



UNIVERSITY OF  
**SOUTH CAROLINA**  
LANCASTER

## ***USC Lancaster Maintenance Building Re-Roof***

SC Project # H37-9512  
USC Project # CP00365813  
GMC # AGRE120049

### **PROJECT MANUAL**

March 2013

Designed by:



GOODWYN | MILLS | CAWOOD

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INTEGRATED DISCIPLINES. PROVEN SOLUTIONS.

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**PROJECT NAME:** USC Lancaster Maintenance Building Re-Roof

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# SE-311

## Invitation for Minor Construction Quotes

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**SCBO NOTES 2, 4 and 5 APPLY TO THIS INVITATION FOR QUOTES**

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PROJECT NAME: USC LANCASTER MAINTENANCE BUILDING RE-ROOF

PROJECT NUMBER: H37-9512 PROJECT LOCATION: LANCASTER, SC

BID SECURITY REQUIRED? Yes  No

PERFORMANCE BOND REQUIRED? Yes  No

PAYMENT BOND REQUIRED? Yes  No  CONSTRUCTION COST RANGE: LESS THAN \$50,000

DESCRIPTION OF PROJECT:  
The scope of this project includes the removal of the existing roof of the Maintenance Building at USC Lancaster, and replacing it with a new thermoplastic membrane roof.

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A/E NAME: Goodwyn Mills Cawood A/E CONTACT: Matthew King  
 ADDRESS: 101 East Washington Street PHONE: 864.233.2804 Fax: 864.233.6567  
 CITY: Greenville STATE: sc ZIP: 29601 E-MAIL: matthew.king@gmcnetwork.com

PLANS ON FILE AT: AGC: \_\_\_\_\_  
 DODGE: \_\_\_\_\_  
 OTHER: \_\_\_\_\_

PLANS MAY BE OBTAINED FROM: http://purchasing.sc.edu "facilities/construction solicitations and awards"

PLAN DEPOSIT AMOUNT: NA IS DEPOSIT REFUNDABLE? Yes  No

PRE-QUOTE CONFERENCE?  Yes  No MANDATORY ATTENDANCE?  Yes  No  
 DATE: 4/18/2013 TIME: 9:00 AM PLACE: Bradley Hall Room 111 USC Lancaster

AGENCY: University of South Carolina  
 NAME AND TITLE OF AGENCY COORDINATOR: Michelle Adams  
 ADDRESS: 743 Greene Street PHONE: 803.777.0981 Fax: 803.777.7334  
 CITY: Columbia STATE: SC ZIP: 29208 E-MAIL: mdadams@fmc.sc.edu

IFQ CLOSING DATE: 4/29/2013 TIME: 2:00 PM LOCATION: 743 Greene Street

IFQ DELIVERY ADDRESSES:  
HAND-DELIVERY: \_\_\_\_\_  
MAIL SERVICE:  
 Michelle Adams  
 743 Greene Street  
 Columbia SC 29208

IS PROJECT WITHIN AGENCY CONSTRUCTION CERTIFICATION? (Agency MUST check one)  YES  NO

APPROVED BY: \_\_\_\_\_ (State Engineer) \_\_\_\_\_ (Date)

**BASIC INSTRUCTIONS TO BIDDERS**

**PROJECT NUMBER:** H37-9512

**PROJECT NAME:** USC Lancaster Maintenance Building Re-Roof

1. CONSTRUCTION TIME IS 60 DAYS FROM THE DATE OF COMMENCEMENT TO THE DATE OF SUBSTANTIAL COMPLETION.
2. THE PROJECT DRAWINGS AND PROJECT MANUAL WILL CONSTITUTE THE BASE BID. THERE ARE NO ALTERNATES.

# **CERTIFICATION REGARDING ILLEGAL IMMIGRATION (NOVEMBER 2008)**

(An overview is available at [www.procurement.sc.gov](http://www.procurement.sc.gov))

By signing your bid, the contractor certifies that you will comply with the applicable requirements of Title 8, Chapter 14 of the South Carolina Code of Laws and agree to provide to the State upon request any documentation required to establish either: (a) that Title 8, Chapter 14 is inapplicable to you and your subcontractors or sub-subcontractors; or (b) that you and your subcontractors or sub-subcontractors are in compliance with Title 8, Chapter 14. Pursuant to Section 8-14-60, "A person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony and, upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both." You agree to include in any contracts with your subcontractors language requiring your subcontractors to (a) comply with the applicable requirements of Title 8, Chapter 14, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 8, Chapter 14.

**GIVING FALSE, MISLEADING, OR INCOMPLETE INFORMATION ON THIS CERTIFICATION MAY RENDER YOU SUBJECT TO PROSECUTION UNDER SECTION 16-9-10 OF THE SOUTH CAROLINA CODE OF LAWS AND OTHER APPLICABLE LAWS.**

(a) By submitting an offer, the offeror certifies that—

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to—

- (i) Those prices;
- (ii) The intention to submit an offer; or
- (iii) The methods or factors used to calculate the prices offered.

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory—

(1) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; or

(2)(i) Has been authorized, in writing, to act as agent for the offeror's principals in certifying that those principals have not participated, and will not participate in any action contrary to paragraphs (a)(1) through (a)(3) of this certification [As used in this subdivision (b)(2)(i), the term "principals" means the person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal];

(ii) As an authorized agent, does certify that the principals referenced in subdivision (b)(2)(i) of this certification have not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this certification.

(c) If the offeror deletes or modifies paragraph (a)(2) of this certification, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure. [02-2A032-1]

**SE-331**  
**Quote Form**

2011 Edition

*Quotes shall be submitted only on SE-331*

QUOTE SUBMITTED BY: \_\_\_\_\_  
(Offeror's Name)

QUOTE SUBMITTED TO: University of South Carolina  
(Agency Name)

FOR PROJECT: H37-9512 USC Lancaster Maintenance Building Re-Roof  
(Number) (Name)

**OFFER**

1. In response to the Form SE-311, *Request for Minor Construction Quotes*, and in compliance with the *Instructions to Bidders* for the above-named Project, the undersigned **OFFEROR** proposes and agrees, if this Quote is accepted, to enter into a Contract with the **AGENCY** in the form included in the Solicitation Documents, and to perform all Work as specified or indicated in the Solicitation Documents, for the prices and within the time frames indicated in the Solicitation and in accordance with the other terms and conditions stated.

2. Pursuant to Section 11-32-3030(1) of the SC Code of Laws, as amended, **OFFEROR** has submitted Bid Security as follows in the amount and form required by the Solicitation Documents:

Bid Bond with Power of Attorney     Electronic Bid Bond     Cashier's Check  
(OFFEROR check one, if Bid Security is required)

3. **OFFEROR** acknowledges the receipt of the following Addenda to the Solicitation documents and has incorporated the effects of said Addenda into its Quote:

ADDENDUM No: \_\_\_\_\_

4. **OFFEROR** agrees that this Quote, including all bid alternates, if any, may not be revoked or withdrawn after the opening of bids, and shall remain open for acceptance for a period of \_\_\_\_\_ Days following the Quote Date, or for such longer period of time that **OFFEROR** may agree to in writing upon request of the **AGENCY**.

5. **OFFEROR** agrees that from the compensation to be paid, the **AGENCY** shall retain as Liquidated Damages the amount of for each calendar day the actual construction time required to achieve Substantial Completion exceeds the specified or adjusted Contract Time for Substantial Completion, as provided in the Contract Documents.

6. **OFFEROR** herewith submits its offer to provide all labor, materials, equipment, tools of trades and labor, accessories, appliances, warranties and guarantees, and to pay all royalties, fee, permits, licenses and applicable taxes necessary to complete the following items of construction work:

6.1 **BASE BID** \_\_\_\_\_  
(enter BASE BID in figures only)

6.2 **ALTERNATE NO. 1** \_\_\_\_\_ to be ADDED/DEDUCTED from BASE BID.  
(circle one)

6.3 **ALTERNATE NO. 2** \_\_\_\_\_ to be ADDED/DEDUCTED from BASE BID.  
(circle one)

FEIN/SSN: \_\_\_\_\_

SC Contractor's License Number: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone/Fax \_\_\_\_\_

E-mail \_\_\_\_\_

This Quote is hereby submitted on behalf of the Offeror named above.

BY: \_\_\_\_\_  
(Signature of Offeror's Representative)

\_\_\_\_\_  
(Print or Type Name of Offeror's Representative)

ITS: \_\_\_\_\_

USC SUPPLEMENTAL GENERAL CONDITIONS  
FOR CONSTRUCTION PROJECTS

1. Contractor's employees shall take all reasonable means not to interrupt the flow of student traffic in building corridors, lobbies and stairs. All necessary and reasonable safety precautions shall be taken to prevent injury to building occupants while transporting materials and equipment through the building to the work area. Providing safe, accessible, plywood pedestrian ways around construction may be required if a suitable alternative route is not available.
2. Fraternalization between Contractor's employees and USC students, faculty or staff is strictly prohibited-zero tolerance!
3. USC will not tolerate rude, abusive or degrading behavior on the job site. Heckling and cat-calling directed toward students, faculty or staff or any other person on USC property is strictly prohibited. Any contractor whose employees violate this requirement will be assessed a fine of up to \$500 per violation.
4. Contractor's employees must adhere to the University's policy of maintaining a drug-free and smoke-free/tobacco free workplace.
5. Contractor must sign a Contractor Key Receipt/Return form before any keys are issued. Keys must be returned immediately upon the completion of the work. The Contractor will bear the cost of any re-keying necessary due to the loss of or failure to return keys.
6. A welding permit must be issued by the University Fire Marshall before any welding can begin inside a building. Project Manager will coordinate.
7. Contractor must notify the University immediately upon the discovery of suspect material such as those potentially containing asbestos or other such hazardous materials. These materials **must not** be disturbed until approved by the USC Project Manager.
8. At the beginning of the project, the USC Project Manager will establish the Contractor's lay-down area. This area will also be used for the Contractor's work vehicles. No personal vehicles will be allowed in this area, or in any areas surrounding the construction site that are not regular or authorized parking lots. Personal vehicles must be parked in the perimeter parking lots. Parking permits can be obtained at the USC Parking Office located in the Pendleton Street parking garage. The lay down area will be clearly identified to the contractor by the PM, with a sketch or drawing provided to Parking. In turn, the contractor will mark off this area with a sign containing the project name, PM name, Contractor name and contact number, and end date. Where this area is subject to foot traffic, protective barriers will be provided as specified by the PM. The area will be maintained in a neat and orderly fashion. Vehicles parked in the lay down area (or designated parking areas) will be clearly marked or display a CPC furnished placard for identification.



9. Contractor will be responsible for providing its own temporary toilet facilities, unless prior arrangements are made with the USC Project Manager.
10. Use of USC communications facilities (telephones, computers, etc.) by the Contractor is prohibited, unless prior arrangements are made with the USC Project Manager.
11. For all projects over \$100,000, including IDC ' s, an SE-395, Contractor Performance Evaluation, will be completed by the USC Project Manager and reviewed with the GC at the beginning of the project and a copy given to the GC. At the end of the project the form will be completed and a Construction Performance rating will be established.
12. Contractor is responsible for removal of all debris from the site, and is required to provide the necessary dumpsters which will be emptied at least one times per week. Construction waste must not be placed in University dumpsters. THE CONSTRUCTION SITE MUST BE THOROUGHLY CLEANED WITH ALL TRASH PICKED UP AND PROPERLY DISPOSED OF ON A DAILY BASIS AND THE SITE MUST BE LEFT IN A SAFE AND SANITARY CONDITION EACH DAY. THE UNIVERSITY WILL INSPECT JOB SITES REGULARLY AND WILL FINE ANY CONTRACTOR FOUND TO BE IN VIOLATION OF THIS REQUIREMENT AN AMOUNT OF UP TO \$1,000 PER VIOLATION.
13. **Contractor must provide all O&M manuals, as-built drawings, and training of USC personnel on new equipment, controls, etc. prior to Substantial Completion. Final payment will not be made until this is completed.**
14. The contractor will comply with all regulations set forth by OSHA and SCDHEC. Contractor must also adhere to USC's internal policies and procedures (available by request). As requested, the contractor will submit all Safety Programs and Certificates of Insurance to the University for review.
15. Tree protection fencing is required to protect existing trees and other landscape features to be preserved within a construction area. The limits of this fence will be evaluated for each situation with the consultant, USC Arborist and USC Project Manager. The tree protection fence shall be 5' high chain link fence unless otherwise approved by USC Project Manager. No entry or materials storage will be allowed inside the tree protection zone. A 4" layer of mulch shall be placed over the tree protection area to maintain moisture in the root zone.
16. Where it is necessary to cross walks, tree root zones (i.e., under canopy) or lawns the following measures shall be taken: For single loads up to 9,000 lbs., a 3/4" minimum plywood base shall be placed over areas impacted. For single loads over 9,000 lbs., two layers of 3/4" plywood is required.
17. For projects requiring heavy loads to cross walks tree root zones or lawns. A construction entry road consisting of 10' X 16' oak logging mates on 12" coarse, chipped, hardwood base. Mulch and logging mats shall be supplemented throughout the project to keep

Updated: July 15, 2011

matting structurally functional.

18. Any damage to existing landscaping (including lawn areas) will be remediated before final payment is made.
19. Orange safety fence to be provided by the contractor. (USC Arborist, Kevin Curtis may be contacted at 777-0033 or 315-0319)

### **Campus Vehicle Expectations**

1. All motorized vehicles on the University campus are expected to travel and park on roadways and/or in parking stalls.
2. All motorized vehicle traffic on USC walkways must first receive the Landscape Manager=s authorization. Violators may be subject to fines and penalties.
3. All motorized vehicles that leak or drip liquids are prohibited from traveling or parking on walks or landscaped areas.
4. Contractors, vendors, and delivery personnel are required to obtain prior parking authorization before parking in a designated space. Violators may be subject to fines and/or penalties. See Item 10 below.
5. Drivers of equipment or motor vehicles that damage university hardscape or landscape will be held personally responsible for damages and restoration expense.
6. Vehicle drivers who park on landscape or drives must be able to produce written evidence of need or emergency requiring parking on same.
7. All vehicles parked on landscape, hardscape, or in the process of service delivery, must display adequate safety devices, i.e. flashing lights, cones, signage, etc.
8. All drivers of equipment and vehicles will be respectful of University landscape, equipment, structures, fixtures and signage.
9. All incidents of property damage will be reported to Parking Services or the Work Management Center.
10. Parking on campus is restricted to spaces designated by Parking Services at the beginning of the project. Once the project manager and contractor agree on how many spaces are needed, the project manager will obtain a placard for each vehicle. This placard must be hung from the mirror of the vehicle, otherwise a ticket will be issued and these tickets cannot be “fixed”. Parking spaces are restricted to work vehicles only; no personal vehicles.

Project Name:

Project Number:

University of South Carolina

**CONTRACTOR'S ONE YEAR GUARANTEE**

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

WE \_\_\_\_\_  
as General Contractor on the above-named project, do hereby guarantee that all work executed under the requirements of the Contract Documents shall be free from defects due to faulty materials and /or workmanship for a period of one (1) year from date of acceptance of the work by the Owner and/or Architect/Engineer; and hereby agree to remedy defects due to faulty materials and/or workmanship, and pay for any damage resulting wherefrom, at no cost to the Owner, provided; however, that the following are excluded from this guarantee;

Defects or failures resulting from abuse by Owner.

Damage caused by fire, tornado, hail, hurricane, acts of God, wars, riots, or civil commotion.

\_\_\_\_\_  
[Name of Contracting Firm]

\*By \_\_\_\_\_

Title \_\_\_\_\_

\*Must be executed by an office of the Contracting Firm.

SWORN TO before me this \_\_\_\_\_ day of \_\_\_\_\_, 2\_\_\_\_ (seal)

\_\_\_\_\_ State

My commission expires \_\_\_\_\_



STATE OF SOUTH CAROLINA  
DEPARTMENT OF REVENUE  
**NONRESIDENT TAXPAYER REGISTRATION  
AFFIDAVIT INCOME TAX WITHHOLDING**

**Mail to: The company or individual you are contracting with.**

The undersigned nonresident taxpayer on oath, being first duly sworn, hereby certifies as follows:

1. Name of Nonresident Taxpayer: \_\_\_\_\_

2. Trade Name, if applicable (doing business as):  
\_\_\_\_\_

3. Mailing Address: \_\_\_\_\_

4. Federal Employer Identification Number (FEIN): \_\_\_\_\_

5. \_\_\_\_\_ Hiring or Contracting with:  
Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_ Receiving Rentals or Royalties From:  
Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_ Beneficiary of Trusts and Estates:  
Name: \_\_\_\_\_

Address: \_\_\_\_\_

6. I hereby certify that the above named nonresident taxpayer is currently registered with (check the appropriate box):

- The South Carolina Secretary of State or
- The South Carolina Department of Revenue

Date of Registration: \_\_\_\_\_

7. I understand that by this registration, the above named nonresident taxpayer has agreed to be subject to the jurisdiction of the South Carolina Department of Revenue and the courts of South Carolina to determine its South Carolina tax liability, including estimated taxes, together with any related interest and penalties.

8. I understand the South Carolina Department of Revenue may revoke the withholding exemption granted under Code Sections 12-8-550 (temporarily doing business or professional services in South Carolina), 12-8-540 (rentals), and 12-8-570 (distributions to nonresident beneficiary by trusts or estates) at any time it determines that the above named nonresident taxpayer is not cooperating with the Department in the determination of its correct South Carolina tax liability.

The undersigned understands that any false statement contained herein could be punished by fine, imprisonment or both.

Recognizing that I am subject to the criminal penalties under Code Section 12-54-44 (B) (6) (a) (i), I declare that I have examined this affidavit and to the best of my knowledge and belief, it is true, correct and complete.

\_\_\_\_\_  
Signature of Nonresident Taxpayer (Owner, Partner or Corporate Officer, when relevant) (Seal) \_\_\_\_\_ Date

If Corporate officer, state title: \_\_\_\_\_

\_\_\_\_\_  
(Name - Please Print)

**INFORMATION  
NONRESIDENT TAXPAYER REGISTRATION AFFIDAVIT**

**Submit this form to the company or individual you are contracting with.**

**Do not submit this form to South Carolina Department of Revenue.**

**PURPOSE OF AFFIDAVIT**

A person is not required to withhold taxes for a nonresident taxpayer who submits an affidavit certifying that they are registered with either the South Carolina Secretary of State or the South Carolina Department of Revenue.

**REQUIREMENTS TO MAKE WITHHOLDING PAYMENTS**

Code Section 12-8-550 requires persons hiring or contracting with a nonresident taxpayer to withhold 2% of each payment made to the nonresident where the payments under the contract exceed \$10,000. However, this section does not apply to payments on purchase orders for tangible personal property when those payments are not accompanied by services to be performed in this state.

Code Section 12-8-540 requires persons making payment to a nonresident taxpayer of rentals or royalties at a rate of \$1,200 or more a year for the use of or for the privilege of using property in South Carolina to withhold 7% of the total of each payment made to a nonresident taxpayer who is not a corporation and 5% if the payment is made to a corporation.

Code Section 12-8-570 requires trusts or estates making distribution of South Carolina taxable income to a nonresident beneficiary to withhold 7% of the beneficiary's distribution which is attributable to South Carolina taxable income.

Our Internet address is: [www.sctax.org](http://www.sctax.org)

## **INCOME TAX CREDIT!!**

Reference: SC §12-6-3350 – Income Tax Credit for State Contractors Having Subcontracts with MINORITY Firms

Taxpayers, who utilize certified minority subcontractors, may take a tax credit equal to 4% of the payments they make to said subcontractors. The payments claimed must be based on work performed directly for a South Carolina state contract. The credit is limited to a maximum of \$50,000 annually. A taxpayer is eligible to claim the credit for 10 taxable years beginning with the taxable year in which the credit is first claimed. After the above 10 taxable years, the taxpayer is no longer eligible for the credit regardless of whether or not the taxpayer claimed the credit in a year subsequent to the year in which the credit was first claimed.

The credit may be claimed on Form TC-2, "Minority Business Credit." A copy of the subcontractor's certificate from the Governor's Office of Small and Minority Business (OSMBA) is to be attached to the contractor's income tax return. Taxpayers must maintain evidence of work performed for a State contract by the minority subcontractor.

Questions regarding the tax credit and how to file are to be referred to:

SC Department of Revenue  
Research and Review  
Phone: (803) 898-5786  
FAX: (803) 898-5888

References: SC §11-35-5010 – Definition for Minority Subcontractor  
SC §11-35-5230 (B) – Regulations for Negotiating with State Minority Firms

The subcontractor must be certified as to the criteria of a "Minority Firm" by the Governor's Office of Small and Minority Business Assistance (OSMBA). Certificates are issued to subcontractors upon successful completion of the certification process. Questions regarding subcontractor certification are to be referred to:

Governor's Office of Small and  
Minority Business Assistance  
Phone: (803) 734-0657  
FAX: (803) 734-2498

## SECTION 07540 - THERMOPLASTIC MEMBRANE ROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes adhered membrane roofing systems.
- B. Roof Walkway Pads.

#### 1.2 SUBMITTALS

- A. Product Data: For each product indicated.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other Work.
- C. Samples: For each product included in membrane roofing system.
- D. Research/evaluation reports.
- E. Maintenance data.

#### 1.3 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer, approved by manufacturer to install manufacturer's products.
- B. Source Limitations: Obtain components for membrane roofing system from roofing membrane manufacturer.
- C. Preinstallation Conference: Conduct conference at Project site.

#### 1.4 WARRANTY

- A. Special Warranty: Manufacturer's standard form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within 20 years from date of Substantial Completion. Failure includes roof leaks.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

### 2.2 THERMOPLASTIC POLYOLEFIN ROOFING MEMBRANE

- A. Fabric-Reinforced Thermoplastic Polyolefin Sheet: Uniform, flexible sheet formed from a thermoplastic polyolefin, internally fabric or scrim reinforced, and as follows:

1. Manufacturers:
  - a. Carlisle SynTec Incorporated.
  - b. Firestone Building Products Company.
  - c. GAF Materials Corporation.
  - d. GenFlex Roofing Systems.
  - e. Johns Manville International, Inc.
  - f. Stevens Roofing Systems; Div. of JPS Elastomerics.
2. Thickness: 60 mills, nominal.
3. Exposed Face Color: White.
4. Physical Properties:
  - a. Breaking Strength: 225 lbf (1 kN); ASTM D 751, grab method.
  - b. Elongation at Break: 15 percent; ASTM D 751.
  - c. Tearing Strength: 55 lbf (245 N) minimum; ASTM D 751, Procedure B.
  - d. Brittleness Point: Minus 22 deg F (30 deg C).
  - e. Ozone Resistance: No cracks after sample, wrapped around a 3-inch- (75-mm-) diameter mandrel, is exposed for 166 hours to a temperature of 104 deg F (40 deg C) and an ozone level of 100 pphm (100 mPa); ASTM D 1149.
  - f. Resistance to Heat Aging: 90 percent minimum retention of breaking strength, elongation at break, and tearing strength after 166 hours at 240 deg F (116 deg C); ASTM D 573.
  - g. Water Absorption: Less than 4 percent mass change after 166 hours' immersion at 158 deg F (70 deg C); ASTM D 471.
  - h. Linear Dimension Change: Plus or minus 2 percent; ASTM D 1204.

### 2.3 AUXILIARY MATERIALS

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



- B. Sheet Flashing: Manufacturer's standard unreinforced thermoplastic polyolefin sheet flashing of same color as sheet membrane.
- C. Bonding Adhesive: Manufacturer's standard bonding adhesive for membrane, and bonding adhesive for base flashings.
- D. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, termination reglets, cover strips, slip sheet, and other accessories.

## 2.4 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway pads approximately 3/16 inch (5 mm) thick, and acceptable to membrane roofing system manufacturer.

## PART 3 - EXECUTION

### 3.1 ADHERED ROOFING MEMBRANE INSTALLATION

- A. Install roofing membrane over area to receive roofing according to membrane roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
  - 1. Install sheet according to ASTM D 5036.
- B. Bonding Adhesive: Apply bonding adhesive to substrate and underside of roofing membrane at rate required by manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.
- C. Seams: Clean seam areas, overlap roofing membrane, and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.
  - 1. Repair tears, voids, and lapped seams in roofing membrane that does not meet requirements.

### 3.2 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with sheet flashing.

- D. Clean seam areas and overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings.

### 3.3 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations indicated. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

### 3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect.
- C. Repair or remove and replace components of membrane roofing system where test results or inspections indicate that they do not comply with specified requirements.

END OF SECTION 07540

## SECTION 07591 - PREPARATION FOR REROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Partial tear-off of entire roof.

#### 1.2 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.
- B. Partial Roof Tear-Off: Removal of selected components and accessories from existing roofing system.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Include plans, sections, and details.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
  - 1. Include certificate that Installer is approved by warrantor of existing roofing system.
- B. Fastener pull-out test report.
- C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Approved by warrantor of existing roofing system to work on existing roofing.
- B. Reroofing Conference: Conduct conference at Project site.
  - 1. Meet with Owner; Architect; Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; roofing Installer, including

project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing, including installers of roof deck, roof accessories, and roof-mounted equipment.

2. Review methods and procedures related to roofing system tear-off and replacement, including, but not limited to, the following:
  - a. Reroofing preparation, including roofing system manufacturer's written instructions.
  - b. Temporary protection requirements for existing roofing system components that are to remain.
  - c. Existing roof drains and roof drainage during each stage of reroofing, and roof-drain plugging and plug removal.
  - d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to avoid delays.
  - e. Existing roof deck conditions requiring notification of Architect.
  - f. Existing roof deck removal procedures and Owner notifications.
  - g. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
  - h. Structural loading limitations of roof deck during reroofing.
  - i. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that affect reroofing.
  - j. HVAC shutdown and sealing of air intakes.
  - k. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
  - l. Discovery of asbestos-containing materials.
  - m. Governing regulations and requirements for insurance and certificates if applicable.
  - n. Existing conditions that may require notification of Architect before proceeding.

## 1.6 FIELD CONDITIONS

- A. Existing Roofing System: EPDM roofing with various patches.
- B. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations are not disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
  1. Coordinate work activities daily with Owner so Owner can place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
  2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.
- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

- E. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
- F. Hazardous Materials: It is not expected that hazardous materials, such as asbestos-containing materials, will be encountered in the Work.
  - 1. Hazardous materials will be removed by Owner before start of the Work. Existing roof will be left no less watertight than before removal.
  - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- G. Hazardous Materials: A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

## 1.7 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during reroofing, by methods and with materials so as not to void existing roofing system warranty. Notify warrantor before proceeding.
  - 1. Notify warrantor of existing roofing system on completion of reroofing, and obtain documentation verifying that existing roofing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

## PART 2 - PRODUCTS

### 2.1 TEMPORARY PROTECTION MATERIALS

- A. Expanded Polystyrene (EPS) Insulation: ASTM C 578.
- B. Plywood: DOC PS1, Grade CD Exposure 1.
- C. OSB: DOC PS2, Exposure 1.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Shut off rooftop utilities and service piping before beginning the Work.
- B. Test existing roof drains to verify that they are not blocked or restricted. Immediately notify Architect of any blockages or restrictions.

- C. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- D. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- E. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
  - 1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing roofing system components that are to remain.

### 3.2 ROOF TEAR-OFF

- A. General: Notify Owner each day of extent of roof tear-off proposed for that day.
- B. Remove pavers and accessories from roofing.
- C. Partial Roof Tear-Off: Remove existing roofing and immediately check for presence of moisture by visually observing substrate that is to remain.
  - 1. Coordinate with Owner's inspector to schedule times for tests and inspections immediately after removal.
  - 2. With an electrical capacitance moisture-detection meter, spot check substrate that is to remain.
  - 3. Inspect insulation, deck, wood blocking, curbs, and nailers for deterioration and damage. If any roof component has signs of deteriorated, immediately notify Architect.

### 3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263 or by pouring 1 pint (0.5 L) of hot roofing asphalt on deck at start of each day's work and at start of each roof area or plane. Do not proceed with roofing work if moisture condenses under plastic sheet or if asphalt test sample foams or can be easily and cleanly stripped after cooling.
- C. If broken or loose fasteners that secure deck panels to one another or to structure are observed, or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.

- D. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

### 3.4 BASE FLASHING

- A. Inspect parapet sheathing, wood blocking, curbs, and nailers for deterioration and damage. If parapet sheathing, wood blocking, curbs, or nailers have deteriorated, immediately notify Architect.

### 3.5 DISPOSAL

- A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
  - 1. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 07591