
   1. Roof Curb Mounting Substrate: Curb substrate consists of flat roof deck sheathing with insulation.
   2. Provide layouts and configurations indicated on drawings.

C. Pipe, Duct, and Conduit Mounting Pedestals: Vertical posts, minimum 8 inches square unless otherwise indicated.
   1. Height Above Finished Roof Surface: 8 inches, minimum.

2.02 ROOF HATCHES

A. Manufacturers - Roof Hatches:
   1. Acudor Products Inc; Galvanized Steel Roof Hatch: www.acudor.com/#sle.
   2. Babcock-Davis; Personnel II (Ladder Access) : www.babcockdavis.com/#sle.
   3. Bilco Company; Type S (ladder access, standard size, solid cover): www.bilco.com/#sle.

B. Roof Hatches: Factory-assembled steel frame and cover, complete with operating and release hardware.
   1. Style: Provide flat metal covers unless otherwise indicated.
   2. Mounting: Provide frames and curbs suitable for mounting conditions indicated on the drawings.
   3. Size: Verify in field.
   4. For Ladder Access: Single leaf; 30 by 36 inches.

C. Frames/Curbs: One-piece curb and frame with integral cap flashing to receive roof flashings; extended bottom flange to suit mounting.
   1. Material: Galvanized steel, 14 gage, 0.0747 inch thick.
   2. Finish: Factory prime paint.
   3. Insulation: 1 inch rigid glass fiber, located on outside face of curb.
   4. Curb Height: 12 inches from finished surface of roof, minimum.

D. Metal Covers: Flush, insulated, hollow metal construction.
   1. Capable of supporting 40 psf live load.
   2. Material: Galvanized steel; outer cover 14 gage, 0.0747 inch thick, liner 22 gage, 0.03 inch thick.
   3. Finish: Factory prime paint.
   4. Insulation: 1 inch rigid glass fiber.
   5. Gasket: Neoprene, continuous around cover perimeter.

E. Hardware: Steel, zinc coated and chromate sealed, unless otherwise indicated or required by manufacturer.
   1. Lifting Mechanisms: Compression or torsion spring operator with shock absorbers that automatically opens upon release of latch; capable of lifting covers despite 10 psf load.
   2. Hinges: Heavy duty pintle type.
   3. Hold open arm with vinyl-coated handle for manual release.
   4. Latch: Upon closing, engage latch automatically and reset manual release.
   5. Manual Release: Pull handle on interior.
   6. Locking: Padlock hasp on interior.

2.03 NON-PENETRATING ROOFTOP ASSEMBLIES

A. Non-Penetrating Rooftop Assemblies: Manufacturer-engineered and factory-fabricated, with pedestal bases that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly.
   1. Design Loadings and Configurations: As required by applicable codes.
   2. Height: Provide minimum clearance of 8 inches under supported items to top of roofing.
   3. Support Spacing and Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
   4. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.
   5. Hardware, Bolts, Nuts, and Washers: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A153/A153M.

B. Pipe Supports: Provide attachment fixtures complying with MSS SP-58 and as indicated.

C. Non-Penetrating Pedestals: Steel pedestals with square, round, or rectangular bases.
   1. Bases: High density polypropylene.

2. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
3. Steel Components: Stainless steel, or carbon steel hot-dip galvanized after fabrication in accordance with ASTM A123/A123M.

D. Non Penetrating Saefty Rail System
1. Manufacturer: Garlock Safety System, RailGuard 200
a. Base Plate
1) Mounts up to four rail sections
2) Allows 90° turn
3) 3-1/4” space between rails 90 lbs.
b. Rail Sections
1) Top Rail Height = 42” tall
2) Mid-Rail Height = 20” tall
3) Rail length: 10’ sections
4) Outrigger length: 5' section
5) 6 ga. welded steel
c. Usage Recommendations
1) End all confgurations with either a closed loop that connects all bases and rail sections or the use of a 5-foot
2) Outrigger System to provide the needed counterbalance.
3) Confgurations with Outrigger Systems require one addi-tional base.
4) Locking pins must be used to secure all rails into the bases.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions, in manner that maintains roofing weather integrity.

3.04 CLEANING

A. See Section 01 70 00 - Execution and Closeout Requirements for additional requirements.

B. Clean installed work to like-new condition.

3.05 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 72 33
ROOF HATCHES

(BILCO TYPE NB)

PART 1 GENERAL

2.01 SUMMARY

A. Work Included: Provide factory-fabricated roof hatches for ladder access.

2.02 SUBMITTALS

A. Product Data: Submit manufacturer's product data.

B. Shop Drawings: Submit shop drawings including profiles, accessories, location, adjacent construction interface, and dimensions.

C. Warranty: Submit executed copy of manufacturer's standard warranty.

2.03 QUALITY ASSURANCE

A. Manufacturer: A minimum of 5 years experience manufacturing similar products.

B. Installer: A minimum of 2 years experience installing similar products.

C. Manufacturer's Quality System: Registered to ISO 9001 Quality Standards including in-house engineering for product design activities.

2.04 DELIVERY, STORAGE AND HANDLING

A. Deliver products in manufacturer's original packaging. Store materials in a dry, protected, well-vented area. Inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.

2.05 WARRANTY

A. Manufacturer's Warranty: Provide manufacturer's standard warranty. Materials shall be free of defects in material and workmanship for a period of five years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.

PART 2 PRODUCTS

3.01 MANUFACTURER

A. Basis-of-Design Manufacturer: Type NB Roof Hatch by The BILCO Company, P.O. Box 1203, New Haven, CT 06505, 1-800-366-6530, Fax: 1-203-535-1582, Web: www.bilco.com.

3.02 ROOF HATCH

A. Furnish and install where indicated on plans metal roof hatch Type NB, size width: 30" (762mm) x length: 54" (1372mm). Length denotes hinge side. The roof hatch shall be single leaf. The roof hatch shall be pre-assembled from the manufacturer.

B. Performance characteristics:
   1. Cover shall be reinforced to support a minimum live load of 40 psf (195kg/m2) with a maximum deflection of 1/150th of the span or 20 psf (97kg/m2) wind uplift.
   2. Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.
   3. Operation of the cover shall not be affected by temperature.
   4. Entire hatch shall be weather tight with fully welded corner joints on cover and curb.

C. Cover: Shall be [select: 14 gauge (1.9mm) paint bond G-90 galvanized steel or 11 gauge (2.3mm) aluminum] with a 3" (76mm) beaded flange with formed reinforcing members. Cover shall have a heavy extruded EPDM rubber gasket that is bonded to the cover interior to assure a continuous seal when compressed to the top surface of the curb.

D. Cover insulation: Shall be fiberglass of 1” (25mm) thickness, fully covered and protected by a metal liner [select: 22 gauge (.8mm) paint bond G-90 galvanized steel or 18 gauge (1mm) aluminum].

E. Curb: Shall be 12” (305mm) in height and of [select: 14 gauge (1.9mm) paint bond G-90 galvanized steel or 11 gauge (2.3mm) aluminum]. The curb shall be formed with a 3-1/2” (89mm) flange with 7/16” (11mm) holes provided for securing to the roof deck. The curb shall be equipped with an integral metal capflashing of the same gauge and material as the curb, fully welded at the corners, that features the Bil-Clip® flashing system, including stamped tabs, 6” (153mm) on center, to be bent inward to hold single ply roofing membrane securely in place.

F. Curb insulation: Shall be rigid, high-density fiberboard of 1” (25mm) thickness on outside of curb.

G. Lifting mechanisms: Manufacturer shall provide compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe [for aluminum construction: welded to the curb assembly; for steel construction: through bolted to the curb assembly].

H. Hardware
   1. Heavy pintle hinges shall be provided
   2. Cover shall be equipped with a spring latch with interior and exterior turn handles
   3. Roof hatch shall be equipped with interior and exterior padlock hasps.
   4. The latch strike shall be a stamped component bolted to the curb assembly.
   5. Cover shall automatically lock in the open position with a rigid hold open arm equipped with a 1” (25mm) diameter red vinyl grip handle to permit easy release for closing.
   6. Compression spring tubes shall be an anti-corrosive composite material and all other hardware shall be zinc plated and chromate sealed. [For installation in highly corrosive environments or when prolonged exposure to hot water or steam is anticipated, specify Type 316 stainless steel hardware].
   7. Cover hardware shall be bolted into heavy gauge channel reinforcing welded to the underside of the cover and concealed within the insulation space.

I. Finishes: Factory finish shall be [select: alkyd based red oxide primed steel or mill finish aluminum].

PART 3 EXECUTION

4.01 EXAMINATION

A. Examine substrates and openings for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

4.02 INSTALLATION

A. Install products in strict accordance with manufacturer’s instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work.
   1. Test units for proper function and adjust until proper operation is achieved.
   2. Repair finishes damaged during installation.
   3. Restore finishes so no evidence remains of corrective work.

4.03 ADJUSTING AND CLEANING

A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

END OF SECTION

SECTION 07 92 00
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.

B. Joint backings and accessories.

C. Sealants for roof assembly and roof accessories are not included in this section. Sealants for roof assembly are per roof membrane and accessory manufacturers recommendations and are to be provided to satisfy roof assembly system and accessory warrantee.

1.02 RELATED REQUIREMENTS

A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.

1.03 REFERENCE STANDARDS

A. ASTM C794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.

B. ASTM C834 - Standard Specification for Latex Sealants.

C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.

D. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems.

E. ASTM C1193 - Standard Guide for Use of Joint Sealants.

F. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   4. Substrates the product should not be used on.
   5. Substrates for which use of primer is required.
   6. Substrates for which laboratory adhesion and/or compatibility testing is required.
   7. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
   8. Sample product warranty.
   9. Certification by manufacturer indicating that product complies with specification requirements.

C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

D. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.

1.05 QUALITY ASSURANCE

A. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
   1. Adhesion Testing: In accordance with ASTM C794.

2. Compatibility Testing: In accordance with ASTM C1087.
3. Allow sufficient time for testing to avoid delaying the work.
4. Deliver to manufacturer sufficient samples for testing.
5. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.
6. Testing is not required if sealant manufacturer provides data showing previous testing, not older than 24 months, that shows satisfactory adhesion, lack of staining, and compatibility.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
   1. Pecora Corporation: www.pecora.com/#sle.
   2. Sika Corporation: www.usa-sika.com/#sle.
   3. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.

2.02 JOINT SEALANT APPLICATIONS

A. Scope:
   1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to:
      a. Wall expansion and control joints.
      b. Joints between door, window, and other frames and adjacent construction.
      c. Joints between different exposed materials.
      d. Openings below ledge angles in masonry.
      e. Other joints indicated below.
   2. Interior Joints: Interior joints to be sealed include, but are not limited to, the following items.
      a. Joints between new and exisitng materials and extent of work with adjacent construction.
      b. Other joints indicated below.
   3. Do not seal the following types of joints.
      a. Intentional weep holes in masonry.
      b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
      c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
      d. Joints where installation of sealant is specified in another section.
      e. Joints between suspended panel ceilings/grid and walls.

B. Exterior Joints: Use nonsag nonstaining silicone sealant, unless otherwise indicated.

C. Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.
   1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant.

2.03 JOINT SEALANTS - GENERAL

A. Sealants and Primers: Provide products with levels of volatile organic compound (VOC) content as indicated in Section 01 61 16.

2.04 NONSAG JOINT SEALANTS

A. Nonstaining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.

B. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.

C. Type 02 - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.

2.05 ACCESSORIES

A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
   1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type O - Open Cell Polyurethane.
   2. Open Cell: 40 to 50 percent larger in diameter than joint width.

B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

C. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.

D. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Install bond breaker backing tape where backer rod cannot be used.

D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

E. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

F. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

END OF SECTION

VORTEX

P.O. Box 6060, Warwick, RI 02887 1.800.VORTEXX

"Suspect" Asbestos Containing Building Materials Inspection & Report

Zuccolo Recreational Center

18 Gesler Street, Providence, RI

Vortex Inc.

Environmental Management, Consulting & Training Services

P.O. Box 6060

Warwick, RI 02887-6060

ASBESTOS INSPECTION & REPORT

REPORT DATE: November 29, 2023

INSPECTION DATES October/November 2023

REPORT TO: Tracey Donnelly
StudioJAED

INSPECTION LOCATION: **Zuccolo Recreational Center**
18 Gesler Street
Providence, RI

INSPECTION PERFORMED BY: John Carbone ***(RI Asbestos Inspector #177IS)***

INSPECTION RESULTS

John Carbone from Vortex Inc. performed an asbestos inspection that included a visual inspection and collection/PLM analysis of "suspect" asbestos containing building materials from the entire Roof Levels, interior Paint and "black colored" solidified drips (from roof mastic material) originating from between the ceiling wood beams. The pipe lagging/fitting material was in "very good condition" and is assumed to contain asbestos.

ENTIRE ROOF – All levels and types of roofing material (perimeter flashing, field/flat and arched roofs) and roof penetration flashing) was sampled and PLM analyzed. *SanAir Lab results confirm NONE of the sampled roofing materials contain asbestos.* There was also black "dried" mastic that had been "oozing" from between several wood ceiling planks at a time (unknown) in the past it was applied to the rooftop. Refer to SanAir Lab Report pages #3 - #6 for analytical confirmation and DRAWING A1 for roof core sampling locations.

INTERIOR - PIPE FITTING & LAGGING INSULATION – there is approximately 800+ l.f. of assumed asbestos containing and visible (majority at ceiling level) pipe fitting/lagging insulation scattered throughout all areas (Boy's/Girl's Locker Room, offices, Entry Lobby, Gym, etc.). Over 99% of this pipe insulation is in "great" condition.

However, there are approximately 10 – 15 locations (total of <10 l.f.) scattered throughout this building where there are "minute" penetration of this insulation. This may include either a <½" round puncture, insulation edge seam seal cracking or 3 l.f. of insulation needing a "spot repair" within the Girl's Locker Room wall heater unit piping.

INTERIOR – PAINT CHIPS – We have experienced paint to contain asbestos in the past so we sampled and had it analyzed. *Lab analysis confirms the peeling paint throughout this building does NOT contain asbestos.*

RECOMMENDATIONS

INTERIOR - PIPE FITTING & LAGGING INSULATION – Recommend "spot repairs" to be performed on these 10 -15 small areas scattered throughout this building. These spot repairs would include the application of rewettable cloth (3" wide x 12" long /area) installed around the breached area followed by the painting of a "chill seal" heat resistant paint applied over the rewettable cloth. This work can be performed by Asbestos training personnel and should performed per RIDOH "Spot Repair" Regulations. This work does not require an Asbestos Plan or RIDOH Notification and it is assumed that there would be no ACM waste generated as a result of this repair.

ROOFING MATERIAL – The removal of the existing roof can be performed by the roofing company and disposed as a solid waste (non-ACM).

GENERAL INFORMATION - However, during the renovation process, if any "suspect" ACM becomes visible from behind wall cavities or underneath previously hidden areas, immediately stop and have materials sampled and analyzed for asbestos content and proceed accordingly.

SanAir Technologies Laboratory

The Identification Specialists

Analysis Report
prepared for
Vortex Inc. Enviro. Management Consulting Training

Report Date: 11/28/2023

Project Name: Zuccolo

Project #: 23-275

SanAir ID#: 23065296

NVLAP TESTING

NVLAP LAB CODE 200870-0

10501 Trade Court | North Chesterfield, Virginia 23236
888.895.1177 | 804.897.1177 | fax: 804.897.0070 | IAQ@SanAir.com | SanAir.com

SanAir Technologies Laboratory

SanAir ID Number
23065296
FINAL REPORT
11/28/2023 5:25:59 PM

Name: Vortex Inc. Enviro. Management Consulting Training
Address: PO Box 6060
Warwick, RI 02887
Phone: 401-738-7710

Project Number: 23-275
P.O. Number:
Project Name: Zuccolo
Collected Date: 10/30/2023
Received Date: 11/28/2023 10:15:00 AM

Dear John Carbone,

We at SanAir would like to thank you for the work you recently submitted. The 36 sample(s) were received on Tuesday, November 28, 2023 via UPS. The final report(s) is enclosed for the following sample(s): BF4, BE2, BF1, AE7, BP1, BE3, BF3, AEI, BE5, CE1, AE2, AE4, AE5, CF4, BE4, AE3, CE2, AF4, AF1, CE3, CF1, CE5, BE1, CE4, AF6, CP1, AF2, CE6, AE6, CE5, BF2, CF5, AE8, AE6, CE2, AE2, AF3, BP2, 1, 2.

These results only pertain to this job and should not be used in the interpretation of any other job. This report is only complete in its entirety. Refer to the listing below of the pages included in a complete final report.

Sincerely,

Sandra Sobrino

Sandra Sobrino
Asbestos & Materials Laboratory Manager
SanAir Technologies Laboratory

Final Report Includes:
- Cover Letter
- Analysis Pages
- Disclaimers and Additional Information

Sample conditions:
- 40 samples in Good condition.

SanAir Technologies Laboratory

SanAir ID Number
23065296
FINAL REPORT
11/28/2023 5:25:59 PM

Name: Vortex Inc. Enviro. Management Consulting Training
Address: PO Box 6060
Warwick, RI 02887
Phone: 401-738-7710

Project Number: 23-275
P.O. Number:
Project Name: Zuccolo
Collected Date: 10/30/2023
Received Date: 11/28/2023 10:15:00 AM

Analyst: Mayes, Jean

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non-fibrous	Asbestos Fibers
BF4 / 23065296-001 BF4	Black Fibrous Heterogeneous	70% Cellulose	30% Other	None Detected
BE2 / 23065296-002 BE2	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
BF1 / 23065296-003 BF1	Black Non-Fibrous Heterogeneous	15% Cellulose	85% Other	None Detected
AE7 / 23065296-004 AE7	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
BP1 / 23065296-005 BP1	Black Fibrous Heterogeneous	80% Cellulose	20% Other	None Detected
BE3 / 23065296-006 BE3	Black Fibrous Heterogeneous	80% Cellulose	20% Other	None Detected
BF3 / 23065296-007 BF3	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
AEI / 23065296-008 AEI	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
BE5 / 23065296-009 BE5	Black Fibrous Heterogeneous	80% Cellulose	20% Other	None Detected
CE1 / 23065296-010 CE1	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected

Analyst: Jean Mayes
Analysis Date: 11/28/2023

Approved Signatory: Johnathan Wilson
Date: 11/28/2023

SanAir Technologies Laboratory

SanAir ID Number
23065296
FINAL REPORT
11/28/2023 5:25:59 PM

Name: Vortex Inc. Enviro. Management Consulting Training
Address: PO Box 6060
Warwick, RI 02887
Phone: 401-738-7710

Project Number: 23-275
P.O. Number:
Project Name: Zuccolo
Collected Date: 10/30/2023
Received Date: 11/28/2023 10:15:00 AM

Analyst: Mayes, Jean

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non-fibrous	Asbestos Fibers
AE2 / 23065296-011 AE2	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
AE4 / 23065296-012 AE4	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
AE5 / 23065296-013 AE5	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
CF4 / 23065296-014 CF4	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
BE4 / 23065296-015 BE4	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
AE3 / 23065296-016 AE3	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
CE2 / 23065296-017 CE2	Black Non-Fibrous Heterogeneous	20% Glass	80% Other	None Detected
AF4 / 23065296-018 AF4	Black Non-Fibrous Heterogeneous	40% Cellulose	60% Other	None Detected
AF1 / 23065296-019 AF1	Black Non-Fibrous Homogeneous		100% Other	None Detected
CE3 / 23065296-020 CE3	Black Fibrous Heterogeneous	60% Cellulose	40% Other	None Detected

Analyst: J. Mayes
Analysis Date: 11/28/2023

Approved Signatory: Jonathan Wilson
Date: 11/28/2023

SanAir Technologies Laboratory

SanAir ID Number
23065296
FINAL REPORT
11/28/2023 5:25:59 PM

Name: Vortex Inc. Enviro. Management Consulting Training
Address: PO Box 6060
Warwick, RI 02887
Phone: 401-738-7710

Project Number: 23-275
P.O. Number:
Project Name: Zuccolo
Collected Date: 10/30/2023
Received Date: 11/28/2023 10:15:00 AM

Analyst: Mayes, Jean

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non-fibrous	Asbestos Fibers
CF1 / 23065296-021 CF1	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
CE5 / 23065296-022 CE5	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
BE1 / 23065296-023 BE1	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
CE4 / 23065296-024 CE4	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
AF6 / 23065296-025 AF6	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
CP1 / 23065296-026 CP1	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
AF2 / 23065296-027 AF2	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
CE6 / 23065296-028 CE6	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
AE6 / 23065296-029 AE6	Black Non-Fibrous Heterogeneous	10% Cellulose	90% Other	None Detected
CE5 / 23065296-030 CE5	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected

Analyst: Jean Mayes
Analysis Date: 11/28/2023

Approved Signatory: Jonathan Wilson
Date: 11/28/2023

SanAir
Technologies Laboratory

SanAir ID Number
23065296
FINAL REPORT
11/28/2023 5:25:59 PM

Name: Vortex Inc. Enviro. Management Consulting
Address: Training
PO Box 6060
Warwick, RI 02887
Phone: 401-738-7710

Project Number: 23-275
P.O. Number:
Project Name: Zuccolo
Collected Date: 10/30/2023
Received Date: 11/28/2023 10:15:00 AM

Analyst: Mayes, Jean

Asbestos Bulk PLM EPA 600/R-93/116

	Stereoscopic	Components		
SanAir ID / Description	Appearance	% Fibrous	% Non-fibrous	Asbestos Fibers
BF2 / 23065296-031 BF2	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
CF5 / 23065296-032 CF5	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
AE8 / 23065296-033 AE8	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
AE6 / 23065296-034 AE6	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
CE2 / 23065296-035 CE2	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
AE2 / 23065296-036 AE2	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
AF3 / 23065296-037 AF3	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
BP2 / 23065296-038 BP2	Black Non-Fibrous Heterogeneous	20% Cellulose	80% Other	None Detected
1 / 23065296-039 Interior Wall Paint	White Non-Fibrous Homogeneous		100% Other	None Detected
2 / 23065296-040 Ceiling/Roof Drippings	Black Non-Fibrous Homogeneous		100% Other	None Detected

Analyst: Jean Mayes
Analysis Date: 11/28/2023

Approved Signatory: Johnathan Wilson
Date: 11/28/2023

Disclaimer

This report is the sole property of the client named on the SanAir Technologies Laboratory chain-of-custody (COC). Results in the report are confidential information intended only for the use by the customer listed on the COC. Neither results nor reports will be discussed with or released to any third party without our client's written permission. The final report shall not be reproduced except in full without written approval of the laboratory to assure that parts of the report are not taken out of context. This report and any information contained within shall not be edited, altered, or modified in any way by any persons or agencies receiving, viewing, distributing, or otherwise possessing a copy of this final report. The laboratory reserves the right to perform amendments to any finalized report, of which shall supersede and make obsolete any previous editions. Such changes, modifications, additions, or deletions shall be effective immediately upon notice thereof, which may be given by means including but not limited to posting on the SanAir client portal website, electronic or conventional mail, or by any other means. The information provided in this report applies only to the samples submitted and is relevant only for the date, time, and location of sampling. The accuracy of the results is dependent upon the client's sampling procedure and information provided to the laboratory by the client on the COC. SanAir assumes no responsibility for the sampling procedure and will provide evaluation reports based solely on the sample(s) in the condition in which they arrived at the laboratory and information provided by the client on the COC, such as: project number, project name, collection dates, po number, special instructions, samples collected by, sample numbers, sample identifications, sample type, selected analysis type, flow rate, total volume or area, and start stop times that may affect the validity of the results in this report. Samples were received in good condition unless otherwise noted on the report. SanAir assumes no responsibility or liability for the manner in which the results are used or interpreted. This report does not constitute nor shall not be used by the client to claim product, process, system, or person certification, approval, or endorsement by NVLAP, NIST, NELAC, AIHA LAP, LLC or any other U.S. governmental agencies and may not be accredited by every local, state, and federal regulatory agencies. Samples are held for a period of 60 days. Fibers smaller than 5 microns cannot be seen with this method due to scope limitations. For NY state samples, method EPA 600/M4-82-020 is performed.

NYELAP Disclaimer:
Polarized- light microscopy is not consistently reliable in detecting asbestos in floor covering and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

Asbestos Accreditations
National Voluntary Laboratory Accreditation Program (NVLAP) Lab Code 200870-0
City of Philadelphia Department of Public Health Air Management Services, Certification#ALL-460
Commonwealth of Pennsylvania Department of Environmental Protection Number 68-05397
California State Environmental Laboratory Accreditation Program Certificate Number 2915
Colorado Department of Public Health and Environment Registration Number AL-23143
Connecticut Department of Public Health Environmental Laboratory Registration Number PH-0105
Massachusetts Department of Labor Standards Asbestos Analytical Services License Number: AA000222
State of Maine Department of Environmental Protection License Number: LB-0075, LA-0084
New York State Department of Health Laboratory ID: 11983
State of Rhode Island Department of Health Certification No.: PCM00126, PLM00126, TEM00126
Texas Department of State Health Services License Number: 300440
Commonwealth of Virginia Department of Professional and Occupational Regulation Number: 3333000323
State of Washington Department of Ecology Laboratory ID: C989
State of West Virginia Bureau for Public Health Analytical Laboratory Number: LT000616
Vermont Department of Health License Number: Asb-Co-An-000006
Louisiana Department of Environmental Quality AI Number 212253, Certificate #05088

SanAir Technologies Laboratory

1551 Oakbridge Dr. STE B
Powhatan, VA 23139
804.897.1177 / 888.895.1177
Fax 804.897.0070
sanair.com

Asbestos
Chain of Custody
Form 140, Rev 1, 1/20/2017

SanAir ID Number: 23065294

Company: Vortex Inc. Enviro. Management Consulting Training		Project #: 23-275	Collect by: CARBONE
Address: PO Box 6060		Project Name: ZUCCOLO	Phone #: ~~401-738-7710~~
City, St, Zip: Warwick, RI 02887		Date Collected: 10/30/23	Fax #: ~~401-738-7660~~
State of Collection: RI	Account#: 3042	P.O. Number:	Email: 401-640-9331

Bulk

ABB	PLM EPA 600/R-93/116	X
	Positive Stop ☐	
ABEPA	PLM EPA 400 Point Count	☐
ABB1K	PLM EPA 1000 Point Count	☐
ABBEN	PLM EPA NOB**	☐
ABBCH	TEM Chatfield**	☐
ABBTM	TEM EPA NOB**	☐
ABQ	PLM Qualitative	☐

** Available on 24-hr. to 5-day TAT

Water

ABHE	EPA 100.2	☐

Air

ABA	PCM NIOSH 7400	☐
ABA-2	OSHA w/ TWA*	☐
ABTEM	TEM AHERA	☐
ABATN	TEM NIOSH 7402	☐
ABT2	TEM Level II	☐
Other:		☐

New York ELAP

PLM NY	PLM EPA 600/M4-82-020	☐
ABEPA2	NY ELAP 198.1	☐
ABENY	NY ELAP 198.6 PLM NOB	☐
ABBNY	NY ELAP 198.4 TEM NOB	☐

Soil

ABSE	PLM EPA 600/R-93/116 (Qual.)	☐

Vermiculite & Soil

ABSP	PLM CARB 435 (LOD <1%)	☐
ABSP1	PLM CARB 435 (LOD 0.25%)	☐
ABSP2	PLM CARB 435 (LOD 0.1%)	☐

Dust

ABWA	TEM Wipe ASTM D-6480	☐
ABDMV	TEM Microvac ASTM D-5755	☐

Matrix	Other	
		☐

Turn Around Times				
	3 HR (4 HR TEM) ☐	6 HR (8HR TEM) ☐	12 HR X	24 HR ☐
	☐ 2 Days	☐ 3 Days	☐ 4 Days	☐ 5 Days

Special Instructions

Sample #	Sample Identification/Location	Volume or Area	Sample Date	Flow Rate*	Start – Stop Time*	
BF4	SAME AS SAMPLE					
BE2						
BF1						
AE7						
BP1	ONLY ANALYZE 1 BLACK COLORED		11			
BE3	MATERIAL IN EACH BAG AS ONE (1)					
BF3	HOMOGENEOUS SAMPLE					
AE1						
BE5						
CE1						
AE2						
AE4						

Relinquished by	Date	Time	Received by	Date	Time
Carbone	11/27/23	4 PM	SHC	11/28/23	1015 AM

If no technician is provided, then the primary contact for your account will be selected. Unless scheduled, the turnaround time for all samples received after 3 pm EST Friday will begin at 8 am Monday morning. Weekend or holiday work must be scheduled ahead of time and is charged for rush turnaround time. SanAir covers Standard Overnight FedEx shipping. Shipments billed to SanAir with a faster shipping rate will result in additional charges.

Page 1 of 2

23065296

Form 140, Revision 1, 1/20/2017

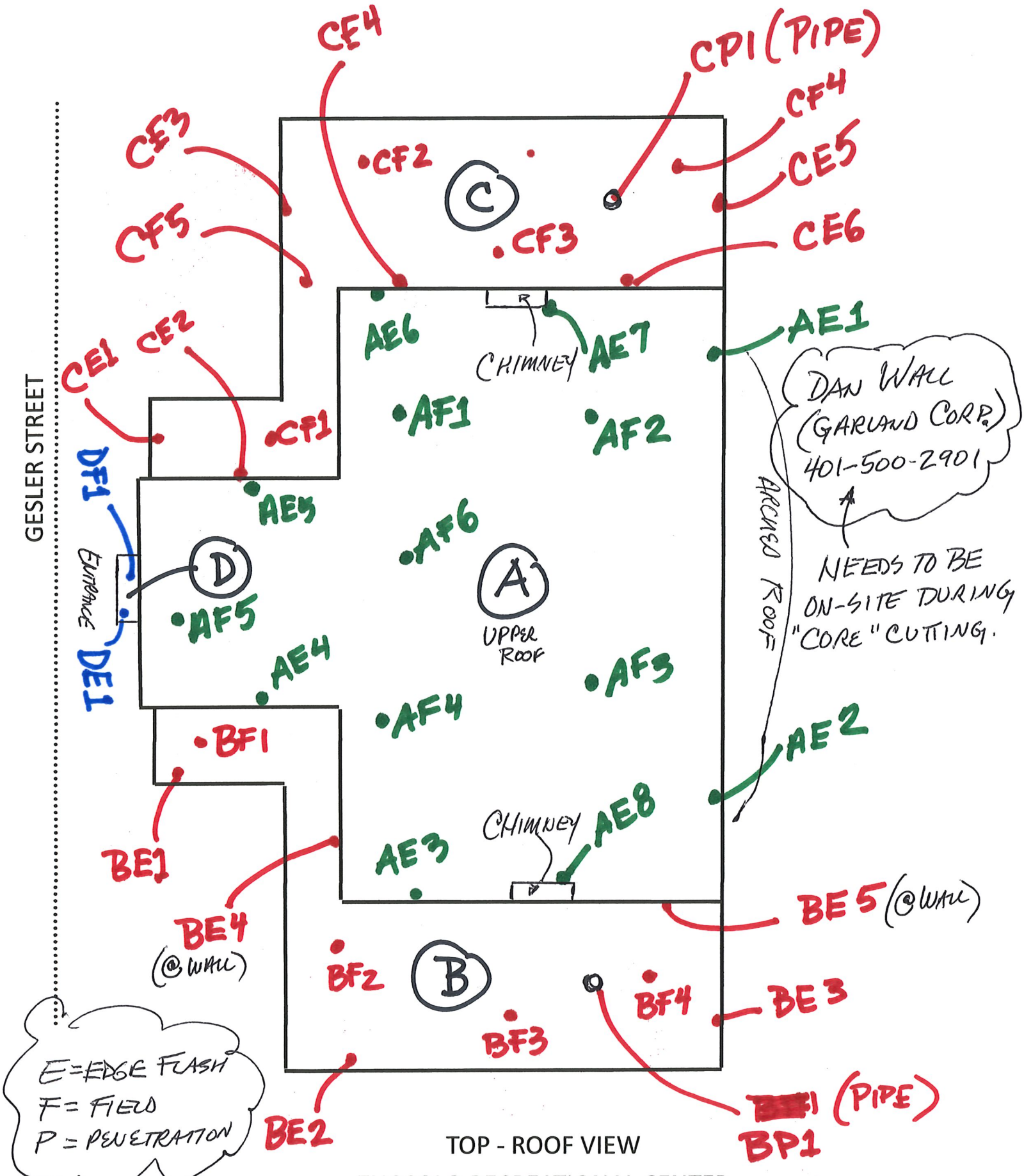
Sample #	Sample Identification/Location	Volume or Area	Sample Date	Flow Rate*	Start – Stop Time*	
AE5	SAME AS SAMPLE #					
CF4	←					
BE4						
AE3						
CE2						
AF4						
AF1						
CE3						
CF1						
CE5						
BE1						
CE4						
AF6						
CP1						
AF2						
CE6						
AE6						
CE5						
BF2						
CF5						
AE8						
AE6						
CE2						
AE2						
AF3						
BP2						
1	- INTERIOR WALL PAINT					
2	- CEILING/ROOF DRIPPINGS					

Special Instructions	

Relinquished by	Date	Time	Received by	Date	Time
			SNL	11/28/23	1015 AM

If no technician is provided, then the primary contact for your account will be selected. Unless scheduled, the turnaround time for all samples received after 3 pm EST Friday will begin at 8 am Monday morning. Weekend or holiday work must be scheduled ahead of time and is charged for rush turnaround time. SanAir covers Standard Overnight FedEx shipping. Shipments billed to SanAir with a faster shipping rate will result in additional charges.

Page 2 of 2



TOP - ROOF VIEW

ZUCCOLO RECREATIONAL CENTER

18 GESLER STREET, PROVIDENCE, RI

DRAWING A1

VORTEX INC.

ENVIRONMENTAL MANAGEMENT • CONSULTING • TRAINING
MAILING ADDRESS: P.O. BOX 6060 • WARWICK, RI 02887-6060

Rhode Island Department of Health

Asbestos Program

Asbestos Inspector

JOHN CARBONE

Exp. Date: 03/31/2024
License #: AI00177
Member of C.O.N.E.S.

Rhode Island Department of Health

Asbestos Program

Asbestos Management Planner

JOHN CARBONE

Exp. Date: 03/31/2024
License #: AMP00177
Member of C.O.N.E.S.

Rhode Island Department of Health

Asbestos Program

Asbestos Project Designer

JOHN CARBONE

Exp. Date: 03/31/2024
License #: APD00177
Member of C.O.N.E.S.

TRAINING CENTER: 3670 West Shore Road - Suite #1 • Warwick, RI 02886 • FAX (401) 738-7869
(401) 738-7710 • 1-800-VORTEXX • WWW.1800VORTEXX.COM
"Celebrating 25 years of Services"

VORTEX

P.O. Box 6060, Warwick, RI 02887 1.800.VORTEXX

"Suspect" Lead-based Paint - Walls/Ceilings
Inspection & Report

Zuccolo Recreational Center

18 Gesler Street, Providence, RI

Vortex Inc.

Environmental Management, Consulting & Training Services

P.O. Box 6060

Warwick, RI 02887-6060

LEAD BASED PAINT INSPECTION & REPORT

REPORT DATE: November 29, 2023

INSPECTION DATES October/November 2023

REPORT TO: Tracey Donnelly
StudioJAED

INSPECTION LOCATION: **Zuccolo Recreational Center**
18 Gesler Street
Providence, RI

INSPECTION PERFORMED BY: John Carbone ***(Industrial Hygienist)***

INSPECTION RESULTS

The interior of this building has sustained water damage to the structural *painted* wood ceiling deck and CMU block walls from a faltering roof system. The water intrusion issue has caused extensive peeling of wall/ceiling paint to some degree in each room/area throughout this building interior. Therefore, we had the peeling paint sampled/analyzed from 3 separate rooms (Men's Locker Room, Entry Lobby & Gymnasium Wall) to determine lead concentration levels.

SanAir Lab results confirm the Men's Locker Room and Entry Lobby walls contained "lead-free" paint and the Gym wall paint contained low levels of lead. However, because the paint is NOT intact, we shall consider all surface areas will require professional Lead trained personnel. Refer to SanAir Lab Report (page #3) for analytical confirmation.

RECOMMENDATIONS

As a precautionary measure with non-intact paint, we shall assume that all wall/ceiling surfaces throughout this building interior contains low levels of lead in the paint and the following should be complied with.. to include:

1) At a minimum, the scrapping, sanding, feathering of the remaining paint, etc. and wall/floor cleaning throughout this building should be performed by a RI Dept. of Health licensed Lead-Safe Remodeler/Renovator Contractor with properly certified workforce.

2) Once completed, there shall be a visual inspection of the areas and surface dust wipes (total of 5 in various areas) to be collected by a RI licensed Lead Inspector then analyzed by a RIDOH approved Lab. Results will be interpreted by the Lead Inspector then conveyed to the GC.

3) Once the dust wipe results are within RIDOH acceptable levels, the painting of the walls/ceilings can begin and be performed by the GC's Painting Contractor.

4) Copies of all Lead Inspector Documentation shall be forwarded to the GC and the Building Owner.

SanAir Technologies Laboratory

The Identification Specialists

Analysis Report
prepared for
Vortex Inc. Enviro. Management Consulting Training

Report Date: 11/28/2023

Project Name: Zuccolo

Project #: 23-275

SanAir ID#: 23065188

10501 Trade Court | North Chesterfield, Virginia 23236
888.895.1177 | 804.897.1177 | fax: 804.897.0070 | IAQ@SanAir.com | SanAir.com

SanAir Technologies Laboratory

SanAir ID Number
23065188
FINAL REPORT
11/28/2023 3:16:10 PM

Name: Vortex Inc. Enviro. Management Consulting Training
Address: PO Box 6060
Warwick, RI 02887
Phone: 401-738-7710

Project Number: 23-275
P.O. Number:
Project Name: Zuccolo
Collected Date: 11/20/2023
Received Date: 11/28/2023 10:15:00 AM

Dear John Carbone,

We at SanAir would like to thank you for the work you recently submitted. The 3 sample(s) were received on Tuesday, November 28, 2023 via UPS. The final report(s) is enclosed for the following sample(s): A, B, C.

These results only pertain to this job and should not be used in the interpretation of any other job. This report is only complete in its entirety. Refer to the listing below of the pages included in a complete final report.

Sincerely,

Abisola Kasali
Metals Laboratory Director
SanAir Technologies Laboratory

Final Report Includes:
- Cover Letter
- Analysis on Test Family AA
- Disclaimers and Additional Information

Sample conditions:
- 3 samples in Good condition.

SanAir
Technologies Laboratory

SanAir ID Number
23065188
FINAL REPORT
11/28/2023 3:16:10 PM

Name: Vortex Inc. Enviro. Management Consulting
Address: Training
PO Box 6060
Warwick, RI 02887
Phone: 401-738-7710

Project Number: 23-275
P.O. Number:
Project Name: Zuccolo
Collected Date: 11/20/2023
Received Date: 11/28/2023 10:15:00 AM

Analyst: Rivera, Shirley
Test Method: SW846/M3050B/7000B

Lead Paint Analysis

PAINT Sample	Description	µg Pb In Sample	Sample Size (grams)	Calculated RL	Sample Results	Sample Results
23065188 - 1	A Men's Room-Wall Paint	< 10	0.1044	95.8	<95.8 µg/g (ppm)	<0.010 % By Weight
23065188 - 2	B Lobby-Wall Paint	< 10	0.1105	90.5	<90.5 µg/g (ppm)	<0.009 % By Weight
23065188 - 3	C Gym-Wall Paint	12	0.1032	96.9	112.1 µg/g (ppm)	0.011 % By Weight

Method Reporting Limit <10 µg/0.1 g paint

Signature: Shirley Rivera
Date: 11/28/2023

Reviewed: Alissa Calabrese
Date: 11/28/2023

Disclaimer

SanAir Technologies Laboratory, Inc. participates in the Environmental Lead Accreditation Program (ELAP) administered by AIHA LAP, LLC (Laboratory ID LAP-162952). Refer to our accreditation certificate and scope on our website or www.aihaaccreditedlabs.org for an up to date list of the Fields of Testing for which we are accredited. SanAir also participates in the State of New York's DOH-ELAP (Lab Id 11983), and has met the EPA's NLLAP program standards. This report does not constitute nor shall be used by the client to claim product, process, system, or person certification, approval, or endorsement by AIHA LAP, LLC, NELAC, NIST, and/or any other U.S. governmental agencies; and test results in this report may not be accredited by every local, state or federal regulatory agency.

This report is the sole property of the client named on the SanAir Technologies Laboratory chain-of-custody (COC). Results in the report are confidential information intended only for the use by the customer listed on the chain of custody. Neither results nor reports will be discussed with or released to any third party without our client's written permission. Final reports cannot be reproduced, except in full, without written authorization from SanAir Technologies Laboratory, Inc. This report and any information contained within shall not be edited, altered, or modified in any way by any persons or agencies receiving, viewing, distributing, or otherwise possessing a copy of this final report. The laboratory reserves the right to perform amendments to any finalized report, of which shall supersede and make obsolete any previous editions. Such changes, modifications, additions, or deletions shall be effective immediately upon notice thereof, which may be given by means including but not limited to posting on the SanAir client portal website, electronic or conventional mail, or by any other means. The information provided in this report applies only to the samples submitted and is relevant only for the date, time, and location of sampling. The accuracy of the results of the analysis is dependent upon the method of sample procurement and information provided by the client on the COC. SanAir is not responsible for the method of sample procurement. SanAir assumes no responsibility for information provided by the client on the COC such as project number, project name, collection dates, po number, special instructions, samples collected by, sample numbers, sample identifications, sample type, selected analysis type, flow rate, total volume or area, and start stop times that may affect the validity of the results in this report. SanAir Technologies Laboratory, Inc only assures the precision and accuracy of the data it generates and assumes no responsibility for errors or biasing that occur during collection prior to SanAir's receipt of the sample(s). Evaluation reports are based solely on the sample(s) in the condition in which they arrived at the laboratory and on the information provided by the client on the COC. Sample(s) were received in good condition unless otherwise noted on the report. SanAir assumes no responsibility or liability for the manner in which the results are used or interpreted. SanAir's Method Detection Limits (MDL) and Reporting Limits (RL) have been derived using various materials meeting each accrediting agencies' standards. All quality control results are acceptable unless otherwise noted. SanAir does not make contamination corrections to reports based upon analysis of laboratory and/or field blanks. All samples are disposed of after 90 days unless otherwise requested by the client. For Lead Exposure Limits, refer to HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards and State and Federal Regulations, where applicable. For Lead Exposure Limits in Air, refer to EPA National Ambient Air Quality Standards, OSHA Action Levels & Permissible Exposure Limits (General Industry & Construction), and relative state or federal requirements where applicable.

AIHA LAP, LLC Lab ID: LAP-162952
Commonwealth of VA Department of General Services DCLS, VELAP Laboratory ID#460251
New York State Department of Health Laboratory ID No: 11983
California State Environmental Laboratory Accreditation Program Certificate No: 2915
State of Connecticut Department of Public Health Environmental Laboratory Registration Number: PH-0105
New Jersey Department of Environment Protection Environmental Laboratory Certification ID# VA014
Ohio Department of Health Environmental Lead Laboratory Approval Number E10049
State of Rhode Island Department of Health Environmental Lead Laboratory No LAO00371

SanAir Technologies Laboratory

1551 Oakbridge Dr STE B
Powhatan, VA 23139
804.897.1177 / 888.895.1177
Fax 804.897.0070
sanair.com

Metals & Lead Chain of Custody

Form 70, Revision 9, 01/19/2017

SanAir ID Number: 23065108

Company: Vortex Inc. Enviro. Management Consulting Training	Project #: 23-275	Phone #: ~~401-738-7740~~
Address: PO Box 6060	Project Name: ZUCCOLO	Phone #: 401 640-9331
City, St., Zip: Warwick, RI 02887	Date Collected: 11/20/23	Fax #: 401-738-7869
Samples Collected By:	P.O. Number:	Email:
Account #: 3042	U.S. State Collected in:	Email:

Matrix Types

- ☐ Air (ug/m³)
- ☐ Wipe (ug/ft²)
- ☐ Paint ☐ Soil ☒ Bulk (ug/g or ppm)
- ☐ Other: CHIPS

Metals Analysis Types

- Total Concentration of Lead ☒
- Total Concentration of RCRA 8 Metals ☐
- TCLP for Lead ☐
- TCLP for RCRA 8 Metals ☐
- ☐ ICP-total concentration of metals (please list metals):

Turn Around Time				
	Same Day ☒	1 Day ☐	2 days ☐	3 Days ☐
	☐ Standard (5 day)	☐ Full TCLP (10d)		

Sample #	Collection Date & Time	Sample Identification/Location	Flow Rate	Start Time	Stop Time	Volume (L) Area (Sq ft)
A		A - Men's Room - Wall Paint				
B		Lobby - Wall Paint				
C		Gym - Wall Paint				

Special Instructions:

Relinquished by	Date	Time	Received by	Date	Time
Cake	11/27/23	4 pm	TRM	11/28/23	10:15 am

If no technician is provided, then the primary contact of your account will be selected. Unless scheduled, the turnaround time for all samples received after 3 pm will begin at 8 am the next business morning. Weekend or holiday work must be scheduled ahead of time and is charged at 150% of the Rush TAT rate. There is a minimum charge of $100 for weekend work. A courier charge will be applied for same day and one-day turnaround times for offsite work. SanAir covers Standard Overnight FedEx shipping. Shipments billed to SanAir with a faster shipping rate will result in additional charges.

Page ___ of ___

Photo Report

Client: City of Providence
Facility: Zuccolo Recreation Center
Roof Section: All Elevations

Report Date: 11/10/2023
Title: Roof Core Test Cuts

Photo 1

Overview-Existing fully adhered EPDM roof system on main elevation with test cuts in progress.

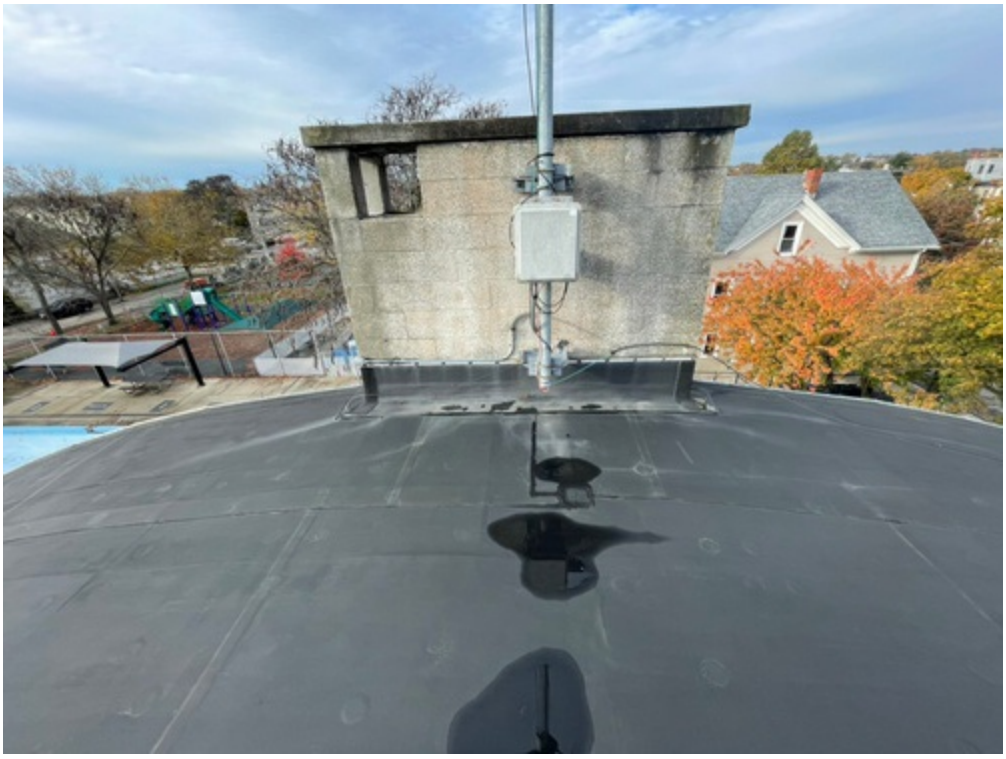


Photo 2

Overview-Existing fully adhered EPDM roof system on main elevation.

Photo 3

Overview-Existing fully adhered EPDM roof system on main elevation.

Photo 4

Overview-Existing fully adhered EPDM roof system on main elevation with test cuts in progress.

Photo 5

Overview-Existing fully adhered EPDM roof system on main elevation with test cuts in progress.

Photo 6

Overview-Existing ballasted EPDM roof system on lower elevation West side of building.

Photo 7

Overview-Existing ballasted EPDM roof system on lower elevation East side of building.

Photo 8

Test Cut #1 - Low Point Outside of Drain Location.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 9

Test Cut #1 - Low Point Outside of Drain Location.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 10

Test Cut #1 - Low Point Outside of Drain Location.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 11

Test Cut #2 - High Point Between Drain Locations.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 12

Test Cut #2 - High Point Between Drain Locations.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 13

Test Cut #3 - High Point at Wall.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 14

Test Cut #3 - High Point at Wall.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 15

Test Cut #4 - High Point at Wall.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 16

Test Cut #5 - High Point Upper Roof
-Concrete deck.
-Asphalt over concrete.
-3? polyisocyanurate insulation mechanically fastened.
-Fully adhered .045 EPDM.
*Possible deteriorated concrete decking with wood repair found.

Photo 17

Test Cut #5 - High Point EPDM Upper Roof
-Concrete deck.
-Asphalt over concrete.
-3? polyisocyanurate insulation mechanically fastened.
-Fully adhered .045 EPDM.
-3.5 inch core hole.
*Possible deteriorated concrete decking with wood repair found.

Photo 18

Test Cut #6 - Low Point EPDM Upper Roof near Scupper.
-Concrete deck.
-Asphalt over concrete.
-3? polyisocyanurate insulation mechanically fastened.
-Fully adhered .045 EPDM.
-3.5 inch core hole.

Photo 19

Test Cut #6 - Low Point EPDM Upper Roof near Scupper
-Concrete deck.
-Asphalt over concrete.
-3 inch polyisocyanurate insulation mechanically fastened.
-Fully adhered .045 EPDM.
-3.5 inch core hole.

Photo 20

Test Cut #7 - Barrel Roof High Point.
-Concrete deck.
-Asphalt over concrete.
-1/2 inch wood fiber board.
-3 inch polyisocyanurate insulation mechanically fastened.
-1 inch polyisocyanurate insulation mechanically fastened.
-Fully adhered .045 EPDM.
-5.5 inch core hole.

Photo 21

Test Cut #7 - Barrel Roof High Point.
-Concrete deck.
-Asphalt over concrete.
-1/2 inch wood fiber board.
-3 inch polyisocyanurate insulation mechanically fastened.
-1 inch polyisocyanurate insulation mechanically fastened.
-Fully adhered .045 EPDM.
-5.5 inch core hole.

Photo 22

Test Cut #8 - Barrel Roof High Point.
-Concrete deck.
-Asphalt over concrete.
-1/2 inch wood fiber board.
-3 inch polyisocyanurate insulation mechanically fastened.
-1 inch polyisocyanurate insulation mechanically fastened.
-Fully adhered .045 EPDM.
-5.5 inch core hole.

Photo 23

Test Cut #8 - Barrel Roof High Point.
-Concrete deck.
-Asphalt over concrete.
-1/2 inch wood fiber board.
-3 inch polyisocyanurate insulation mechanically fastened.
-1 inch polyisocyanurate insulation mechanically fastened.
-Fully adhered .045 EPDM.
-5.5 inch core hole.

Photo 24

Test Cut #9 - Small Section Between Barrel Roof and Perimeter.
-Concrete deck.
-Asphalt over concrete.
-2 Layers of 1/2 inch wood fiber board.
-Fully adhered .045 EPDM.
-1.5 inch core hole.

Photo 25

Test Cut #9 - Small Section Between Barrel Roof and Perimeter.
-Concrete deck.
-Asphalt over concrete.
-2 Layers of 1/2 inch wood fiber board.
-Fully adhered .045 EPDM.
-1.5 inch core hole.

Photo 26

Test Cut #9 - Small Section Between Barrel Roof and Perimeter.
-Concrete deck.
-Asphalt over concrete.
-2 Layers of 1/2 inch wood fiber board.
-Fully adhered .045 EPDM.
-1.5 inch core hole.

Photo 27

Test Cut #10 - Low Point Outside of Drain Location West Side Elevation.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 28

Test Cut #10 - Low Point Outside of Drain Location West Side Elevation.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 29

Test Cut #10 - High Point at Wall on West Side Elevation.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 30

Test Cut #10 - High Point at Wall on West Side Elevation.
-Concrete deck.
-1/4 inch wood fiber board.
-4 ply coal tar pitch.
-2 layers of 2 inch XPS.
-.045 EPDM.
-Ballast
-6 inch core hole.

Photo 31

Existing drains measure 3.5 inches.

Photo 32

Existing wall flashing measures 6 inches to top of termination bar.

Photo 33

Possible through wall flashing on lower elevations. Multiple weep holes are blocked.

Photo 34

2 Existing louvres at wall on lower North side elevations.

Photo 35

Poor slope with blocked drains at corners of small elevation between perimeter and barrel roof South side of building.

Photo 36

Poor slope with blocked drains at corners of small elevation between perimeter and barrel roof South side of building.

Photo 37

Poor slope with blocked drains at corners of small elevation between perimeter and barrel roof South side of building.

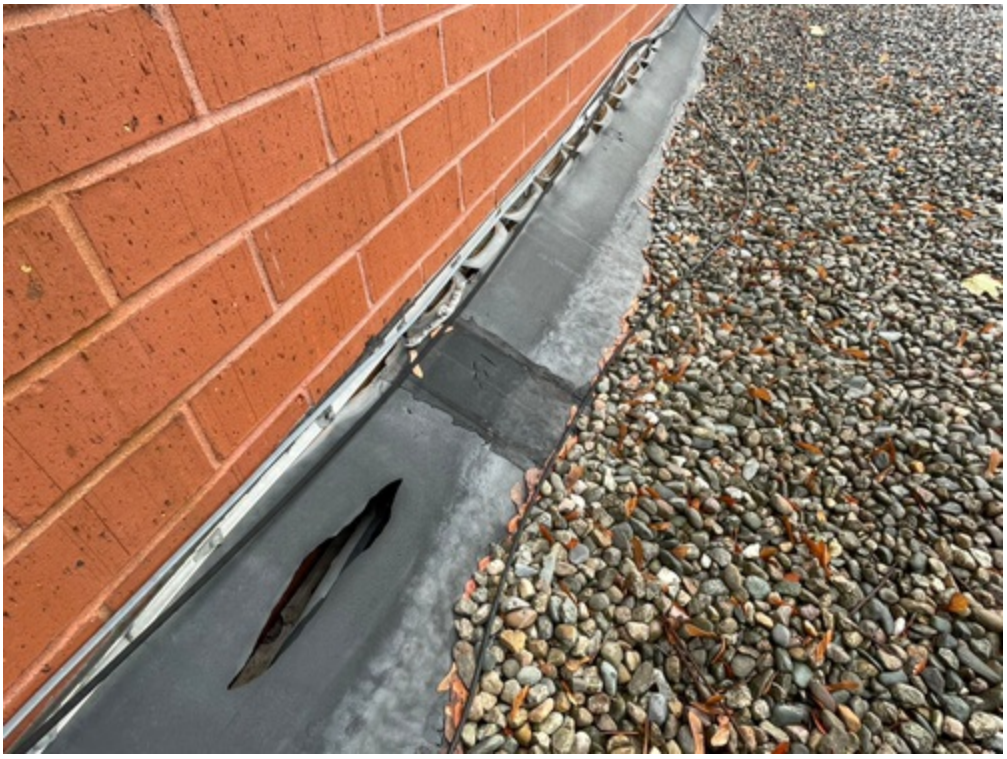


Photo 38

Failed wall flashing on lower West side elevation resulting in large open conditions.

Photo 39

Failed wall flashing on lower West side elevation resulting in large open conditions.

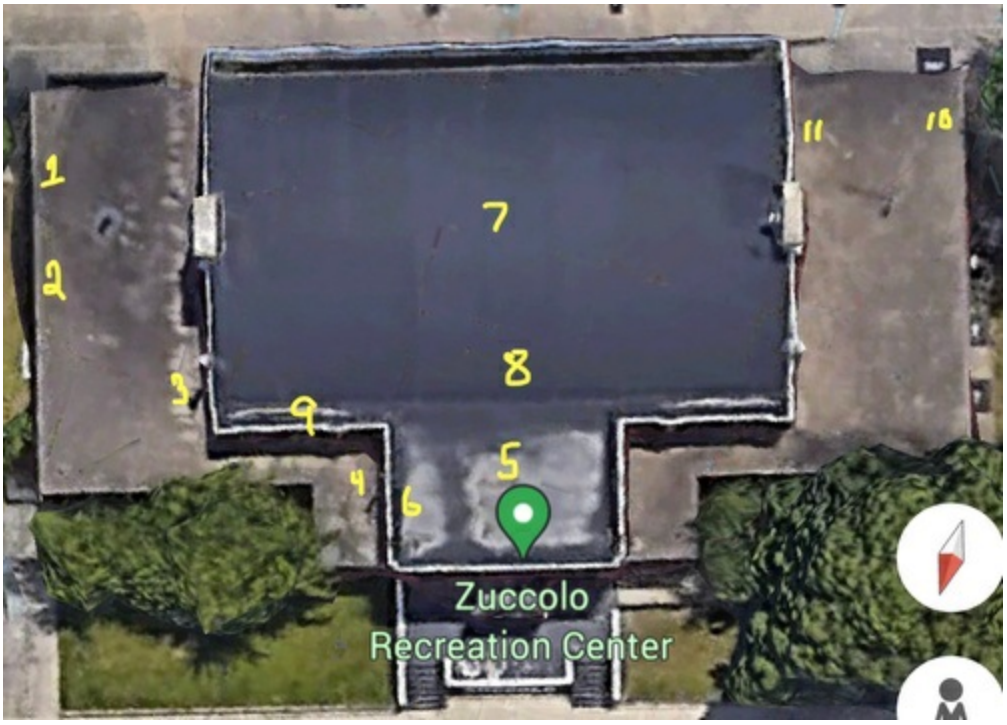
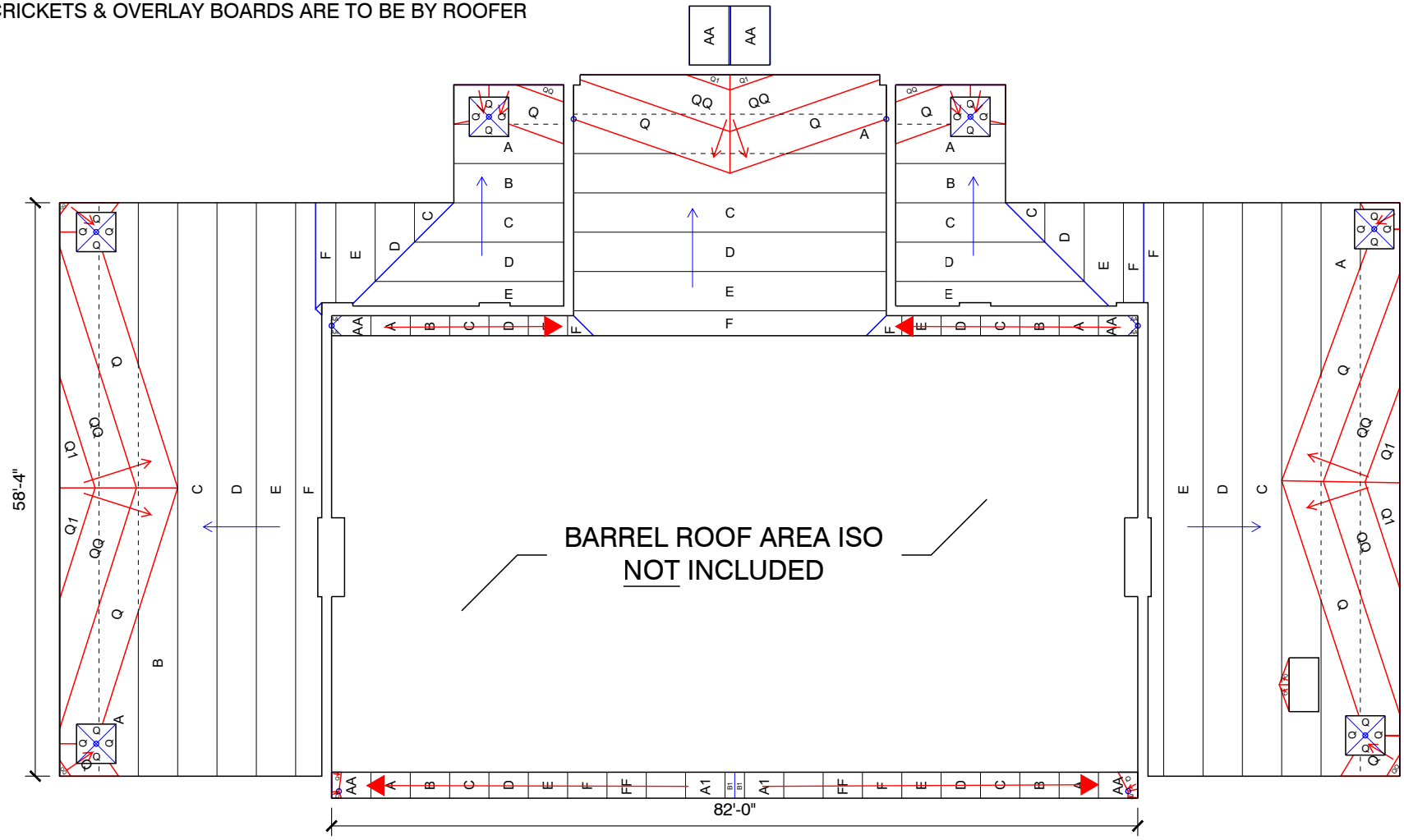


Photo 40

Roof core test cut locations.

1. QUOTE IS BASED ON PROVIDED DRAWING
2. PRICE IS FOR EXTENDED PANEL SYSTEM WITH 4.0" FILL BOARDS TO REDUCE APPLIED SQUARES
3. PRICE IS FOR 1/8" TAPER SLOPE & 1/2" CRICKET SLOPE AS PER RFQ
4. PRICE INCLUDES A 5.0" (2.5" + 2.5") BASE LAYER & A 0.5" TAPER START TO ACHIEVE MIN R-30 AS PER RFQ
5. PRICE INCLUDES (6) 4'X4' FACTORY PRE-CUT SUMPS (0.5" - 1.5") WITH 4.0" BASE LAYER
6. UNIT CRICKETS & OVERLAY BOARDS ARE TO BE BY ROOFER



QUOTED PRICE IS ONLY GOOD THRU STATED DATE BELOW AND WILL BE INVOICED WITH CURRENT PRICING AT TIME OF DELIVERY - NOT TO SCALE - FOR BIDDING PURPOSES ONLY

TAPERED SYSTEM PROPERTIES

TAPERED PANELS: TAPERED VPG 20 PSI
FILL PANELS: VPG-FLAT 20 PSI
CRICKET PANELS: TAPERED VPG 20 PSI
FILL PANELS: VPG-FLAT 20 PSI

TAPERED SPECS	CRICKET SPECS
MIN. THICKNESS: 4.5" @ DRAIN	MIN. THICKNESS: 0.5"
MAX. THICKNESS: 10.6"	MAX. THICKNESS: 6.2"
SLOPE (in/ft): 1/8", 1/2"	SLOPE (in/ft): 1/2"

R-VALUE PER INCH: 5.7
MINIMUM R-VALUE: 25.7
AVERAGE R-VALUE: 37.60

TOTAL SQUARES OF APPLICATION: 234

TAPER ROOF SQ/FT:	5,036	FLAT ROOF SQ/FT:	3,619
TAPER SQUARES:	50	FLAT SQUARES:	72
CRICKET SQUARES:	11	TOTAL BUNDLES:	85.79
FILL SQUARES:	2	TOTAL STACKS:	0
BASE LAYER:	99	TOTAL TRUCKS:	1.79

*PRICE IS FOR MATERIAL ONLY & DOES NOT INCLUDE ANY FREIGHT OR FUEL SURCHARGES.
*ADDITIONAL FREIGHT WILL BE APPLIED IF TRUCK(S) CANNOT BE FILLED OUT.

PROJECT

Zuccolo Recreation Center

Providence, Rhode Island

PRICING VALID THRU
03/31/24

PROJECT NUMBER
98078A02

DATE:	02/08/2024
DESIGNER:	Matt Swann