

**SPECIFICATIONS &
CONTRACT DOCUMENTS**

FOR

FIRE STATION#30 ROOFING PROJECT

CITY OF MORAINE, OHIO

MONTGOMERY COUNTY

March 2017

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PROJECT TABLE of CONTENTS

I.	BIDDING REQUIREMENTS	
	Legal Notice	Enclosed
	Bidding Information	Enclosed
	Instructions to Bidders	Enclosed
	Contractor's Insurance	Enclosed
	Contractor Alert	Enclosed
	Contractor's Qualification Statement [AIA A305]	COQ
	Bid Guarranty and Contract Bond	Enclosed
	Affdavit-Personal Property Taxes	Enclosed
	Affdavit-Non-Collusion	Enclosed
	Affdavit-Corporate Authorization	Enclosed
	Affdavit-Drug and Alcohol Policy and Procedure	Enclosed
	Affdavit-ORC 3517.13 Compliance	Enclosed
	Affdavit-Insurance	Enclosed
	Affdavit-Compliance Prevailing Wages	Enclosed
	DMA Forms	Information Enclosed
	Government Business and Funding Contracts	Information Enclosed
	Certificate of Fiscal Officer	Enclosed
	Proposal / Bid Form	Enclosed
II.	PREVAILING WAGES	
	Asbestos Local 50 Zone 2	Enclosed
	Labor Local 1410 Building	Enclosed
	Roofer Local 75	Enclosed
	Sheet Metal Local 24 [Dayton]	Enclosed
III.	CONTRACT	
	Form of Contract	Enclosed
IV.	TECHNICAL SPECIFICATIONS	
	Section 01 10 00	Summary/GeneralRequirements 01 10 00
	Section 01 30 00	Administration Requirements 01 30 00
	Section 01 33 00	Submittals 01 33 00
	Section 01 70 00	Execution & Project Close Out 01 70 00
	Sections 02 41 00/07 01 50	Demolition & Maintenance of Roofing 02 41 00/07 01 50
	Section 06 10 53	Rough Carpentry for Roofing 06 10 53
	Sections 07 52 00	Roofing & Sheet Metal/Specialties 07 52 00/
	07 62 00/07 71 00	07 62 00/07 71 00
	Section 07 61 00	Architectural Metal Panels 07 61 00
	Section 26 41 00	Lightning Protection 26 41 00
V.	DRAWING/S	
	T1.1 Cover Sheet, Project Information, General Notes	March 2017
	A1.1 Roof Plan, Roof Details	March 2017

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BIDDING REQUIREMENTS

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LEGAL NOTICE
ADVERTISEMENT FOR BIDS

The City of Moraine will receive sealed bid proposals for **FIRE STATION #30 ROOFING PROJECT** until **April 5, 2017 at 10:00 a.m.** local time, at the Moraine Municipal Building, 4200 Dryden Road, Moraine, Ohio, 45439 at which time and place they will be publicly opened and read aloud.

Copies of the specifications, proposal and contract forms are available on the City's website: www.ci.moraine.oh.us, "About the City" tab, "Legal Notices" on dropdown menu.

A mandatory pre-bid meeting and walk-through will be held on March 29, 2017, at 10:00 a.m. at Moraine Municipal Building, 4200 Dryden Road, Moraine, Ohio 45439.

Each proposal shall be signed with the full name and business address of each interested company and shall be accompanied by a security bond issued by a bonding company authorized to do business in the State of Ohio, or by a certified check on a solvent bank in the amount of ten percent (10%) of the amount of the submitted main contract proposal. Bond or certified check must be payable to the City of Moraine as a guarantee that if the proposal is accepted, a contract will be executed and its performance secured by a satisfactory bond in the amount of one hundred percent (100%) of the contract price or irrevocable letter of credit.

The proposal must be made on the forms provided in the Contract Documents, or a copy thereof, with a price quoted for the proposed maintenance services.

City Council reserves the right to accept or reject any or all proposals, to waive any informalities or irregularities in the bids received, or to accept any proposal which is deemed most favorable to the City of Moraine.

David D. Hicks, City Manager

Advertised: March 20, 2017, March 27, 2017

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BIDDING INFORMATION

All bids must be submitted on forms provided in this packet. Bids must be regular in every respect and no changes, deletions, or special conditions shall be made or included in the bid form.

Bid documents shall be submitted in a sealed envelope, marked with the Bidder's return address, and be labeled "Bid Documents for Municipal Building Roofing Project" and addressed as follows:

To: David Hicks
City Manager
City of Moraine
4200 Dryden Road
Moraine, OH 45439

Bid Opening: April 5, 2017, at 10:00 a.m. local time.

No Bidder may withdraw its bid after the specified time of the opening of the bids.

A mandatory pre-bid meeting and walk through will be held March 29, 2017, at 10:00 a.m. at Moraine Municipal Building, 4200 Dryden Road, Moraine, Ohio 45439.

NO FURTHER INSPECTIONS OR QUESTIONS WILL BE PERMITTED AFTER THE PRE-BID MEETING AND WALK-THROUGH.

Project Estimated Amount: \$85,000.00

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INSTRUCTIONS TO BIDDERS

1. Bidding documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Legal Notice or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid for, and contract forms. The proposed Contract Documents consist of the form of agreement between the Owner and Contractor, Conditions of the Contract (General, Supplemental, and other Provisions), Specifications and all Addenda issued prior to the execution of this Contract.
2. The Bidder, by making a Bid, represents that:
 - A. The Bidder has read and understands the Bidding Documents and the Bid is made in accordance herewith.
 - B. The Bidder has read and understands the Bidding Documents or contract documents to the extent that such documentation relates to the work for which the Bid is submitted.
 - C. The Bidder has visited sites, become familiar with local conditions, become familiar with the equipment listed in the Contract Documents, and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents and shall report to the Superintendent errors, inconsistencies or ambiguities discovered.
 - D. The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.
3. Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.
4. Addenda
 - A. Addenda will be mailed or delivered to all who are known by the issuing office to have received a complete set of Bidding Documents.
 - B. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
 - C. No Addenda will be issued later than four (4) days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one that includes postponement of the date for receipt of Bids.

- D. Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and Bidder shall acknowledge receipt in the Bid.
5. Bidding Procedures – Form and Style of Bids
- A. Bids shall be submitted on forms identical to the form included with the Bidding Documents.
 - B. All blanks on the bid form shall be filled in by typewriter or manually in ink.
 - C. Where indicated by the makeup of the bid form, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the amount written in words shall govern.
 - D. The signer of the Bid must initial alterations and erasures.
 - E. Each copy of the Bid shall include the legal name of the Bidder and a statement that the Bidder is a sole proprietor, partnership, corporation, or other legal entity. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A bid by a corporation shall further give the State of incorporation and have the corporate seal affixed. A bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.
6. Bidding Procedures – Submission of Bids
- A. All copies of the Bid and other documents required for submission with the Bid shall be enclosed in a sealed envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the project name, and the Bidder's name and address. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.
 - B. Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.
 - C. Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.
 - D. Oral, telephonic or telegraphic Bids are invalid and will not receive consideration.

- E. A Bid must remain open for acceptance for a period of sixty (60) days from the date of bid opening. A bid may be extended thereafter upon mutual agreement of the Owner and the Bidder.
7. Bidding Procedures – Modification or Withdrawal of Bid
- A. A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.
 - B. Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of such Bids. Such notice shall be in writing over the signature of the Bidder or by telegram. If by telegram, written confirmation over the signature of the Bidder shall be mailed and postmarked on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.
 - C. Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids provided they are then in full conformance with these Instructions to Bidders.
8. The Owner is soliciting Bids pursuant to the bid process. If the Owner awards a Contract, it shall be to the lowest responsible Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities or irregularities in a Bid. The Owner shall have the right to reject any or all Bids, reject a Bid not accompanied by any data required by the Bidding Documents, or reject a Bid that is in any way incomplete or irregular.
9. The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the bidding Documents, and to determine the low Bidder on the basis of the sum of the base Bid and Alternates accepted.
10. Bidders to whom award of a Contract is under consideration shall submit a Contractor's Qualification Statement.
11. Persons and entities proposed by the Bidder and to whom the Owner and Superintendent have made no reasonable objection must be used on the work for which they were proposed and shall not be changed except with written consent of the Owner and Superintendent.
12. **This is a prevailing wage job and the successful Bidder must comply with all applicable laws, rules and regulations applicable thereto.**

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Contractor's and Subcontractor's Insurance

SECTION 11. The Contractor and/or subcontractor on this work will be required to take out and maintain during the life of this Contract, the comprehensive commercial insurance listed below, and approval of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder. The Contractor shall purchase the insurance listed below to protect the Owner and authorized representatives from all claims incurred by the action(s) of the Contractor and/or subcontractors in completion of this work.

I. Compensation and Employees' General Liability Insurance

The Contractor shall procure and shall during the life of this Contract hold Workers Compensation coverage for all of Contractor's employees to be engaged in work under this Contract; and in case any such work is sublet, the Contractor shall require the subcontractor similarly to provide Workers Compensation coverage for all of the latter's employees to be engaged in such work, unless such employees are covered by the protection afforded by the Contractor's Workers Compensation coverage. The Employees Liability limit shall be as provided by statutory requirements of the State. In case any class of employees is engaged in hazardous work protected under the Workers Compensation statute, the Contractor shall provide and shall cause each subcontractor to provide Employer's General Liability Insurance for the protection of such of his employees not otherwise protected.

II. Public Liability and Owner's or Contractor's Protective Insurance

The Contractor shall take out and maintain this type of insurance and shall require any of his subcontractors performing work covered by the Contract to do the same in order to protect themselves from claims for damage to property which may arise from operations under this Contract, whether such operations be by Contractor or by any Subcontractor or by anyone directly or indirectly employed by either of them.

A. (Comprehensive) Automobile Liability Coverage:

- i. Bodily injury including wrongful death in an amount not less than Five Hundred Thousand Dollars (\$500,000.00) for each person and One Million Dollars (\$1,000,000.00) for each accident.
- ii. Property damage in an amount not less than One Hundred Thousand Dollars (\$100,000.00) for each accident.

B. (Comprehensive) General Liability Coverage:

- i. Bodily injury including wrongful death in an amount not less than Five Hundred Thousand Dollars (\$500,000.00) for

each person and One Million Dollars (\$1,000,000.00) for each accident, and

- ii. Property damage in an amount not less than One Hundred Thousand Dollars (\$100,000.00) for each accident, and an aggregate liability of Two Hundred Fifty Thousand Dollars (\$250,000.00).

III. Scope of Insurance and Special Hazards

The insurance required under paragraph II hereof shall be primary insurance and provide adequate protection for the Owner, its elected officials, employees, or volunteers, Contractor and subcontractor respectively, against damage claims which may arise from operations under this Contract, whether such operations are by the insured or by anyone directly or indirectly employed by Contractor, and also against any of the special hazards which may be encountered in the performance of the Contract. Each of the aforesaid policies shall include the Owner as named insured and will provide that such policy will not be canceled until after the Owner shall have been given twenty (20) business days written notice of the proposed cancellation. Contractor's insurance shall be the primary insurance, and any insurance maintained by Owner, its elected officials, employees, or volunteers shall be excess to the Contractor's insurance and shall not contribute to it.

Contractor agrees to hold Owner harmless and indemnify Owner, its elected officials, employees, and volunteers for any and all claims resulting from the actions of the Contractor, its officials, employees, volunteers, and any subcontractors.

CONTRACTOR'S ALERT

REMINDER

If you are the successful bidder for work on any state, county, township, municipal corporation, school district, or other political subdivision of the State of Ohio, please keep in mind that if after award of the contract you are required to perform additional work as a result of the enactment or amendment of any statutes, ordinances, and regulations, including but not limited to those dealing with prevention of environmental pollution, then you are entitled to a change order for the cost of said additional work plus reasonable profit. The owner must issue a change order describing said additional work to you. **NOTE: You are not entitled to payment until an approved change order has been issued.**

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AIA[®]

Document A305[™] – 1986

Contractor's Qualification Statement

The Undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

SUBMITTED TO:

ADDRESS:

SUBMITTED BY:

NAME:

ADDRESS:

PRINCIPAL OFFICE:

- Corporation
- Partnership
- Individual
- Joint Venture
- Other

NAME OF PROJECT: *(If applicable)*

TYPE OF WORK: *(File separate form for each Classification of Work)*

- General Construction
- HVAC
- Electrical
- Plumbing
- Other *(Please specify)*

This form is approved and recommended by the American Institute of Architects (AIA) and The Associated General Contractors of America (AGC) for use in evaluating the qualifications of contractors. No endorsement of the submitting party or verification of the information is made by AIA or AGC.

§ 1. ORGANIZATION

§ 1.1 How many years has your organization been in business as a Contractor?

§ 1.2 How many years has your organization been in business under its present business name?

§ 1.2.1 Under what other or former names has your organization operated?

§ 1.3 If your organization is a corporation, answer the following:

§ 1.3.1 Date of incorporation:

§ 1.3.2 State of incorporation:

§ 1.3.3 President's name:

§ 1.3.4 Vice-president's name(s):

§ 1.3.5 Secretary's name:

§ 1.3.6 Treasurer's name:

§ 1.4 If your organization is a partnership, answer the following:

§ 1.4.1 Date of organization:

§ 1.4.2 Type of partnership, if applicable:

§ 1.4.3 Name(s) of general partner(s):

§ 1.5 If your organization is individually owned, answer the following:

§ 1.5.1 Date of organization:

§ 1.5.2 Name of owner:

§ 1.6 If the form of your organization is other than those listed above, describe it and name the principals:

§ 2. LICENSING

§ 2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

§ 2.2 List jurisdictions in which your organization's partnership or trade name is filed.

§ 3. EXPERIENCE

§ 3.1 List the categories of work that your organization normally performs with its own forces.

§ 3.2 Claims and Suits. *(If the answer to any of the questions below is yes, please attach details.)*

§ 3.2.1 Has your organization ever failed to complete any work awarded to it?

§ 3.2.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?

§ 3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years?

§ 3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? *(If the answer is yes, please attach details.)*

§ 3.4 On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

§ 3.4.1 State total worth of work in progress and under contract:

§ 3.5 On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

§ 3.5.1 State average annual amount of construction work performed during the past five years:

§ 3.6 On a separate sheet, list the construction experience and present commitments of the key individuals of your organization.

§ 4. REFERENCES

§ 4.1 Trade References:

§ 4.2 Bank References:

§ 4.3 Surety

§ 4.3.1 Name of bonding company:

§ 4.3.2 Name and address of agent:

§ 5. FINANCING

§ 5.1 Financial Statement

§ 5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

- .1 Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);
- .2 Net Fixed Assets;
- .3 Other Assets;
- .4 Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes); and
- .5 Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

§ 5.1.2 Name and address of firm preparing attached financial statement, and date thereof:

§ 5.1.3 Is the attached financial statement for the identical organization named on page one?

§ 5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsiary).

§ 5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

§ 6. SIGNATURE

§ 6.1 Dated this _____ day of _____ 20____

Name of Organization:

By:

Title:

§ 6.2

M _____ being
duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be
misleading.

Subscribed and sworn before me this _____ day of _____ 20____

Notary Public:

My Commission Expires:

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

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Bid Guaranty and Contract Bond

(ORC 153.571)

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned

_____, as Principal, and

_____, as Surety, are hereby

held and firmly bound unto the *City of Moraine* as Obligee in the penal sum of the dollar amount of the bid submitted by the Principal to the Obligee on

_____ to undertake the Project known as the

FIRE STATION #30 ROOFING PROJECT

The penal sum referred to herein shall be the dollar amount of the Principal's bid to the Obligee, incorporating any additive or deductive alternate proposals made by the Principal on the date referred to above to the Obligee, which are accepted by the Obligee. In no case shall the penal sum exceed the amount of

_____ dollars

(\$_____).

(If above line is left blank, the penal sum will be the full amount of the Principal's bid, including alternates. Alternatively, if completed, the amount stated must not be less than the full amount of the bid, including alternates, in dollars and cents. A percentage is not acceptable.)

For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Signed this _____ day of _____, 2017.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that whereas the above named Principal has submitted a bid for _____

NOW, THEREFORE, if the Obligee accepts the bid of the Principal and the Principal fails to enter into a proper contract in accordance with the bid and specifications; and in the event the Principal pays to the Obligee the difference not to exceed ten percent of the penalty hereof between the amount specified in the bid and such larger amount for which the Obligee may in good faith contract with the next lowest bidder to perform the work covered by the bid; or in the event the Obligee does not award the contract to the next lowest bidder and resubmits the project for bidding, the Principal pays to the Obligee the difference not to exceed ten percent of the penalty hereof between the amount specified in the bid, or the costs, in connection with resubmission, of printing new contract documents, required advertising, and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be null and void, otherwise to remain in full force and effect. If the Obligee accepts the bid of the Principal and the Principal within ten days after award of the contract enters into a proper contract in accordance with the bid and specifications, which said contract is made a part of this bond the same as though set forth herein; and

IF THE SAID _____ shall well and faithfully do and perform the things agreed by the *City of Moraine, Ohio* to be done and performed according to the terms of said contract; and shall pay all lawful claims of

subcontractors, materialmen, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any materialman or laborer having a just claim, as well as for the Obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

THE SAID Surety hereby stipulates and agrees that no modifications, omissions, or additions in or to the terms of said contract or in or to the plans or specifications therefore shall in any way affect the obligations of said Surety on its bond.

Principal:

Surety:

By:_____

By:_____

Title:_____

Title:_____

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AFFIDAVIT

Regarding payment of Montgomery County Personal Property Taxes (Bidder to complete and execute either Part A or Part B).

STATE OF _____)

) SS:

COUNTY OF _____)

Part A. That _____, being duly sworn, affirms that as of _____, 2017, _____ is not charged with any delinquent personal property taxes on the general tax list of personal property of Montgomery County, Ohio.

Bidder

OR _____

Part B. That _____, being duly sworn, affirms that _____ is currently charged with Montgomery County delinquent personal property taxes in the amount of \$_____ with interest in the amount of _____, and penalties in the amount of \$_____, due to said Montgomery County, Ohio.

Bidder

SWORN TO and subscribed before me this _____ day of _____, 2017.

Notary Public in and for

_____ County, Ohio.

My commission expires: _____

NOTE: If this statement indicates that the taxpayer was charged with any such taxes, a copy of the statement shall be transmitted by the Director of Finance to the County Treasurer within thirty (30) days of the date it is submitted.

NOTE: A copy of this statement shall be incorporated into the contract, and no payment shall be made with respect to said contract unless such statement has been incorporated as a part thereof.

Affidavit of Compliance
NON-COLLUSION AFFIDAVIT

STATE OF _____)

) SS:

COUNTY OF _____)

_____, being first duly sworn, deposes and says that he/she is the

_____ (sole owner, partner, president, secretary, etc.) of

_____, the party making the foregoing proposal or bid; that such bid is genuine and not collusive or sham; and that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any other bidder or person, to put in a sham bid, or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion or communication or conference, with any person, to fix the bid price of affiant or any other bidder, or to fix any overhead, profit, or cost element of said bid price, or of that of any other bidder, or to secure any advantage against any company, person or persons interested in the proposed contract; and that all statements contained in said proposal or bid are true. Further, that such bidder has not, directly or indirectly, submitted this bid, or the contents thereof, or divulged information or data relative thereto to any association or to any member or agent thereof.

Affiant

SWORN TO and subscribed before me this ____ day of _____, 2017.

Notary Public in and for
_____ County, _____
state
My commission expires: _____

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AFFIDAVIT

(TO BE COMPLETED IF THE CONTRACTOR IS A CORPORATION)

STATE OF _____)

) SS:

COUNTY OF _____)

_____, being duly sworn, deposes and says that he/she is

_____ (president, secretary, etc.) of

_____, a corporation organized and existing under and by virtue of

the laws of the State of _____, and having its principal office at

_____,

(number and street)

_____, _____.

(city)

(state)

Affiant further states that he is familiar with the records, minute books and by-laws of

_____.

(name of corporation)

Affiant further states that _____, _____,

(name)

(title)

of the corporation, is duly authorized to sign the contract for the provision of services for the **FIRE STATION #30 ROOFING PROJECT** or said corporation by virtue of

(State whether a provision of bylaws or a resolution of the Board of Directors. If by resolution, give date of adoption.)

Affiant

SWORN TO and subscribed before me this ____ day of _____, 2017.

Notary Public in and for

_____ County, _____
state

My commission expires: _____

AFFIDAVIT

Drug and Alcohol Abuse Prevention and Testing Policy and Procedure

This Affidavit is required when needed regarding existence of a program and compliance with the Omnibus Transportation Employee Testing Act of 1991 (the "Act"). The Act requires that any bidder who supplies operators of safety sensitive equipment provide a **Drug and Alcohol Abuse Prevention and Testing Policy and Procedure**. The program shall provide the minimal standards as stated in the Act and cover such issues as pre-employment, reasonable suspicion, random, post-accident, return-to-work, and follow-up testing of safety-sensitive employees.

The bidder is to complete and have notarized this Affidavit if successful in receiving the contract and may be required to provide a copy of the policy.

STATE OF _____)

) SS:

COUNTY OF _____)

_____, being duly sworn, affirms that as of _____, 20____,

_____ has developed and implemented a Drug and Alcohol Abuse Prevention and Testing Policy and Procedure in compliance with the Act.

Affiant

SWORN TO and subscribed before me this ____ day of _____, 2017.

Notary Public in and for

_____ County, _____

state

My commission expires: _____

NOTE: A copy of this statement shall be incorporated into the contract, and no payment shall be made with respect to said contract unless such statement has been incorporated as a part thereof.

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**AFFIDAVIT IN COMPLIANCE WITH SECTION 3517.13
OF THE OHIO REVISED CODE**

STATE OF _____

COUNTY OF _____ SS:

Personally appeared before me the undersigned, as an individual or as a

representative of _____ for a
(Name of Entity)

contract for **FIRE STATION #30 ROOFING PROJECT** to be let by the City of Moraine, who, being duly cautioned and sworn, make the following statement with respect to prohibited activities constituting a conflict of interest or other violations under Ohio Revised Code Section 3517.13, and further states that the undersigned has the authority to make the following representation on behalf of himself or herself or of the business entity:

- 1) That none of the following have **individually** made within the previous twenty-four months and that, if awarded a contract for the purchase of goods or services aggregating more than \$10,000 in a calendar year, none of the following Individually will make, beginning on the date the contract is awarded and extending until one year following the conclusion of the contract, as an individual, one or more campaign contributions totaling in excess of \$1,000, to any member of the City of Moraine Council or their individual campaign committees:
 - a) myself;
 - b) any partner or owner of the partnership or other unincorporated business (if applicable);
 - c) any shareholder of the professional association organized under Chapter 1785 of the Ohio Revised Code (if applicable);
 - d) any trustee of the trust (if applicable);
 - e) any administrator or executor of the estate (if applicable);
 - f) any owner of more than 20% of the corporation or business trust (if applicable);
 - g) each spouse of any person identified in (a) through (f) of this section;
 - h) each child seven years of age to seventeen years of age of any person identified in divisions (a) through (f) of this section;
- 2) That none of the following have **collectively** made within the previous twenty-four months, and that, if awarded a contract for the purchase of goods or services aggregating more than \$10,000 in a calendar year, none of the following **collectively** will make, beginning on the date the contract is awarded and extending until one year following the conclusion of the contract, one or more campaign contributions totaling in excess of \$2,000, to any member of the City of Moraine Council or their individual campaign committees:
 - a) myself;

- b) any partner or owner of the partnership or other unincorporated business (if applicable);
 - c) any shareholder of the professional association organized under Chapter 1785 of the Ohio Revised Code (if applicable);
 - d) any trustee of the trust (if applicable);
 - e) any administrator or executor of the estate (if applicable);
 - f) any owner of more than 20% of the corporation or business trust (if applicable);
 - g) each spouse of any person identified in (a) through (f) of this section;
 - h) each child seven years of age to seventeen years of age of any person identified in divisions (a) through (f) of this section;
 - i) any political action committee affiliated with the corporation, business trust, partnership or other unincorporated business, association, estate or trust identified in (a) through (f) of this section;
 - j) Any combination of persons identified in (a) through (i) of this section;
- 3) I do hereby acknowledge that to knowingly make any false statement herein may subject me and/or the above-named entity to the penalties set forth in Section 3517.992 of the Ohio Revised Code.

Further, Affiant sayeth naught.

Signature _____

Title _____

Sworn to before me and subscribed in my presence this _____ day of
 _____, 2017.

 Notary Public

My Commission Expires: _____

The requirements of Ohio Revised Code Section 3517.13 are only applicable to contributions made on or after April 4, 2007 (Section 631.05, Amended Substitute Ohio House Bill 119).

Affidavit of Insurance

STATE OF _____)

) KNOW ALL MEN BY THESE PRESENTS

COUNTY OF _____)

BEFORE ME, the undersigned authority, on this day, personally appeared

_____, who being duly sworn, stated that he/she is
(Affiant)

_____, of _____,
(Title) (Contractor's Company Name)

the Contractor named and referred to within the Contract Documents; that he/she is fully competent and authorized to give this affidavit and that the attached original insurance certificate truly and accurately reflects the insurance coverage that is now available and will be available during the term of the Contract.

Affiant

SWORN AND SUBSCRIBED before me on the _____ day of _____, 2017.

Notary Public
In and for the County of _____
State of _____

My commission expires: _____

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Department of Commerce

Division of Industrial Compliance

Bureau of Wage and Hour Administration
6606 Tussing Road - PO Box 4009
Reynoldsburg, OH 43068-9009
Phone 614-644-2239 | Fax 614-728-8639
TTY/TDD 800-750-0750
www.com.ohio.gov

An Equal Opportunity Employer and Service Provider

John R. Kasich, Governor
Andre T. Porter, Director

Affidavit Of Compliance

PREVAILING WAGES

I, _____
(Name of person signing affidavit) (Title)

do hereby certify that the wages paid to all employees of

(Company Name)

for all hours worked on the

(Project name and location)

project, during the period from _____ to _____ are in
(Project Dates)

compliance with prevailing wage requirements of Chapter 4115 of the Ohio Revised Code. I further certify that no rebates or deductions have been or will be made, directly or indirectly, from any wages paid in connection with this project, other than those provided by law.

(Signature of Officer or Agent)

Sworn to and subscribed in my presence this _____ day of _____,
20_____.

(Notary Public)

The above affidavit must be executed and sworn to by the officer or agent of the contractor or subcontractor who supervises the payment of employees. This affidavit must be submitted to the owner (public authority) before the surety is released or final payment due under the terms of the contract is made.

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*****FOR INSTRUCTIONAL USE ONLY*****

READ BEFORE COMPLETING YOUR DMA FORM

Forms not conforming to the specifications listed below or not submitted to the appropriate agency or office will not be processed.

To complete this form, you will need a copy of the Terrorist Exclusion List for reference. The Terrorist Exclusion List can be found on the Ohio Homeland Security Web site at the following address:

<http://www.homelandsecurity.ohio.gov/dma/dma.asp>

Be sure you have the correct DMA form. If you are applying for a state issued license, permit, certification or registration, the "State Issued License" DMA form must be completed (HLS 0036). If you are applying for employment with a government entity, the "Public Employment" DMA form must be completed (HLS 0037). If you are obtaining a contract to conduct business with or receive funding from a government entity, the "Government Business and Funding Contracts" DMA form must be completed (HLS 0038).

Your DMA form is to be submitted to the issuing agency or entity. "Issuing agency or entity" means the government agency or office that has requested the form from you or the government agency or office to which you are applying for a license, employment or a business contract. For example, if you are seeking a business contract with the Ohio Department of Commerce's Division of Financial Institutions, then the form needs to be submitted to the Department of Commerce's Division of Financial Institutions. Do NOT send the form to the Ohio Department of Public Safety UNLESS you are seeking a license from or employment or business contract with one of its eight divisions listed below.

Department of Public Safety Divisions:

Administration

Ohio Bureau of Motor Vehicles

Ohio Emergency Management Agency

Ohio Emergency Medical Services Ohio Homeland Security*

Ohio Investigative Unit

Ohio Criminal Justice Services

Ohio State Highway Patrol

* DO NOT SEND THE FORM TO OHIO HOMELAND SECURITY UNLESS OTHERWISE DIRECTED.
FORMS SENT TO THE WRONG AGENCY OR ENTITY WILL NOT BE PROCESSED.

*****FOR INSTRUCTIONAL USE ONLY*****

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GOVERNMENT BUSINESS AND FUNDING CONTRACTS
In accordance with section 2909.33 of the Ohio Revised Code

DECLARATION REGARDING MATERIAL ASSISTANCE/NONASSISTANCE TO A TERRORIST ORGANIZATION

This form serves as a declaration by an applicant for a government contract or funding of material assistance/non-assistance to an organization on the U.S. Department of State Terrorist Exclusion List ("TEL"). Please see the Ohio Homeland Security Division Web site for a copy of the TEL.

Any answer of "yes" to any question, or the failure to answer "no" to any question on this declaration shall serve as a disclosure that material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List has been provided. Failure to disclose the provision of material assistance to such an organization or knowingly making false statements regarding material assistance to such an organization is a felony of the fifth degree.

For the purposes of this declaration, "material support or resources" means currency, payment instruments, other financial securities, funds, transfer of funds, financial services, communications, lodging, training, safe houses, false documentation or identification, communications equipment, facilities, weapons, lethal substances, explosives, personnel, transportation, and other physical assets, except medicine or religious materials.

COMPLETE THIS SECTION ONLY IF YOU ARE AN INDEPENDENT CONTRACTOR

LAST NAME	FIRST NAME		
HOME ADDRESS			
CITY	STATE	ZIP	COUNTY
HOME PHONE ()	WORK PHONE ()		

COMPLETE THIS SECTION ONLY IF YOU ARE A COMPANY, BUSINESS OR ORGANIZATION

BUSINESS/ORGANIZATION NAME			PHONE ()
BUSINESS ADDRESS			
CITY	STATE	ZIP	COUNTY
BUSINESS/ORGANIZATION REPRESENTATIVE NAME			TITLE

DECLARATION

In accordance with section 2909.32 (A)(2)(b) of the Ohio Revised Code

For each question, indicate either "yes," or "no" in the space provided. Responses must be truthful to the best of your knowledge.

- | | |
|--|--------|
| 1. Are you a member of an organization on the U.S. Department of State Terrorist Exclusion List? | Yes No |
| 2. Have you used any position of prominence you have with any country to persuade others to support an organization on the U.S. Department of State Terrorist Exclusion List? | Yes No |
| 3. Have you knowingly solicited funds or other things of value for an organization on the U.S. Department of State Terrorist Exclusion List? | Yes No |
| 4. Have you solicited any individual for membership in an organization on the U.S. Department of State Terrorist Exclusion List? | Yes No |
| 5. Have you committed an act that you know, or reasonably should have known, affords "material support or resources" to an organization on the U.S. Department of State Terrorist Exclusion List? | Yes No |
| 6. Have you hired or compensated a person you knew to be a member of an organization on the U.S. Department of State Terrorist Exclusion List, or a person you knew to be engaged in planning, assisting, or carrying out an act of terrorism? | Yes No |

If an applicant is prohibited from receiving a government contract or funding due to a positive indication on this form, the applicant may request the Ohio Department of Public Safety to review the prohibition. Please see the Ohio Homeland Security Web site for information on how to file a request for review.

CERTIFICATION

I hereby certify that the answers I have made to all of the questions on this declaration are true to the best of my knowledge. I understand that if this declaration is not completed in its entirety, it will not be processed and I will be automatically disqualified. I understand that I am responsible for the correctness of this declaration. I understand that failure to disclose the provision of material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List, or knowingly making false statements regarding material assistance to such an organization is a felony of the fifth degree. I understand that any answer of "yes" to any question, or the failure to answer "no" to any question on this declaration shall serve as a disclosure that material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List has been provided by myself or my organization. If I am signing this on behalf of a company, business or organization, I hereby acknowledge that I have the authority to make this certification on behalf of the company, business or organization referenced on page 1 of this declaration.

APPLICANT SIGNATURE X	DATE
---------------------------------	------

CERTIFICATE OF FISCAL OFFICER

As Fiscal Officer for the City of Moraine, Montgomery County, Ohio, I hereby certify that funds in the amount of _____ Dollars have been lawfully appropriated for the purpose of meeting the obligations of this contract with _____ duly authorized by Resolution No. _____ approved by the City of Moraine Council, Montgomery County, Ohio, and that they are in the treasury or in the process of collection to the credit of the City of Moraine free from any previous encumbrances.

Signed this ____ day of _____, 2017.

Fiscal Officer for the City of Moraine,
County of Montgomery,
State of Ohio

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PROPOSAL for:
Fire Station #30 Roofing Project
City of Moraine

The undersigned, _____, having carefully inspected the sites and locations of the work proposed to be performed, and also the premises at and adjacent to the location of the proposed work and specified equipment and conditions thereof, and having also carefully examined the "Notice to Contractor," "Instruction to Bidders," "Form of Contract," "General Provisions," and the detailed specifications which shall govern the work to be done, NOW PROPOSES to furnish any and all materials, tools, labor, transportation, machinery, appliances and/or necessary appurtenances, and to prosecute to full completion the work called for under the Contract Documents, all upon the terms and the conditions and provisions set forth in the "Instructions to Bidder," "Form of Contract," "Contract Bond," and "General Provisions," detailed specifications of this Proposal; and in consideration thereof to accept from the Owner as full payment for the completion of each specified item and any required maintenance thereof as hereinafter provided, the price quoted for each item for work completed, the price of labor and materials to be stated separately.

The undersigned _____ agrees that if this Proposal shall be accepted, he will be prepared to discuss with the Owner in detail any matters relating to special features and the methods he proposes to follow for the general conduct of the work; that he will within twenty (20) business days after notice of acceptance of bid, complete the Contract Form with the Owner for the performance of the work and furnish evidence of required insurance policies.

The undersigned _____ hereby certifies that no person interested in this Proposal is directly or indirectly interested in or connected with any other bid or proposal for the said work and no member of the City of Moraine or any other person in the employ of said City is directly or indirectly interested therein, or in any portion thereof, and he will, if required by the Owner, execute and submit from himself as Principal Contractor and from any subcontractor, the non-collusion affidavits as provided herein.

SUM PROPOSAL PRICE FOR: Fire Station #30 Roofing Project
Having read and examined the Contract Documents, including without limitation the Drawings and Specifications, prepared by RDA Group for the above referenced project and the following addenda as applicable:

Addendum No.

Date of Addendum

Submitted By:

(Legal Company Name)

(Date)

The undersigned Bidder having full knowledge of the site and the requirements proposes to perform all Work in accordance with the Contract Documents for the sums as stated below:

Base Bid Item 1 - Roof Replacement, Roof Areas as shown, ALL LABOR, MATERIALS, EQUIPMENT and PERMIT FEES for the total sum of

\$ _____
(figures) (words)

Contingency Allowance

\$ 5,000.00 Five thousand dollars

Total - Bid item 1 [with contingency]

\$ _____
(figures) (words)

UNIT PRICES/OPTIONS

Owner may also use unit costs/contingency if unforeseen conditions are encountered during construction, making certain changes necessary, or if the Owner desires to order additional Work or delete part of the Work as shown. All unit prices shall include Contractor's overhead and profit. Prices should include all accessories, coordination and ancillary work necessary for a complete installation.

If work is required involving these items:

1. Removal and replace/overlay deteriorated/rusted metal deck, on a square foot basis.

\$ _____/SF [600 SF included in the contract]

Signed at _____ this _____ day of _____,
2017.

Firm: _____

By: _____

Title: _____

(SEAL)

Official Address:

(Telephone Number)

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PREVAILING WAGE REQUIREMENTS

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Special Calculation Note

Ratio:

3 Journeymen to 1 Trainee

Jurisdiction (* denotes special jurisdictional note):

ADAMS, ASHLAND, ASHTABULA*,
 ATHENS, AUGLAIZE, BROWN, BUTLER*,
 CARROLL, CHAMPAIGN, CLARK,
 CLERMONT, CLINTON, COLUMBIANA,
 COSHOCTON, CRAWFORD, CUYAHOGA,
 DARKE, DELAWARE, FAIRFIELD,
 FAYETTE, FRANKLIN, GEAUGA, GREENE,
 GUERNSEY, HAMILTON, HARDIN,
 HARRISON, HIGHLAND, HOCKING,
 HOLMES, HURON, KNOX, LAKE,
 LICKING, LOGAN, LORAIN, MADISON,
 MAHONING, MARION, MEDINA, MIAMI,
 MONTGOMERY, MORGAN, MORROW,
 MUSKINGUM, NOBLE, PERRY,
 PICKAWAY, PORTAGE, PREBLE,
 RICHLAND, ROSS, SHELBY, STARK,
 SUMMIT, TRUMBULL, TUSCARAWAS,
 UNION, VINTON, WARREN*, WAYNE

Special Jurisdictional Note: Butler County: (townships of Fairfield, Hanover, Liberty, Milford, Morgan, Oxford, Ripley, Ross, StClair, Union & Wayne.) (Lemon & Madison)
 Warren County: (townships of: Deerfield, Hamilton, Harlan, Salem, Union & Washington). (Clear Creek, Franklin, Mossie, Turtle Creek & Wayne). Ashtabula County: (post offices & townships of Ashtabula, Austinburg, Geneva, Harperfield, Jefferson, Plymouth & Saybrook) (townships of Andover, Cherry Valley, Colbrook, Canneaut, Denmark, Dorset, East Orwell, Hartsgrrove, Kingville, Lenox, Monroe, Morgan, New Lyme, North Kingsville, Orwell, Pierpoint, Richmond Rock Creek, Rome, Sheffield, Trumbull, Wayne, Williamsfield & Windsor) Erie County:(post offices & townships of Berlin, Berlin Heights, Birmingham, Florence ,Huron, Milan, Shinrock & Vermilion)

Details:

Asbestos & lead paint abatement including, but not limited to the removal or encapsulation of asbestos & lead paint, all work in conjunction with the preparation of the removal of same & all work in conjunction with the clean up after said removal. The removal of all insulation materials,

whether they contain asbestos or not, from mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) is recognized as being the exclusive work of the Asbestos Abatement Workers.

On all mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) that are going to be demolished, the removal of all insulating materials whether they contain asbestos or not shall be the exclusive work of the Laborers.

An Abatement Journeyman is anyone who has more than 300 hours in the Asbestos Abatement field.

Special Calculation Note: Other is Industry Fund & Labor Management Fund.

Ratio :

4 Journeymen to 1 Apprentice Company Wide
 except no apprentice may work on a job site
 without a Mechanic.

Jurisdiction (* denotes special jurisdictional note):

AUGLAIZE, BUTLER*, CHAMPAIGN,
 CLARK, CLINTON, DARKE, GREENE,
 LOGAN, MIAMI, MONTGOMERY, PREBLE,
 SHELBY, WARREN*

Special Jurisdictional Note: In Butler County the following townships are included:
 (Lemon Twp, Madison Twp) In Warren County the following townships are included:
 (Clear Creek Twp, Franklin Twp, Massie Twp, Turtle Creek Twp, Wayne Twp)

Special Calculation Note \$0.10 LECET is for Education Fund.

Ratio

1 Journeymen to 1 Apprentice
 4 Journeymen to 1 Apprentice thereafter per project

Jurisdiction (* denotes special jurisdictional note):

CHAMPAIGN, CLARK, DARKE, GREENE, LOGAN, MIAMI, MONTGOMERY, PREBLE

Special Jurisdictional Note:

Details:

Group 1

Building & Construction Laborer, Railroad Laborer, Asbestos & Hazardous Waste (Levels A,B,C, & D), Concrete Crew, Form Setter, Pipelayer, Bottom Man, Burner (Cutting Torch), Welder Helper, All Machine & Power Driven Tools, Sandblaster
 Yardman-Landscaping, Sewer Jet, Waterperson, Tool Cage Laborer, Unloading Furniture & Fixtures, Final Clean-Up
 Watchman, Residential Construction, Signal Men

Group 2

Mason Tender For Bricklayers, Flexcore, Firebrick Tender (Blast Furnaces, Soaking Pits, Stoves & Stacks), Plasterer Tenders & Lathers

Group 3

Tender Operator

Asbestos, Lead and Hazardous Material:

The removal, abatement or encapsulation of asbestos, lead and/or toxic and hazardous waste or materials is defined as all work included in the erection, moving servicing and dismantling of all enclosures, scaffolding, barricades, etc. and the operation of all tools and equipment (including generators, compressors and vacuums) normally used in the removal or abatement or asbestos, lead and toxic and hazardous waste or materials; the labeling, bagging, cartoning, crating or otherwise packaging of materials for disposal; as well as the clean-up of the work site and all other work incidental to the removal, abatement or encapsulation of asbestos, lead or toxic and hazardous waste materials.

Level A

Protective equipment is required when the area has been determined to contain extremely toxic contaminants or contaminants unknown but may be expected to be extremely toxic and/or immediately dangerous to life and health. This ensemble includes a fully encapsulated chemical suit, self-contained breathing apparatus (SCBA) or airline fed respirator, and various types and numbers of boots and gloves.

Level B

Protective equipment includes a chemically resistant splash suit and a SCBA or airline respirator. This ensemble is required when the situation is very hazardous, such as oxygen deficient atmospheres, IDLH atmospheres, or confined space entries.

Level C

Protective equipment includes a protective suit and an air purifying respirator (APR) with the appropriate filter canisters.

Level D

To be worn only in established "safe zones" may consist of, from normal work clothes to normal skin protection such as gloves, face shields goggles, coveralls and occasionally respiratory protection.

Prevailing Wage Rate Skilled Crafts

Name of Union: **Roofer Local 75**

Change # : LCN01-2016fbLoc75

Craft: Roofer Effective Date: 05/20/2016 Last Posted: 05/20/2016

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Roofer	\$23.08		\$7.68	\$7.28	\$0.64	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.68	\$50.22
Slate and Tile	\$23.30		\$7.68	\$7.28	\$0.64	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.90	\$50.55
Apprentice	Percent											
1st term 1000 hrs	50.00	\$11.54	\$2.50	\$0.67	\$0.64	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$15.35	\$21.12
2nd term 1000 hrs	55.00	\$12.69	\$7.68	\$0.99	\$0.64	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$22.00	\$28.35
3rd term 1000 hrs	60.00	\$13.85	\$7.68	\$1.31	\$0.64	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.48	\$30.40
4th term 1000 hrs	70.00	\$16.16	\$7.68	\$2.04	\$0.64	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26.52	\$34.59

5th term 1000 hrs	80.00	\$18.46	\$7.68	\$2.77	\$0.64	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.55	\$38.79
Tradesman	79.00	\$18.23	\$2.50	\$1.32	\$0.64	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$22.69	\$31.81

Special Calculation Note: No special calculations for this skilled craft wage rate are required at this time.

Ratio:

3 Journeymen to 2 Apprentices

Jurisdiction (* denotes special jurisdictional note):

ALLEN, AUGLAIZE, CLARK, CLINTON, DARKE, GREENE, MERCER, MIAMI, MONTGOMERY, PREBLE, SHELBY, VAN WERT

Special Jurisdictional Note:

Details:

2 Year A	50.00	\$13.27	\$7.32	\$6.33	\$0.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$27.77	\$34.41
Probationary 1 Year	47.50	\$12.61	\$7.29	\$6.01	\$0.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26.76	\$33.06

Special Calculation Note: No special calculations for this skilled craft wage rate are required at this time.

Ratio:

1 Journeyman to 1 Apprentice then,
1 Apprentice for every 2 Journeymen thereafter

Jurisdiction (* denotes special jurisdictional note):

ALLEN, AUGLAIZE, BUTLER,
CHAMPAIGN, CLARK, CLINTON, DARKE,
GREENE, HARDIN, LOGAN, MERCER,
MIAMI, MONTGOMERY, PREBLE,
SHELBY, VAN WERT, WARREN,
WYANDOT

Special Jurisdictional Note:

Details:

Prevailing Wage Rate Skilled Crafts

Name of Union: Sprinkler Fitter Local 669

Change #: LCN03-2016fbLoc669

Craft: Sprinkler Fitter Effective Date: 08/17/2016 Last Posted: 09/08/2016

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Sprinkler Fitter	\$35.08		\$8.77	\$6.05	\$0.45	\$0.00	\$4.72	\$0.00	\$0.00	\$0.00	\$55.07	\$72.61
Indentured prior to April 2010												
45%	\$15.79		\$7.45	\$0.00	\$0.45	\$0.00	\$0.69	\$0.00	\$0.00	\$0.00	\$24.38	\$32.28
50%	\$17.54		\$7.45	\$0.00	\$0.45	\$0.00	\$0.74	\$0.00	\$0.00	\$0.00	\$26.18	\$34.95
55%	\$19.29		\$8.77	\$6.05	\$0.45	\$0.00	\$0.53	\$0.00	\$0.00	\$0.00	\$35.09	\$44.74
60%	\$21.05		\$8.77	\$6.05	\$0.45	\$0.00	\$0.58	\$0.00	\$0.00	\$0.00	\$36.90	\$47.42
65%	\$22.80		\$8.77	\$6.05	\$0.45	\$0.00	\$1.13	\$0.00	\$0.00	\$0.00	\$39.20	\$50.60
70%	\$24.56		\$8.77	\$6.05	\$0.45	\$0.00	\$1.18	\$0.00	\$0.00	\$0.00	\$41.01	\$53.29
75%	\$26.31		\$8.77	\$6.05	\$0.45	\$0.00	\$1.23	\$0.00	\$0.00	\$0.00	\$42.81	\$55.96
80%	\$28.06		\$8.77	\$6.05	\$0.45	\$0.00	\$1.28	\$0.00	\$0.00	\$0.00	\$44.61	\$58.64
85%	\$29.82		\$8.77	\$6.05	\$0.45	\$0.00	\$1.32	\$0.00	\$0.00	\$0.00	\$46.41	\$61.32
90%	\$31.57		\$8.77	\$6.05	\$0.45	\$0.00	\$1.37	\$0.00	\$0.00	\$0.00	\$48.21	\$64.00
Apprentice Indentured on or after April 2010												
	Percent											
CLASS 1	45.00	\$15.79	\$7.45	\$0.00	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$23.69	\$31.58
CLASS 2	50.00	\$17.54	\$7.45	\$0.00	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.44	\$34.21
CLASS 3	55.00	\$19.29	\$8.77	\$6.05	\$0.45	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$34.81	\$44.46
CLASS 4	60.00	\$21.05	\$8.77	\$6.05	\$0.45	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$36.57	\$47.09
CLASS 5	65.00	\$22.80	\$8.77	\$6.05	\$0.45	\$0.00	\$0.50	\$0.00	\$0.00	\$0.00	\$38.57	\$49.97
CLASS 6	70.00	\$24.56	\$8.77	\$6.05	\$0.45	\$0.00	\$0.50	\$0.00	\$0.00	\$0.00	\$40.33	\$52.60

CLASS 7	75.00	\$26.31	\$8.77	\$6.05	\$0.45	\$0.00	\$0.50	\$0.00	\$0.00	\$0.00	\$42.08	\$55.24
CLASS 8	80.00	\$28.06	\$8.77	\$6.05	\$0.45	\$0.00	\$0.50	\$0.00	\$0.00	\$0.00	\$43.83	\$57.87
CLASS 9	85.00	\$29.82	\$8.77	\$6.05	\$0.45	\$0.00	\$0.50	\$0.00	\$0.00	\$0.00	\$45.59	\$60.50
CLASS 10	90.00	\$31.57	\$8.77	\$6.05	\$0.45	\$0.00	\$0.50	\$0.00	\$0.00	\$0.00	\$47.34	\$63.13

Special Calculation Note: No special calculations for this skilled craft wage rate are required at this time.

Ratio:

1 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note):

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Sprinkler Fitter work shall consist of the installation, dismantling, maintenance, repairs, adjustments and corrections of all fire protection and fire control systems including the unloading, handling by hand-powered equipment and installation of all piping or tubing, appurtenances and equipment pertaining thereto, including both overhead and underground water mains, fire hydrants and hydrant mains, standpipes and hose connections to sprinkler systems used in connection with sprinkler and alarm systems. Also all tanks and pumps connected thereto

also included shall be CO-2 and Cardox Systems, Dry Chemical Systems, Foam Systems and all other fire protection systems.

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CONTRACT

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FORM OF CONTRACT

THIS AGREEMENT, entered into this ____ day of _____, 2017, by
and between the *City of Moraine, Ohio*, hereinafter called the "Owner" and
_____ hereinafter called the "Contractor."

WITNESSETH: That the said Contractor has agreed and by these presents does agree with the said Owner for the consideration hereinafter named, to furnish all the materials and do all of the work of whatever kind necessary to complete, in a good, substantial, and workmanlike manner, ready for use, and in strict accordance with the specifications on file in the office of the Maintenance Superintendent, and subject to all the terms and conditions of said specifications, and to the approval of said Superintendent, for the provision of services for the

FIRE STATION #30 ROOFING PROJECT CONTRACT FOR CITY OF MORAIN

in accordance with the Contract Documents dated March 2017, and Addenda thereto numbered and dated _____, for

The sum of _____ **thousand Dollars, (\$,000.00)** for Roofing Project.

The Owner agrees to pay, and the Contractor agrees to accept as full compensation, satisfaction, and discharge for all work done and material furnished, and also for all costs and expenses incurred and losses or damages sustained by reason of the action of the elements or because of the nature of the work or because of any unforeseen obstruction or difficulty encountered in the prosecution of the work, herein as specified and also for well and faithful completion of the work, and the whole thereof, in accordance with the terms, conditions and provisions of this contract and the instructions, orders, and directions of the Superintendent hereunder, and also for maintaining the work in good condition, except extra work which shall be paid for as provided in the General Conditions and except as in this Contract otherwise specifically provided, a sum of money equal to the amount of the actual work furnished, as determined by the Superintendent, as set forth in the Proposal attached hereto.

WITNESSETH, that in consideration of the sums of money herein specified to be paid by the

CONTRACTOR:

OWNER:

(name of company)

City of Moraine _____

By: _____

By: _____

(title)

(title)

Contract approved as to form _____

TECHNICAL SPECIFICATIONS

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SECTION 01 10 00
SUMMARY / GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 Work Includes

- A. The work covered by these specifications consists of furnishing all labor, equipment and materials necessary in connection with roof replacement other associated removals/repairs. Work includes items as shown, subject to the terms and condition of the contract, specifications and the drawing/s as listed.

SCHEDULE OF DRAWINGS

<u>Sheets</u>	<u>Designation</u>	<u>Date</u>
Drawing T1.1	Cover Sheet, Project Information, and Notes	Mar 17
Drawing A1.1	Roof Plan, Roof Details	Mar 17

1.2 Location

- A. The site of this work is at the City of Moraine, Fire Station #30, 3333 Pinnacle Park Drive, Moraine, OH 45439.

1.3 Instructions/Responsibilities of the Contractor

- A. Special care shall be taken not to allow dust and debris to fall onto any equipment/ material/ personnel.
- B. Contractor shall commence and complete work as noted in the contract.
- C. Contractor shall visit the site to become thoroughly familiar with all working conditions, check and verify all dimensions, to include locations of all drains. Any dimensions given or referred to in the specification or drawing is to be used purely as approximates and not as a basis for exact amounts for bidding. Contractor shall promptly advise the RDA Group of any discrepancies, errors with the specifications and drawings before bidding the work.
- D. All bonds, payment schedule, insurance shall be as noted in the contract documents.
- E. The plans and specifications are intended to depict the general scope, layout and quality of workmanship required, they are not intended to show or describe in detail every item necessary for the proper installation of the work. The contractor shall use the details and recommendations of the NRCA's current manual or membrane manufacturer [roof warranty provider] recommendations/detail if no information/detail is shown or stated.
- F. The contractor shall provide material data sheets [MDS] on all products used.
 - 1. Submit directly to the Owner.
- G. The term 'Architect or RDA/RDA Group, Roof/Building Envelope Consultant' as referenced in these contract documents is RDA Group Architects, RDA Group, Roof/Building Envelope Consultants, Architects and Construction Observers of Ohio, Georgia and Florida.
- H. The term 'owner' as referenced in this specification is the City of Moraine, Moraine OH.

1.4 Coordination/Work Scheduling

- A. Work Schedules:
 - 1. Monday through Friday between the hours of 6:00AM to 6:00PM.
- B. Saturday and Sunday and overtime work will be required by the Owner at no additional cost if the contractor fails to meet milestone dates as prescribed in the contract. Saturday and

Sunday work can take place but must be coordinated and approved with the owner and be between the same hours as above.

1.5 Applicable References, Codes and Permits.

- A. References will be found in each section that applies to that section. In addition, contractor shall comply with the state building code as it relates to the work.
- B. Contractor shall procure at his own expense all necessary permits from municipal or other agencies and give all notices required. Fines levied due to non compliance shall be paid by the contractor.

1.6 Taxes

- A. Any taxes paid by the contractor will be considered their expense for which no compensation will be made by the owner.

1.7 Wages

- A. This project is subject to prevailing wage requirements. Refer to the wage rates included in the bid documents.

1.8 Contract Period

- A. The contract period for this project is 45 calendar days from the date of the Notice to Proceed with no weather days.

1.9 Liquidated Damages

- A. This project is subject to liquidated damages. Liquidated damages shall be assessed for time delays beyond the contract period in the amount of \$200 per calendar day.
- B. A final inspection of the work shall constitute substantial completion.

1.10 Smoking

- A. Smoking is not permitted on the work site or inside of any facility.
- B.

1.11 Unit Prices – Refer to Bid Form/Specifications

- A. Removal and replace/overlay deteriorated/rusted metal deck, on a square foot basis. See allowance in contract. Bid SF costs provided will be used as the basis for adjustments [credit or additional costs] in accordance with the actual square footage replaced. 600 SF included in the contract.

PART 2 PRODUCTS

2.1 Manufactured Products

- A. Where a particular system, product, or material is specified by name it shall be considered a standard and most satisfactory for its particular purpose. Any other product or material considered equal or better in all respects must be approved by the RDA Group prior to bidding.
- B. All products used on this project shall be new, unless otherwise noted on the drawings or as specified herein.

PART 3 EXECUTION

3.1 Protection

- A. The work shall be accomplished in accordance with the provision of Federal, State American Standard Safety Code for Building Construction and OSHA safety requirements.

1. Each contractor shall be responsible for protective railings and guards as required by OSHA, even if not specified. Fall protection is required.
- B. The contractor shall protect and maintain all building entrances, interior contents, building exterior and grounds.
 1. Return all surfaces to their original condition after all work is complete.
- C. In the event of damages of any kind caused by improper protection. The contractor shall replace/repair the damages [including interior or exterior equipment] at no expense to the owner.
- D. Contractor shall comply with all regulations of the Local Fire Department and the owner's requirement regarding storage and handling of flammable materials, etc. It is the responsibility of the contractor performing any hot /torch work to comply with the safety provisions of the National Fire Codes pertaining to such work and the contractor shall be responsible for all damage or fines resulting from failure to so comply.

3.2 Sanitary Facilities

- A. Furnish and maintain temporary sanitary facilities for employee use during the project. If located on the ground, provide all required protection from vandalism.

3.3 Storage and Protection of Materials

- A. Contractor shall be responsible for storage and safekeeping of all materials, including company's personal property. All damaged materials shall be removed from the site.
- B. Coordinate material delivery to avoid owner involvement.
- C. Locations of ground level storage and waste dumpster must be approved by the owner.

3.4 Job Superintendent/Employee's

- A. Each prime contractor shall have a qualified foreman on the project at all times when the work is being done [see appropriate sections].
- B. Employees shall refrain from fraternization with building occupants.
- C. The contractor shall furnish the owner with a list of personnel with phone numbers that will be working on the project and two emergency contacts names and numbers that has the authority to handle emergencies on a 24 hour/seven days a week.

3.5 Roof/Project Access

- A. Access to roof areas shall be from outside ladder or ladder on man lift, provided, installed and maintained by the contractor for the duration of the work. Workers are not to access the roof through the building. Workers are not to enter any office/building space. If a crane is required a 3-day notice plus a safety plan shall be provided, location of the crane must be approved by the owner.
- B. Owner will make reasonable effort to provide suitable space on the site for the contractor to set up operations. Moving from this space may be necessary when instructed by the owner and shall be accomplished without charge to the owner. Cooperate with owner to minimize conflict from owner's operations.
- C. Contractor's employee shall park personal vehicles only in areas designated by owner.

3.6 Safety Program

- A. Contractor must have a written safety program for all operations/ work performed on this project. The documents must be at the job site and be made available to the owner or RDA when requested. The contractor assumes all responsibility for project safety, ways and means and methods of constructing the project. In addition, the owner may require special

safety requirements to be performed by the contractor, these requirements will be provided prior to commence of work.

3.7 Removals and Clean Up

- A. Contractor shall be responsible for the removal, dismantling of items that are required for proper completion of the work as applicable in each section [see section 02 41 00 / 07 01 50]. All debris resulting from the work not designated for reuse becomes the property of the contractor unless stated otherwise.
- B. At the completion of each day, the general contractor shall maintain the work area clean of all debris to the satisfactory of the owner, including all the subcontractors work area.

END OF SECTION

SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 Work Includes

- A. Pre-construction meeting, project coordination and progress meetings.

1.2 Coordination

- A. Coordinate scheduling of work to ensure efficient and orderly sequence of installation of roofing, sheet metal and other construction elements.
- B. Coordinate completion and clean up of all work, including subcontractor work.

1.3 Pre-Construction Meeting

- A. General: RDA and Owner will schedule a pre-construction meeting after notice of award and approx. one week prior to commence of work. RDA, the owner, roofing contractor and on-site project roofing foreman shall be in attendance.
 - 1. Agenda:
 - a. Scheduling of construction events, set-up, storage and etc.
 - b. Project personnel with contact information.
 - c. Sequence of construction, starting points, events and required resources.
 - d. Subcontractors list with contact information.
 - e. Temporary utilities.
 - f. Inspection and acceptance of systems, roof drains, A/C units and etc.
 - g. Owner's requirements.
 - h. Project safety.

1.4 Progress Meetings

- A. General: RDA will provide the owner with a field/observation report at each site visit/observation. RDA will be observing the work for compliance with the specification and will not be responsible for the ways, means and methods of constructing the project.
- B. RDA will schedule the meeting, prepare meeting minutes and provide copies to the owner and the roofing contractor. RDA, owner, roof contractor representative and on-site project roof foreman shall be in attendance.
 - 1. Agenda:
 - a. Review of work progress and owner's requirements.
 - b. Field observations of the completed work.
 - c. Identification of problems and associated solutions.
 - d. Proposed changes, work and personnel.

END OF SECTION

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SECTION 01 33 00
SUBMITTALS

PART 1 GENERAL

1.1 Work Includes

- A. General: Review of shop drawings and product data by RDA will be general in nature and does not relieve the contractor in any way of responsibility in compliance with the contract documents and applicable codes.
- B. Submittal items required for the project.
 - 1. Submit **three** copies of all required submittals to the RDA Group as herein outlined. One copy will be returned to the contractor; items not approved must be revised to meet the requirements and resubmitted. Allow 7 days for review.
 - 2. Products that are no longer produced can be substituted, identify variations from the contract documents and products.
 - 3. All submittals shall be provided ten days after notice to proceed or as agreed to by the RDA Group.

1.2 Materials

- A. Submit manufacturer's product data sheet for roof membrane [Modified], cover board/insulation and insulation adhesive, wind rated coping [ES-1 approved], roof drain inserts, roof breather vents and manufacture/contractor approved scaled insulation/saddle layout.
- B. Submit sheet metal colors and sheet metal manufacturer and sheet metal items for coping, and counter-flashing.
- C. Submit insulation/cover board fastening/adhesive patterns and frequency [as applicable] from the manufacturer supplying the membrane/insulation material wind warranty, verifying or changing our drawings notes.
- D. Submit any additional details to comply with manufacturer's details or changes to details as shown on the drawings.
- E. Submit a construction schedule outlining sequence of construction activities and proposed dates.
- F. Submit installer training certificate/s.

1.3 Factory Mutual Global [FMG], Roof Manufacturer and Material Data Sheets

- A. Submit evidence that the roofing material system meets the performance intent of FMG's wind resistance tests. The roof membrane manufacturer must provide the roof assembly securement requirements along with a list of the proposed materials [assembly letter] for the wind design pressures as specified, to meet the roof warranty wind requirements and other requirements as outlined in the specifications. See regulatory performance requirements.
- B. Submit Material Data Sheets on all products to the owner.
 - 1. Owner shall be responsible to provide to employees as applicable.
 - 2. RDA Does not review/approve any SMDS sheets.

1.4 Eligible Applicator

- A. Submit a letter from the roofing material manufacturer with the following items addressed [see section 07 53 00 / 07 62 00 / 07 71 00].
 - 1. The applicator is approved to use the products as specified and the manufacturer accepts the roofing system requirements and details as shown or with changes as provided.

2. The applicator has been manufacturer approved for over 2 years and is capable of obtaining the warranty as outlined in the specifications.

1.5 Personnel/Other Contractors

- A. Submit a list of all subcontractors and on-site personnel with the list of lead contact and associated phone numbers.

1.6 Bonds and Insurance

- A. As outlined in the contract documents.

END OF SECTION

SECTION 01 70 00
EXECUTION AND CLOSE OUT REQUIREMENTS

PART 1 GENERAL

1.1 Work Includes

- A. Close-out of the actual work, including warranties, maintenance manuals and final cleaning. Close-out of all contract obligations.

1.2 Close-out Procedures

- A. Contractor shall notify RDA when the work is complete to establish the desired inspection date.
- B. RDA and the owner shall inspect the completed project and notify the contractor of any deficiencies. Deficiencies will form 'punch list' for final acceptance.

1.3 Prerequisites to Final Acceptance and Payment.

- A. General: Prior to acceptance and final payment, all claims or disputes must have been resolved and the contractor must have provided the following items to the RDA:
 - 1. Notarized affidavit of waiver of liens
 - 2. Final statement of charges [100% application for payment].
 - 3. Documented evidence [photos] of completing 'punch list' as applicable.
 - 4. Manufacturer's original roof warranties [copies to RDA, original to owner]
 - 5. Manufacturer's roof maintenance and repair instructions.
 - 6. Final cleaning of all work areas: clean roof, roof drains, soil from building surfaces, etc
 - 7. Restore all work staging and lay-out areas to pre-construction conditions, including but not limited to, removal of debris, temporary facilities, grading and grass seeding and cleaning or repair of impacted structures

END OF SECTION

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SECTION 02 41 00 / 07 01 50

SELECTIVE DEMOLITION/MAINTENANCE OF MEMBRANE ROOFING

PART 1 GENERAL

1.1 Work Includes, but not limited to:

General: Removal of existing gravel surfaced built-up roof system [plies/gravel] down to the existing metal deck. Adhered asphalt residue to remain in place. Do not damage deck to remove roof system [see existing roof matrix].

- A. Removal of existing perimeter base flashing [metal, BUR, single ply & composite] and related items.
- B. Removal of wood nailers and blocking. Wood members that are securely bolted or adequately fastened or can be adequately fastened to the structure per specs and are in a dry good condition can remain in place, if approved by the RDA Group. [See section 06 10 53 for anchoring requirements].
- C. Removal of sheet metal items such as copings, termination bars, bib flashings, supports, breather vents and counter-flashings, other items as required to install the new roof system and as noted.
- D. Removal of existing unused/unwanted curbs, HVAC screens, vents and covering associated openings as noted on the drawings.
- E. Other removals necessary to accomplish the new work.

1.2 Quality Assurance

- A. Work shall be performed in strict accordance with the terms and conditions of all municipal and state regulation and local codes.
- B. Demolition shall comply with the requirements of ANSI - American National Standard Safety Requirements for Demolition.
- C. Conduct demolition work in a manner that will minimize disruption of owner's normal operations. Coordinate work activities daily with owner.
- D. Do not remove existing roofing membrane or components when weather conditions threaten integrity of building contents.
- E. Properly protect all facility surfaces and associated landscaping from damages due to normal demolition operation. Return all areas to their original condition at no charge to the owner.

1.3 Coordination

- A. All utilities and mechanical rooftop equipment will remain active during normal work hours, unless approved otherwise by the owner.
- B. All removals shall be legally disposed of, except those indicated to be reinstalled, salvaged or to remain owner's property.

PART 2 PRODUCTS

Not Applicable

PART 3 EXECUTION

3.1 Dust/Fume Control

- A. Contractor to take measures to avoid dust, dirt and debris from entering the building. Throwing material off the roof is prohibited; provide an enclosed chute, crane or raised dump truck to remove roofing materials. Contractor shall provide a tarp or other protection of walls where material is being removed.
- B. Contractor must take special precautions around deck penetrations, including but not limited to installation and removal of reinforced visqueen below the roof deck to protect property below.
- C. Special precautions shall be taken to avoid fumes from entering the facilities through air intakes. Work with the owners to adjust A/C and other units –owner’s responsibility.

3.2 Traffic

- A. Conduct demolition operations and the removals of debris to ensure minimum interference with streets, walks and other adjacent facilities. Do not close or obstruct streets or walks, without permission from owner and authorities having jurisdiction.

3.3 Disposal of Materials

- A. Remove from the site, all debris, rubbish and other materials resulting from the demolition operations, are not being reused as soon as possible. The landfill used for disposal shall be approved for type of materials being disposed. Comply with local laws, EPA regulations when transporting materials from the site.
- B. All materials that are to be reused in the new work shall be removed, cleaned and stored in a safe place until reinstallation, as applicable.

3.4 Asbestos Removal/Notification

- A. If asbestos is found during the course of work, all removals shall be in accordance with written guidelines provided by OSHA Asbestos Construction Standard [29 CFR 1926.1101], and State, County and EPA guidelines as applicable. Contractor must be OSHA trained meeting the requirements of 29 CFR 1926.1101 for the removal, handling and monitoring of removed material. Notify and provide all documentation to the owner for disposal of asbestos. All costs for asbestos removal, permitting and handling will be included in the bid if noted herein. Test Cut Data: No suspect ASBESTOS containing materials have been found from the roof field membrane.
- B. All asbestos removals shall be in a manner not to cause the roofing fibers to become crumbed, pulverized or airborne, these materials shall be handled as Category I and II non-friable asbestos. Should asbestos be encountered noted or not, that has become friable due to the actions of the contractor or the condition of the material, the contractor shall secure the services of an abatement contractor to remove the material and an independent firm to monitor removal activities and procedures [removal plan required]. Contractor shall pay for this abatement contractor if asbestos became friable due to his removal procedures. Notify RDA if asbestos has been encountered that was not noted, prior to removal.

3.5 Utilities/Equipment

- A. Where electrical lines, equipment or controls interface with the performance of the work, they shall be temporarily removed, replaced and made fully operational as soon as possible, a 48 hour advance notice and approval from owner is required before any removals can take

place. The contractor has the responsibility to verify the operational status of all equipment before removals take place.

- B. The contractor must notify the owner of any non-operational items prior to removal, commencement of work constitutes acceptance of equipment and any costs to make operational shall be borne by the contractor.

END OF SECTION

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SECTION 06 10 53
MISCELLANEOUS ROUGH CARPENTRY FOR ROOFING

PART 1 GENERAL

1.1 Work Includes, but not limited to:

- A. Miscellaneous sized new wood nailers/blocking, curbs, fascia/trim boards, plywood and associated fasteners, bolts, adhesives as required for installation of the roofing system and sheet metal.
- B. Wood members that meet the requirements of Section 02 41 00/07 01 50 can remain in place as per conditions as specified herein

1.2 Applicable References

- A. The following references form a part of this specification.
 - 1. NFPA - National Forest Products design specifications.
 - 2. Factory Mutual Research Corporation, Loss Prevention Data Sheet 1-49, Perimeter Flashings
 - 3. APA – American Plywood Association.
 - 4. Lumber Grading Agency.
 - 5. American Wood Preservers Association

1.3 Quality Assurance

- A. Perform work in accordance with Local Building Code.

PART 2 PRODUCTS

2.1 Dimension Lumber

- A. Board Stock: graded in accordance with NFPA and Lumber Grading Agency, board class number 2, structural grade, kiln-dried Douglas fir or Southern yellow pine. Preservative treated; asphaltic, creosote or copper additive [CCA, CA-B & ACQ] or any other type treated lumber not acceptable for use on this project unless for used as nailers on top of concrete or masonry wall surface, then use ACQ treated lumber. Sizes as shown are standard nominal sizes. Provide dressed lumber, S4S, unless otherwise noted.
- B. Plywood: CD-X, thickness as shown or as necessary.
- C. Moisture content for all lumber shall not exceed 19% by weight at time of installation, including any lumber that is allowed to remain in place. Lumber will be removed if moisture exceeds 19%.

2.2 Fasteners

- A. General: Contractor to determine the required length for each application in accordance with manufacturer data and Factory Mutual recommendations, minimum embedment for steel-3/4 in., for wood-1 1/4 in. and concrete/concrete block [masonry] -1 in. unless otherwise noted. Comply with the fastening requirements of the International Building Code, Local Building Code and Factory Mutual requirements, whichever is more stringent. All fasteners to anchor wood members shall be corrosion-resistant steel or type 410 stainless steel [as noted]. See section 07 52 00 for additional fasteners data.
 - 1. Lag Bolts: ANSI/ASME B18.2.1
 - 2. Steel Bolts: ASTM A 307, Grade A
 - 3. Nails: 12 gage, corrosion resistance.
 - 4. Wood Screws: ANSI/ASME B 18.6.1
 - 5. ITW Redhead, A7 acrylic adhesive

2.3 Adhesives

- A. Standard wood adhesive, caulk grade.

PART 3 EXECUTION

3.1 Examination

- A. Inspect fastening of existing wood members left in place for conformance to requirements specified herein, upgrade as necessary.
- B. Examine surfaces for satisfactory conditions and do not use materials that are warped, bowed, twisted or unsound.

3.2 Installation

General: Installation shall be in accordance with Factory Mutual Loss Prevention Data Sheet 1-49 perimeter flashing recommendations and details, other standard industry framing methods and as shown.

- A. Install members true, plumb and level, secure in place. Provide all required shoring and temporary bracing required.
 - 1. Use members of continuous possible lengths.
 - 2. Nails used to secure fascia and top nailers to other wood members shall penetrate 1-1/4 in., apply in two rows at 24 inches on center at perimeters and 12 inches in corners, staggered if feasible. Withdrawal resistance shall be 150 lb/f min.
 - 3. Wood nailers/blocking shall have a 1/4" space between boards.
- B. Metal/ Metal Deck: Wood nailers at perimeter/corners shall be fastened to the deck with two rows of #14 steel, wood to metal deck tek fasteners [wafer head] or #14 HD steel roofing fastener at 24 inches on center [offset or staggered] in perimeters and 16 inches [offset or staggered] in corners, starting 3 inches from each end of the board, staggered fasteners 2 inches from edge if nailer is wider than 6 inches. Nailers parallel to metal deck ribs shall have a 5/8" outside diameter steel washer under the screw heads. All fastener must penetrate the top flange of the deck and be driven flush or counter-sunk, if necessary.
- C. Steel Members: Wood nailers at perimeter/corners shall be fastened to a steel member with one row of #14 or 1/4 in. steel, wood to steel tek fasteners at 24 inches on center, centered-staggered fasteners 2 inches from edge if nailer is wider than 6 inches, pre drill holes and countersink, if necessary. Fasteners shall start 3 inches from each end of the boards and shall be spaced 16 inches on center each way at the corners.
- D. Concrete Block/Concrete, Stone and Concrete Decking: Wood nailers at perimeter/corners or on top of parapet wall shall be fastened with one row of 1/4 in. self tapping fasteners at 24 inches on center, [centered or staggered], staggered fasteners 2 inches from edge if nailer is wider than 6 inches, pre drill holes and countersink, if necessary. Fasteners shall start 3 inches from each end of the boards and shall be spaced 16 inches on center each way from the corner [if wood/nailers exceed 6 inches in thickness consult RDA for fastener selection] or use a 1/2 in. diameter treaded rod with nut and washer attached, placed into a pre drilled hole with adhesive injected. Rods placed at 4 feet on center in the perimeter and 2 feet on center each way from the corner [stagger all fasteners two inches from edge if nailer is wider than 6 inches]. Ensure all cores of hollow block are filled with grout where rods are located. Embed rods 4 1/4 inches min. into filled block cores or solid block/concrete.

3.3 Surface Treatment

- A. All exposed to view newly installed wood members shall be primed and painted to match surrounding surfaces colors unless otherwise noted.

END OF SECTION

SECTION 07 52 00 / 07 62 00 / 07 71 00
MODIFIED ROOF SYSTEM AND SHEET METAL / ROOF SPECIALTIES

PART 1 GENERAL

1.1 Work Includes but not limited to

General: Intent of project is to provide a functional 20-year new waterproof roof system.

- A. Removal of existing roof system and related items [See section 02 41 00/07 01 50 [Selective Demolition/Maintenance of Membrane Roofing].
- B. Clean and dry deck surface.
- C. Installation of a multi-ply roofing system with SBS modified granular cap.
- D. Installation of new sheet metal items, including wind-rated coping, bib flashing, vent flashings, equipment supports, termination bars, fasteners/plates and counter- flashings.
- E. Installation of new insulation, tapered insulation saddles and cover board [see roof schedule].
- F. Installation of new membrane flashings and roof accessories/specialties.
- G. Raising existing curbs on mechanical units, vents, etc and rework, disconnect/ extend ducting/ electrical /gas lines to accommodate new insulation heights, flashings, penetration covers and sheet metal as required. Electrical connections/utility hookups removed and reinstalled by Electrical contractor. Purge and recharge all removed HVAC units by HVAC contractor. Contractors must be approved by owner.
- H. Installing new drain inserts on existing drain lines.
- I. Installation of new or overlay deteriorated metal decking.
- J. Fastening the metal deck at the perimeters and corners where roof system has been totally removed to deck, as required.

1.2 Related Sections

- A. Section 06 10 53 – Miscellaneous Rough Carpentry for Roofing
- B. Section 02 41 00/07 01 50 – Selective Demolition/Maintenance of Membrane Roofing

1.3 Applicable References

- A. The following references form a part of this specification.
 - 1. ASTM D 41 Asphalt Primer Used in Roofing, Damp proofing Waterproofing.
 - 2. ASTM D 4586 Type II, Asphalt Roof Cement, Asbestos Free.
 - 3. ASTM A755/A755M Pre-Finished Galvanized, grade A, Hot Dipped, Zinc Coated G90
 - 4. ASTM C 1289-13 Polyiso Insulation Board, Type II, Class 1, Grade 2
 - 5. ASTM E 108 Fire Test of Roof Coverings
 - 6. [FMG] Factory Mutual Global - Current Approval System [NAV assembly numbers], Loss Prevention Data Sheets for Roof Deck Securement for Above Deck Roof Components, Perimeter Flashings, Wind Design and Roof Loads for Construction.
 - 7. [UL] Underwriters Laboratories - Roofing Materials and Systems Directory, Fire Resistance Directory, Current Edition.
 - 8. [NRCA] National Roofing Contractors Association - Current Roofing and Waterproofing Manual
 - 9. [SMACNA] Sheet Metal and Air Conditioning Contractors Association- 6th Edition or Current Manual

10. [OSHA] Occupational Safety and Health Administration, Guidelines
11. ASCE 7-05 Minimum Design Loads for Buildings
12. ASTM D 6163/4 General Standards for SBS Modified Membrane. Type I , Grade G and S
13. ANSI/SPRI/FM 4435 ES-1 Wind Design for Edge Systems.
14. [NFPA] National Fire Protection Association, 58 Liquefied Petroleum Gas Code

1.4 Substitutions/Equals

- A. When a particular make or trade name is specified, it shall indicate the standard quality required. Bidders proposing substitutions shall submit the following seven [7] days prior to bid date to the Owner's Consultant.
 1. Manufacturer's literature and samples of requested substitutions.
 2. Only substitutions approved by the RDA Group prior to scheduled bid date will be considered.
 3. Substitution requests can only be made by a bidding contractor.

1.5 Quality Assurance

- A. Manufacturer: Company specializing in manufacturing SBS roofing membranes specified in this section, with minimum 10 years experience.
 1. All roofing materials supplied must be manufactured or manufacturer approved by the company furnishing the warranty including the metal roof edge and coping as required - **single source responsibility**. The manufacturer must manufacture the membrane material furnished as a minimum.
 2. The roofing material manufacturer must submit a letter stating that the applicator is approved to use the products as furnished, is licensed to install their material in the state where project is located, that the applicator is capable of obtaining the warranties as outlined in the specifications in accordance with the roof system requirements and details as drawn and the products are acceptable for use on the surfaces to which they are being applied. In addition, an outline of the roofing system components product name and their securement requirements shall be included with the letter.
- B. Applicator: Company specializing in applying bituminous roofing with minimum 5 years documented experience, never been terminated by a manufacturer for workmanship problems, be approved for minimum 2 years by the manufacturer for use of their materials and be capable of providing the warranties as specified.
- C. Inspection: Prior to, during mid-point installation and at completion, an inspection shall be made by the manufacturer's representative to assure that the roofing system is/has been installed in accordance with their requirements and recommendations. An inspection status report @ mid-point of construction shall be prepared by the manufacturer's rep and provided to the RDA Group, no later than 3 days after inspection.
- D. Training: The roof foremen or at least 1 assistant working on this project must either be a 'Journeymen Roofer' or have attended and completed the roof material membrane manufacturer's approved installation course associated with the membrane/s specified herein within the last two years of the bid date, **[certificate of proof required as part of the submittal]**. Roof foremen must have a minimum of 5 years experience with application of SBS roof systems and be able to interpret specifications and drawings [Contract documents must be on-site at all times].
- E. Drainage Testing: The contractor shall test each roof drain and/or downspouts/scuppers for proper water flow and notify the owner of any clogged drainage, commencement of work shall constitute acceptance of drainage device and any costs to unclog these items shall be borne by the contractor.

- F. Contractor shall have a large waterproof tarp on site for sudden inclement weather.
- G. Contractor is required to locate under metal deck conduits/lines prior to using any penetrating deck fasteners to avoid punching conduits/lines, coordinate inspection with owner.
- H. Existing membrane penetrations or leak sources within work area must be repaired watertight before commencement of new roofing work.
- I. Contractor to provide any power necessary to accomplish the work, owner will not provide power.

1.6 Regulatory Performance Requirements

- A. Fire Hazard Classification: Underwriters Laboratories [UL], Use only Class A fire-rated materials as tested in accordance with ASTM E 108 or UL 790 for exterior fire.
- B. American Society of Civil Engineers [ASCE], Factory Mutual Global Corporation [FMG]/Roof Material Manufacture [NRCA]: Roof materials supplied must be FMG approved meeting the intent of the test criteria set forth in ANSI/FMG standard 4474, to resist the wind uplift design uplift pressure as noted on the drawing and for FMG windstorm resistance classifications, to support internal/external fire, exposure Class 1A [metal deck], to support corrosion resistance fasteners/anchors and impact resistance for severe hail. The roof membrane manufacturer incompliance with building code must provide the roof assembly securement requirements to resist the wind pressures as noted along with meeting the roof warranty wind requirements and other requirements as outlined in the specifications. The manufacturer's roof assembly securement must **not** be less stringent then the calculations according with ASCE 7-05 and IBC 2010 requirements as an assembly. A field pull [ANSI/SPRI FX-1] or adhesion test [ANSI/SPRI 1A-1] will be necessary prior to commencing work when conditions are different then manufacture's assembly test criteria for their approval to meet the design pressures or required by the state building codes or RDA Group. If a test has been accomplished the results will be provided herein.
- C. Roof membrane sheets that require torching must follow FMG data Sheet 1-33 [safeguarding torch-apply roof installation guidelines] along with NRCA's and the manufacturer's requirement. All personnel that uses a torch on this project must read and sign this document.

1.7 Pre-Installation Conference

- A. A pre-installation conference one week prior to commencing work of this section will be mandatory. All parties responsible for work in this section are required to attend. In addition, meetings will be held each week during construction. Memos resulting from these meetings will be provided to the owner and contractor by the RDA Group [See section 01 30 00].

1.8 Delivery, Storage and Handling

- A. Do not overload structure with storage of materials, verify roof deck weight capacity and location of structural supports, only items needed that day shall be stored on the roof. Limit loads on roof to 25 pounds per square foot for uniformly distributed loads for metal/gypsum decks, 75 pounds per square for concrete decks. **Provide temporary securement of existing membrane to prevent membrane blow off while installing new roof system.**
- B. Store and protect products in accordance with manufacturer's instructions.
- C. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact. All materials must be UL or FM labeled.

- D. Store products in weather-protected environment [manufacturer's plastic wrap is accepted for proper protection, unless wrap is broken, torn, removed or if noted otherwise by the manufacturer as part of the packaging label], clear of ground 4 inches and moisture. Use tarps for moisture protection as needed. Protect foam insulation from direct sunlight exposure. Water damaged materials will be marked 'rejected' by the contractor/owner or RDA and removed from the site.
- E. Storage of flammable liquids in buildings is prohibited. All combustible debris shall be removed from the site daily.
- F. Storage shall be in areas designated by owner.
- G. If applicable, liquid propane [LP] gas containers shall be in an upright position at all times, comply with NFPA 58.

1.9 Weather Conditions

General: Contractor shall notify the Owner and Roof/Building Envelope Consultant by E-mail on days that weather conditions prohibit work [time extensions may be granted by review of E-mails].

- A. Do not apply roofing system during inclement weather or when the chance is 40% or greater, percentage as listed on www.weather.com for the local area, percentage as listed when read at 7 A.M. local time or time of work commencement. Proceed with roofing and associated work when weather conditions will permit unrestricted use of materials and quality control of the work being installed.
- B. Do not apply roofing system to damp or frozen deck surface.
- C. Adverse weather conditions e.g. extreme temperature, high winds, high humidity and moisture could have a detrimental effect on adhesives, contact manufacturer for acceptable tolerances. See additional restrictions specified herein
- D. Follow manufacturer's cold weather application when temperatures fall below 40 degrees F.

1.10 Sequencing and Scheduling

- A. Building space underneath roof work is utilized by on-going operations. Contractor must provide overhead protection for owner's personnel from falling materials/debris at building entry points. Coordinate all work with owner including, material storage and contractor parking. Owner's approval required before proceeding with the work.
- B. Coordinate the work of installing all associated items in such sequence that will not necessitate movement of workers and equipment over completed roof areas.
- C. Sequence daily work of new roofing to be limited only that can be covered and made 100% watertight at the end of each day, including full adhesion of the membrane, flashings and night seals. No temporary roofing shall be allowed unless approved by RDA Group.

1.11 Manufacturer's Warranties

- A. Provide a manufacturer's warranty for both repairs/replacements due to any faults in the material and workmanship [Total System Responsibility]. Any leak repairs/replacement due to normal wear and tear, membrane defects, workmanship defects, damage due to wind speeds up to **72 mph** [10 meters above ground], shall be performed at no charge to the owner through the period of the warranty. Roof warranty shall be a no dollar limit type with no penal sum, covering all insulation, fasteners, membrane, flashings, liquid flashing, metal coping/edging, regardless of the manufacturer, sheet metal items such as coping and edges must be furnished or approved by the manufacturer of the roofing membrane. Warranty must be transferable and must be signed by the manufacturer of

record and the owner. When a contractor warranty is provided or implied, this warranty must bind the manufacturer and contractor, for the terms of their agreement, to perform any necessary repairs/replacements for the term of the warranty [in most cases two years].

1. SBS Modified Roof System shall be warranted for [20] twenty years by the roof membrane manufacturer.
 2. Sheet metal coping shall be warranted for winds up to 72 MPH by the roof membrane manufacturer [part of the warranty]. Pre-manufactured items or ES-1 shop fabricated must be warranted by the metal manufacturer or fabricator for winds up to 110 MPH or be certified to meet or exceed the design pressure as noted and other requirements as stated herein. Coping shall be carry a leak-proof and 20 year finish warranty.
- B. In the event of a default by the contractor, the manufacturer will provide a new contractor to fulfill the warranty obligation.

1.12 Portable Fire Extinguishers

- A. Two standard listed multipurpose dry chemical fire extinguisher, NFPA 10, with 10 pound capacity, 4A-60B:C UL rating shall be provided and located near the work area. Additional fire extinguishers shall be provided for different roof levels/work sites.
1. Contractor to ensure all personnel are trained to use fire extinguishers.

PART 2 PRODUCTS

General: All products shall be Building Code approved as applicable and be a Factory Mutual approved roof assembly.

2.1 Roofing System Descriptions

Styrene Butadiene Styrene [SBS] Modified: Two-ply membrane, which includes a SBS mineral granulated surfaced polymer modified fire resistance cap sheet [top ply must contain a non-woven polyester reinforcement, unless stated otherwise herein].

- A. Modified Manufacturers, Membrane Products and Membrane Application: **Soprema**, 'Sopralene Flam 180/Sopralene Flam 180 FRGR'. **Firestone Building Products [Firestone]**, SBS Poly Torch Base/SBS FR Torch - **Johns Manville [JM]**, Dyna Weld Base/Dyna Weld Cap. [**Base:** Heat welded/**Cap:** heat welded]. **See roofing schedule.**
1. Insulation [polyisocyanurate] Manufacturers: Soprema, 'Sopra-ISO r' or Firestone ISO 95+GL or JM ENRGY 3.
 2. Base Flashing Designations, Modified: Soprema/Firestone/JM, Modified, same as roof system unless manufacturer requires a difference product for their warranty or as noted herein. [See torch restrictions herein]. Use manufacturer approved liquid membrane system product, Soprema, 'Alsan' system or equal for flashing condition as required by the manufacturer as noted or not.
 3. Other Flashing Designation: Manufacturers approved details for 20-year warranty.

ROOFING SYSTEM SCHEDULES

The contractor's quote must match the roof system including all components and application procedures [cover board, fasteners, membrane and etc.]. The roofing schedules set the parameters for the roof system assembly and its application procedures.

ROOF SYSTEM [Modified]
Area as shown – Metal Deck
Remove existing roof system down to the existing Metal Deck

Deck, Prep:	See deck preparation.
Insulation System:	Two layers, flat stock, polyiso, First layer 2 inches thick, Second layer 1 ½ inches thick [total R=20], mechanically fastened to the metal deck, including saddles.
Cover Board:	Top layer, Adhered to the insulation/saddles in adhesive [low rise foam]
Base/Ply Sheet:	One ply SBS smooth modified heat welded applied to the cover board.
Cap Sheet:	One ply, mineral surfaced SBS modified fire rated sheet, heat welded applied to the base ply [see note on combustible materials].

2.2 Sheet Materials [Modified/Felts/Membrane]

- A. SBS Base/Ply Sheet: ASTM D 6164, Type I, Grade S, non-woven polyester reinforced mat coated with SBS polymer modified asphalt, 90-138 mils thick, smooth surfaced, both sides surfaced with a heat weldable surface. Soprema, Modified, 'Sopralene Flam 180 or Firestone, Modified, SBS Poly Torch Base or JM Modified, Dyna Weld Base.
- B. SBS Cap Sheet: ASTM D 6164, Type I, Grade G, non-woven polyester reinforced mat which may be enhanced with fiberglass strands/scrim, 130-160 mils thick, granular surfaced, coated only with SBS polymer modified asphalt and fire retardant additives. One side surfaced with a heat weldable surface and the exposed to view side surfaced with **white** ceramic granules. Soprema, Modified, Sopralene Flam180 FRGR' or Firestone, Modified, SBS FR Torch or JM Dyna Weld Cap.
- C. SBS Flashing Sheets, [two ply system]: ASTM D 6164, **First ply**, a layer of non-woven polyester, smooth surfaced mat coated with SBS polymer modified asphalt. One side surfaced with a self-adhered [over combustibles] or heat weldable surface. **Top ply**, a layer of non-woven polyester granular surfaced mat which may be enhanced with fiberglass coated on both sides by SBS polymer modified asphalt. One side surfaced with a heat weldable or sanded surface [over combustibles] and the exposed to view side surfaced with **white** ceramic granules.

2.3 Bituminous Materials

- A. Asphalt Primer: ASTM D 41, solvent or water-based-use water based above 35 degrees F and raising.
- B. Plastic Cement, asbestos free as recommended by the manufacturer.
- C. Modified Flashing Cement: ASTM D 4586, type I, MBR Flashing Cement, elastomeric adhesive specially formulated to be compatible with SBS modified products.

2.4 Insulation and Cover Board

General: All flat stock insulation or cover board from the same manufacturer. Board configuration: 48 inches x 96 inches [mechanically fastened] or 48 inches x 48 inches for adhered applied. Mixing of insulation panels from different manufacturers is not acceptable. Insulation shall meet FMG 4450.

- A. Flat/Tapered Board Stock [includes infill/ tapered saddles]: ASTM C1289, polyiso, rigid board; type II, class 1, non-asphaltic, glass fiber reinforced organic facers on both sides, square edges; minimum 20 psi [grade 2], compressive strength, size as approved for application and as supplied by the roof membrane manufacturer. Thickness/slope as indicated in roofing schedule.
 - 1. Saddles: Each side of the saddle width shall be minimum 1/4 [25%] of the drain to drain length as applicable for conditions. Saddle insulation shall be sloped at ½ inch per foot.
 - 2. Drains: Tapered min. 1/4 inch per foot slope drain sumps are required at all drains.

- B. Cover Board, Flat Stock, Modified [top layer over new insulation and saddles]: ASTM C 1278 USG, Securerock, ¼ inch thick, square edges, homogenous composition.

2.5 Cants/Edge

- A. Cant and Tapered Edge Strips: Perlite, fire resistant, performed to 45 degree angle and 18" long tapered edge strip, tapered front to back as required by the manufacturer.

2.6 Insulation Adhesive

- A. Insulation Adhesive: Low rise, two part, moisture cured, polyurethane based, low odor, Soprema, Duotack, Firestone, ISO Twin Pack or JM, Urethane adhesive as approved and supplied by the manufacturer.

2.7 Accessories/Roof Specialties

General: Fasteners/Anchors: strength, type and configuration must meet the required pull test resistance for each attachment application. Fasteners rate and pattern must be FMG or local code approved to meet the intent of the wind uplift rating specified. The contractor shall determine fastener lengths, minimum embedment: steel-3/4 in., concrete/concrete block-1 1/4in., gypsum 2 inches and wood 1 1/4 in. Fastener manufacturers listed are ITW Buildex, IWT Red Head and TruFast or equal.

- A. Summary of items and requirements are as follows:
 - 1. Roofing and Other Nails: square or round head, ring shanked galvanized or non-ferrous type, length and diameter as required to suit application.
 - 2. Other Fasteners:
 - a. Metal Counterflashing and other LG metal sheets to Wood, ITW Buildex, 'Scots Tek's' [AB point] stainless steel-hex head, ¼ in., corrosion resistance steel shank with EPDM washer.
 - b. New -Existing Wood Members or New-Existing Nailers to Steel, ITW Buildex, # 14 or ¼ in. tek/ 3, 4.5 or 5, hex washer head, corrosion resistant self-drilling steel fastener [pre-drill holes and countersink head-max. wood thickness 7 inches].
 - c. New -Existing Wood Members or New-Existing Nailers to Metal Decking, TruFast, #14 HD, phillips head, corrosion resistant self drilling steel roof fastener .
 - d. Metal Counterflashing and Other LG Sheet Metal [exposed] to Masonry, ITW Red Head, ¼ in., 'Scots Tapcon', stainless steel-hex head, HL treads, corrosion resistant steel shank, with EPDM washer.
 - e. Termination Bars [exposed] to Masonry, ITW Red Head, ¼ in., 'Scots Tapcon', stainless steel-hex head, HL treads, corrosion resistant steel shank, with EPDM washer.
 - f. Metal Sheets or Metal Decking to Metal Decking, #10, ITW Buildex, ' tek/ 1', hex washer head, ABOT self-tapping with corrosion resistant steel shank.
 - g. Metal Decking to Metal Joists, #14 or 1/4 in., ITW Buildex, ' tek/ 4 or 4.5 hex washer head, self tapping with corrosion resistant steel shank.
 - h. Wood Members/Nailers to Masonry: ITW Red Head, ¼ in. 'tapcon' steel anchor, corrosion resistant, pre-drilled and countersink head - max wood thickness 5 inches required. Or use TruFast, #14, HD phillips head, corrosion resistance steel roof fastener.
 - i. General Purpose Stainless Steel: Series 304 fasteners, with or w/out EPDM washers.
 - 3. Pitch Pans: Pre-finished 24 gauge stainless steel, soldered together with 4" roof flange and 4" height or size required for condition, only use if liquid flashing system not applicable.
 - 4. Continuous Cleats: Galvanized steel, 22 gauge.

5. Counter-flashing: 16 oz. copper or 24 gauge pre-finished galvanized, length as shown. CF corners shall be mitered and sealed with sealant
6. Pipe Supports/Hangers: Manufactured by Portable Pipe Hangers, Adjustable, stainless metal components, polypropylene base, 'type SS8 – C or R [up to 2 ½ pipes] or PP10' [up to 3 ½ pipes] or equal, as required for conditions.
7. Termination Bars: Aluminum 1.3" wide, 10" long, 1/8" thick bars with integral caulk edge.
8. Roof Drain Accessories: bolts, clamping ring, strainers, size and type as required to accommodate existing drains.
9. Rail Curbs: Manufactured by Pate, type es-1, es-2 or es-5, as required for condition, size as required by unit base size.
10. Bib Metal: 24 gauge stainless steel, minimum 4" wide.
11. Pourable Sealer: Polyurethane, manufacturer's standard.
12. Pipe supports for Condensate Piping: Manufactured by Advanced Support Products, EcoCurb or Equal.
13. Wind-Rated Coping [pre-manufactured or ANSI/SPRE/FM 4435 ES-1 shop fabricated]: Pre-finished 24 gauge galvanized steel coping cap, without exposed fasteners cleated on both sides, [unless shop fabricated ES-1 approval required fasteners on one or both sides to meet design pressures] tapered style [toward roof], butt type joints with concealed splice plates which must allow the cap to expand and contract freely while locked in place with cleats on sides of a 20 or 16 gauge metal seat/chair plates anchored to nailer/substrate. Condition must allow for moisture to drain off edges without moisture to enter under coping cap, ANSI/SPRI/FM 4435 ES-1 tested and approved, size and shape as shown, roof membrane manufacturer approved and warranted for minimum 110 mph wind resistance or higher to meet design pressures and a 20 year finish, leak proof warranty by the metal/roof materials manufacturer. Pre-Manufactured by Metal-Era's 'Perma-Tite' series or equal.
14. Drain Inserts: Manufactured or approved by the membrane manufacturer, extruded aluminum body, cast dome with stainless steel clamping ring and a watertight rubber seal, size as required.
15. Walkway Pads: manufacturer standard.
16. Insulation Fasteners/Plate, Metal Deck: Steel, HD, white, phillips head, superior corrosion resistance with a 3 in. round metal cap, meeting FMG 4450 standard requirements and must be supplied or approved by the roofing manufacture for their warranty.
17. Breather Roof Vents: Manufactured by OMG,'Olyvent', Aluminum, one-way, 8 inches high, with a nitrile rubber valve.
18. Vent Pipe Extenders: Manufactured by Tubos, Clearwater, FL, PVC pipe extenders.

2.8 Sheet Metal

General: Roof membrane manufacturer supplied/approved components [roof coping] must be used, these sheet metal components must be tested and approved in accordance with ANSI/SPRI/FM 4435 ES-1 test methods and must be included into the roof warranty. Fabricated by Metal Panel System, Architectural Products or Dimensional Metals, all other metal shall be shop fabricated in accordance with SMACNA 6th Edition or other details as shown. Metal shops/fabricators that have approved ANSI/SPRI ES-1 tested copings or edges can be used in lieu of pre-manufactured components only if the tested components are equal to in size or larger and the shape/profile is the same as shown on the drawing and can meet the wind resistance requirements. The metal fabricator must provide the approved component with the wind resistance as specified herein to the RDA Group for approval.

- A. Pre-Finished Metal: Galvanized steel, ASTM A755/A755M grade A, 24 gauge, hot dipped, zinc coated G90, primed and finished one side with a fluoropolymer Kynar 500 coating and a wash coat applied to the reverse side, 20 year warranty covering fade, chalking and film integrity. Provided by Interis Metals, Petersen or others, colors as selected by the RDA Group and owner.
- B. Lead: ASTM B 749, 2 1/2 pounds per square foot [roof drain and vent pipe flashing-modified].
- C. Stainless Steel: ASTM A 240/A 240M, dead soft fully annealed, smooth 24 gauge, type/grade 304 and 316 [exposed to view].
- D. Copper: ASTM 101, lead-coated copper.

2.9 Sealant

- A. General use: ASTM C 920, Tremco's 'Dymonic FC' polyurethane, non- staining, non-shrinking, non sagging and ultra-violet resistant, clear or to match surrounding existing color.

PART 3 EXECUTION

3.1 Examination/Level Surface Conditions

- A. Verify that surfaces and site conditions are ready to receive work. Verify that deck [total removed sections] is clean, dry and smooth, free of depressions, irregularities, or projections, **properly leveled**, start of work constitutes acceptance of conditions.
- B. Areas of substrate where ponding water will occur [1in. deep or greater one hour after rainfall] shall be built-up in accordance with the leveling fill manufacturer's recommendations prior to the installation of the final ply sheet, string leveling deck/insulation prior to final ply recommended. Water test may be required upon request of RDA group. Failure to perform this action could result in total roof removal at contractor expense.

3.2 Protection

- A. Protect building surfaces/interior spaces against damage from roofing work. It is the contractor's responsibility to take any necessary actions to prevent construction-related leaks, to include but not limited to repairing watertight existing surrounding roofing scheduled to be replaced or overlaid. Surround roofing areas include roof top material storage areas, workers roof top access to from roofing work site areas and any drainage system [roof drain-scuppers] leak issues located in work area. Contractor must include the cost to deal with these existing leak sources into the overall project, unless the Owner/RDA is made aware of these leak sources prior to commencement of the project.
- B. Provide, erect barricades, guardrails as required by applicable regulatory advisory to protect occupants of building and workers.
- C. Cover all drains and other openings intended for drainage during construction to prevent clogging of system, remove at the end of each day to allow for drainage.
- D. Contractor is required to install a temporary roof over areas that the sand/concrete material has been removed, prior to installing new roof system.

3.3 Deck Preparation

- A. Metal Deck: [Where removal of total roof system has taken place]. Fasten any loose or non- welded sections. Replace or retro-fit [overlay] all rusted metal decking with new panels, match existing deck profiles and gauge, so to product a flat surface, fasten in place 15 inches on center in all directions [end laps/side laps], overlapping good decking or structural member 6 inches. Holes or weak areas, less than 1 square foot or 12 inches

in dia. and deck tie-ins shall be covered with 20 gauge steel sheets fastened in place in all /edges overlapping good decking 6 inches [min. 4 fasteners or 18 inches on center fastening].

- B. Coat rusted deck sections with a rust exhibitor where panels have over 35% of the surface area rusted, prior to installation of roof system.

3.4 Insulation/Cover Board

General: Secure insulation/cover board to roof deck to the requirements of FMG loss Prevention Data Sheet 1-28 and 1-29 to include additional securement at the corners and perimeters.

- A. Metal Deck: Mechanically fasten the insulation board layers to the existing deck in accordance with the Manufacturer's /Contractors/Roof/Building Envelope Consultant approved layout [two layer configuration], including the tapered saddles. Install insulation with long joints in a straight line with end joints staggered. Stagger joints of top layers from bottom layers/saddles, minimum 12 inches. Install the top cover board in adhesive perpendicular to roof slope to the new insulation board with joints staggered [as applicable] no less than 24 inches in all directions from joints below in accordance with windstorm resistance classification securement pattern and insulation manufacturer's instructions. Two opposite edges on any panel shall be supported on the flutes minimum 1 1/2 in. where total removal has taken place. Any portion of an insulation board that falls within the calculated perimeter or corner area has the increased securement applied over the entire board.
- B. Apply no more insulation than can be sealed watertight with roofing membrane in the same day. Cut insulation to fit neatly to perimeter blocking and around penetrations through the roof, maximum joint width 3/8 in.
- C. All ventilators, A/C unit curbs, supports etc. [square or rectangle] will have a tapered edge strip [formed as a saddle] placed around the high side of unit to slope water from unit. Ventilators, A/C unit, supports etc. curbs over 2' wide will require insulation saddles sloped 1/2" per foot.
- D. Sump around all roof drains unless otherwise noted on the drawings, as applicable. Provide adequate separation of insulation between hot exhaust stacks.
- E. **Level existing deck low areas or uneven with material as per manufacturer's guidelines prior to installing roof system.**

3.5 Asphalt Primer Application

- A. Prime all dissimilar surfaces [metal, concrete, etc] which asphalt or membrane will come in contact. Apply at rate of 150-200 sq. ft. per gallon. Ensure that the primer is **completely dry** before any insulation or membrane can be installed.

3.6 Membrane Application [Modified]

General: Install roofing sheets as per manufacturer's recommendations and the following requirements [see roof schedule]. The cap ply must be installed no longer than 5 working days after the installation of the base ply. Ensure the RDA Group has inspected the base ply installation prior to applying the cap sheet.

- A. Apply the SBS modified smooth membrane over the cover board. Shingle fashion, starting at the low edge of the roof or at roof drains, apply one full width sheet of the modified membrane being sure to maintain 3-4 inch side and 6 inch end laps over preceding sheets, stagger end laps 12 inches. Align sheets [chalk lines] to maintain uniform laps. The sheet must be firmly and uniformly torched over the entire surface.
- B. Apply the SBS modified cap sheet using one full width sheet to maintain 3-4 inch side and 6 inch end laps over preceding sheets with staggered laps 12 inches. The sheet

must be firmly and uniformly torched. Apply sheets smooth without voids, free from air pockets, wrinkles, fishmouths, or tears, and avoid seams intersecting into drains. Extend roofing plies over and terminate above cants strips [as applicable]. **[use cement applied or self-adhered membrane around combustible material, no torching].**

- C. Special application shall be exercised at all T-joints [3 or more membranes], follow manufacturers printed instructions.

3.7 Flashing Application [Modified] – Vertical Surfaces, Edges, Pipes and Drains

General: Install flashing sheets over cants strips and other vertical surfaces, at edges and penetrations through roof as per manufacture's recommendations, requirements of FMG loss Prevention Data Sheet 1-49 including details and the following requirements.

- A. Remove loose or unsecured flashings, mineral surfaced or coated flashings and excessive asphalt from walls, curbs etc. to provide a smooth, sound surface for new flashings.
- B. Vertical Surface
 - 1. Adhere each layer of roofing ply flashing [base layer of smooth surfaced and exposed to view layer of a granular surfaced ply sheet] in strips four-six feet long [max] on the primed vertical surfaces extending onto the flat field surface of the roof minimum four inches [six inches for the cap sheet] then heat weld or cement the plies ply in place. **Use cement applied or self-adhered base membrane when adhering to roof top unit curbs or combustible material, no torching.** Firmly press flashing into position extending up walls or parapets minimum of 8 inches, [max. 24] inches above roof surface and nail cap sheet on 8 in. centers or install a termination bar at the top [as applicable]. Side laps shall be three inches and shall be staggered a minimum of twelve inches from the proceeding ply below. Flashing shall never be installed above any thru-wall metal flashing unless authorized by the RDA Group. Seam all corners and seams as per manufacturer recommendations.
 - 2. Liquid flashing system shall be installed with a polyester scrim in a multi layer components configuration where noted or as required by condition per the manufacturer.
- C. Flanges [curbs, flues, etc]
 - 1. Primed all metal flanges and set primed metal flanges on top of smooth surfaced SBS sheet or on top of the modified cap, strip-in flange with 12" wide smooth or cap sheet, as applicable, anchor in place as per manufacturer's guidelines. Manufactured supplied edges shall be installed in accordance with written instructions.
- D. Pipes
 - 1. All plumbing vents shall be flashed with a one piece lead flange and sleeve installed over existing pipe, striped-in lead roof flanges with the modified membrane as per manufacturer recommendations. Extend short pipes to minimum 8 inches above finished roof surface. All other pipes that cannot be fitted with a lead flashing shall be flashed using liquid material/system as per manufacturer guidelines and as specified herein.
- E. Drains
 - 1. Provide primed new 3' x 3' leads targets set onto the base ply in water cut-off mastic, then strip-in 6 inch beyond lead edges. Anchor clamping rings over the lead flashing/cap ply with the lead minimum 1 inch turned down into the drain bowl. Install modified cap ply with several cuts, adhered in place to conform to the drain bowl diameter. Provide modified membrane cap ply target over drain, if a field ply seam intersects the drain.

3.8 Installation of Sheet Metal/Accessories/Roof Specialties

General: Sheet metal items shall be installed in accordance with manufacturers and NRCA's/SMACNA, FMG recommendations and details from their current manual.

- A. Continuous cleat [for non-pre-manufactured metal components]: Cleats shall not exceed 12 feet in length; allow a ¼" gap between pieces. Fasten cleat to wood nailer or deck as applicable at 6 inches on center with corrosion resistant annular threaded nails (3/16 in. head), long enough to penetrate the wood 1 ¼ in. or metal ¾ in.
- B. Pitch pans shall have mortar installed in the bottom of pitch pans with polyurethane pourable sealer [2 inches min.] filled to the top of the pan, then slope.
- C. Roof drain clamp rings/bolts where distorted, corroded or too short, shall be replaced. Clamp rings shall be clean of all asphalt and other deposits. Provide new drain strainers where missing.
- D. Bib Flashing shall be installed around all roof top units/supports and all items that cannot be removed and reinstalled. Position under unit curb and anchor to unit with corrosion resistance fasteners with EPDM washers at 12 inches on center unless otherwise noted.
- E. Rail curbs and pipe supports shall be installed in accordance with the manufacturer's instructions. Place curbs on deck and position curbs ends to allow water to flow toward drains or gutters.
- F. Equipment enclosure shall have mortar installed in the bottom with polyurethane pourable sealer [2 in. depth minimum] filled. Seal pipes that exit enclosure with sealant.
- G. Counter-flashing [CF] that is surfaced mounted shall be attached with concrete self-tapping [Scots tapcon] or wood fasteners, as applicable fitted with an EPDM washer at 12 inches on center, 1 in. minimum embedment. Apply a bead of sealant on the top of 45 degree angle lip of the metal flashing. CF that is placed in existing reglet shall be installed with lead anchors, re-cut reglet as necessary. Apply a bead of sealant where metal enters the masonry. CF that is made of copper over existing copper can have the existing CF cut back and a new copper CF piece pop riveted and solder in place. All CF shall overlap base flashing a minimum of three inches and shall terminate no lower than 4" above finished roof surface, unless approved by the manufacturer.
- H. Termination bars shall be placed no more then 1 1/2 inches down from top of base flashing and be fastened at 6 inches o. c with 1/4 in. diameter self-tapping [Scots tapcon] or wood steel fasteners, as applicable, 1 in. minimum embedment. Provide sealant at top edge of bars.
- I. Pipe supports shall be installed in accordance with manufacturer's instructions and be spaced no longer than ten feet.
- J. Wind Rated pre-Manufactured /shop formed ES-1 approved coping sections shall be jointed together with a butt type joint with concealed splice located underneath the 10 to 12 foot long panels, which must allow to expand and contract freely while locked in place. Provide factory-fabricated corners, intersections and ends. Coping metal seat/chair to be anchored to wood nailer or surface material at splice joints and within the coping panel [approx. every four feet on center, maximum], with steel fasteners or other fasteners to meet the wind resistance rating pressures as shown and as recommended by coping manufacturer. Coping shall have a 4 in. vertical end flange where terminating into wall, counter-flash flanges.
- K. Install breather roof vents and drain inserts in accordance with manufacturer's instructions or as shown on the drawings.

3.9 Heat Weld Safety

- A. Measures to be implemented by the contractor are to minimize the possibility of fire and to provide a safe work environment. It is the responsibility of the contractor performing any hot /torch work to comply with the safety provisions of the National Fire Codes pertaining to such work along with other requirements specified herein. All torched-applied material shall be in accordance with FM 1-33 and NRCA requirements. Never torch apply membrane to any flammable substrate. Crew members handling torches shall be trained by an authorized certified torch applicator [CERTA] trainer. One crewmember shall watch for fires or smoldering materials on all areas of the roof during torching application, **an infrared device that measures the material temperature shall be used for this watch. The watch shall continue one hour after roofing material application has been completed for the day checking all materials with the infrared device.**
- B. In the event of a fire of any size, contractor shall notify the Local Fire Department.

3.10 Water cut-off [night seals]

- A. At the end of the day's work or when precipitation is imminent, a water night seal or other cut-off waterproof protection shall be provided to ensure a 100 % watertight condition is obtained, between the new and existing conditions, to prevent water from penetrating behind or beneath the new roofing remove cut-off prior to resuming the installation of the roofing system.

3.11 Cleaning

- A. Remove bituminous markings and asphalt from finished surfaces with ProSoco's, Sure Klean, asphalt and tar remover.
- B. In areas where finished surfaces are soiled by any other source of soiling caused by work of this section, consult manufacturer for cleaning advice.

END OF SECTION

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SECTION 07 61 00
ARCHITECTURAL METAL ROOF PANELS

PART 1 GENERAL

1.1 Work Includes, but not limited to:

- A. Preformed, pre-finished metal roofing and flashings; pre-finished metal soffits.
- B. Miscellaneous trim, closures ridge cap, clips and accessories items. All tape and sealant required along with attachment hardware.
- C. Underlayment protective membrane.

1.2 Quality Assurance

- A. The manufacturer must be regularly engaged in producing metal roof/wall panels with a minimum 10 years' experience. Manufacturer's rep shall inspect the installation of the roof system several times during work activates.

1.3 Precautions

- A. Stack all materials to prevent damage and allow for ventilation and drainage, store in clean dry place. Do not install material when rain or snow is falling.

1.4 Sequencing/Scheduling and Protection

- A. Building space underneath roof work is utilized by on-going operations. Coordinate all work with owner including, material storage and contractor parking. Owner's approval required before proceeding with the work. **Contractor must provide overhead protection for owner's workers from falling materials/debris at building entry points.**
- B. Coordinate the work of installing all associated items in such sequence that will not necessitate movement of workers and equipment over completed roof areas.
- C. Sequence work so that all membrane, flashing, etc. is installed to produce a watertight condition as work progresses.

1.5 Applicable References

General: These references form a part of the specifications.

- A. ASTM A 755, Pre-finished, galvanized steel, grade A, aluminum-zinc alloy-coated by the hot dip process, G90, yield strength 50 KSI.
- B. AISC Manual of Steel construction.
- C. ASTM A 792/A 792M, Grade 50, Coating Class AZ50, Sheet steel, aluminum-zinc alloy-coated by the hot dip process.
- D. ASTM A 653, Steel sheet zinc coated by the hot dip process [galvalume].
- E. UL 580, Class UL 90, Wind uplift for architectural metal roof panels.
- F. ASTM D1970 Self-Adhered Membrane.
- G. [SMACNA] Sheet Metal and Air Conditioning Contractors Association- 6th Edition or Current Manual
- H. [OSHA] Occupational Safety and Health Administration, Guidelines.

1.6 Submittals

- A. Panel catalog cut [roof panels & accessories] layout shop drawings, underlayment and panel color selection.

1.7 Related Sections

- A. Section 06 10 53 - Rough Carpentry for roofing

1.8 Manufacturer's and Contractor Warranties

- A. Provide a manufacturer's warranty for both repairs/replacements due to any faults in the material and workmanship [Total System Responsibility]. Any repairs/replacement due to normal wear and tear, panel defects, workmanship defects and damage due to winds up to **55 MPH [and the design wind pressure resistance requirements]** shall be performed at no charge to the owner through the period of the warranty. Roof Warranty shall be a no dollar limit type with no penal sum and cover, clips, fasteners, accessories, metal flashings and components of the metal roof system, regardless of the manufacture. When a contractor warranty is provided or implied, this warranty must bind the manufacturer and contractor, for the terms of their agreement, to perform any necessary repairs/replacements for the term of the contractor's warranty.
 - 1. Roof panels metal and accessories shall be warranted for [20] years by the manufacturer.
 - 2. Roof panel film integrity finish shall be warranted for [30] years for paint chalk and fade by the manufacturer's standard warranty.

PART 2 PRODUCTS

2.1 Manufacture/Panel Type

- A. Architectural Metal Standing Seam Roof Panels: MBCI, 'LOKSEAM' or Firestone Building Products, Una-Clad UC-14, snap together joint system.
- B. Architectural Metal Soffit Panels: MBCI Artisan Series, or Firestone Building Products, Una-Clad UC-500, flush soffit panels.

2.2 Sheet Material Roof/Soffit Panels

- A. Standing seam pre-finished roof panels shall be 24 gage hot dipped galvanized metal [G90], extra smooth, with flat ribs/low bead stiffeners, tension-leveled, 16 inches wide, joint snapped together system, with 1 ¾ inch high seam with thermally factory applied in-seam sealant. Roof panels shall be factory formed with longest length possible and have been tested with the manufacturer to meet the wind design pressures as noted.
- B. Flush design pre-finished soffit panels shall be 24 gage hot dipped galvanized metal [G90], extra smooth, interlocking leg and concealed fastening, 16 inches wide, joint snapped together system, with 1 inch high seam with thermally factory applied in-seam sealant. Soffit panels shall be factory formed with longest length possible and have been tested with the manufacturer to meet the wind design pressures as noted.
- C. Panel finish shall be full strength [fluorocarbon] Kynar 500 coating [2 coats], applied by the manufacturer, with a top side dry film thickness between .70 to 1.0 mil over a prime coat with a striated standard finish. Bottom side shall be coated with primer.
 - 1. Colors shall be from standard colors supplied by the manufacturer.
- D. Pre-finished flashings shall be 24 or 22 gage [as noted] hot dipped galvanized metal [G90] with same finish as the panels.
- E. Z closure clips and standing seam clip for metal roof shall be 18 gage hot dipped galvanized [G90].

2.3 Accessory Materials

- A. Fasteners: Manufactured standard corrosion resistance, use stainless steel rivets and fastener with sealed EPDM washers for any exposed fasteners.

- B. Components: Components shall be compatible with the roof panels system. Flashing, edge trim, metal closure strips, caps, closed-cell molded closures and pre-fabricated molded pipe flashings [with metal flanged base ring] shall be as recommended by the manufacturer. Concealed clips assembly shall be corrosion resistance galvanized metal allowing for panel movement. Tapes shall be permanently elastic, non-sagging, non-toxic, non-staining 100% solid sealing tape.
- C. Clips for roof panels shall be made of galvanized steel and designed to be mechanically integrated into the roof panel seam thus allowing for thermal panel movement while secured. Clips must be provided by the manufacturer of the roof panel.
- D. Self Adhered Ice and Water Shield Membrane: ASTM D 1970, Manufactured by PolyGlass, 'Polystick MTS Plus' or Firestone Clad-Gard SA, 60 mils thick, high temperature resistance, fiberglass reinforced embedded in a modified compound with a self-adhered back surface with strippable paper.

PART 3 EXECUTION

3.1 Surface/Deck Preparation

- A. Clean/prep surface of existing decking to allow for an acceptable substrate for the underlayment and roof panels. Insure all new or existing decking is level and smooth after existing deck/fasteners/underlayment is removed.
- B. Replace any deteriorated wood decking
- C. Install underlayment/protective membrane over existing wood deck to cover the entire roof deck area.

3.2 Metal Roof Protective Membrane Installation

- A. Install the self-adhered protective membrane over the entire deck surface. Lap end joint 6 inches and 3 inches for horizontal side joints. Horizontal side laps shall be back-nailed @ 12 inches on center in the selvage edge, roll all selvage edge and end laps for full contact.

3.3 Roof/Soffit Panel Installation

General: Follow manufacturers printed instructions and SMACNA details for installation standards. Install panels to form a watertight condition and allow for thermal movements with panels true and level with slope as indicated. Removal plastic film prior to installation.

- A. Roof panels shall be snapped in place around each clip that is fastened into the deck system in accordance with the design wind resistance loads as shown [anchoring spacing data for clips and panel eave fastening must be provided by the panel manufacturer], must be verified and approved from engineering requirements as submitted with the shop drawings.
- B. Soffit panels shall be secured in place at concealed fastening leg that is fastened into the deck system in accordance with the design wind resistance loads as shown [anchoring spacing data must be provided by the panel manufacturer], must be verified and approved from engineering requirements as submitted with the shop drawings.
- C. Do not place pipe penetrations thru seams of panels.
- D. Attach panels using the manufacturers supplied accessories, self-tapping fasteners, closures, caps, clips and etc. as detailed in the shop drawings.

3.4 Accessory Installation

- A. Clips for roof panels shall be installed with minimum two #12 fasteners per clip anchored to the deck with fasteners type as recommended by the manufacturer. Apply roof cement

over all clip fasteners and any other deck penetration fasteners, unless fasteners contain an EPDM washer. Spacing in accordance with wind design loads resistance as shown and provided by the manufacturer.

3.5 Clean up

- A. Clean up all debris resulting from each day's work. Clean exposed panels surface with recommended cleaners.

END OF SECTION

SECTION 26 41 00
LIGHTNING PROTECTION SYSTEM FOR ROOFING

PART 1 GENERAL

1.1 Work Includes, but not limited to:

- A. Remove, upgrade per standard and reinstall existing lightning protection system after reroofing has been completed. Items that cannot be reused must be identified prior to bidding.

1.2 Applicable References

- A. The following references form a part of this specification.
 - 1. NFPA – 780 Standard.
 - 2. UL- 96 Standard

1.3 Quality Assurance

- A. Installer must be a Lightning Protection Institute [LPI] certified master installer. Perform work in accordance with Local Building Code.

PART 2 PRODUCTS

2.1 System Design

General: System consists of air terminals, interconnecting conductors, down conductors, grounding and surge protection.

- A. Design shall be per current NFPA 780 requirements, with class I materials. Materials that form electrolytic in the present of moisture shall not be used.
- B. Grounding system and down conductors determined to meet the overall design requirement shall remain in place and shall be interconnected to the new or reinstalled system.
- C. New designed, air terminal minimum 10 inch projection above the object protected, maximum 20 feet spacing on the roof or perimeter edges and maximum 24 inches from roof edges and outside corners. Mid-roof areas are to be provided with air terminals of sufficient amount/height to insure the entire roof area is cover by a zone of protection as afforded by a 150 radius sphere.

PART 3 EXECUTION

3.1 Examination

- A. Inspect existing lightning protection materials to be reused and store in an area where materials do not interfere with the roof installation. Only materials that are in good shape shall be reused. **Owner must be informed of material that cannot be reused along with an associated estimate of cost prior to bidding.**

3.2 Installation

General: Component design shall be in accordance with UL 96 standard.

- A. All fasteners necessary to maintain position and hold conductors in place. Do not anchor clips thru roofing install conductors on coping/edge vertical flanges, as applicable.

3.3 Inspection/Master Label

- A. Upon completion if there is an existing UL master Label that the owner will provide, the project must receive a reconditioned master certificate. If there is no documentation for the concealed work and grounding system, work will receive a limited scope certification.

END OF SECTION