

CONTRACT DOCUMENTS AND SPECIFICATIONS

FOR

SOUTH BEND AIRPORT ROOF REPAIR

Project No. 2021-0385

Prepared for

SOUTH BEND INTERNATIONAL AIRPORT, INDIANA

By

**Jones Petrie Rafinski
325 South Lafayette Boulevard
South Bend, Indiana 46601**

Edward J. Kowalczyk, AIA



Registered Architect
State of Indiana No. 11700117

FOR QUOTES DUE: **December 2, 2021, 11:00am (Local Time) to:**
Bbauman@sbnair.com

South Bend International Airport

ROOF REPAIR Project No. 2021-0385

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NOTICE TO PUBLIC AND BIDDERS

Notice is hereby given that the St. Joseph County Airport Authority acting and through its Board will receive sealed proposals until the hour of 11:00 a.m., December 2, 2021, and bids will be opened publicly immediately after, on the last day of receiving bids in the Boardroom of the South Bend International Airport, South Bend IN. 46628, for the following:

Replacement of various roof sections on the Terminal Building, to include the Atrium (Area A Approx. 7800 sq./ft), Area East of Atrium, (Area B approx. 21,000 sq./ft.) and sections on the front of terminal from Door A to Door B (Area C Approx. 6000 sq./ft.)

Bid documents and specifications are available on our Website at <https://flysbn.com/doing-business/> Solicitations & Bidding.

There shall be separate bids for each of the 3 requests. Combined proposals for the requested equipment will not be accepted.

Questions shall be submitted in writing to bbauman@sbnair.com until 10:00 a.m. on November 15th 2021 and answers provided via website.

A Pre-Bid Meeting will be held November 18th at 8:30 am in the Boardroom of the South Bend International Airport.

Bids must be submitted on Indiana Bid Form 96, accompanied by a certified check or bid bond in the amount no less than five percent (5%) of the amount of the bid. The guarantee shall be made out to the St. Joseph County Airport Authority. Mailing address is, St. Joseph County Airport Authority, 4477 Progress Drive, South Bend IN. 46628

The Board reserves the right to reject any and all bids, or to waive any informalities in bidding, to accept a full or partial award of the bid or bids which, in its judgement, will be in the best interests of the St. Joseph County Airport Authority.

SBN

SPECIAL PROVISIONS

AIRPORT ROOF REPAIR Project No. 2021-0385

I. PROJECT DESCRIPTION

Work to be performed shall include furnishing all labor, services, materials, insurance, labor and equipment to provide and install the South Bend Airport Roof Repair project including, but not limited to, parapet cap/coping, remove existing roof, replace damaged substrate, and roof, according to the intent of the plans and specifications..

II. TERM "OR EQUAL"

A. Prevailing Specifications: None

B. Additions:

1. Where the term "or equal" is used in these specifications, the Quote provider deviating from specified item shall file with his/her Quote a letter fully explaining and justifying his/her proposed article or equal. The City of South Bend shall be the sole judge in determining if the "or equal" offered meets the specification.

IV. TAX EXEMPT

1. Materials and properties purchased under contract with the Owner that becomes a permanent part of the structure or facilities constructed are not subject to the Indiana Gross Retail Tax (Sales Tax). The exemption number will be furnished to the Contractor upon award.

V. INDEMNIFICATION

1. Contractor agrees to indemnify, defend and hold harmless the City of South Bend, its agents, officers and employees, from all costs, losses, claims and suits, including court costs, attorney fees, and other expenses, arising from or out of the negligent performance of this Contract by Contractor, or because of arising out of any defect in the goods, materials or equipment supplied by the Quote provider.

VI. INSURANCE

1. All Contractors and subcontractors doing business with the SBN shall present a Certificate of Insurance showing coverage in the following minimum amount:
 - a. General Liability: Premises-Completed Operations or Products, Bodily Injury and Property Damage Combined Single Limit - \$1,000,000.
 - b. There shall be no exclusion for explosion, collapse or underground hazard.
 - c. Workmen's Compensation: Statutory State of Indiana Employer's Liability - \$100,000.

- d. Auto Liability: Bodily Injury and Property Damage Combined Single limit - \$1,000,000
- e. SBN shall be named as additional insured on the Certificate of Insurance.

VII. CONTROL OF WORK

- 1. Construction Engineering - The Contractor shall provide all the necessary, qualified personnel, equipment and supplies to perform all work required under this item. There will be no direct payment for this item.
- 2. The contractor is responsible to maintain the site which includes but is not limited to; dust control, site security, erosion control, and protecting adjacent properties.
- 3. Work hours for the Project shall be from 7:00 a.m. through 6:00 p.m., Monday through Friday. No work shall be permitted on weekends, Holidays, or after hours unless approved by the City of South Bend Department of Public Works.

VIII. LEGAL RELATIONS

- 1. The Owner, where mentioned in these documents, is the SBN. The Engineer, where mentioned in these documents, is Jones Petrie Rafinski, Corp.
- 2. The Contractor shall apply for and obtain any and all required permits for the work from local, state, and federal agencies and shall comply with permit requirements, including the St. Joseph County / City of South Bend Building Department.
- 3. If the Contractor awarded this contract is not a resident of Indiana, within thirty days, the Contractor shall provide the Engineer with proof that the Contractor is duly licensed, qualified and registered with the Secretary of State of Indiana to engage in business within the State of Indiana.
- 4. The Contractor shall comply with all provisions of Indiana Code 5-16-13, as amended. The Owner reserves the right to immediately terminate the public work project awarded should the Contractor be found to be in violation of any provision of Indiana Code 5-16-13 and such violation shall result in the forfeiture of Contractor's performance bond to the Owner.

IX. SUBMITTALS

- 1. Submit four (4) copies or an electronic version of the submittals for all equipment or materials used in this project to the JPR for approval. All submittals must be delivered within 7 calendar days from the notice to proceed.
- 2. The Department of Public Works will review and return two (2) copies or an electronic version of the submittals within five (5) working days.
- 3. The review of the submittal information by the Department of Public Works is to facilitate the satisfactory acceptance of the equipment. This review shall neither relieve the contractor from the responsibility for deviations from the Specifications, nor from errors and omissions in the shop drawings or literature. Parts found not meeting the requirements of these Specifications shall be removed, repaired or replaced at no cost to the OWNER.
- 4. Submittals shall include complete manufacturer's descriptive information and shop drawings for all the parts furnished under this contract.

5. Upon completion of project, the Contractor will supply one (1) conformed set of all submittals to the SBN.

X. PROSECUTION AND PROGRESS

1. The project will have a completion date of November 18th, 2022 for all work. The contract time will start when the Notice to Proceed is delivered and signed.
2. SBN, Engineer, and Contractor will hold a pre-construction meeting following award of the contract. The date of the Notice to Proceed will be agreed at that meeting.
3. Contractor shall provide a schedule to the Owner prior to beginning any work on the site.

XI. CHANGE OF CONTRACT TIME

1. The Contract Time may only be changed by Change Order. Any Claim for an extension in the Contract Time shall be based on written notice delivered to SBN within seven (7) calendar days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within fourteen (14) calendar days after such occurrence unless an official of the SBN allows an additional period of time to ascertain more accurate data. The Contract Time will be extended in an amount equal to time lost to delays beyond the control of the Contractor if a claim is made in accordance with this provision. Such delays shall include acts of neglect by SBN employees, or to fires, flood, labor disputes, epidemics, abnormal weather conditions, governmental procedures, or acts of God.
2. Unless otherwise provided, the Contract time is based upon normal weather conditions. An extension is granted for weather conditions significantly more severe than normal if the Contractor demonstrates to the satisfaction of SBN that the delay in the progress of the work was due to such weather. The basis to define normal weather will be the data compiled by the United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA).
3. No extension of time will be granted if the Contractor, by his/her/its own action or inaction, including fault or negligence of Contractor's subcontractors, caused the delay, or for which any remedies are provided under any other provision of this agreement.
4. The grant of an extension of time under this Section in no way constitutes a waiver by SBN of any rights or remedies existing under this contract at law or in equity.

XII. DEFAULT AND TERMINATION

1. Events of Default shall include Contractor's failure to perform any of its obligations under this contract including failure to commence work at the time specified, failure to perform the work in accordance with these specifications, unauthorized discontinuation of the work, failure to carry out the work in a manner acceptable to SBN, failure to observe Federal, State, or local laws or regulations, and failure to comply with any other term of this contract.
2. If an Event of Default occurs, SBN shall provide Contractor written notice and may permit Contractor ten (10) calendar days after the date of the notice to cure the default. If the default is not cured within the ten (10) day cure period, SBN may at any time thereafter terminate this contract in which case the termination shall be final and effective.
3. Upon an Event of Default, SBN may invoke the following remedies in addition to those remedies provided under separate provisions of this contract, the right of set-off against

any payments due or to become due to the Contractor against the retainage, the right to take over and complete the Work. If SBN notifies Contractor that SBN is invoking its right to complete the Work, all rights that the Contractor has in order under Contractor's subcontracts are assigned to SBN, subject to SBN's right to take assignment of all or only selected subcontracts at SBN's discretion. The sole obligation accepted by SBN under such subcontracts is to pay for Work satisfactorily performed after the date of the assignment. In the event a conditional assignment has not been executed, the Contractor shall execute or cause to be executed any assignment, agreement, or other document that may be necessary in the sole opinion of legal counsel to SBN to evidence compliance with this provision. The Contractor shall promptly deliver such documents upon SBN's request. In the case of such assignment, unless otherwise agreed in writing, The Contractor remains liability to subcontractors for any payment already involved, and for any claim, suit or cause of action based upon or resulting from any error, omission, negligence or other breach of contract by the Contractor, its officers, employees, or agents arising prior to the date of assignment to SBN.

XIII. LIQUIDATED DAMAGES

1. The contractor shall proceed with the work at such rate of progress to ensure full completion within the Contract Time. It is expressly understood and agreed, by and between the Contractor and the Owner, that the Contract Time for completion of the work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the work, and excludes the time for unavoidable delays which were beyond the control and without the fault of the Contractor.
2. If the Contractor shall fail to complete the work within the Contract Time, or extension of time granted by the Owner, then the Contractor will pay to the Owner the amount for liquidated damages a sum of five hundred dollars (\$500.00) for each calendar day that the Contractor shall remain in default after the time of completion stipulated in the Contract Documents.
3. The Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due to the following and the Contractor has promptly given written notice of such delay to the Owner and Engineer/Architect.
 - a. To any preference, priority, or allocation order duly issued by the Owner.
 - b. To unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to acts of God, acts of public enemy, acts of the Owner, acts of another Contractor in the performance of a Contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather.
4. The Contractor is hereby alerted that failure to submit shop drawings in a timely manner or failure to order materials in a timely manner, such that material manufacturing and delivery to the project site are delayed, will not be considered as unforeseeable causes in the determination of liquidated damages, extension of time granted by the Owner, or any excess cost.

XIV. RETAINAGE AND FINAL PAYMENT

1. Payments will be made every thirty (30) calendar days.
2. Consistent with provisions of IC 36-1-12-14, the Board of Public Works shall retain a

percentage of payments throughout the duration of the project.

3. Before final payment and retainage are released the Contractor must satisfy the following:
 - a. All parts and labor meet requirements stated in the specifications.
 - b. Provide copies of test reports or cut sheets on all materials supplied.
 - c. Provide As-Built drawings to SBN
 - d. One (1) copy of a Final Waiver of Lien.

XV. WARRANTY

1. All parts shall include the following:
 - (i) Performance specifications;
 - (ii) Bill of materials
 - (iii) Warranties on all parts; and
 - (iv) Installation and safety requirements.

XVI. DESCRIPTION OF WORK

1. Work to be performed shall include furnishing all labor, services, materials, insurance, labor and equipment to provide and install the SBN airport Roof Repair project including, but not limited to, parapet cap, remove existing roof, replace damaged substrate, replace roof, according to the intent of the plans and specifications, according to the intent of the plans and specifications.
2. The Contractor shall preserve and protect all surrounding property, structures, tenants, visitors and their property from damage caused by the Contractor's operations.
3. Architectural site improvements shall be completed in accordance with plan details and separate architectural specifications.

XVII. PLANS

- A. Prevailing Specifications: City of South Bend Design and Construction Standards
- B. Additions:
 1. Roof Repair
 - a. The plans consist of **Seven (7)** sheets.
 2. The work shall conform to the plans.
 3. The drawings are schematic in nature.
 4. The CONTRACTOR is responsible for estimating dimensions and quantities of materials.
 5. In the event that the Specifications and the Plans conflict, the Specifications shall govern.

XVIII. PUBLIC SAFETY

1. It shall be the Contractor's responsibility to secure the construction site against unauthorized entrance by persons and vehicles outside of and during work hours. This includes securing the site against dumping and public safety of the Owner, Owner's representatives, pedestrians, bystanders and neighborhood residents.
2. Maintaining public safety will not be paid for directly, but shall be included in the cost of various items of the contract.

XIX. PERMITS

1. The Contractor shall be solely responsible for filing all paperwork required for City of South Bend permits, including but not limited to the City building permit.
2. The Contractor shall be required to observe and obey all requirements of the permits.

**SOUTH BEND AIRPORT
CONTRACTOR'S QUOTE
CHECKLIST FOR BIDDERS**



Project Name South Bend Airport Roof Repair
Project No. 2021-0385
For Quotes Due December 2, 2021 at 11:00am (Local Time)

From time to time the South Bend Board of Public Works finds it necessary to reject a quote because it does not comply with statutory requirements. In preparing your quote, please use the following checklist in order to make sure that your quote is done in the proper manner.

___ Proper quote security included. The bidder has the option of providing either a Certified Check or Bid Bond.

___ Quote prepared on the SBN Contractor's Quote for Work Form, completely executed.

___ Proof of MBE/WBE Participation Goal Form

___ Acknowledge Receipt of ___ Addendum(s) included with the quote.

___ All required additional information is included with the quote.

___ Proposal statements and other affidavits all signed by the proper party with name either printed or typed underneath signature.

___ This checklist submitted with the Quote.

This checklist is provided for bidder's use in assuring compliance with required documentation; however, it does not include all specifications requirements and does not relieve the bidder of the need to read and comply with the specifications.

Bidder: _____ Date: _____

By Authorized Representative:

Signature: _____

Print Name & Title: _____

QUOTE/PROPOSAL
South Bend Airport

Project Name South Bend Airport Roof Repair

Project No. 2021-0385

For Quotes Due December 2, 2021 at 11:00am (Local Time)

BASE QUOTE

Item No.	Description	Total Amount
1A	EPDM Mechaincally adhered	
	Area A	
	Area B	
	Area C	

BASE QUOTE TOTAL _____

ALTERNATE

Item No.	Description	Total Amount
1B	EPDM fully adhered with over new cover board	
	Area A	
	Area B	
	Area C	

ALTERNATE 1B TOTAL _____

ALTERNATE

Item No.	Description	Total Amount
2A	Sarnafil PVC mechanically adhered	
	Area A	
	Area B	
	Area C	

ALTERNATE 2A TOTAL _____

ALTERNATE

Item No.	Description	Total Amount
2B	Sarnafil PVC fully adhered over new cover board	
	Area A	
	Area B	
	Area C	

ALTERNATE 2B TOTAL _____

Bidder (Firm): _____

Address: _____

City/State/Zip: _____ Telephone Number: () _____

By _____

(Signature)

(Printed Name of Person Signing)

POLICY STATEMENT

Section 26.1, 26.23 Objectives/Policy Statement

St. Joseph County Airport Authority, owner of South Bend International Airport, has established a Disadvantaged Business Enterprise (DBE) Program in accordance with regulations of the U.S. Department of Transportation (DOT), 49 CFR Part 26. St. Joseph County Airport Authority has received Federal financial assistance from the Department of Transportation, and as a condition of receiving this assistance, St. Joseph County Airport Authority has signed an assurance that it will comply with 49 CFR Part 26 (hereafter referred to as "Part 26").

It is the policy of the St. Joseph County Airport Authority to ensure that DBEs as defined in Part 26, have an equal opportunity to receive and participate in DOT-assisted contracts. It is also St. Joseph County Airport Authority policy to engage in the following actions on a continuing basis:

1. Ensure nondiscrimination in the award and administration of DOT- assisted contracts;
2. Create a level playing field on which DBEs can compete fairly for DOT- assisted contracts;
3. Ensure that the DBE Program is narrowly tailored in accordance with applicable law;
4. Ensure that only firms that fully meet 49 CFR Part 26 eligibility standards are permitted to participate as DBEs;
5. Help remove barriers to the participation of DBEs in DOT assisted contracts;
6. Promote the use of DBEs in all types of federally-assisted contracts and procurement activities;
7. Assist the development of firms that can compete successfully in the market place outside the DBE Program; and
8. Make appropriate use of the flexibility afforded to recipients of Federal financial assistance in establishing and providing opportunities for DBEs.

The Properties Manager has been delegated as the DBE Liaison Officer. In that capacity, the Properties Manager is responsible for implementing all aspects of the DBE program. Implementation of the DBE program is accorded the same priority as compliance with all other legal obligations incurred by the St. Joseph County Airport Authority in its financial assistance agreements with the Department of Transportation.

St. Joseph County Airport Authority has disseminated this policy statement to the Authority and all components of our organization. This statement has been distributed to DBE and non-DBE business communities that may perform work on St. Joseph County Airport Authority DOT-assisted contracts. The distribution was accomplished by mass e-mail and at pre-construction meetings.

CEO & Executive Director

Date

GENERAL REQUIREMENTS

Section 26.1 Objectives

The objectives are elaborated in the policy statement on the first page of this program.

Section 26.3 Applicability

St. Joseph County Airport Authority is the recipient of Federal airport funds authorized by 49 U.S.C. 47101, *et seq.*

Section 26.5 Definitions

St. Joseph County Airport Authority will use terms in this program that have their meanings defined in Part 26, §26.5.

Section 26.7 Non-discrimination Requirements

St. Joseph County Airport Authority will never exclude any person from participation in, deny any person the benefits of, or otherwise discriminate against anyone in connection with the award and performance of any contract covered by 49 CFR Part 26 on the basis of race, color, sex, or national origin.

In administering its DBE program, St. Joseph County Airport Authority will not, directly or through contractual or other arrangements, use criteria or methods of administration that have the effect of defeating or substantially impairing accomplishment of the objectives of the DBE program with respect to individuals of a particular race, color, sex, or national origin.

Section 26.11 Record Keeping Requirements

Reporting to DOT

St. Joseph County Airport Authority will provide data about its DBE Program to the Department as directed by DOT operating administrations.

DBE participation will be reported to FAA as follows:

St. Joseph County Airport Authority will transmit to FAA annually, by or before December 1, the information required for the "Uniform Report of DBE Awards or Commitments and Payments", as described in Appendix B to Part 26. St. Joseph

County Airport Authority will similarly report the required information about participating DBE firms. All reporting will be done through the FAA official reporting system, or another format acceptable to FAA as instructed thereby.

Bidders List

St. Joseph County Airport Authority will create and maintain a bidders list. The purpose of the list is to provide as accurate data as possible about the universe of DBE and non-DBE contractors and subcontractors who seek to work on St. Joseph County Airport Authority DOT-assisted contracts, for use in helping to set overall goals. The bidders list will include the name, address, DBE and non-DBE status, age of firm, and annual gross receipts of firms.

This information will be collected per **ATTACHMENT 3**.

Section 26.13 Federal Financial Assistance Agreement

St. Joseph County Airport Authority has signed the following assurances, applicable to all DOT-assisted contracts and their administration:

Assurance: - Each financial assistance agreement St. Joseph County Airport Authority signs with a DOT operating administration (or a primary recipient) will include the following assurance:

The St. Joseph County Airport Authority shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any DOT-assisted contract or in the administration of its DBE program or the requirements of 49 CFR Part 26. The St. Joseph County Airport Authority shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts. The St. Joseph County Airport Authority DBE program, as required by 49 CFR Part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the St. Joseph County Airport Authority of its failure to carry out its approved program, the Department may impose sanctions as provided for under 49 CFR Part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801 *et seq.*).

Contract Assurance: St. Joseph County Airport Authority will ensure that the following clause is included in each DOT-funded contract it signs with a contractor (and each subcontract the prime contractor signs with a subcontractor):

The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- 1) Withholding monthly progress payments;
- 2) Assessing sanctions;
- 3) Liquidated damages; and/or
- 4) Disqualifying the contractor from future bidding as non-responsible.

ADMINISTRATIVE REQUIREMENTS

Section 26.21 DBE Program Updates

St. Joseph County Airport Authority is required to have a DBE program meeting the requirements of this part as it will receive grants for airport planning or development and will award prime contracts, cumulative total value of which exceeds \$250,000 in FAA funds in a federal fiscal year. St. Joseph County Airport Authority is not eligible to receive DOT financial assistance unless DOT has approved this DBE program and St. Joseph County Airport Authority is in compliance with it and Part 26. St. Joseph County Airport Authority will continue to carry out this program until all funds from DOT financial assistance have been expended. St. Joseph County Airport Authority does not have to submit regular updates of the DBE program document, as long as it remains in compliance. However, significant changes in the program, including those required by regulatory updates, will be submitted for DOT approval.

Section 26.23 Policy Statement

The Policy Statement is elaborated on the first page of this DBE Program.

Section 26.25 DBE Liaison Officer (DBELO)

The following individual has been designated as the DBE Liaison Officer for St. Joseph County Airport Authority:

Kerianne Linn, A.A.E.
Properties Manager
St. Joseph County Airport Authority
4477 Progress Drive

South Bend, IN 46628
Phone: 574-282-4590 ext. 221
Fax: 574-239-2585
klinn@sbnair.com

In that capacity, the DBELO is responsible for implementing all aspects of the DBE program and ensuring that the St. Joseph County Airport Authority complies with all provision of 49 CFR Part 26. The DBELO has direct, independent access to the CEO & Executive Director concerning DBE program matters. An organizational chart displaying the DBELO's position in the organization is included in **ATTACHMENT 2** to this program.

The DBELO is responsible for developing, implementing and monitoring the DBE program, in coordination with other appropriate officials. The DBELO has sufficient support staff including Board attorney and consultant to assist in the administration of the program. The duties and responsibilities include the following:

[Note: The following are examples. Include only those responsibilities that the DBELO actually performs. Add additional responsibilities if appropriate.]

1. Gathers and reports statistical data and other information as required by DOT.
2. Reviews third party contracts and purchase requisitions for compliance with this program.
3. Works with all departments to set overall annual goals.
4. Ensures that bid notices and requests for proposals are available to DBEs in a timely manner.
5. Identifies contracts and procurements so that DBE goals are included in solicitations (both race-neutral methods and contract specific goals) and monitors results.
6. Analyzes St. Joseph County Airport Authority progress toward attainment and identifies ways to improve progress.
7. Participates in pre-bid meetings.
8. Advises the CEO/governing body on DBE matters and achievement.
9. Determine contractor compliance with good faith efforts.
10. Plans and participates in DBE training seminars.
11. Acts as liaison to the Uniform Certification Process. *[certifying agencies only]*
12. Provides outreach to DBEs and community organizations to advise them of opportunities.

Section 26.27 DBE Financial Institutions

It is the policy of the St. Joseph County Airport Authority to investigate each 3-year cycle the full extent of services offered by financial institutions owned and controlled by socially and economically disadvantaged individuals in the community, to make

reasonable efforts to use these institutions, and to encourage prime contractors on DOT-assisted contracts to make use of these institutions.

We have queried online whether any local DBE financial institutions exist, including reaching out to the local chamber and have found none.

Section 26.29 Prompt Payment Mechanisms

St. Joseph County Airport Authority requires that all subcontractors performing work on DOT-assisted contracts shall be promptly paid for work performed pursuant to their agreements, in accordance with all relevant federal, state, and local law.

In accordance with 49 CFR §26.29, the St. Joseph County Airport Authority established a contract clause implementing this requirement and requires prime contractors to pay subcontractors for satisfactory performance of their contracts no later than 30 days from the prime contractor's receipt of each payment from the St. Joseph County Airport Authority.

St. Joseph County Airport Authority ensures prompt and full payment of retainage from the prime contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. Pursuant to §26.29, St. Joseph County Airport Authority has selected the following method to comply with this requirement:

- Hold retainage from prime contractors and provide for prompt and regular incremental acceptances of portions of the prime contract, pay retainage to prime contractors based on these acceptances, and require a contract clause obligating the prime contractor to pay all retainage owed to the subcontractor for satisfactory completion of the accepted work within 30 days after your payment to the prime contractor.

Additionally, for Federal Aviation Administration (FAA) Recipients include the following:

To implement this measure, St. Joseph County Airport Authority includes the following clause from FAA Advisory Circular 150/5370-10 in each DOT-assisted prime construction contract:

The Contractor is required to pay all subcontractors for satisfactory performance of their contracts no later than 30 days after the Contractor has received a partial payment. The Owner must ensure prompt and full payment of retainage from the prime Contractor to the subcontractor within 30 days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented as required by the Owner. When the Owner has made an incremental acceptance of a portion of a prime

contract, the work of a subcontractor covered by that acceptance is deemed to be satisfactorily completed.

From the total of the amount determined to be payable on a partial payment, 5 percent of such total amount will be deducted and retained by the Owner until the final payment is made, except as may be provided (at the Contractor's option) in the subsection 90-08 titled PAYMENT OF WITHHELD FUNDS of this section. The balance – 95% of the amount payable, less all previous payments, shall be certified for payment. Should the Contractor exercise his or her option, as provided in the subsection 90-08 titled PAYMENT OF WITHHELD FUNDS of this section, no such percent retainage shall be deducted.

When at least 95% of the work has been completed, the Engineer shall, at the Owner's discretion and with the consent of the surety, prepare estimates of both the contract value and the cost of the remaining work to be done.

The Owner may retain an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

Section 26.31 Directory

St. Joseph County Airport Authority is a non-certifying member of the Indiana Unified Certification Program (UCP). The UCP maintains a directory identifying all firms eligible to participate as DBEs, which contains all the elements required by §26.31.

Section 26.33 Over-concentration

St. Joseph County Airport Authority has not identified that over-concentration exists in the types of work that DBEs perform.

Section 26.35 Business Development Programs

St. Joseph County Airport Authority has not established a Business Development Program.

Section 26.37 Monitoring Responsibilities

St. Joseph County Airport Authority implements and carries out appropriate mechanisms to ensure compliance with 49 CFR Part 26 program requirements by all program participants, including prompt payment, and describes and set forth these mechanisms in St. Joseph County Airport Authority DBE program.

St. Joseph County Airport Authority actively monitors participation by maintaining a running tally of actual DBE attainments (e.g., payments actually made to DBE firms), including a means of comparing these attainments to commitments.

Monitoring Payments to DBEs and Non-DBEs

St. Joseph County Airport Authority undertakes ongoing monitoring of prime payments to subcontractors over the course of any covered contract. Such monitoring activities will be accomplished through the following method(s):

1. We will bring to the attention of the Department of Transportation any false, fraudulent, or dishonest conduct in connection with the program, so that DOT can take the steps (e.g., referral to the Department of Justice for criminal prosecution, referral to the DOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules) provided in 26.107.
2. We will implement similar action under our own legal authorities, including responsibility determinations in future contracts. **ATTACHMENT 7** lists the regulation, provisions, and contract remedies available to us in the events of non-compliance with the DBE regulation by a participant in our DBE Program.
3. We will implement a monitoring and enforcement mechanism to ensure that work committed to DBEs at contract award or subsequently (i.e., as the result of modification to the contract) is actually performed by the DBEs to which the work was committed.
4. We will implement a monitoring and enforcement mechanism that will include written certification that we have reviewed contracting records and monitored work sites for this purpose. This will be accomplished by review of work orders, contracts, pay requests and job site visits.
5. We will implement a mechanism that will provide for a running tally of actual DBE attainments (e.g., payment actually made to DBE firms), including a means of comparing these attainments to commitments. In our reports of DBE participation to DOT, we will show both commitments and attainments, as required by the DOT uniform reporting form.

St. Joseph County Airport Authority requires prime contractors to maintain records and documents of payments to subcontractors, including DBEs, for a minimum of three (3) years unless otherwise provided by applicable record retention requirements for the St. Joseph County Airport Authority financial assistance agreement, whichever is longer. These records will be made available for inspection upon request by any authorized representative of St. Joseph County Airport Authority or DOT. This reporting requirement extends to all subcontractors, both DBE and non-DBE.

- St. Joseph County Airport Authority proactively reviews contract payments to subcontractors including DBEs quarterly. Payment reviews will evaluate whether the actual amount paid to DBE subcontractors is equivalent to the amounts reported to St. Joseph County Airport Authority by the prime contractor.

Prompt Payment Dispute Resolution

St. Joseph County Airport Authority will take the following steps to resolve disputes as to whether work has been satisfactorily completed for purposes of §26.29.

- During regular monthly progress meetings with all parties (at minimum staff, prime contractor, and consultant representatives) involved in aspects of the project, time will be allowed to identify any matters of dispute.
- Each representative will have authorization to bind their party with authority to take enforcement action.
- All matters shall be discussed and condensed in writing.
- The matter will be brought to the DBELO to determine next steps, i.e. seek advice of an appointed attorney and/or involve the Board.
- A clear next step will be determined as quickly as possible.

St. Joseph County Airport Authority has established, as part of its DBE program, the following mechanism(s) to ensure prompt payment and return of retainage:

(1) Alternative dispute resolution (ADR)

- A contract clause that requires prime contractors to include in their subcontracts language providing that prime contractors and subcontractors will use appropriate alternative dispute resolution mechanisms to resolve payment disputes.

(2) A contract clause providing that the prime contractor will not be reimbursed for work performed by subcontractors unless and until the prime contractor ensures that the subcontractors are promptly paid for the work they have performed.

- A contract clause providing that the prime contractor will not be reimbursed for work performed by subcontractors unless and until the prime contractor ensures that the subcontractors are promptly paid for the work they have performed.

(3) Other mechanisms

- Other mechanisms, consistent with this part and applicable state and local law, to ensure that DBEs and other contractors are fully and promptly paid.

Prompt Payment Complaints

Complaints by subcontractors regarding the prompt payment requirements are handled according to the following procedure:

- Subcontractor should first attempt to bring the dispute to the attention of the prime in writing.
- If affected subcontractor is not comfortable contacting prime directly regarding payment or unable to resolve payment discrepancies with prime, subcontractor should contact DBELO in writing to initiate their complaint.
- If filing a prompt payment complaint with the DBELO does not result in timely and meaningful response by St. Joseph County Airport Authority to resolve prompt payment disputes, affected subcontractor may contact the responsible FAA contact.
- Pursuant to Sec. 157 of the FAA Reauthorization Act of 2018, all complaints related to prompt payment will be reported in a format acceptable to the FAA, including the nature and origin of the complaint and its resolution.

Enforcement Actions for Noncompliance of Participants

St. Joseph County Airport Authority will provide appropriate means to enforce the requirements of §26.29. These means include:

- In accordance with the contract, assessing liquidated damages against the prime contractor for each day beyond the required time period the prime contractor fails to pay the subcontractor
- Advise subcontractors of the availability of the payment and performance bond to assure payment for labor and materials in the execution of the work provided for in the contract
- Issue a stop-work order until payments are released to subcontractors, specifying in the contract that such orders constitute unauthorized delays for the purposes of calculating liquidated damages if milestones are not met
- Other penalties for failure to comply, up to and including contract termination.

St. Joseph County Airport Authority will actively implement the enforcement actions detailed above.

Monitoring Contracts and Work Sites

St. Joseph County Airport Authority reviews contracting records and engages in active monitoring of work sites to ensure that work committed to DBEs at contract award or subsequently (e.g., as the result of modification to the contract) is actually performed by the DBEs to which the work was committed. Work site monitoring is performed by the Project Manager. Contracting records are reviewed by Project Manager. St. Joseph County Airport Authority will maintain written certification that contracting records have been reviewed and work sites have been monitored for this purpose **ATTACHMENT 7.**

Section 26.39 Fostering small business participation

St. Joseph County Airport Authority has created a Small Business element to structure contracting requirements to facilitate competition by small business concerns, taking all reasonable steps to eliminate obstacles to their participation, including unnecessary and unjustified bundling of contract requirements that may preclude small business participation in procurements as prime contractors or subcontractors.

The small business element is incorporated as **ATTACHMENT 9** to this DBE Program. The program elements will be actively implemented to foster small business participation. Implementation of the small business element is required in order for St. Joseph County Airport Authority to be considered by DOT as implementing this DBE program in good faith.

SUBPART C – GOALS, GOOD FAITH EFFORTS, AND COUNTING

Section 26.43 Set-asides or Quotas

St. Joseph County Airport Authority does not use quotas in any way in the administration of this DBE program.

Section 26.45 Overall Goals

St. Joseph County Airport Authority will establish an overall DBE goal covering a three-year federal fiscal year period if it anticipates awarding DOT-funded prime contracts the cumulative total value of which exceeds \$250,000 in DOT funds during any one or more of the reporting fiscal years within the three-year goal period. In accordance with §26.45(f), St. Joseph County Airport Authority will submit its Overall Three-year DBE Goal to FAA by August 1st of the year in which the goal is due, as required by the schedule established by and posted to the website of FAA.

https://www.faa.gov/about/office_org/headquarters_offices/acr/bus_ent_program/media/Schedule_of_DBE_and_ACDBE_Reporting_Requirements_Dec_2017_Issue.pdf

The DBE goals will be established in accordance with the 2-step process as specified in 49 CFR Part 26.45. If St. Joseph County Airport Authority does not anticipate awarding prime contracts the cumulative total value of which exceeds \$250,000 in DOT funds during any of the years within the three-year reporting period, an overall goal will not be developed. However, this DBE Program will remain in effect and St. Joseph County Airport Authority will seek to fulfill the objectives outlined in 49 CFR Part 26.1.

Step 1. The first step is to determine a base figure for the relative availability of DBEs in the market area. St. Joseph County Airport Authority will use as a method to determine the base figure. St. Joseph County Airport Authority understands that the exclusive use of a list of prequalified contractors or plan holders, or a bidders list that does not comply with the requirements of 49 CFR Part 26.45(c)(2), is not an acceptable alternative means of determining the availability of DBEs.

Step 2. The second step is to adjust, if necessary, the “base figure” percentage from Step 1 so that it reflects as accurately as possible the DBE participation the recipient would expect in the absence of discrimination. Adjustments may be made based on past participation, information from a disparity study (to the extent it is not already accounted for in the base goal), and/or information about barriers to entry to past competitiveness of DBEs on contracts. St. Joseph County Airport Authority will examine all of the evidence available in its jurisdiction to determine what adjustment, if any, is needed. If the evidence does not suggest an adjustment is necessary, then no adjustment shall be made.

Any methodology selected will be based on demonstrable evidence of local market conditions and be designed to ultimately attain a goal that is rationally related to the relative availability of DBEs in the St. Joseph County Airport Authority market.

In establishing the overall goal, St. Joseph County Airport Authority will provide for consultation and publication. This includes consultation with minority, women’s and general contractor groups, community organizations, and other officials or organizations which could be expected to have information concerning the availability of disadvantaged and non-disadvantaged businesses, the effects of discrimination on opportunities for DBEs, and the efforts by St. Joseph County Airport Authority to establish a level playing field for the participation of DBEs. The consultation will include a scheduled, direct, interactive exchange (e.g., a face-to-face meeting, video conference, teleconference) with as many interested stakeholders as possible focused on obtaining information relevant to the goal setting process, and it will occur before St. Joseph County Airport Authority is required to submit the goal methodology to the operating administration for review pursuant to §26.45(f). The goal submission will document the consultation process in which St. Joseph County Airport Authority

engaged. Notwithstanding paragraph (f)(4) of §26.45, the proposed goal will not be implemented until this requirement is met.

In addition to the consultation described above, St. Joseph County Airport Authority will publish a notice announcing the proposed overall goal before submission to the FAA on August 1st. The notice will be posted on St. Joseph County Airport Authority official internet web site and may be posted in other sources (e.g., minority-focused media, trade association publications). If the proposed goal changes following review by FAA, the revised goal will be posted on the official internet web site.

The public will also be informed that the proposed overall goal and its rationale are available for inspection during normal business hours at the principal office of St. Joseph County Airport Authority. This notice will provide that the St. Joseph County Airport Authority and FAA will accept comments on the goals for 30 days from the date of the notice. Notice of the comment period will include the addresses to which comments may be sent (including offices and websites) where the proposal may be reviewed. **The public comment period will not extend the August 1st deadline.**

The Overall Three-Year DBE Goal submission to FAA will include a summary of information and comments received, if any, during this public participation process and St. Joseph County Airport Authority responses.

St. Joseph County Airport Authority will begin using the overall goal on October 1 of the relevant period, unless other instructions from FAA have been received.

Project Goals

If permitted or required by the FAA Administrator, an overall goal may be expressed as a percentage of funds for a particular grant or project or group of grants and/or projects, including entire projects. Like other overall goals, a project goal may be adjusted to reflect changed circumstances, with the concurrence of the appropriate operating administration. A project goal is an overall goal, and must meet all the substantive and procedural requirements of this section pertaining to overall goals. A project goal covers the entire length of the project to which it applies. The project goal will include a projection of the DBE participation anticipated to be obtained during each fiscal year covered by the project goal. The funds for the project to which the project goal pertains are separated from the base from which the regular overall goal, applicable to contracts not part of the project covered by a project goal, is calculated.

If a goal is established on a project basis, the goal will be used by the time of the first solicitation for a DOT-assisted contract for the project.

Prior Operating Administration Concurrence

St. Joseph County Airport Authority understands that prior FAA concurrence with the overall goal is not required. However, if the FAA review suggests that the overall goal

has not been correctly calculated or that the method employed by St. Joseph County Airport Authority for calculating goals is inadequate, FAA may, after consulting with St. Joseph County Airport Authority, adjust the overall goal or require that the goal be adjusted by St. Joseph County Airport Authority. The adjusted overall goal is binding. In evaluating the adequacy or soundness of the methodology used to derive the overall goal, the U.S. DOT operating administration will be guided by the goal setting principles and best practices identified by the Department in guidance issued pursuant to §26.9.

A description of the methodology to calculate the overall goal and the goal calculations can be found in **ATTACHMENT 5** to this program.

Section 26.47 Failure to meet overall goals

St. Joseph County Airport Authority cannot be penalized, or treated by the Department as being in noncompliance with Part 26, because DBE participation falls short of an overall goal, unless St. Joseph County Airport Authority fails to administer its DBE program in good faith.

St. Joseph County Airport Authority understands that to be considered to be in compliance with this part, an approved DBE Program and overall DBE goal, if applicable, must be maintained, and this DBE Program must be administered in good faith.

St. Joseph County Airport Authority understands that if the awards and commitments shown on the Uniform Report of Awards or Commitments and Payments at the end of any fiscal year are less than the overall goal applicable to that fiscal year, the following actions must be taken in order to be regarded by the Department as implementing this DBE Program in good faith:

- (1) Analyze in detail the reasons for the difference between the overall goal and the awards and commitments in that fiscal year;
- (2) Establish specific steps and milestones to correct the problems identified in the analysis to enable the goal for the new fiscal year to be fully met;
- (3) St. Joseph County Airport Authority will prepare, within 90 days of the end of the fiscal year, the analysis and corrective actions developed under paragraph (c)(1) and (2) of this section. We will retain copy of analysis and corrective actions in records for a minimum of three years, and will make it available to FAA upon request.

Section 26.51 Means Recipients Use to Meet Overall Goals

Breakout of Estimated Race-Neutral & Race-Conscious Participation

St. Joseph County Airport Authority will meet the maximum feasible portion of its overall goal by using race-neutral means of facilitating race-neutral DBE participation. Race-neutral DBE participation includes any time a DBE wins a prime contract through customary competitive procurement procedures or is awarded a subcontract on a prime contract that does not carry a DBE contract goal.

Race-neutral means include, but are not limited to the following:

- (1) Arranging solicitations, times for the presentation of bids, quantities, specifications, and delivery schedules in ways that facilitate participation by DBEs and other small businesses and by making contracts more accessible to small businesses, by means such as those provided under §26.39.
- (2) Providing assistance in overcoming limitations such as inability to obtain bonding or financing (e.g., by such means as simplifying the bonding process, reducing bonding requirements, eliminating the impact of surety costs from bids, and providing services to help DBEs, and other small businesses, obtain bonding and financing);
- (3) Providing technical assistance and other services;
- (4) Carrying out information and communications programs on contracting procedures and specific contract opportunities (e.g., ensuring the inclusion of DBEs, and other small businesses, on recipient mailing lists for bidders; ensuring the dissemination to bidders on prime contracts of lists of potential subcontractors; provision of information in languages other than English, where appropriate);
- (5) Implementing a supportive services program to develop and improve immediate and long-term business management, record keeping, and financial and accounting capability for DBEs and other small businesses;
- (6) Providing services to help DBEs, and other small businesses, improve long-term development, increase opportunities to participate in a variety of kinds of work, handle increasingly significant projects, and achieve eventual self-sufficiency;
- (7) Establishing a program to assist new, start-up firms, particularly in fields in which DBE participation has historically been low;
- (8) Ensuring distribution of the DBE directory, through print and electronic means, to the widest feasible universe of potential prime contractors; and
- (9) Assisting DBEs, and other small businesses, to develop their capability to

utilize emerging technology and conduct business through electronic media.

The breakout of estimated race-neutral and race-conscious participation can be found in **ATTACHMENT 5** to this program.

The St. Joseph County Airport Authority will arrange solicitations, times for the presentation of bids, quantities, specifications, and delivery schedules in ways that facilitate participation by DBEs and other small businesses and by making contracts more accessible to small businesses, by means such as those provided under §26.39.

Contract Goals

If the approved projection under paragraph (c) of §26.51 estimates that the entire overall goal for a given year can be met through race-neutral means, contract goals will not be set during that year, unless the use of contract goals becomes necessary in order to meet the overall goal.

Contract goals will be established only on those DOT-assisted contracts that have subcontracting possibilities. A contract goal need not be established on every such contract, and the size of contract goals will be adapted to the circumstances of each such contract (e.g., type and location of work, availability of DBEs to perform the particular type of work).

Contract goals will be expressed as a percentage of the Federal share of a DOT-assisted contract.

Section 26.53 Good Faith Efforts Procedures in Situations where there are Contract Goals

Demonstration of good faith efforts (pre-award)

In cases where a contract goal has been established, the contract in question will only be awarded to a bidder/offeror that has made good faith efforts to meet the contract goal. The bidder/offeror can demonstrate that it has made good faith efforts by either meeting the contract goal or documenting that it has made adequate good faith efforts to do so. Examples of good faith efforts are found in Appendix A to Part 26.

DBELO is responsible for determining whether a bidder/offeror who has not met the contract goal has documented sufficient good faith efforts to be regarded as Responsible.

St. Joseph County Airport Authority will ensure that all information is complete and accurate and adequately documents the bidder/offeror's good faith efforts before committing to the performance of the contract by the bidder/offeror.

In all solicitations for DOT-assisted contracts for which a contract goal has been established, the following information will be required of every bidder/offeror:

- (1) Award of the contract will be conditioned on meeting the requirements of this section;
- (2) All bidders or offerors will be required to submit the following information to the recipient, at the time provided in paragraph (3) of this section:
 - (i) The names and addresses of DBE firms that will participate in the contract;
 - (ii) A description of the work that each DBE will perform. To count toward meeting a goal, each DBE firm must be certified in a NAICS code applicable to the kind of work the firm would perform on the contract;
 - (iii) The dollar amount of the participation of each DBE firm participating;
 - (iv) Written documentation of the bidder/offeror's commitment to use a DBE subcontractor whose participation it submits to meet a contract goal; and
 - (v) Written confirmation from each listed DBE firm that it is participating in the contract in the kind and amount of work provided in the prime contractor's commitment.
 - (vi) If the contract goal is not met, evidence of good faith efforts (as elaborated in Appendix A of Part 26). The documentation of good faith efforts must include copies of each DBE and non-DBE subcontractor quote submitted to the bidder when a non-DBE subcontractor was selected over a DBE for work on the contract; and
- (3) The bidder/offeror will be required to present the information stipulated in paragraph (2) of this section:

No later than 5 days after bid opening as a matter of **responsibility**.

Provided that, in a negotiated procurement, including a design-build procurement, the bidder/offeror may make a contractually binding commitment to meet the goal at the time of bid submission or the presentation of initial proposals but provide the information required by paragraph (2) of this section before the final selection for the contract is made by the recipient.

Administrative reconsideration

Within 7 days of being informed by St. Joseph County Airport Authority that it is not responsible because it has not documented adequate good faith efforts, a bidder/offeror may request administrative reconsideration. Bidder/offerors should make this request in writing to the following reconsideration official: Executive Director. The reconsideration official will not have played any role in the original determination that the bidder/offeror did not document sufficient good faith efforts.

As part of this reconsideration, the bidder/offeror will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or

made adequate good faith efforts to do so. The bidder/offeror will have the opportunity to meet in person with the reconsideration official to discuss the issue of whether the goal was met or the bidder/offeror made adequate good faith efforts to do. The bidder/offeror will be sent a written decision on reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. The result of the reconsideration process is not administratively appealable to the Department of Transportation.

Good Faith Efforts procedural requirements (post-solicitation)

The awarded contractor will be required to make available upon request a copy of all DBE subcontracts. The contractor shall ensure that all subcontracts or agreements with DBEs to supply labor or materials include all required contract provisions and mandate that the subcontractor and all lower tier subcontractors perform in accordance with the provisions of Part 26.

Prime contractors will be prohibited from terminating a DBE subcontractor listed in response to a covered solicitation (or an approved substitute DBE firm) without the prior written consent of St. Joseph County Airport Authority. This includes, but is not limited to, instances in which a prime contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or another DBE firm.

Such written consent will be provided only if St. Joseph County Airport Authority agrees, for reasons stated in the concurrence document, that the prime contractor has good cause to terminate the DBE firm. For purposes of this paragraph, good cause includes the following circumstances:

- (1) The listed DBE subcontractor fails or refuses to execute a written contract;
- (2) The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Provided however, that good cause does not exist if the failure or refusal of the DBE subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the prime contractor;
- (3) The listed DBE subcontractor fails or refuses to meet the prime contractor's reasonable, non-discriminatory bond requirements.
- (4) The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
- (5) The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215 and 1,200 or applicable state law;
- (6) St. Joseph County Airport Authority determined that the listed DBE subcontractor is not a responsible contractor;
- (7) The listed DBE subcontractor voluntarily withdraws from the project and provides St. Joseph County Airport Authority written notice of its withdrawal;

- (8) The listed DBE is ineligible to receive DBE credit for the type of work required;
- (9) A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract;
- (10) Other documented good cause that St. Joseph County Airport Authority has determined compels the termination of the DBE subcontractor. Provided, that good cause does not exist if the prime contractor seeks to terminate a DBE it relied upon to obtain the contract so that the prime contractor can self-perform the work for which the DBE contractor was engaged or so that the prime contractor can substitute another DBE or non-DBE contractor after contract award.

Before transmitting to St. Joseph County Airport Authority a request to terminate and/or substitute a DBE subcontractor, the prime contractor must give notice in writing to the DBE subcontractor, with a copy to St. Joseph County Airport Authority, of its intent to request to terminate and/or substitute the DBE, and the reason(s) for the request.

The prime contractor must give the DBE five days to respond to the prime contractor's notice and advise St. Joseph County Airport Authority and the prime contractor of the reasons, if any, why the DBE objects to the proposed termination of its subcontract and why the prime contractor's action should not be approved. If required in a particular case as a matter of public necessity (e.g., safety), a response period shorter than five days may be provided.

In addition to post-award terminations, the provisions of this section apply to pre-award deletions of or substitutions for DBE firms put forward by offerors in negotiated procurements.

Each prime contract will include a provision stating:

The contractor shall utilize the specific DBEs listed in the contractor's bid response to perform the work and supply the materials for which each is listed unless the contractor obtains prior written consent of St. Joseph County Airport Authority as provided in 49 CFR Part 26, §26.53(f). Unless such consent is provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

St. Joseph County Airport Authority will require a contractor to make good faith efforts to replace a DBE that is terminated or has otherwise failed to complete its work on a contract with another certified DBE. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, to the extent needed to meet the contract goal that was established for the procurement. The good faith efforts shall be documented by the contractor. If St. Joseph County Airport Authority requests documentation from the contractor under this provision, the contractor shall submit the documentation within 7

days, which may be extended for an additional 7 days if necessary at the request of the contractor. St. Joseph County Airport Authority shall provide a written determination to the contractor stating whether or not good faith efforts have been demonstrated.

If the contractor fails or refuses to comply in the time specified, the contracting office/representative of St. Joseph County Airport Authority may issue an order stopping all or part of payment/work until satisfactory action has been taken. If the contractor still fails to comply, the contracting officer may issue a termination for default proceeding.

Section 26.55 Counting DBE Participation

DBE participation will be counted toward overall and contract goals as provided in §26.55. The participation of a DBE subcontractor will not be counted toward a contractor's final compliance with its DBE obligations on a contract until the amount being counted has actually been paid to the DBE.

In the case of post-award substitutions or additions, if a firm is not currently certified as a DBE in accordance with the standards of subpart D of this part at the time of the execution of the contract, the firm's participation will not be counted toward any DBE goals, except as provided for in §26.87(j).

Pursuant to Sec. 150 of the FAA Reauthorization Act of 2018, firms that exceed the business size standard in § 26.65(b) will remain eligible for DBE certification and credit on FAA-funded projects as long as they do not exceed the small business size standard, as adjusted by the United States Small Business Administration, for the NAICS code(s) in which they are certified.

SUBPART D – CERTIFICATION STANDARDS

Section 26.61 – 26.73 Certification Process

St. Joseph County Airport Authority is a non-certifying member of the Indiana Unified Certification Program (UCP). Indiana UCP will use the certification standards of Subpart D of Part 26 to determine the eligibility of firms to participate as DBEs in DOT-assisted contracts. To be certified as a DBE, a firm must meet all certification eligibility standards. Certifying Indiana UCP members make all certification decisions based on the facts as a whole.

For information about the certification process or to apply for certification, firms should contact:

Indiana Department of Transportation
Disadvantaged Business Enterprise (DBE) Certification
Derrick Casson
DBE Certification Manager

SUBPART E – CERTIFICATION PROCEDURES

Section 26.81 Unified Certification Programs

St. Joseph County Airport Authority is the member of a Unified Certification Program (UCP) administered by Indiana. The UCP will meet all of the requirements of this section. See **ATTACHMENT 8.**

SUBPART F – COMPLIANCE AND ENFORCEMENT

Section 26.101 Compliance Procedures Applicable to St. Joseph County Airport Authority

St. Joseph County Airport Authority understands that if it fails to comply with any requirement of this part, St. Joseph County Airport Authority may be subject to formal enforcement action under §26.103 or §26.105 or appropriate program sanctions by the concerned operating administration, such as the suspension or termination of Federal funds, or refusal to approve projects, grants or contracts until deficiencies are remedied. Program sanctions may include, in the case of the FHWA program, actions provided for under 23 CFR 1.36; in the case of the FAA program, actions consistent with 49 U.S.C. 47106(d), 47111(d), and 47122; and in the case of the FTA program, any actions permitted under 49 U.S.C. chapter 53 or applicable FTA program requirements.

Section 26.109 Information, Confidentiality, Cooperation and intimidation or retaliation

Information that may reasonably be regarded as confidential business information, consistent with Federal, state, and local law will be safeguarded from disclosure to third parties.

Notwithstanding any provision of Federal or state law, information that may reasonably be construed as confidential business information will not be released to any third party without the written consent of the firm that submitted the information, including applications for DBE certification and supporting information. However, this information will be transmitted to DOT in any certification appeal proceeding under §26.89 or to any other state to which the individual's firm has applied for certification under §26.85.

All participants in the Department's DBE program (including, but not limited to, recipients, DBE firms and applicants for DBE certification, complainants and appellants, and contractors using DBE firms to meet contract goals) are required to cooperate fully and promptly with DOT and recipient compliance reviews, certification reviews,

investigations, and other requests for information. Failure to do so shall be a ground for appropriate action against the party involved (e.g., with respect to recipients, a finding of noncompliance; with respect to DBE firms, denial of certification or removal of eligibility and/or suspension and debarment; with respect to a complainant or appellant, dismissal of the complaint or appeal; with respect to a contractor which uses DBE firms to meet goals, findings of non-responsibility for future contracts and/or suspension and debarment).

St. Joseph County Airport Authority, contractor, or any other participant in the program will not intimidate, threaten, coerce, or discriminate against any individual or firm for the purpose of interfering with any right or privilege secured by this part or because the individual or firm has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing under this part. St. Joseph County Airport Authority understands that it is in noncompliance with Part 26 if it violates this prohibition.

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ATTACHMENTS

- Attachment 1 Regulations: 49 CFR Part 26 or website link
- Attachment 2 Organizational Chart
- Attachment 3 Bidder's List Collection Form
- Attachment 4 DBE Directory or link to DBE Directory
- Attachment 5 Overall Goal Calculations
- Attachment 6 Demonstration of Good Faith Efforts or Good Faith Effort Plan - Forms 1 & 2
- Attachment 7 DBE Monitoring and Enforcement Mechanisms
- Attachment 8 State's UCP Agreement
- Attachment 9 Small Business Element
- Attachment 10 CUF Log

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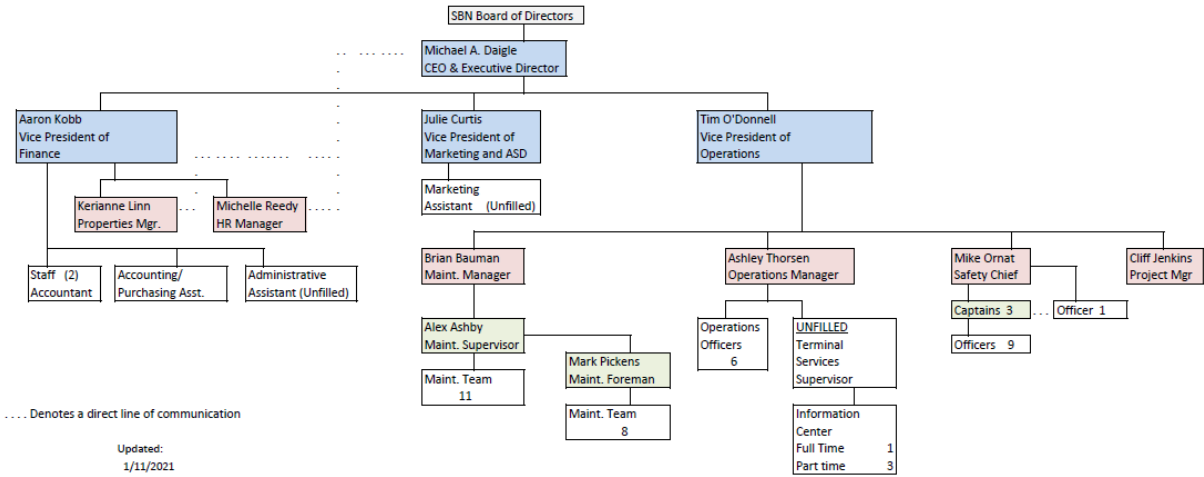
ATTACHMENT 1

Regulations: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title49/49cfr26_main_02.tpl

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ATTACHMENT 2

Organizational Chart



DKI

ATTACHMENT 3
Bidder's List and Letter of Intent Collection Form

Bidder/Offer Name: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 IRS Number: _____
 Contact Name: _____, Telephone No.: _____

Was the following firm selected by lowest bid? (check one) Yes: ___ No: ___

Firm: Name: _____
 Address: _____
 City: _____ State: _____ Zip: _____

Contact Person: Name: _____ Phone: () _____

What is the Age of Firm? _____

Firms annual Gross Receipts? <\$500,000 \$500,000 - \$1Mill. \$1 - \$2 Mill. \$2 - \$5 Mill.

Is firm a Small Business Enterprise (SBE)? (check one) Yes: ___ No: ___

Is firm a Disadvantaged Business Enterprise (DBE)? (check one) Yes: ___ No: ___

Classification: Prime Contractor Subcontractor Joint Venture
 Manufacturer Supplier

Work item(s) to be performed by Firm	Description of Work Item	Quantity	Total

The bidder/offeror is committed to utilizing the above-named firm for the work described above. The estimated participation is as follows:

Firm's contract amount: \$ _____ Percent of total contract: _____%

AFFIRMATION:

The above-named firm affirms that it will perform the portion of the contract for the estimated dollar value as stated above.

By: _____
 (Signature) (Title) Following for DBE Only

DBE Certifying Agency: _____ Expiration Date: _____
 Each DBE Firm shall submit evidence (such as a photocopy) of their certification status

Note: In the event the bidder/offeror does not receive award of the prime contract, any and all representations in this Letter of Intent and Affirmation shall be null and void.

ATTACHMENT 4

Indiana DBE Directory <https://entapps.indot.in.gov/DBELocator/>

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ATTACHMENT 5

Overall DBE Three-Year Goal Methodology

Name of Recipient: St. Joseph County Airport Authority, owner of the South Bend International Airport

Goal Period: FY-2022-2023-2024 – October 1, 2021 through September 30, 2024)

DOT-assisted contract amount:	FY-2022	<u>\$16,000,000</u>
	FY-2023	<u>\$16,640,000</u>
	FY-2024	<u>\$20,249,067</u>
	Total	<u>\$52,889,067</u>

Overall Three-Year Goal: 3.91%, to be accomplished through 3.91% RC and 0.00% RN

Total dollar amount to be expended on DBEs: \$2,067,963

Describe the Number and Type of Contracts that the airport anticipates awarding:

Contracts Fiscal Year #1

1. Reconstruct Terminal Apron and Reconstruct/Realign Taxiway B: Phase 3 Construction \$15,040,000 and CA - \$960,000

Contracts Fiscal Year #2

2. Design Bid Package 4 Reconstruct Terminal Apron and Reconstruct/Realign Taxiway B – \$640,000
3. Reconstruct Terminal Apron and Reconstruct/Realign Taxiway B: Phase 4 Construction \$15,040,000 and CA - \$960,000

Contracts Fiscal Year #3

4. Reconstruct Terminal Apron and Reconstruct/Realign Taxiway B: Phase 5 Construction \$13,160,000 and CA - \$840,000
5. D&E - Rehabilitate Lighting - Phase 1 and 2 - \$523,000
6. Rehabilitate Lighting - Phase 1 - \$2,667,000
7. D&E for Runway 9R/27L Reconstruction - \$3,059,067

Market Area: Because the work evaluated in this program it is reasonable to expect the market is statewide.

Step 1. Actual relative availability of DBEs

The base figure for the relative availability was calculated as follows:

$$BF = \left[\text{Construction \% of Project} \times \frac{\text{Ready, willing and able DBE construction firms}}{\text{All construction firms ready, willing and able}} + \text{Professional Services \% of Project} \times \frac{\text{Ready, willing and able DBE professional services}}{\text{All professional services firms ready, willing and able}} \right] \times 100$$

$$BF = \left[0.87 \times \frac{36}{645} + 0.13 \times \frac{26}{979} \right] \times 100$$

$$BF = 5.2\%$$

The data source or demonstrable evidence used to derive the numerator was: <https://entapps.indot.in.gov/DBELocator/> searching for ready willing and able Indiana Certified DBE's with NAICS codes 237990 and 541330

The data source or demonstrable evidence used to derive the denominator was: http://www2.census.gov/econ/susb/data/2012/state_id-ia_6digitnaics_2012.txt searching for ready willing and able universe of DBE's with NAICS codes 237990 and 541330

Step 2: Adjustments to Step 1 base figure

After calculating a base figure of the relative availability of DBEs, evidence was examined to determine what, if any, adjustment to the base figure was needed in order to arrive at the overall goal.

Past History Participation

One piece of data used to determine the adjustment to the base figure was the median of historical DBE accomplishments, as follows:

FY	Total Grant \$ Amount	DBE Goals			Accomplishments			Type of work
		RC	RN	Total	RC	RN	Total	
FY 13							0.00%	
FY 14							2.42%	
FY 15							0.00%	
FY 16							0.00%	
FY 17							3.30%	
FY 18							2.72%	
FY 19							2.00%	

The average of the above accomplishments is 2.61%. Taking the BF of 5.2% from above and averaging it with the statistical accomplishments over 7 years, the Overall Goal is 3.91%.

Furthermore, there are no applicable disparity studies for the local market area or recent legal case information from the relevant jurisdictions to show evidence of barriers to entry or competitiveness of DBEs in the market area that is sufficient to warrant making an adjustment to the base goal.

DRAFT

Breakout of Estimated “Race and Gender Neutral” (RN) and “Race and Gender Conscious” (RC) Participation.

St. Joseph County Airport Authority will meet the maximum feasible portion of the overall goal by using RN means of facilitating DBE participation.

1. Arranging solicitations, times for the presentation of bids, quantities, specifications, and delivery schedules in ways that facilitates DBE, and other small businesses, participation;
2. Providing assistance in overcoming limitations such as inability to obtain bonding or financing;
3. Providing technical assistance and other services;
4. Carrying out information and communications programs on contracting procedures and specific contract opportunities;
5. Implementing a supportive services program to develop and improve immediate and long-term business management, record keeping, and financial and accounting capability for DBEs and other small businesses;
6. Providing services to help DBEs and other small businesses improve long-term development, increase opportunities to participate in a variety of kinds of work, handle increasingly significant projects, and achieve eventual self-sufficiency;
7. Establishing a program to assist new, start-up firms, particularly in fields in which DBE participation has historically been low;
8. Ensuring distribution of DBE directory, through print and electronic means, to the widest feasible universe of potential prime contractors;
9. Assist DBEs and other small businesses, to develop their capability to utilize emerging technology and conduct business through electronic media; and

St. Joseph County Airport Authority estimates that in meeting the established overall goal of 3.91%, it will obtain 0.00% from RN participation and 3.91% through RC measures.

St. Joseph County Airport Authority will adjust the estimated breakout of RN and RC DBE participation as needed to reflect actual DBE participation [see §26.51(f)] and track and report RN and RC participation separately. For reporting purposes, RN DBE participation includes, but is not necessarily limited to the following: DBE participation through a prime contract obtained through customary competitive procurement procedures; DBE participation through a subcontract on a prime contract that does not carry a DBE goal, DBE participation on a prime contract exceeding a contract goal, and DBE participation through a subcontract from a prime contractor that did not consider a firm’s DBE status in making the award.

PUBLIC PARTICIPATION

Consultation:

In establishing the overall goal, St. Joseph County Airport Authority provided for consultation and publication. This process included consultation with minority, women's, and general contractor groups, community organizations, and other officials or organizations which could be expected to have information concerning the availability of disadvantaged and non-disadvantaged businesses, the effects of discrimination on opportunities for DBEs, and the St. Joseph County Airport Authority efforts to establish a level playing field for the participation of DBEs. The consultation included a scheduled, direct or web-link interactive exchange with as many interested stakeholders as possible focused on obtaining information relevant to the goal setting process, and was conducted before the goal methodology was submitted to the operating administration for review. Details of the consultation are as follows.

Notice sent to the following potential interested parties:

Local newspaper
Indiana Small Business Development Center Network Lead Center
Economic Opportunity Division
South Bend Chamber of Commerce

The consultation engaged in may be a face-to-face open meeting or via web-link video meeting.

The following comments were received during the course of the consultation:
No Comments were received.

If the proposed goal changes following review by FAA the revised goal will be posted on St. Joseph County Airport Authority official website.

Notwithstanding paragraph (f)(4) of §26.45, St. Joseph County Airport Authority proposed goals will not be implemented until this requirement has been met.

PUBLIC NOTICE

The St. Joseph County Airport Authority hereby announces its goal covering the period 2022, 2023 and 2024 of 3.91% for Disadvantaged Business Enterprise (DBE) airport construction projects. The proposed goal and rationale is available for inspection between 8:00 a.m. and 5:00 p.m., Monday through Friday at St. Joseph County Airport Authority, 4477 Progress Drive, South Bend, IN 46628 for 30 days from the date of this publication.

Comments on the DBE goal will be accepted for 30 days from the date of this publication and can be sent to the following:

Kerianne Linn, A.A.E
Properties Manager
St. Joseph County Airport Authority
4477 Progress Drive
South Bend, IN 46628
Phone: 574-282-4590 ext. 221
Fax: 574-239-2585

AND

Ms. Nancy Cibic
Compliance Specialist and
Contracting Officer Representative
Federal Aviation Administration
Office of Civil Rights
2300 E. Devon Avenue, Room 440
Des Plaines, Illinois 60018

ATTACHMENT 6

Demonstration of Good Faith Efforts - Forms 1 & 2

Forms 1 and 2 should be provided as part of the solicitation documentation.

FORM 1: DISADVANTAGED BUSINESS ENTERPRISE (DBE) UTILIZATION

The undersigned bidder/offeror has satisfied the requirements of the bid specification in the following manner:

- Bidder/offeror has met the DBE contract goal
The bidder/offeror is committed to a minimum of _____ % DBE utilization on this contract.

- Bidder/offeror has not met the DBE contract goal
The bidder/offeror is committed to a minimum of _____ % DBE utilization on this contract and has submitted [*or "will submit," if recipient made compliance a matter of responsibility*] documentation demonstrating good faith efforts.

Legal name of bidder/offeror's firm: _____

Bidder/Offeror Representative:

Name & Title

Signature

Date

ATTACHMENT 7

DBE Monitoring and Enforcement Mechanisms

The St. Joseph County Airport Authority has available several remedies to enforce the DBE requirements contained in its contracts, including, but not limited to, the following:

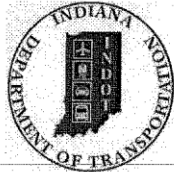
1. Breach of contract action, pursuant to the terms of the contract
2. Breach of contract action, pursuant to Indiana Code

In addition, the Federal government has available several enforcement mechanisms that it may apply to firms participating in the DBE problem, including, but not limited to, the following:

1. Suspension or debarment proceedings pursuant to 49 CFR Part 26
2. Enforcement action pursuant to 49 CFR Part 31
3. Prosecution pursuant to 18 USC 1001.

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ATTACHMENT 8
State's UCP Agreement



INDIANA DEPARTMENT OF TRANSPORTATION
100 North Senate Avenue
Room N758
Indianapolis, Indiana 46204-2216
(317) 232-5533 FAX: (317) 232-0238
An Equal Opportunity Employer • <http://www.in.gov/dot>

MITCHELL E. DANIELS, JR., Governor
THOMAS O. SHARP, Commissioner

Writer's Direct Line
(317)232-5328

August 31, 2005

Mr. Kenneth Woodruff
Civil Rights Program Manager
U.S. Department of Transportation
Federal Highway Administration, Indiana Division
575 N. Pennsylvania St., Room 254
Indianapolis, Indiana 46204

Re: Amendment to State of Indiana Unified Certification Program

Dear Mr. Woodruff:

The U.S. Department of Transportation, by letter from Jeffrey Rosen dated August 3, 2005, attached hereto, accepted the request made by the Indiana Department of Transportation and the Indiana Department of Administration to amend the State of Indiana Unified Certification Program. As you are aware, the amendment will replace the current Certification Review and Appeal Committee with an Administrative Law Judge who will be an attorney familiar with Indiana's DBE program. We plan to educate a group of attorneys from the Office of Attorney General on the DBE program and federal regulations so that they may effectively serve as administrative law judges for recertification DBE appeals.

While I understand that INDOT must amend the DBE Program Manual to reflect this change, I respectfully request permission to schedule these trainings and hearings with the AG's office immediately as we have some recertification appeal requests waiting for a hearing. The written changes to the manual and the UCP will be forthcoming. Thank you for your consideration.

Sincerely,

A handwritten signature in cursive script, appearing to read "Martha G. Kenley".

Martha G. Kenley
Director
Economic Opportunity Division

c.c. Mark Ahearn, Chief Legal Counsel

ATTACHMENT 9
Small Business Element

1. Objective/Strategies

In multi-year design-build contracts or other large contracts (e.g., for “megaprojects”) requiring bidders on the prime contract to specify elements of the contract or specific subcontracts that are of a size that small businesses, including DBEs, can reasonably perform. Also, on prime contracts not having DBE contract goals, requiring the prime contractor to provide subcontracting opportunities of a size that small businesses, including DBEs, can reasonably perform, rather than self-performing all the work involved.

2. Definition

Size standard should be consistent with 49 CFR 26.5 and must be no larger than the Small Business Administration’s size standards. DBE firms and small firms eligible for the program should be similarly sized to reduce competitive conflict between DBE and non-DBE firms.

Personal Net Worth standards (optional) – should be consistent with 49 CFR Part 26 thresholds.

3. Verification

Should diligently attempt to minimize fraud and abuse in the small business element of its DBE program by verifying program eligibility of firms

4. Monitoring/Record Keeping

The information will be organized by the project manager and will be monitored by the DBELO

5. Assurance

1. The program is authorized under state law;
2. Certified DBEs that meet the size criteria established under the program are presumptively eligible to participate in the program;
3. No limits are placed on the number of contracts awarded to firms participating in the program, but every effort will be made to avoid creating barriers to the use of new, emerging, or untried businesses; and
4. Aggressive steps will be taken to encourage those minority and women owned firms that are eligible for DBE certification to become certified.
5. The program is open to small businesses regardless of their location (i.e., there is no local or other geographic preference).

PART 1 GENERAL

1.01 DESCRIPTION

- A. The project consists of installing Carlisle's Sure-Tough (black) Mechanically Fastened Roofing System as outlined below:

Apply the Mechanically Fastened EPDM Roofing System over the existing Insulation after wet/damaged has been removed

1.02 EXTENT OF WORK

- A. Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of a Sure-Tough™ 60-mil thick reinforced EPDM membrane Mechanically Fastened Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.

This project will be a Base Bid of Tearing off the existing EPDM Membrane and replacing any wet or damaged existing insulation. Then the new reinforced EPDM membrane will be mechanically fastened to the deck.

The Alternate Bid will be to tear off the existing EPDM Membrane and replace and wet or damaged existing insulation, then Mechanically Fastening the SecurShield HD cover board to the roof deck and Fully adhering the new EPDM Membrane.

- B. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.
- C. The roofing contractor shall confirm all given information and advise the building owner, prior to bid, of any conflicts that will affect their cost proposal.
- D. Any contractor who intends to submit a bid using a roofing system other than the approved manufacturer must submit for pre-qualification in writing fourteen (14) days prior to the bid date. Any contractor who fails to submit all information as requested will be subject to rejection. Bids stating "as per plans and specs" will be unacceptable.

1.03 SUBMITTALS

- A. Prior to starting work, the roofing contractor must submit the following:
1. Shop drawings showing layout, details of construction and identification of materials.
 2. Sample of the manufacturer's Total Systems Warranty covering all components of the roofing system.
 3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.
 4. Certification from the membrane manufacturer indicating the fasteners are capable of providing a static backout resistance of 10 inch pounds minimum is required.
 5. Certification of the manufacturer's warranty reserve.

- B. Upon completion of the installed work, submit copies of the manufacturer's final inspection report to the specifier prior to the issuance of the manufacturer's warranty.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.
- B. Comply with the manufacturer's written instructions for proper material storage.
 - 1. Store materials between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature before using.
 - 2. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
- C. Insulation and underlayment products must be on pallets, off the ground and tightly covered with waterproof materials. Manufacturer's wrap does not provide sufficient waterproofing. Insulation and underlayment products that become wet or saturated are to be discarded.
- D. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

1.05 WORK SEQUENCE

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system.
- B. Do not disrupt activities in occupied spaces.

1.06 USE OF THE PREMISES

- A. Before beginning work, the roofing contractor must secure approval from the building owner's representative for the following:
 - 1. Areas permitted for personnel parking.
 - 2. Access to the site.
 - 3. Areas permitted for storage of materials and debris.
 - 4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.
- B. Interior stairs or elevators may not be used for removing debris or delivering materials, except as authorized by the building superintendent.

1.07 EXISTING CONDITIONS

If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

1.08 PRE-CONSTRUCTION CONFERENCE

- A. A pre-bid meeting will be held at the job site on Nov 18th 2021 at 8:30am at the conference room at the airport. Contact the owner's representative, Brian Bauman, at 574-514-9343 if there are any questions.
- B. Prior to bid submittal, the roofing contractor should schedule a job site inspection to observe actual conditions and verify all dimensions on the roof. The job site inspection may occur on the day of the pre-

bid meeting or prior to such a meeting. Should access to the roof be necessary before or after the pre-bid meeting, the contractor must contact the owner's representative, Brian Bauman, at 574-514-9343 to coordinate an appropriate time.

- D. Any conditions which are not shown on the shop drawings should be indicated on a copy of the shop drawing and included with bid submittal if necessary to clarify any conditions not shown.

1.09 TEMPORARY FACILITIES AND CONTROLS

A. Temporary Utilities:

1. Water, power for construction purposes and lighting are not available at the site and will not be made available to the roofing contractor.
2. Provide all hoses, valves and connections for water from source designated by the owner when made available.
3. When available, electrical power should be extended as required from the source. Provide all trailers, connections and fused disconnects.

B. Temporary Sanitary Facilities

Sanitary facilities will not be available at the job site. The roofing contractor shall be responsible for the provision and maintenance of portable toilets or their equal.

C. Building Site:

1. The roofing contractor shall use reasonable care and responsibility to protect the building and site against damages. The contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.
2. The roofing contractor shall remove all construction debris from the job site in a timely and legally acceptable manner so as to not detract from the aesthetics or the functions of the building.

D. Security:

Obey the owner's requirements for personnel identification, inspection and other security measures.

1.10 JOB SITE PROTECTION

- A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.
- B. During the roofing contractor's performance of the work, the building owner will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.
- C. Do not overload any portion of the building, either by use of or placement of equipment, storage of debris, or storage of materials.
- D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- E. Take precautions to prevent drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas **where work is in progress**. Install flags or other telltales on plugs. Remove plugs each night and screen drain.

- F. Store moisture susceptible materials above ground and protect with waterproof coverings.
- G. Remove all traces of piled bulk materials and return the job site to its original condition upon completion of the work.

1.11 SAFETY

The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. **Safety shall be the responsibility of the roofing contractor.** All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

1.12 WORKMANSHIP

- A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.
- B. All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.
- C. There shall be a supervisor on the job site at all times while work is in progress.
- D. All field seams and flashing details are to be completed according to manufacturer's specifications and details by the end of each work day.

1.13 QUALITY ASSURANCE

- A. The Sure-Tough Roofing System must achieve a UL Class B.

The specified roofing assembly must have been successfully tested by a qualified testing agency to resist the design uplift pressures calculated according to

International Building Code (IBC) and American Society of Civil Engineers (ASCE 7)
ANSI/SPRI WD-1 "Wind Design Standard Practice for Roofing Assemblies"

and after multiplying the results with a safety factor of 2.0

- B. The membrane must be manufactured by the material supplier. Manufacturer's supplying membrane made by others are not acceptable.
- C. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.
- D. The manufacturer must have a minimum of 20 years experience in the manufacturing of vulcanized thermal set sheeting.
- E. The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing single-ply EPDM roofing systems and having installed at least one (1) EPDM roofing application or several similar systems of equal or greater size within one year.

AND

The applicator shall, upon request, be able to document three (3) installations completed more than two years prior to issuance of the contract documents, utilizing components of the proposed manufacturer, that are comparable to those required for the work and similar in scope and complexity. Provide complete contact information, warranty history for previous installations and demonstrate in-service performance.

- F. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled

in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.

- G. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the specifier. Any deviation from the manufacturer's installation procedures must be supported by a written certification on the manufacturer's letterhead and presented for the specifier's consideration.
- H. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to determine whether or not corrective work will be required before the warranty will be issued. Notify the building owner seventy-two (72) hours prior to the manufacturer's final inspection.
- I. Inspector shall be employed and trained by the manufacturer and have received product-specific training from the manufacturer of the products.
- J. The Sure-Tough EPDM Membrane exceeds 35,320 kJ/m² under Xenon-Arc UV Light testing used for testing "Resistance to Outdoor (Ultraviolet) Weathering." (ASTM D 4637 Specification requires a 7560 kJ/m² minimum total radiant exposure at 70 W/m² irradiance at 176°F black panel temperature to pass.)The membrane shows no visible signs of cracking or crazing.
- K. Sure-Tough EPDM Membranes achieves a zero (no growth) rating in the ASTM G21 test for fungi growth.

1.14 JOB CONDITIONS, CAUTIONS AND WARNINGS

Refer to Carlisle's Sure-Seal Roofing System specification for General Job Site Considerations.

- A. Safety Data Sheets (SDS) must be on location at all times during the transportation, storage and application of materials.
- B. When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.
- C. When loading materials onto the roof, the Carlisle Authorized Roofing Applicator must comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.
- D. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
- E. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage.
- F. Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.
- G. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
- H. New roofing shall be complete and weathertight at the end of the work day.
- I. Contaminants such as grease, fats and oils shall not be allowed to come in direct contact with the roofing membrane. An overlay of Epichlorhydrin membrane must be adhered around units which have the potential to emit solvents, grease or oil.

1.15 WARRANTY

- A. Provide manufacturer's 20-year Total System Warranty covering both labor and material with no dollar

limitation. The maximum wind speed coverage shall be peak gusts of 55-mph measured at 10 meters above ground level. Certification is required with bid submittal indicating the manufacturer has reviewed and agreed to such wind coverage.

- B. Pro-rated System Warranties shall not be accepted.
- C. Evidence of the manufacturer's warranty reserve shall be included as part of the project submittals for the specifier's approval.

PART 2 PRODUCTS

2.01 GENERAL

- A. All components of the specified roofing system shall be products of Carlisle SynTec or accepted by Carlisle SynTec as compatible.
- B. Unless otherwise approved by the specifier and accepted by the membrane manufacturer, all products (including insulation, fasteners, fastening plates and edgings) must be **manufactured and supplied** by the roofing system manufacturer and covered by the warranty.

AND

Manufacturer of roof membrane shall also manufacture all polymeric components for the roofing system, including, but limited to, membrane, adhesives, primers, flashings, caulks and tapes.

2.02 MEMBRANE

Furnish Sure-Tough 60-mil thick reinforced EPDM (Ethylene, Propylene, Diene Terpolymer) conforming to the minimum physical properties of ASTM D4637 in the largest sheet possible with 3" or 6" Factory-Applied Tape (FAT). The membrane shall be manufactured in a single panel with no factory splices to reduce splice intersections. Membrane sheets are available in rolls of 6.5', 8' or 10' widths and 100' in length.

2.03 INSULATION/UNDERLAYMENT

- A. **This project will be a Base Bid of Tearing off the existing EPDM Membrane and replacing any wet or damaged existing insulation. Then the new EPDM membrane will be mechanically fastened to the deck.**
- B. **The Alternate Bid will be to tear off the existing EPDM Membrane and replace and wet or damaged existing insulation, then Mechanically Fastening the SecurShield HD cover board to the roof deck and Fully adhering the new EPDM Membrane.**
 - 1. **Carlisle SecurShield HD Cover Board** – a rigid insulation panel composed of a high-density, closed-cell polyisocyanurate foam core laminated to coated-glass fiber-mat facer for use as a cover board or recover board. Available 1/2" thick 4' x 8' panel weight 11 lbs with an R-value of 2.5.

2.04 ADHESIVES, CLEANERS AND SEALANTS

All products shall be furnished by Carlisle and specifically formulated for the intended purpose.

- A. **90-8-30A Bonding Adhesive:** A high-strength, yellow colored, synthetic rubber adhesive used for bonding Sure-Seal EPDM membranes to various surfaces. Available in 5 gallon pails.
- B. **Carlisle Weathered Membrane Cleaner:** A clear, solvent-based cleaner used to loosen and remove dirt and other contaminants from the surface of exposed EPDM membrane (for repairs, etc.) prior to applying EPDM Primer. Weathered Membrane Cleaner can also be used when applying Splicing Cement.

Available in 1 and 5-gallon pails.

- C. **Sure-Seal Pressure-Sensitive SecurTAPETM (Factory Applied):** A 3" or 6" wide (used for Mechanically Fastened Roofing Systems and 20-year Warranty Systems) by 100' long splice tape used for splicing adjoining sections of EPDM membrane. Complies with the South Coast Air Quality Management District Rule 1168.
- D. **HP-250 EPDM Primer:** A solvent-based primer used to prepare the surface of EPDM membrane for application of Splice Tape or Pressure-Sensitive products. This Primer can also be used in conjunction with EP-95 Splicing Cement in lieu of Splice Cleaner. Available in 1 gallon pails.
- E. **Sure-Seal Lap Sealant:** A black, heavy-bodied material used to seal the exposed edges of a membrane splice. A pre-formed Lap Sealant tool is included in each carton of Lap Sealant. Available in tubes.
- F. **Water Cut-Off Mastic:** A one-component, low viscosity, self wetting, Butyl blend mastic used as a sealing agent between the EPDM membrane or Elastoform Flashing and applicable substrates. Available in tubes.
- G. **Pourable Sealer:** A black, two-component, solvent-free, polyurethane based product used for tie-ins and as a sealant around hard-to-flash membrane penetrating objects such as clusters of pipes and for a daily seal when the completion of flashings and terminations cannot be completed by the end of each work day.
- H. **Universal Single-Ply Sealant** A one-part polyether, non-sagging sealant designed for sealing expansion joints, control joints and counterflashings. Available in white only.
- I. **CAV-GRIP III Low-VOC Aerosol Contact Adhesive/Primer:** a low-VOC, methylene chloride-free adhesive that can be used for a variety of applications including: bonding Sure-Weld membrane to various surfaces, enhancing the bond between Carlisle's VapAir Seal 725TR and various substrates, priming unexposed asphalt prior to applying FAST Adhesive and for adhering Sure-Seal FleeceBACK and Sure-Seal EPDM membrane to vertical walls. Coverage rate is approximately 2,000-2,500 sq. ft. per 40 lb cylinder and 4,000-5,000 sq. ft. per 85 lb cylinder as a primer, in a single-sided application and 750 sq. ft. per 40 lb cylinder and 1,500 sq. ft. per 85 lb cylinder as an adhesive for vertical walls, in a double-sided application.

2.05 FASTENERS AND PLATES

To be used for mechanical attachment of insulation and to provide additional membrane securement:

- A. **HP-X Fasteners:** A heavy duty #15 threaded fastener with a #3 phillips drive used for membranre or insulation securement into steel, wood plank or minimum 15/32 inch thick plywood when increased pullout resistance is desired.
- B. **HP Term Bar Nail-Ins:** A 1-1/4" long expansion anchor with a zinc plated steel drive pin used for fastening the Carlisle Termination Bar or Seam Fastening Plates to concrete, brick, or block walls.
- C. **Insulation Fastening Plates:** a nominal 3 inch diameter plastic or metal plate used for insulation attachment.
- D. **Seam Fastening Plate:** a 2" diameter metal fastening plate used in conjunction with RUSS or EPDM membrane for membrane securement into wood or structural concrete decks. May also be used for insulation attachment.
- E. **Polymer Seam Plate:** a 2" diameter plastic fastening plate incorporating barbs on the underside of the plate. This plate is required for membrane and RUSS attachment installed in conjunction with steel roof decks. May also be used for insulation attachment.
- F. **Sure-Seal Pressure-Sensitive RUSSTM (Reinforced Universal Securement Strip):** a 6" or 9" wide, nominal 45-mil thick clean, cured black reinforced EPDM membrane with 3" wide Factory-Applied Tape (FAT) laminated along one edge for the 6" wide RUSS and along both edges for the 9" wide RUSS.

1. **6” wide Pressure-Sensitive RUSS** is used horizontally or vertically at the base of walls, curbs, etc., in conjunction with 2” diameter Fastening Plates below the EPDM deck membrane for additional membrane securement (Polymer Seam Plates are required for steel decks).
2. **9” wide Pressure-Sensitive RUSS** is for perimeter membrane securement.

2.06 METAL EDGING AND MEMBRANE TERMINATIONS

- A. **General:** All metal edgings shall be tested and meet ANSI/SPRI ES-1 standards and comply with International Building Code. All metal work is to be supplied and warranted by the manufacturer.
 1. **SecurEdge 200:** a coping or fascia, snap-on edge system consisting of a 24 gauge galvanized metal water dam and 24 gauge steel, Kynar 500 finish. Metal fascia color shall be as designated by the Owner's Representative. ANSI/SPRI ES-1 Certified. Coping FM Approved 1-90. Fascia FM Approved 1-195.
 2. **SecurEdge 2000:** a metal fascia system with an extruded aluminum anchor bar and 24 gauge galvanized steel fascia. Metal fascia color shall be as designated by the Owner's Representative. ANSI/SPRI ES-1 Certified. 2000 Fascia FM Approved 1-645. 2000 Extended Fascia FM Approved 1-270. 2000 Canted Fascia FM Approved 1-270.
- B. **Drip Edge:** a metal fascia/edge system with a 22 or 24 gauge continuous anchor cleat and .032 inch thick aluminum or 24 gauge steel fascia. Metal fascia color shall be as designated by the Owner's Representative.
- C. **SecurEdge Coping:** incorporates a 20 gauge anchor cleat with 4 pre-slotted holes, a concealed joint cover and 10 foot continuous sections of coping cap; can accommodate minimum 5 “ wide parapet walls. Metal coping cap color shall be as designated by the Owner's Representative.
- D. **Termination Bar:** a 1” wide and .098” thick extruded aluminum bar pre-punched 6” on center; incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.
- E. **SecurEdge Term Bar Fascia:** A 1.75” wide formed aluminum termination bar with pre-slotted fastening holes for ease of locating and installing. The decorative cover is available in 0.040” aluminum or 24-gauge galvanized steel. SecurEdge Term Bar Fascia is manufactured in 12’ lengths for fewer joints/seams, fewer sections to handle and faster installation.

2.07 WALKWAYS

Protective surfacing for roof traffic shall be Sure-Seal Pressure-Sensitive Walkway Pads (with Factory-Applied Tape on the underside of the walkway) adhered to the membrane surface in conjunction with Sure-Seal Primer.

PART 3 EXECUTION

3.01 GENERAL

- A. Comply with the manufacturer’s published instructions for the installation of the membrane roofing system including proper substrate preparation, jobsite considerations and weather restrictions.
- B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

3.03 INSULATION PLACEMENT AND ATTACHMENT

- A. Install insulation or membrane underlayment over the substrate with boards butted tightly together with no joints or gaps greater than 1/4 inch. Stagger joints both horizontally and vertically if multiple layers are

provided.

- B. Secure insulation to the substrate with the required mechanical fasteners in accordance with the manufacturer's specifications.

3.04 MEMBRANE PLACEMENT AND ATTACHMENT

- A. Unroll and position membrane without stretching. Allow the membrane to relax for approximately 1/2 hour prior to attachment. Provide and secure both perimeter and field membrane sheets in accordance with the manufacturer's most current specifications and details.
- B. Secure the membrane (along the pre-printed blue line approximately 3" from the edge of the membrane sheet) with the required Sure-Seal Fastener and Carlisle securement plate or bar spaced a maximum of 12" on center. The minimum distance between the edge of the fastening plate and the edge of the membrane must be 2 inches.
- C. Install adjoining membrane sheets in the same manner in accordance with the manufacturer's specifications.

3.05 MEMBRANE SPLICING

- A. Tape splices where fastening plates are located (along the length of the membrane) must utilize 6" wide Factory-Applied Tape (FAT). Tape splices at end roll sections (along the width of the membrane without fastening plates) shall utilize 3" wide SecurTAPE.
- B. Overlap adjacent sheets and mark a line approximately 1/4" to 1/2" from the top sheet edge.
- C. Apply EPDM Primer or Low VOC EPDM Primer to splice area.
- D. When adhering Factory Applied Tape (FAT), pull the poly backing from FAT beneath the top sheet and allow the top sheet to fall freely onto the exposed primed surface. Press top sheet on to the bottom sheet using firm even hand pressure across the splice towards the splice edge.
- E. For end laps, apply 3" or 6" SecurTAPE to the primed membrane surface in accordance with the manufacturer's specifications. Remove the poly backing and roll the top sheet onto the mating surface.
- F. Immediately roll the splice using positive pressure when using a 2" wide steel roller. Roll across the splice edge, not parallel to it. When using FAT, Carlisle's Stand-Up Seam Roller can be used to roll parallel to the splice edge.
- G. **At all field splice intersections**, apply Lap Sealant along the edge of the membrane splice to cover the exposed SecurTAPE 2" in each direction from the splice intersection. Install Carlisle's Pressure-Sensitive "T" Joint Covers or a 6" wide section (with rounded corners) of Sure-Seal Pressure-Sensitive Elastoform Flashing over the field splice intersection.

3.06 FLASHING

- A. Wall and curb flashing shall be cured EPDM membrane. Continue the deck membrane as wall flashing where practicable. Use Pressure-Sensitive Curb Wrap when possible to flash curb units.
- B. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

3.07 WALKWAYS

- A. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the specifier's drawing.

- B. Adhere walkways to the EPDM membrane in accordance with the manufacturer's specifications.

3.08 DAILY SEAL

- A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed.

3.09 CLEAN UP

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

END OF SPECIFICATION

Basis of design specification

PART 1 - GENERAL CONDITIONS

1.01 DESCRIPTION

- A. Scope
To install a complete Sarnafil adhered system including membrane, flashings and other components.
- B. Related Work
The work includes but is not limited to the installation of:
 - 1. Removal of existing roofing and insulation
 - 2. Substrate preparation
 - 3. Roof drains
 - 4. Vapor retarder
 - 5. Insulation
 - 6. Separation layers
 - 7. Roof membrane
 - 8. Fasteners
 - 9. Adhesive for flashings
 - 10. Roof membrane flashings
 - 11. Walkways
 - 12. Metal Flashings
 - 13. Sealants
- C. Upon successful completion of work the following warranties may be obtained:
 - 1. Sika Corporation Warranty
 - 2. Roofing Applicator Warranty

1.02 QUALITY ASSURANCE

- A. This roofing system shall be applied only by a roofing applicator authorized prior to bid by Sika Corporation (Sika Corporation "Applicator").
- B. A Sika Corporation Technical Service Representative will review the installed roof system wherever a System Warranty has been requested.
- C. All work pertaining to the installation of membrane, flashings, and accessories shall only be completed by Applicator authorized by Sika Corporation in those procedures.
- D. Roofing membrane manufacturer must have a demonstrated performance history of producing PVC roof membranes no less, in duration of years, than the warranty duration specified.
- E. Roofing membrane and membrane flashings to be manufactured by membrane supplier and not private labeled.
- F. Manufacturer to have a minimum ten years of experience recycling their membranes at the end of their service life back into new membrane products. Provide a minimum of five reference projects completed with new membrane produced from recycled membrane.
- G. Applicable code/insurance requirements shall be identified by the Owner or Owner's representative.

1.03 SUBMITTALS

- A. At the time of bidding, the Applicator shall submit to the Owner (or Representative) the following:

1. Copies of Specification.
2. Samples of each primary components to be used in the roof system and the manufacturer's current product data sheet for each component.
3. Written approval by the insulation manufacturer (as applicable) for use of the product in the proposed system.
4. Sample copy of Sika Corporation's warranty.
5. Sample copy of Applicator's warranty.
6. Safety Data Sheets (SDS)

1.04 CODE REQUIREMENTS

The Applicator shall submit evidence that the proposed roof system meets the requirements of the local building code and has been tested and approved or listed by an approved, codified testing organization. These requirements are minimum standards and no roofing work shall commence without written documentation of the system's compliance.

- B. Underwriters Laboratories, Inc. - Northbrook, IL
7. Class B assembly

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.
- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean tarpaulins. Unvented tarpaulins are not accepted due to the potential accumulation of moisture beneath the tarpaulin which may affect the membrane weldability.
- D. As a general rule all adhesives shall be stored at temperatures between 40°F (4°C) and 80°F (27°C). Read product data sheets and instructions contained on adhesive canisters for specific storage instructions.
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers and read product Safety Data Sheets (SDS).
- F. Any materials which the Owner's representative or Sika Corporation determine to be damaged are to be removed from the job site and replaced at no cost to the Owner.
- G. Safety Data Sheets (SDS) shall be available at the job site at all times.

1.06 JOB CONDITIONS

- A. Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. All seams shall be heat welded before leaving the job site that day.
- B. Temporary overnight tie-ins shall be installed at the end of each day's work and shall be completely removed (including any contaminated materials) before proceeding with the next day's work.
- C. The Applicator is cautioned that certain Sarnafil membranes are incompatible with asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with these Sarnafil membranes.
- D. The Applicator shall follow all safety regulations as required by OSHA and any other applicable authority having jurisdiction. Roof and walkways may be slippery when icy, snow covered, or wet. Working on

surfaces under these conditions is hazardous. Appropriate safety measures must be implemented prior to working on such surfaces. Always follow OSHA and other relevant fall protection standards when working on roofs.

- E. Where applicable, the Applicator shall arrange for pullout tests in accordance with the latest versions of the SPRI/ANSI Standard Field Test Procedures FX-1 and IA-1 for fasteners and adhesives, respectively, to verify condition of the deck/substrate and to confirm expected pullout values.
- F. The Sarnafil membrane shall not be installed under the following conditions without consulting Sika Corporation's Technical Dept. for precautionary steps:
 - 1. The roof assembly permits interior air to pressurize the membrane underside.
 - 2. Any exterior wall has 10% or more of the surface area comprised of opening doors or windows.
 - 3. The wall/deck intersection permits air entry into the wall flashing area.
- G. Special consideration should be given to construction related moisture. Sika Corporation is not responsible for damage when exposed to construction related moisture.

1.07 BIDDING REQUIREMENTS

- A. Pre-Bid Meeting:
A pre-bid meeting shall be held with the Owner's Representative and involved trades to discuss all aspects of the project. The Applicator's field representative or roofing foreman for the work shall be in attendance.
- B. Site Visit:
Bidders shall visit the site and carefully examine the areas in question as to conditions that may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the Applicator. No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions unless agreed to in advance with the Owner or Owner's Representative.

1.08 WARRANTIES

- A. Sika Corporation Warranty
Upon successful completion of the work to Sika Corporation's satisfaction and receipt of final payment, the Sika Corporation Warranty shall be issued.
 - 4. 20 year System Warranty
- B. Contractor Warranty

1.09 WARRANTY DURATIONS

- A. Sika Corporation's warranty shall be in effect for a 20 year duration.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Components of the roof system shall be products of Sika Corporation as indicated on the Detail Drawings and specified in the Contract Documents.
- B. Components that are other than those supplied or manufactured by Sika Corporation may be submitted for review and acceptance by Sika Corporation. Sika Corporation's acceptance of any other product is only for a determination of compatibility with Sika Corporation products and not for inclusion in the Sika Corporation

warranty. The specifications, installation instructions, limitations, and restrictions of the respective manufacturers must be reviewed by the Owner's Representative for acceptability for the intended use with Sika Corporation products.

- C. Consult respective product data sheets and selection guides for additional information.

2.02 MEMBRANE

- A. Membrane shall conform to:
 - 1. ASTM D-4434 (latest version), "Standard for Polyvinyl Chloride Sheet Roofing". Classification: Type II.
 - 2. NSF/ANSI Standard 347, "Sustainability Assessment for Single Ply Roofing Membranes". Certification Level: Platinum.
 - 3. The manufacture to guarantee that the membrane thickness meets or exceeds the specified thickness when tested according to ASTM D-751.
- B. Sarnafil PVC thermoplastic membrane
 - 1. Type of Membrane
 - a) Sarnafil G 410 SA
 - 2. Membrane Thickness
 - a) 60 mil (1.5 mm)
- C. Color of Membrane
 - 1. Sarnafil G 410 Membrane / Sarnafil G 410 Feltback Membrane / Sarnafil G 410 SA Membrane
 - a) EnergySmart White
- D. Typical Physical Properties
 - 1. Refer to individual Sarnafil G 410 Product Data Sheets for physical property values.

2.03 INSULATIONS / ROOF BOARDS

- A. Insulation
 - 2. Sarnatherm XPS
Closed-cell extruded polystyrene foam insulation board, meeting ASTM C-578 Type VI or VII, minimum 20 psi compressive strength.
- B. Roof Boards
 - 3. DensDeck® Prime Roof Board
Gypsum roof board with fiberglass mat facers primed on one side, meeting ASTM C-1177.

2.04 ATTACHMENT COMPONENTS

A. Membrane Adhesive

1. Sarnacol 2170 Adhesive
Solvent-based reactivating adhesive used to attach membrane.

B. Insulation / Roof Board Adhesive

2. Sarnacol AD Board Adhesive
Two-component foamable polyurethane board adhesive applied in ribbons or full applications. The minimum ambient and surface temperature required is 25°F (-4°C) and rising.

C. Insulation / Roof Board Attachment

[SARNAPLATE LOW PROFILE IS RECOMMENDED WHEN INSTALLING A DÉCOR ROOF SYSTEM.]

1. Sarnaplate
26 gauge, 3" (76 mm) square or round steel plate with a Galvalume coating, used with #12, #14, and #15 Sarnafasteners to attach Sarnatherm insulation, Sarnatherm roof boards, gypsum roof boards, or other Sika approved boards to the roof deck.

2.05 DECK PRIMERS

A. Vapor Retarder Primer SB

Solvent-based primer used to prime wood, concrete, primed gypsum boards and decks, prior to the application of Sika's self-adhered vapor retarders.

2.06 VAPOR RETARDERS

A. Vapor Retarder PE 10

10 mil (0.25 mm) thick polyethylene vapor retarder/air barrier.

2.07 VAPOR RETARDER ADHESIVES

B. Vapor Retarder Adhesive CA

Cold applied polyether based adhesive used to adhere Sika's vapor retarders that are typically adhered with hot asphalt. It is used in applications where hot asphalt is not advised and/or not permitted.

2.08 FLASHING MATERIALS

A. Wall / Curb Flashing

2. Sarnafil G 410 SA Flashing Membrane
3. G 459 Flashing Membrane
For use over residual asphalt or other contaminated surfaces.

4. Sarnacol 2170 Adhesive
Solvent-based reactivating adhesive used to attach membrane to flashing substrate.
- B. Perimeter Edge Flashing
1. Sarnaclad
24 gauge, G90 galvanized steel with PVC-coating on one side for heat-weldability.
- C. Miscellaneous Flashing
1. Sarnacircles
Round circle patch.
 2. Sarnacorners - Inside
Injection molded inside corner.
 3. Sarnacorners - Outside
Injection molded outside corner.
 4. Sarnastack Universal
Injection molded stack/pipe boot to flash pipes, vent stacks and cylindrical penetrations.
 5. Sarnastack Split A, B, C
Prefabricated stack/pipe boot open along one side to flash pipes, vent stacks and cylindrical penetrations when access is obstructed.
 6. Open Post Flashing
Prefabricated pipe boot open along one side to flash rooftop conduits, pipes, and cylindrical penetrations when access is obstructed.
 7. Sarnareglet
Extruded aluminum flashing termination reglet used at walls and large curbs for exposed applications. Use prefabricated Sarnareglet mitered inside and outside corners where walls intersect.
 8. Sarnadrain with U-Flow
Seamless one-piece heavy-duty aluminum drain with a coated flange for hot-air welding of Sarnafil membranes.

2.09 WALKWAY PROTECTION

- D. Concrete Pavers
Normal weight concrete pavers specifically designed and produced for rooftop application. For large areas the use of paver pedestals or a drainage panel protection layer between the Sarnafil roof membrane and the pavers is required. For narrow walkways, a welded-in-place protection layer of Sarnafil membrane is required under the concrete pavers.

2.10 MISCELLANEOUS ACCESSORIES

- A. Aluminum Tape

- 2" (51 mm) wide pressure-sensitive aluminum tape used as a separation layer between small areas of asphalt contamination and the membrane and as a bond-breaker under the coverstrip at Sarnaclad joints.
- B. Multi-Purpose Tape ST
Tape used to seal membrane at penetrations and securements, metals, or Vapor Retarder PE 10.
 - C. Décor Profile Rib
PVC extruded rib hot-air welded to the membrane to simulate the look of a standing seam metal roof.
 - D. Perimeter Warning Tape
2" (51 mm) wide yellow tape with a release liner used in required areas. Exceeds reflectivity 3 requirements and Federal spec. L-S-300, Class 1.
 - E. Perimeter Warning Membrane
4" (10.2 cm) wide yellow Sarnafil G 410 Membrane used in required areas.
 - F. Seam Cleaner
Used to clean adhesive out of seams. It is not to be used as a general membrane cleaner. It is also used to clean metal and reactivate existing Liquid Flashing prior to the application of new Liquid Flashing.
 - G. Sarnadisc
20 gauge, 2" (51 mm) round steel disc with Galvalume coating, used with #14 or #15 XP Sarnafasteners or Fastener CD-10 to attach the Sarnafil roof membrane to the roof deck at the base of walls, curbs, and other roof penetrations.
 - H. Sarnastop
1" wide extruded aluminum, low profile bar used with certain Sarnafasteners to secure membrane to the roof deck or to walls/curbs at terminations, penetrations and at angle changes of the substrate.
 - I. Sarnabar
14 gauge, galvanized or stainless, roll-formed steel bar used to attach membrane to roof decks.
 - J. Sarnacord
5/32" (4 mm) diameter, red-colored, flexible thermoplastic extrusion that is welded to the top surface of the Sarnafil membrane and against the side of the Sarnabar, used to hold the membrane in position.

2.11 SEALANTS AND PITCH POCKET FILLERS

- A. Sikaflex-1a
Moisture-cured, one-component polyurethane-based, non-sag elastomeric sealant used in wall, curb and drain terminations. It is also used as a sealant at pipe penetrations and under certain metal flashings. Sikaflex-1a can be used as a pourable sealer pocket filler.
- B. Sikasil SG-10
One-component silicone adhesive.
- C. Sarnafiller
Two-component urethane adhesive for pitch pocket toppings.
- D. Mastic TG
Cold applied, fiber reinforced high strength SBS modified bitumen mastic that is specially formulated to detail around penetrations and flashings where Sika vapor retarders and ply sheets are used as a temporary roof.

2.12 MISCELLANEOUS FASTENERS AND ANCHORS

All fasteners, anchors, nails, straps, bars, etc. shall be post-galvanized steel, aluminum or stainless steel. Mixed metal type components shall be assembled in such a manner as to avoid galvanic corrosion. Fasteners for attachment of metal to masonry shall be expansion type fasteners with stainless steel pins.

2.13 RELATED MATERIALS

- A. Wood Nailer
Code compliant wood nailers shall be installed at the perimeter of the entire roof and around such other roof projections and penetrations as specified on Project Drawings. Thickness of nailers must match the height of the insulation and roof board to achieve a smooth transition.
- B. Plywood
When bonding directly to plywood, a minimum 1/2" (13 mm) CDX (C side out), smooth-surfaced exterior grade plywood with exterior grade glue shall be used. Rough-surfaced plywood or high fastener heads will require the use of Sarnafelt behind the flashing membrane. Plywood shall have a maximum moisture content of 19% by weight on a dry weight basis.

PART 3 - EXECUTION

3.01 PRE-CONSTRUCTION CONFERENCE

The Applicator, Owner's Representative/Designer and Manufacturer(s) shall attend a pre-construction conference.

3.02 SUBSTRATE CONDITION

- A. Applicator shall be responsible for acceptance or provision of proper substrate to receive new roofing materials.
- B. Applicator shall verify that the work done under related sections meets the following conditions:
1. Roof drains and scuppers have been reconditioned or replaced (as applicable) and installed properly.
 2. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured and prepared to receive new roofing materials.
- C. The substrate shall be clean, smooth, dry, free of water, ice and snow and free of flaws, sharp edges, loose and foreign material, oil, grease and other contaminants. Roofing shall not start until all defects have been corrected.

3.03 SUBSTRATE PREPARATION

The roof deck and existing roof construction must be structurally sound to provide support for the new roof system. The Owner's Representative shall ensure that the roof deck is secured to the structural framing according to local building code or insurance requirements and in such a manner as to resist all anticipated loads in that location.

- A. New Construction
1. Steel Deck
The roof deck shall conform and be installed to current local building code or insurance requirements.
 2. Wood Deck
The roof deck shall be minimum 1-1/2" (38 mm) thick lumber or 15/32" (12 mm) thick plywood. Deck shall be installed according to local code requirements.
 3. Poured Structural Concrete Deck

The surface shall be dry and free of moisture, have a level finish, and shall be free of dust, excess moisture, oil-based curing agents and loose debris. Under no circumstances shall a sealer be used in lieu of a curing agent. Sharp ridges or other projections above the surface shall be removed before roofing. In accordance with the ICRI Technical Guideline No. 310.2R-2013, newly poured concrete surfaces may be finished by forming, wood float, steel or power trowel, or broom finished to meet the equivalency of a CSP type surface between a rating of 2 – 5.

4. Poured Lightweight (Cellular or Insulating) Concrete Substrate
The surface shall be installed per lightweight concrete manufacturer's guidelines. The wet and dry densities shall be in accordance with the manufacturer's requirements. Sharp ridges or other projections above the surface shall be removed before roofing.
5. Precast / Prestressed Concrete Panel Deck
The surface shall have a smooth and level finish and shall be free of dust, moisture, oil or loose debris. All joints between precast units shall be grouted. Any differentials in height between precast units shall be feathered for a smooth transition. Sharp ridges or other projections above the surface shall be removed before roofing.
6. Cementitious Wood Fiber Deck
The roof deck shall be installed in accordance with the deck manufacturer's requirements and industry practice. The surface shall have a smooth and level finish and shall be free of dust, moisture, and loose debris. All voids and joints shall be grouted. Any differentials in height between precast units shall be feathered for a smooth transition. Sharp ridges or other projections above the surface shall be removed before roofing. Panels shall be secured to structural supports as recommended by the deck manufacturer.

B. Reroofing with Removal of Existing Roofing System

All existing roofing, base flashing, deteriorated wood blocking or deteriorated metal flashings shall be removed. Remove only that amount of roofing and flashing which can be made weathertight with new materials during a one-day period or before the onset of inclement weather.

1. Steel Deck
All rusted or deteriorated decking shall be brought to the attention of the Owner's Representative to determine method of treatment or replacement. Surface-only rusted metal shall be sanded and treated with rust-inhibiting paint. Sections that have rusted deeper than the surface or are not structurally sound shall be removed and replaced. Deck type shall match existing and the attachment shall conform to local code requirements.
2. Wood Deck
All rotted or deteriorated wood shall be removed and replaced. The deck thickness shall be 1-1/2" (38 mm) lumber or 15/32" (12 mm) plywood or match existing deck if greater. Deck type and attachment shall conform to local code requirements. Fastener heads shall be recessed into the wood surface.
3. Poured Structural Concrete Deck
The surface shall be dry and free of moisture, have a level finish, and shall be free of dust, excess moisture, and loose debris. Sharp ridges or other projections above the surface shall be removed before roofing. In accordance with the ICRI Technical Guideline No. 310.2R-2013, newly poured concrete surfaces may be finished by forming, wood float, steel or power trowel, or broom finished to meet the equivalency of a CSP type surface between a rating of 2 – 5.
4. Poured Lightweight (Cellular or Insulating) Concrete Substrate
Sharp ridges or other projections above the surface shall be removed before roofing. Fastening for recover board shall be into structural deck below insulating fill (see steel/concrete deck requirements).
5. Precast / Prestressed Concrete Deck

The roof deck shall be smooth, even, free of dust, dirt, excess moisture or oil and be structurally sound. All joints between precast units shall be grouted. Any differentials in height between precast units shall be feathered for a smooth transition. Any deteriorated decking shall be repaired.

6. Cementitious Wood Fiber Deck

The roof deck face shall be smooth, even, free of excess moisture, and structurally sound. Joints over bulb-tees shall be grouted. Grouting shall be done with materials supplied or recommended by the deck manufacturer. All wet or deteriorated sections of decking shall be removed and replaced. Deck planks shall be secured to structural supports as recommended by deck manufacturer.

C. Reroofing with Removal of Existing Single-Ply Membrane

The Owner's Representative and Applicator shall determine the condition of the roof deck and existing insulation. Deteriorated decking or wet or deteriorated materials are to be removed and replaced. After removal of single-ply roof, inspect insulation boards and reuse only if dry and in stable condition. Add a Sika Corporation approved recover board or new insulation board. Fasten recover board or top layer of insulation in accordance with Sika Corporation's requirements.

D. Recover Over Existing Single Ply Membrane

The Owner's Representative and Applicator shall determine the condition of the roof deck and existing insulation. Deteriorated decking or wet or deteriorated materials are to be removed and replaced. Remove all debris from the existing single-ply roof and cut into 10 ft x 10 ft panels (3.0 m x 3.0 m), or cut 6" (15.2 cm) circles down center of each sheet, every 5 to 8 ft (1.5 to 2.4 m). Install a layer of a Sika Corporation approved roof board or new insulation board over the cut single-ply and then fasten the board according to Sika Corporation's requirements.

1. Install a layer of a Sika Corporation approved recover board or a new insulation board over the fastened 10 ft x 10 ft (3.0 m x 3.0 m) panels and then fasten the board according to Sika Corporation's requirements. For Type III hot asphalt attachment of new insulation board, priming of the old roof surface after preparation is necessary.

E. Recover Over Existing Bitumen Roofing

The Owner's Representative and Applicator shall determine the condition of the existing roof deck and old roof system. Areas with deteriorated decking or wet materials are to be removed and replaced.

1. On graveled surfaces, all debris shall be removed. All blisters shall be removed and sealed or cut, fastened down and sealed. Any accumulation of bitumen or other irregularities shall be scratched and removed so as to produce a smooth surface.
2. On smooth surfaced roofs, the surface must be clean and dry. All blisters shall be removed and sealed or cut, fastened down and sealed. For Type III hot asphalt attachment of new insulation board, priming of the old roof surface after preparation is necessary.
3. Coal-tar pitch or heavily resaturated roofs may require removal. Contact Sika Corporation Technical for coal-tar pitch or heavily resaturated reroof preparation requirements.

3.04 WOOD NAILER INSTALLATION

- A. Install continuous code compliant wood nailers at the perimeter of the entire roof and around roof projections and penetrations as shown on the Detail Drawings.
- B. Wood nailers or wood blocking for penetrations, curbs, or snow protection systems shall be installed prior to the installation of the roof membrane whenever possible.

3.05 VAPOR RETARDER INSTALLATION

Refer to vapor retarder Product Data Sheets (PDS) and *Vapor Retarder Installation* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

- A. Vapor Retarder PE 10
Overlap loose laid sheets 4" (10.2 cm) and extend up the perimeter and deck penetrations. Seams and penetrations shall be sealed with Multi-Purpose Tape ST.
- B. Vapor Retarder SA 31
All surfaces except for steel require priming. Lay out sheets so side laps are overlapped by 3" (76 mm) and end laps are overlapped by 6" (15.2 cm). Peel back release liner, press onto substrate, and roll with a minimum 100 lb roller.
- C. Vapor Retarder SA 106
All surfaces except for steel require priming. Lay out sheets so side laps are overlapped by 3" (76 mm) and end laps are overlapped by 6" (15.2 cm). Peel back release liner, press onto substrate, and roll with a minimum 100 lb roller.
- D. Vapor Retarder TA 138
Prime concrete surfaces. Lay out sheets so side laps are overlapped by 3" (76 mm) and end laps overlapped by 6" (15.2 cm). Torch the bottom side of the sheet and install into substrate.
- E. Ply Sheet TA 87
Prime concrete surfaces. Torch the bottom side of the sheet, install into substrate, and walk on or roll the surface with a minimum 100 lb roller. Sheets shall be laid out so side laps are overlapped by 6" (15.2 cm) and end laps are overlapped by 12" (30.5 cm).
- F. Ply Sheet HA 87 and Ply Sheet HA 118
Prime concrete surfaces. Adhere sheets with Type III or Type IV asphalt in accordance with ARMA guidelines. Ply Sheet HA 87 and HA 118 can also be cold applied with Vapor Retarder Adhesive CA.

3.06 INSULATION / ROOF BOARD INSTALLATION

General Criteria:

1. Boards shall be installed according to local building code, insurance requirements, and manufacturer's instructions.
 2. Boards shall be neatly cut to fit around penetrations and projections.
 3. Install tapered insulation in accordance with insulation manufacturer's shop drawings.
 4. Do not install more board than can be covered with membrane by the end of the day or the onset of inclement weather.
 5. When two or more layers of insulation and/or roof boards are used, stagger joints at least 12" (30.5 cm) in both directions between layers.
 6. Refer to individual Product Data Sheets (PDS) and *Insulation or Roof Board Installation* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.
- A. Mechanical Attachment
Boards shall be mechanically fastened to the deck with approved fasteners and plates according to the wind uplift rating requirements and associated fastening patterns.
 - B. Attachment with Board Adhesives
Boards shall be adhered to the deck with approved adhesives according to the wind uplift rating requirements and associated ribbon spacing patterns. The maximum board size with board adhesives is 4 ft x 4 ft (1.2 m x 1.2 m) for insulation boards and 4 ft x 8 ft (1.2 m x 2.4 m) for roof boards.
 - C. Attachment with hot asphalt Type III or Type IV:
Insulation shall be adhered to the concrete deck or another approved substrate with hot Type III or Type IV asphalt. The asphalt temperature and application methodology shall be maintained throughout the

installation as recommended by the NRCA and ARMA. The maximum board size with hot-asphalt attachment is 4 ft x 4 ft (1.2 m x 1.2 m). Aluminum tape shall be installed over joints where asphalt has been pushed to the board's surface.

- D. Lightweight Insulating Concrete
Install in accordance with selected manufacturer's guidelines.

3.07 SARNAFIL MEMBRANE INSTALLATION

The surface of the insulation, roof board, or substrate shall be inspected prior to installation of the Sarnafil roof membrane. The substrate shall be clean, dry, and free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged boards shall be removed and replaced. Tack welding of Sarnafil membrane field sheets for purposes of temporary restraint during installation is not permitted and may result in voiding of Sika Corporation warranty.

- A. Sarnacol 2170 or Sarnacol 2170 VC Adhesive:

1. Apply adhesive direct to substrate, rate may vary depending on porosity of substrate. Only an area which can be completely covered in the same day's operations shall be coated with adhesive. The first layer of adhesive shall be allowed to dry completely prior to installing the membrane.
2. Refer to individual Product Data Sheets (PDS) and *Adhered Systems: Solvent Based Adhesive Installation* section of Sika Sarnafil Roofing Applicator's Handbook for detailed installation instructions.

- B. Sarnacol 2121 Adhesive:

1. Apply adhesive direct to substrate, rate may vary depending on porosity of substrate. Do not allow adhesive to skin-over or surface-dry prior to installation of Sarnafil membrane.
2. Refer to Sarnacol 2121 Product Data Sheet and *Adhered Systems: Water Based Adhesive Installation* section of Sika Sarnafil Roofing Applicator's Handbook for detailed installation instructions.

- C. Sarnacol AD Feltback Membrane Adhesive or Sarnacol OM Feltback Membrane Adhesive:

1. Application rates vary depending on surface roughness, absorption rate of the substrate, and wind speed approvals.
2. Refer to individual Product Data Sheets (PDS) and *Adhered Systems: Urethane Adhesive Installation Using Feltback Membrane* section of Sika Sarnafil Roofing Applicator's Handbook for detailed installation instructions.

- D. Sarnafil G 410 SA Membrane:

1. The surface of the insulation or substrate shall be inspected prior to installation of the Sarnafil membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged insulation boards shall be removed and replaced.
2. The membrane is installed after proper preparation of substrate. Peel back release liner and press onto substrate. Roll membrane immediately afterwards with a steel membrane roller.
3. Refer to individual Product Data Sheets (PDS) and *Adhered Systems: Self Adhered Membrane* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

- E. Décor Profile Rib (if applicable):

Installation of the Décor roof shall only be done by Applicator personnel that have completed a mandatory one day Décor roof installation and welding training course. Proper installation is critical to achieve the desired appearance.

Refer to *Décor Roof Systems* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

3.08 HOT-AIR WELDING OF MEMBRANE OVERLAPS

- A. All membrane overlaps shall be hot-air welded. The membrane shall be clean and dry prior to hot-air welding.
- B. Field membrane overlaps for automatic machine-welding shall be 3" (76 mm) in width. A minimum of 4" (10.2 cm) wide overlap is required when hand-welding details.
- C. 1" (25 mm) wide cross-section samples of welded seams shall be taken at least two times a day, once in the morning and once in the afternoon.
- D. Refer to *Welding* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

3.09 MEMBRANE FLASHING INSTALLATION

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Corporation. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Applicator's expense. Flashing shall be adhered to compatible, dry, and smooth surfaces free of dirt, dust, and debris. Use caution to ensure adhesive fumes are not drawn into the building.

- A. All flashings should extend a minimum of 8" (20.3 cm) above finished roofing level. Submit requests for exceptions in writing to the Owner's Representative and Sika Corporation Technical Department for signed approval.
- B. No bitumen shall be in contact with any Sarnafil membranes except Sarnafil G 459.
- C. All flashing membranes shall be mechanically fastened along the counter-flashed top edge with Sarnastop or approved Sarnadisc at 6 - 12" (15.2 – 30.5 cm) on center.
- D. Sarnafil flashings shall be terminated according to Sika Corporation recommended details.
- E. All adhered flashings that exceed 45" (1.14 m) in height shall receive additional securement, unless applying Sarnafil G 410 SA membrane to plywood, DensDeck Prime, glass-faced polyisocyanurate, or smooth poured concrete with a concrete surface profile range of CSP 2 to CSP 5 according to ICRI Technical Guideline No. 310.2R-2013.
- F. Refer to *Typical Flashing Procedures* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

3.10 LIQUID FLASHING INSTALLATION

- A. Application Guidelines
Liquid Flashing has a strong odor. Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents and other means of ingress for odors and/or vapors into the building/structure during product application and cure. Refer to individual Product Data Sheets (PDS) and *Liquid Flashing Procedures* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

- B. Installation Notes
 1. Prepare the surface to be flashed by cleaning the area to like-new condition.
 2. Pre-cut vertical and horizontal liquid flashing fleece to fit around the penetration with 2" (51 mm) overlaps.
 3. Thoroughly mix the Liquid Flashing and the Liquid Flashing Catalyst with a slow speed mixer.
 4. Apply the catalyzed liquid flashing with a 55 mil base layer. Place the pre-cut fleece into the wet Liquid Flashing making sure to saturate the fleece. Apply a 25 mil finishing layer over the fleece.
- C. Inspection and Quality Control
Refer to Sika Sarnafil Technical Bulletin 19-02 for detailed inspection procedures.

3.11 SARNACLAD METAL BASE FLASHINGS / EDGE METAL INSTALLATION

- A. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Corporation. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the Applicator's expense.
- B. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the following:
 1. ANSI SPRI ES-1 (latest issue).
 2. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - latest issue.
- C. Pre-formed metal flashing shall be installed according to metal manufacturer's guidelines.
- D. Metal, other than that provided by Sika Corporation, is not covered under the Sika Corporation warranty.
- E. Sarnaclad and other metal flashings shall be formed and installed per the Detail Drawings. Refer to individual Product Data Sheets (PDS) and *Metal Flashings* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

3.12 WALKWAY INSTALLATION

- A. Sarnatred-V
Probe all existing deck membrane seams which are to be covered by Sarnatred-V. Install walkway in straight lines by either adhering and welding or just welding to the field membrane.
- B. Crossgrip XTRA
Probe all existing membrane seams which are to be covered by Crossgrip XTRA. Crossgrip XTRA is installed loose laid. Connecting clips are available for attaching roll ends together.
- C. Concrete Pavers
Probe all existing membrane seams which are to be covered by concrete pavers. Using a separate piece of Sarnafil membrane as a protection layer, weld all edges in place. Place normal weight concrete pavers on the protection membrane. In areas of high wind exposure the pavers shall be strapped together with stainless steel metal straps that are flush with the paver surface.
- D. Refer to individual Product Data Sheets (PDS) and *Walkway Installation* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

3.13 PERIMETER WARNING INSTALLATION

Application areas must be cleaned to a like-new condition. For detailed installation instructions, refer to individual Product Data Sheets (PDS).

- A. Tape: Perimeter Warning Tape is applied with hand pressure to the top of PVC roofing membrane in the areas required.
- B. Membrane: Perimeter Warning Membrane is hot-air welded to the top of PVC roofing membrane in the areas required.

3.14 TEMPORARY CUT-OFF

- A. All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses. All temporary cut-offs shall be constructed to provide a watertight seal. The new membrane shall be carried into the temporary cut-off. Temporary cut-off shall be sealed to the deck or substrate so that water will not be allowed to travel under the new or existing roofing. When work resumes, the contaminated membrane shall be cut out.
- B. If inclement weather occurs while a temporary cut-off is in place, the Applicator shall provide the labor necessary to monitor the situation to maintain a watertight condition.
- C. If any water is allowed to enter under the newly-completed roofing, the affected area shall be removed and replaced at the Applicator's expense.
- D. Refer to *Overnight Tie-In* section of Sika Sarnafil Roofing Applicator Handbook for detailed instructions.

3.15 COMPLETION

- A. Prior to demobilization from the site, the work shall be reviewed by the Owner's Representative and the Applicator. All defects noted and non-compliances with the Specifications or the recommendations of Sika Corporation shall be itemized in a punch list. These items must be corrected immediately by the Applicator to the satisfaction of the Owner's Representative and Sika Corporation prior to demobilization.
- B. All Warranties referenced in this Specification shall have been submitted and have been accepted by the owner or owner's representative at time of contract award.

3.16 DETAILS

- A. Refer to usa.sika.com/sarnafil.

Basis of design specification

PART 1 - GENERAL CONDITIONS

1.01 DESCRIPTION

- A. Scope
To install a complete Sarnafil S 327 mechanically attached system including membrane, flashings and other components.
- B. Related Work
The work includes but is not limited to the installation of:
1. Removal of existing roofing and insulation
 2. Substrate preparation
 3. Roof drains
 4. Vapor retarder
 5. Insulation
 6. Separation layers
 7. Roof membrane
 8. Fasteners
 9. Adhesive for flashings
 10. Roof membrane flashings
 11. Walkways
 12. Metal flashings
 13. Sealants
- C. Upon successful completion of work the following warranties may be obtained:
1. Sika Corporation Warranty
 2. Roofing Applicator Warranty

1.02 QUALITY ASSURANCE

- A. This roofing system shall be applied only by a roofing applicator authorized prior to bid by Sika Corporation (Sika Corporation "Applicator").
- B. A Sika Corporation Technical Service Representative will review the installed roof system wherever a System Warranty has been requested.
- C. All work pertaining to the installation of membrane, flashings, and accessories shall only be completed by Applicator authorized by Sika Corporation in those procedures.
- D. Roofing membrane manufacturer must have a demonstrated performance history of producing PVC roof membranes no less, in duration of years, than the warranty duration specified.
- E. Roofing membrane and membrane flashings to be manufactured by membrane supplier and not private labeled.
- F. Manufacturer to have a minimum ten years of experience recycling their membranes at the end of their service life back into new membrane products. Provide a minimum of five reference projects completed with new membrane produced from recycled membrane.
- G. Applicable code/insurance requirements shall be identified by the Owner or Owner's representative.

1.03 SUBMITTALS

- A. At the time of bidding, the Applicator shall submit to the Owner (or Representative) the following:
 - 1. Copies of Specification.
 - 2. Samples of each primary components to be used in the roof system and the manufacturer's current product data sheet for each component.
 - 3. Written approval by the insulation manufacturer (as applicable) for use of the product in the proposed system.
 - 4. Sample copy of Sika Corporation's warranty.
 - 5. Sample copy of Applicator's warranty.
 - 6. Safety Data Sheets (SDS)

1.04 CODE REQUIREMENTS

The Applicator shall submit evidence that the proposed roof system meets the requirements of the local building code and has been tested and approved or listed by an approved, codified testing organization. These requirements are minimum standards and no roofing work shall commence without written documentation of the system's compliance.

- B. Underwriters Laboratories, Inc. - Northbrook, IL
 - 7. Class B assembly

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.
- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean tarpaulins. Unvented tarpaulins are not accepted due to the potential accumulation of moisture beneath the tarpaulin which may affect the membrane weldability.
- D. As a general rule all adhesives shall be stored at temperatures between 40°F (4°C) and 80°F (27°C). Read product data sheets and instructions contained on adhesive canisters for specific storage instructions.
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers and read product Safety Data Sheets (SDS).
- F. Any materials which the Owner's representative or Sika Corporation determine to be damaged are to be removed from the job site and replaced at no cost to the Owner.
- G. Safety Data Sheets (SDS) shall be available at the job site at all times.

1.06 JOB CONDITIONS

- A. Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. All seams shall be heat welded before leaving the job site that day.
- B. Temporary overnight tie-ins shall be installed at the end of each day's work and shall be completely removed (including any contaminated materials) before proceeding with the next day's work.
- C. The Applicator is cautioned that certain Sarnafil membranes are incompatible with asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with these Sarnafil membranes.

- D. The Applicator shall follow all safety regulations as required by OSHA and any other applicable authority having jurisdiction. Roof and walkways may be slippery when icy, snow covered, or wet. Working on surfaces under these conditions is hazardous. Appropriate safety measures must be implemented prior to working on such surfaces. Always follow OSHA and other relevant fall protection standards when working on roofs.
- E. Where applicable, the Applicator shall arrange for pullout tests in accordance with the latest versions of the SPRI/ANSI Standard Field Test Procedures FX-1 and IA-1 for fasteners and adhesives, respectively, to verify condition of the deck/substrate and to confirm expected pullout values.
- F. The Sarnafil membrane shall not be installed under the following conditions without consulting Sika Corporation's Technical Dept. for precautionary steps:
 - 1. The roof assembly permits interior air to pressurize the membrane underside.
 - 2. Any exterior wall has 10% or more of the surface area comprised of opening doors or windows.
 - 3. The wall/deck intersection permits air entry into the wall flashing area.
- G. Special consideration should be given to construction related moisture. Sika Corporation is not responsible for damage when exposed to construction related moisture.

1.07 BIDDING REQUIREMENTS

- A. Pre-Bid Meeting:
A pre-bid meeting shall be held with the Owner's Representative and involved trades to discuss all aspects of the project. The Applicator's field representative or roofing foreman for the work shall be in attendance.
- B. Site Visit:
Bidders shall visit the site and carefully examine the areas in question as to conditions that may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the Applicator. No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions unless agreed to in advance with the Owner or Owner's Representative.

1.08 WARRANTIES

- A. Sika Corporation Warranty
Upon successful completion of the work to Sika Corporation's satisfaction and receipt of final payment, the Sika Corporation Warranty shall be issued.
 - 4. System Warranty
- B. Contractor Warranty

1.09 WARRANTY DURATIONS

- A. Sika Corporation's warranty shall be in effect for a 20 year duration.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Components of the roof system shall be products of Sika Corporation as indicated on the Detail Drawings and specified in the Contract Documents.
- B. Components that are other than those supplied or manufactured by Sika Corporation may be submitted for review and acceptance by Sika Corporation. Sika Corporation's acceptance of any other product is only for a determination of compatibility with Sika Corporation products and not for inclusion in the Sika Corporation

warranty. The specifications, installation instructions, limitations, and restrictions of the respective manufacturers must be reviewed by the Owner's Representative for acceptability for the intended use with Sika Corporation products.

- C. Consult respective product data sheets and selection guides for additional information.

2.02 MEMBRANE

- A. Membrane shall conform to:
 - 1. ASTM D-4434 (latest version), "Standard for Polyvinyl Chloride Sheet Roofing". Classification: Type III.
 - 2. NSF/ANSI Standard 347, "Sustainability Assessment for Single Ply Roofing Membranes". Certification Level: Platinum.
 - 3. The manufacture to guarantee that the membrane thickness meets or exceeds the specified thickness when tested according to ASTM D-751.
- B. Sarnafil PVC thermoplastic membrane
 - 1. Type of Membrane
 - a) Sarnafil S 327
 - 2. Membrane Thickness
 - a) 60 mil (1.5 mm)
- C. Color of Membrane
 - 1. Sarnafil S 327 Membrane / Sarnafil S 327 Feltback Membrane
 - a) EnergySmart White
- D. Typical Physical Properties
 - 1. Refer to individual Sarnafil S 327 Product Data Sheets for physical property values.

2.03 INSULATIONS / ROOF BOARDS

- A. Insulation
 - 2. Sarnatherm CG
Rigid polyisocyanurate insulation board with coated polymer bonded glass fiber mat facers, meeting ASTM C-1289 Type II, Class 2, Grade 2 (20 psi)
- B. Roof Boards
 - 3. DensDeck® Roof Board
Gypsum roof board with fiberglass mat facers, meeting ASTM C-1177.

2.04 ATTACHMENT COMPONENTS

- A. Insulation / Roof Board Attachment Plates
 - 1. Sarnaplate

26 gauge, 3" (76 mm) square or round steel plate with a Galvalume coating, used with #12, #14, and #15 Sarnafasteners to attach Sarnatherm insulation, Sarnatherm roof boards, gypsum roof boards, or other Sika approved boards to the roof deck.

B. Membrane Attachment Discs

1. Sarnadisc XPN
18 gauge (1.2 mm), 1-1/2" by 3-3/4" (38 mm x 95 mm) steel plate with a Galvalume coating, used with #14 or #15 XP Sarnafasteners to attach membrane to the roof deck.

C. Fasteners

2. Sarnafastener #14
#14 corrosion-resistant fastener used to attach membrane, Sarnatherm insulation, Sarnatherm roof boards, gypsum roof boards, or other Sika approved boards to the roof deck.

Threaded drill point fastener made of carbon steel, used with Sarnadiscs to in-seam attach membrane into structural steel purlin.
3. Fastener CD-10
Nail-in, corrosion-resistant fastener used with Sarnaplates to attach membrane, Sarnatherm insulation, Sarnatherm roof boards, gypsum roof boards, or other Sika approved boards to structural concrete.

2.05 DECK PRIMERS

- A. Vapor Retarder Primer SB
Solvent-based primer used to prime wood, concrete, primed gypsum boards and decks, prior to the application of Sika's self-adhered vapor retarders.

2.06 VAPOR RETARDERS

- A. Vapor Retarder PE 10
10 mil (0.25 mm) thick polyethylene vapor retarder/air barrier.

2.07 VAPOR RETARDER ADHESIVES

- A. Asphalt
Hot application of Type III or Type IV asphalt
- B. Vapor Retarder Adhesive CA
Cold applied polyether based adhesive used to adhere Sika's vapor retarders that are typically adhered with hot asphalt. It is used in applications where hot asphalt is not advised and/or not permitted.
- C. Vapor Retarder Adhesive CA SB
Cold applied solvent based adhesive used to adhere Sika's vapor retarders that are typically adhered with hot asphalt. It is used in applications where hot asphalt is not advised and/or not permitted.

2.08 FLASHING MATERIALS

- A. Wall / Curb Flashing
 - 1. Sarnafil G 410 Membrane

- B. Perimeter Edge Flashing
 - 1. Sarnaclad
24 gauge, G90 galvanized steel with PVC-coating on one side for heat-weldability.

- C. Miscellaneous Flashing
 - 1. Sarnacircles
Round circle patch.
 - 2. Sarnacorners - Inside
Injection molded inside corner.
 - 3. Sarnacorners - Outside
Injection molded outside corner.
 - 4. Sarnastack Universal
Injection molded stack/pipe boot to flash pipes, vent stacks and cylindrical penetrations.
 - 5. Sarnastack Split A, B, C

2.09 WALKWAY PROTECTION

- D. Concrete Pavers
Normal weight concrete pavers specifically designed and produced for rooftop application. For large areas the use of paver pedestals or a drainage panel protection layer between the Sarnafil roof membrane and the pavers is required. For narrow walkways, a welded-in-place protection layer of Sarnafil membrane is required under the concrete pavers.

2.10 MISCELLANEOUS ACCESSORIES

- A. Aluminum Tape
2" (51 mm) wide pressure-sensitive aluminum tape used as a separation layer between small areas of asphalt contamination and the membrane and as a bond-breaker under the coverstrip at Sarnaclad joints.
- B. Multi-Purpose Tape ST
Tape used to seal membrane at penetrations and securements, metals, or Vapor Retarder PE 10.
- C. Perimeter Warning Tape
2" (51 mm) wide yellow tape with a release liner used in required areas. Exceeds reflectivity 3 requirements and Federal spec. L-S-300, Class 1.
- D. Perimeter Warning Membrane
4" (10.2 cm) wide yellow Sarnafil G 410 Membrane used in required areas.
- E. Seam Cleaner

Used to clean adhesive out of seams. It is not to be used as a general membrane cleaner. It is also used to clean metal and reactivate existing Liquid Flashing prior to the application of new Liquid Flashing.

- F. Rhinobond PS Cardboard Disc
Coated cardboard disc used in the installation of Sarnafil S 327 RhinoBond roofing systems. It is intended to protect Sika approved polystyrene fanfold roofing underlayments from heat during the induction welding process.

2.11 SEALANTS AND PITCH POCKET FILLERS

- A. Sikaflex-1a
Moisture-cured, one-component polyurethane-based, non-sag elastomeric sealant used in wall, curb and drain terminations. It is also used as a sealant at pipe penetrations and under certain metal flashings. Sikaflex-1a can be used as a pourable sealer pocket filler.
- B. Sikasil SG-10
One-component silicone adhesive.
- C. Sarnafiller
Two-component urethane adhesive for pitch pocket toppings.
- D. Mastic TG
Cold applied, fiber reinforced high strength SBS modified bitumen mastic that is specially formulated to detail around penetrations and flashings where Sika vapor retarders and ply sheets are used as a temporary roof.

2.12 MISCELLANEOUS FASTENERS AND ANCHORS

All fasteners, anchors, nails, straps, bars, etc. shall be post-galvanized steel, aluminum or stainless steel. Mixed metal type components shall be assembled in such a manner as to avoid galvanic corrosion. Fasteners for attachment of metal to masonry shall be expansion type fasteners with stainless steel pins.

2.13 RELATED MATERIALS

- A. Wood Nailer
Code compliant wood nailers shall be installed at the perimeter of the entire roof and around such other roof projections and penetrations as specified on Project Drawings. Thickness of nailers must match the height of the insulation and roof board to achieve a smooth transition.
- B. Plywood
When bonding directly to plywood, a minimum 1/2" (13 mm) CDX (C side out), smooth-surfaced exterior grade plywood with exterior grade glue shall be used. Rough-surfaced plywood or high fastener heads will require the use of Sarnafelt behind the flashing membrane. Plywood shall have a maximum moisture content of 19% by weight on a dry weight basis.

PART 3 - EXECUTION

3.01 PRE-CONSTRUCTION CONFERENCE

The Applicator, Owner's Representative/Designer and Manufacturer(s) shall attend a pre-construction conference.

3.02 SUBSTRATE CONDITION

- A. Applicator shall be responsible for acceptance or provision of proper substrate to receive new roofing materials.

- B. Applicator shall verify that the work done under related sections meets the following conditions:
 - 1. Roof drains and scuppers have been reconditioned or replaced (as applicable) and installed properly.
 - 2. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured and prepared to receive new roofing materials.
- C. The substrate shall be clean, smooth, dry, free of water, ice and snow and free of flaws, sharp edges, loose and foreign material, oil, grease and other contaminants. Roofing shall not start until all defects have been corrected.

3.03 SUBSTRATE PREPARATION

The roof deck and existing roof construction must be structurally sound to provide support for the new roof system. The Owner's Representative shall ensure that the roof deck is secured to the structural framing according to local building code or insurance requirements and in such a manner as to resist all anticipated loads in that location.

A. New Construction

- 1. **Steel Deck**
The roof deck shall conform and be installed to current local building code or insurance requirements.
- 2. **Wood Deck**
The roof deck shall be minimum 1-1/2" (38 mm) thick lumber or 15/32" (12 mm) thick plywood. Deck shall be installed according to local code requirements.
- 3. **Poured Structural Concrete Deck**
The surface shall be dry and free of moisture, have a level finish, and shall be free of dust, excess moisture, oil-based curing agents and loose debris. Under no circumstances shall a sealer be used in lieu of a curing agent. Sharp ridges or other projections above the surface shall be removed before roofing. In accordance with the ICRI Technical Guideline No. 310.2R-2013, newly poured concrete surfaces may be finished by forming, wood float, steel or power trowel, or broom finished to meet the equivalency of a CSP type surface between a rating of 2 – 5.
- 4. **Poured Lightweight (Cellular or Insulating) Concrete Substrate**
The surface shall be installed per lightweight concrete manufacturer's guidelines. The wet and dry densities shall be in accordance with the manufacturer's requirements. Sharp ridges or other projections above the surface shall be removed before roofing.
- 5. **Cementitious Wood Fiber Deck**
The roof deck shall be installed in accordance with the deck manufacturer's requirements and industry practice. The surface shall have a smooth and level finish and shall be free of dust, moisture, and loose debris. All voids and joints shall be grouted. Any differentials in height between precast units shall be feathered for a smooth transition. Sharp ridges or other projections above the surface shall be removed before roofing. Panels shall be secured to structural supports as recommended by the deck manufacturer.

B. Reroofing with Removal of Existing Roofing System

All existing roofing, base flashing, deteriorated wood blocking or deteriorated metal flashings shall be removed. Remove only that amount of roofing and flashing which can be made weathertight with new materials during a one-day period or before the onset of inclement weather.

- 1. **Steel Deck**
All rusted or deteriorated decking shall be brought to the attention of the Owner's Representative to determine method of treatment or replacement. Surface-only rusted metal shall be sanded and treated

with rust-inhibiting paint. Sections that have rusted deeper than the surface or are not structurally sound shall be removed and replaced. Deck type shall match existing and the attachment shall conform to local code requirements.

2. **Wood Deck**
All rotted or deteriorated wood shall be removed and replaced. The deck thickness shall be 1-1/2" (38 mm) lumber or 15/32" (12 mm) plywood or match existing deck if greater. Deck type and attachment shall conform to local code requirements. Fastener heads shall be recessed into the wood surface.
3. **Poured Structural Concrete Deck**
The surface shall be dry and free of moisture, have a level finish, and shall be free of dust, excess moisture, and loose debris. Sharp ridges or other projections above the surface shall be removed before roofing. In accordance with the ICRI Technical Guideline No. 310.2R-2013, newly poured concrete surfaces may be finished by forming, wood float, steel or power trowel, or broom finished to meet the equivalency of a CSP type surface between a rating of 2 – 5.
4. **Poured Lightweight (Cellular or Insulating) Concrete Substrate**
Sharp ridges or other projections above the surface shall be removed before roofing. Fastening for recover board shall be into structural deck below insulating fill (see steel/concrete deck requirements).
5. **Cementitious Wood Fiber Deck**
The roof deck face shall be smooth, even, free of excess moisture, and structurally sound. Joints over bulb-tees shall be grouted. Grouting shall be done with materials supplied or recommended by the deck manufacturer. All wet or deteriorated sections of decking shall be removed and replaced. Deck planks shall be secured to structural supports as recommended by deck manufacturer.
6. **Poured Gypsum Deck**
The roof deck shall be smooth, even, free of excess moisture, and structurally sound. All wet or deteriorated gypsum shall be removed and replaced. All accumulations of bitumen shall be removed and the surface of the deck shall be smooth and free of ridges and depressions. See steel / concrete requirements.

C. Reroofing with Removal of Existing Single-Ply Membrane

The Owner's Representative and Applicator shall determine the condition of the roof deck and existing insulation. Deteriorated decking or wet or deteriorated materials are to be removed and replaced. After removal of single-ply roof, inspect insulation boards and reuse only if dry and in stable condition. Add a Sika Corporation approved recover board or new insulation board. Fasten recover board or top layer of insulation in accordance with Sika Corporation's requirements.

D. Recover Over Existing Single Ply Membrane

The Owner's Representative and Applicator shall determine the condition of the roof deck and existing insulation. Deteriorated decking or wet or deteriorated materials are to be removed and replaced. Remove all debris from the existing single-ply roof and cut into 10 ft x 10 ft panels (3.0 m x 3.0 m), or cut 6" (15.2 cm) circles down center of each sheet, every 5 to 8 ft (1.5 to 2.4 m). Install a layer of a Sika Corporation approved roof board or new insulation board over the cut single-ply and then fasten the board according to Sika Corporation's requirements.

1. Install a layer of a Sika Corporation approved recover board or a new insulation board over the fastened 10 ft x 10 ft (3.0 m x 3.0 m) panels and then fasten the board according to Sika Corporation's requirements. For Type III hot asphalt attachment of new insulation board, priming of the old roof surface after preparation is necessary.

E. Recover Over Existing Bitumen Roofing

The Owner's Representative and Applicator shall determine the condition of the existing roof deck and old roof system. Areas with deteriorated decking or wet materials are to be removed and replaced.

1. On graveled surfaces, all debris shall be removed. All blisters shall be removed and sealed or cut, fastened down and sealed. Any accumulation of bitumen or other irregularities shall be scratched and removed so as to produce a smooth surface.
2. On smooth surfaced roofs, the surface must be clean and dry. All blisters shall be removed and sealed or cut, fastened down and sealed. For Type III hot asphalt attachment of new insulation board, priming of the old roof surface after preparation is necessary.
3. Coal-tar pitch or heavily resaturated roofs may require removal. Contact Sika Corporation Technical for coal-tar pitch or heavily resaturated reroof preparation requirements.

3.04 WOOD NAILER INSTALLATION

- A. Install continuous code compliant wood nailers at the perimeter of the entire roof and around roof projections and penetrations as shown on the Detail Drawings.
- B. Wood nailers or wood blocking for penetrations, curbs, or snow protection systems shall be installed prior to the installation of the roof membrane whenever possible.

3.05 VAPOR RETARDER INSTALLATION

Refer to vapor retarder Product Data Sheets (PDS) and *Vapor Retarder Installation* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

- A. Vapor Retarder PE 10
Overlap loose laid sheets 4" (10.2 cm) and extend up the perimeter and deck penetrations. Seams and penetrations shall be sealed with Multi-Purpose Tape ST.
- B. Vapor Retarder SA 31
All surfaces except for steel require priming. Lay out sheets so side laps are overlapped by 3" (76 mm) and end laps are overlapped by 6" (15.2 cm). Peel back release liner, press onto substrate, and roll with a minimum 100 lb roller.
- C. Vapor Retarder SA 106
All surfaces except for steel require priming. Lay out sheets so side laps are overlapped by 3" (76 mm) and end laps are overlapped by 6" (15.2 cm). Peel back release liner, press onto substrate, and roll with a minimum 100 lb roller.
- D. Vapor Retarder TA 138
Prime concrete surfaces. Lay out sheets so side laps are overlapped by 3" (76 mm) and end laps overlapped by 6" (15.2 cm). Torch the bottom side of the sheet and install into substrate.
- E. Ply Sheet TA 87
Prime concrete surfaces. Torch the bottom side of the sheet, install into substrate, and walk on or roll the surface with a minimum 100 lb roller. Sheets shall be laid out so side laps are overlapped by 6" (15.2 cm) and end laps are overlapped by 12" (30.5 cm).
- F. Ply Sheet HA 87 and Ply Sheet HA 118
Prime concrete surfaces. Adhere sheets with Type III or Type IV asphalt in accordance with ARMA guidelines. Ply Sheet HA 87 and HA 118 can also be cold applied with Vapor Retarder Adhesive CA.
- G. Sarnavap 5000E SA FR
Install sheets parallel to metal deck profiles so side laps lie on top flanges. Lay out sheets so side and end laps are overlapped by 2" (51 mm). Install a 6" (15.2 cm) wide strip of Sarnavap 5000E SA FR or metal

plate perpendicular to the deck profiles and roll direction to support the end of the sheets. Peel back release liner, press onto substrate, and roll with a minimum 100 lb roller.

3.06 INSULATION / ROOF BOARD INSTALLATION

General Criteria:

1. Boards shall be installed according to local building code, insurance requirements, and manufacturer's instructions.
2. Boards shall be neatly cut to fit around penetrations and projections.
3. Install tapered insulation in accordance with insulation manufacturer's shop drawings.
4. Do not install more board than can be covered with membrane by the end of the day or the onset of inclement weather.
5. When two or more layers of insulation and/or roof boards are used, stagger joints at least 12" (30.5 cm) in both directions between layers.
6. Refer to individual Product Data Sheets (PDS) and *Insulation or Roof Board Installation* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

A. Mechanical Attachment

Boards may be loose laid, but top-most layer shall be mechanically fastened to the deck with a minimum of 6 approved fasteners and plates per 4' x 8' board.

3.07 SARNAFIL S 327 MEMBRANE INSTALLATION

The surface of the insulation, roof board, or substrate shall be inspected prior to installation of the Sarnafil roof membrane. The substrate shall be clean, dry, and free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged boards shall be removed and replaced.

General Criteria

1. Sarnafil S 327 membrane shall be attached with Sarnafasteners and Sarnadiscs to withstand project specified design pressures.
2. Tack welding of Sarnafil S 327 full or half-width rolls for purposes of temporary restraint during installation is not permitted and may result in voiding of Sika Corporation warranty.
3. Sheet layout shall not buck water.
4. Hot-air weld overlaps according to Sika Corporation's recommendations. Seam test cuts shall be taken at least 3 times per day.
5. Refer to Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions

A. Sarnafast System

1. Sarnafasteners and Sarnadiscs are installed along the edge of the membrane on the fastening line at a spacing determined by Sika Corporation and the Owner's Representative/Designer.
2. Fasteners shall clamp the S 327 membrane tightly to the substrate.
3. Adjacent rolls shall be overlapped as outlined on individual Product Data Sheets (PDS) and *In-Seam Attached Sarnafast System* section of Sika Sarnafil Roofing Applicator Handbook for specified plate and fastener combination.

B. Rhinobond System

1. Sarnafil S 327 membrane is laid out over properly installed substrate attached with specified Sarnadisc Rhinobond plates.
2. Membrane is then induction welded to the specified Sarnadisc Rhinobond. After weld is complete, immediately apply magnetic heat sink.

C. Engineered System

1. Sarnabars shall be fastened perpendicular to the direction of the steel deck flutes, wood plank, or poured structural concrete.
2. The spacing and fastening of Sarnabars will be determined by calculated uplift pressures. Sarnafasteners are installed through the Sarnabar, through the Sarnafil S 327 membrane and into the roof deck or structural framing. Fasteners and Sarnabar shall clamp the Sarnafil S 327 membrane tightly to the substrate. All Sarnabars are covered with a hot-air welded minimum 8" wide Sarnafil S 327 coverstrip above them for water tightness.

3.08 HOT-AIR WELDING OF MEMBRANE OVERLAPS

- A. All membrane overlaps shall be hot-air welded. The membrane shall be clean and dry prior to hot-air welding.
- B. Field membrane overlaps for automatic machine-welding will vary in width depending on the plate and fastener combination used. A minimum of 4" (10.2 cm) wide overlap is required when hand-welding details.
- C. 1" (25 mm) wide cross-section samples of welded seams shall be taken at least two times a day, once in the morning and once in the afternoon.
- D. Refer to *Welding* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

3.09 MEMBRANE FLASHING INSTALLATION

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Corporation. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Applicator's expense. Flashing shall be adhered to compatible, dry, and smooth surfaces free of dirt, dust, and debris. Use caution to ensure adhesive fumes are not drawn into the building.

- A. All flashings should extend a minimum of 8" (20.3 cm) above finished roofing level. Submit requests for exceptions in writing to the Owner's Representative and Sika Corporation Technical Department for signed approval.
- B. No bitumen shall be in contact with any Sarnafil membranes except Sarnafil G 459.
- C. All flashing membranes shall be mechanically fastened along the counter-flashed top edge with Sarnastop or approved Sarnadisc at 6 - 12" (15.2 – 30.5 cm) on center.
- D. Sarnafil flashings shall be terminated according to Sika Corporation recommended details.
- E. All adhered flashings that exceed 45" (1.14 m) in height shall receive additional securement, unless applying Sarnafil G 410 SA membrane to plywood, DensDeck Prime, glass-faced polyisocyanurate, or smooth poured concrete with a concrete surface profile range of CSP 2 to CSP 5 according to ICRI Technical Guideline No. 310.2R-2013.
- F. Refer to *Typical Flashing Procedures* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

3.10 LIQUID FLASHING INSTALLATION

- A. Application Guidelines
Liquid Flashing has a strong odor. Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents and other means of ingress for odors and/or vapors into the building/structure during product application and cure.

Refer to individual Product Data Sheets (PDS) and *Liquid Flashing Procedures* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

- B. Installation Notes
 1. Prepare the surface to be flashed by cleaning the area to like-new condition.
 2. Pre-cut vertical and horizontal liquid flashing fleece to fit around the penetration with 2" (51 mm) overlaps.
 3. Thoroughly mix the Liquid Flashing and the Liquid Flashing Catalyst with a slow speed mixer.
 4. Apply the catalyzed liquid flashing with a 55 mil base layer. Place the pre-cut fleece into the wet Liquid Flashing making sure to saturate the fleece. Apply a 25 mil finishing layer over the fleece.
- C. Inspection and Quality Control
Refer to Sika Sarnafil Technical Bulletin 19-02 for detailed inspection procedures.

3.11 SARNACLAD METAL BASE FLASHINGS / EDGE METAL INSTALLATION

- A. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Corporation. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the Applicator's expense.
- B. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the following:
 1. ANSI SPRI ES-1 (latest issue).
 2. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - latest issue.
- C. Pre-formed metal flashing shall be installed according to metal manufacturer's guidelines.
- D. Metal, other than that provided by Sika Corporation, is not covered under the Sika Corporation warranty.
- E. Sarnaclad and other metal flashings shall be formed and installed per the Detail Drawings. Refer to individual Product Data Sheets (PDS) and *Metal Flashings* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

3.12 WALKWAY INSTALLATION

- A. Sarnatred-V
Probe all existing deck membrane seams which are to be covered by Sarnatred-V. Install walkway in straight lines by either adhering and welding or just welding to the field membrane.
- B. Crossgrip XTRA
Probe all existing membrane seams which are to be covered by Crossgrip XTRA. Crossgrip XTRA is installed loose laid. Connecting clips are available for attaching roll ends together.
- C. Concrete Pavers
Probe all existing membrane seams which are to be covered by concrete pavers. Using a separate piece of Sarnafil membrane as a protection layer, weld all edges in place. Place normal weight concrete pavers on the protection membrane. In areas of high wind exposure the pavers shall be strapped together with stainless steel metal straps that are flush with the paver surface.
- D. Refer to individual Product Data Sheets (PDS) and *Walkway Installation* section of Sika Sarnafil Roofing Applicator Handbook for detailed installation instructions.

3.13 PERIMETER WARNING INSTALLATION

Application areas must be cleaned to a like-new condition. For detailed installation instructions, refer to individual Product Data Sheets (PDS).

- A. Tape: Perimeter Warning Tape is applied with hand pressure to the top of PVC roofing membrane in the areas required.
- B. Membrane: Perimeter Warning Membrane is hot-air welded to the top of PVC roofing membrane in the areas required.

3.14 TEMPORARY CUT-OFF

- A. All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses. All temporary cut-offs shall be constructed to provide a watertight seal. The new membrane shall be carried into the temporary cut-off. Temporary cut-off shall be sealed to the deck or substrate so that water will not be allowed to travel under the new or existing roofing. When work resumes, the contaminated membrane shall be cut out.
- B. If inclement weather occurs while a temporary cut-off is in place, the Applicator shall provide the labor necessary to monitor the situation to maintain a watertight condition.
- C. If any water is allowed to enter under the newly-completed roofing, the affected area shall be removed and replaced at the Applicator's expense.
- D. Refer to *Overnight Tie-In* section of Sika Sarnafil Roofing Applicator Handbook for detailed instructions.

3.15 COMPLETION

- A. Prior to demobilization from the site, the work shall be reviewed by the Owner's Representative and the Applicator. All defects noted and non-compliances with the Specifications or the recommendations of Sika Corporation shall be itemized in a punch list. These items must be corrected immediately by the Applicator to the satisfaction of the Owner's Representative and Sika Corporation prior to demobilization.
- B. All Warranties referenced in this Specification shall have been submitted and have been accepted by the owner or owner's representative at time of contract award.

3.16 DETAILS

- A. Refer to usa.sika.com/sarnafil.