MCKINLEY COMMUNITY OUTREACH CENTER ROOF REPLACEMENT

Advertisement, Bid, Contract and Specifications

Lake County Board of Commissioners

Issue Date: August 3, 2022

DRAFT _____

BID__X___

CONTRACT_____

LAKE COUNTY OFFICIALS

BOARD OF LAKE COUNTY COMMISSIONERS

John R. Hamercheck, President
John Plecnik, Vice President
Mark Tyler, Commissioner

Jennifer Bell, Clerk

PROSECUTING ATTORNEY

Charles E. Coulson

ADMINISTRATION

Jason W. Boyd, County Administrator
Mike Matas, Budget Director

OWNER'S REPRESENTATIVE

Tim Hollo, The Garland Company

LAKE COUNTY PREVAILING WAGE COORDINATOR

Erin Fink-Rohde, P.E.

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LEGAL NOTICE TO BIDDERS

Sealed bids will be received by the Board of County Commissioners for Lake County, Ohio (the County) at their office in the **New Lake County Administration Center, 105 Main Street, 5th Floor, Suite 512, Painesville, Ohio 44077 (**contact 440-350-2751 or 440-350-2979 with any questions regarding the new location); up to the hour of 11:00 AM Local Time on **Wednesday, August 3, 2022,** and read publicly thereafter in the Commissioners' Chambers at the above address, for the following improvement project (the Project):

McKinley Community Outreach Center Roof Replacement
Engineer's Estimate of Cost: $900,000.00

The work covered by the plans and specifications includes: tearing off all roofing materials to the associated decking, installing a 2-ply modified system using hot asphalt and cold adhesive. Installing a flood of coal tar and gravel. Installing new metal trim throughout including a standing seam metal roof.
It is intended that the Project will be funded with moneys received by the County from an award under the American Recovery Plan Act - Coronavirus State and Local Fiscal Recovery Fund. This Notice is issued under the provisions for contracting in the Ohio Revised Code and under applicable federal procurement requirements. All bids submitted in response to this Notice shall comply with federal and Ohio law. The laws of the State of Ohio will govern any disputes arising under this Notice and subsequent contract.

A non-mandatory pre-bid meeting is scheduled for July 20, 2022 at 10:00 AM. Meet at the main entrance of the McKinley Community Outreach Center at 1200 Lost Nation Rd., Willoughby, OH 44094.

All work under this contract shall be completed within 180 Days of Notice to Proceed.

Said improvements comprising the Project shall be in accordance with specifications and proposal forms on file with the Clerk of the Board of Lake County Commissioners. This Notice and the Bid Package are available online at https://www.lakecountyohio.gov/commissioners-office/legal-notices-to-bidders/. The Bid Package including copies of plans and specifications may also be obtained at the office of Lake County Planning and Community Development, 105 Main Street, Building B, 4th Floor, Painesville, Ohio 44077, during weekday business hours from 8:00 AM to 4:30 PM, for a non-refundable fee of $20.00. Checks are to be made payable to Lake County Planning and Community Development.

Bids shall be addressed to the Board of Lake County Commissioners, Lake County Administration Center, 105 Main Street, 5th Floor, Suite 512, Painesville, Ohio 44077, Attention: Jennifer Bell and marked "**McKinley Community Outreach Center Roof Replacement".** Bidders must submit a complete, signed and sealed bid, which at a minimum, should include all of the pages of the Bid Package that require the bidder to respond and any additional information required by the Bid Package must be submitted on paper and shall be signed by a representative authorized to bind the bidder.

Inquiries must be submitted in writing to Tim Hollo, The Garland Company, at thollo@garlandind.com. The deadline for questions shall be 1:00 PM, July 28, 2022.

Pursuant to R.C. 153.01 et. seq., the bid must be accompanied by an original sealed document in the form of a bond for the full amount (100%) of the bid, **OR** by a certified check, cashier's check, or irrevocable letter of credit equal to ten percent (10%) of the amount bid, drawn on a solvent bank located in Lake County and payable to the Treasurer of Lake County, Ohio, as surety that if the bid is accepted, a contract will be entered into and its performance properly secured. Should any bid be rejected said surety shall forthwith be returned to the bidder and should any bid be accepted such bid bond, certified check, cashier's check, or letter of credit will be returned to the bidder upon proper execution and securing of the contract.

No bidder shall be considered lowest and best or eligible to be awarded the contract to which this Notice or Bid Specifications apply, if the bidder is listed on the Auditor of State's Database as having a "Finding of Recovery" as that term is defined in R.C. 9.24.

Bids shall be subject to the conditions that the right is reserved to hold bids for a period not longer than sixty (60) days after date of bid opening and/or to award the contract at any time during said period.

The successful bidder will be required to execute the contract within ten (10) days after the award of the work to him/her, and he/she shall furnish acceptable bond or surety, if not filed previously to the satisfaction of the County of Lake, Ohio for the faithful performance of said contract in the sum of one hundred percent (100%) of the total amount of the bid. In case of failure to execute the contract as stated or to furnish bond and/or surety, the bidder shall be considered to have abandoned the contract and is then liable for the difference between his/her bid and the next lowest bid, not to exceed ten percent (10%) of the amount bid.

The County reserves the right to reject any or all bids, to waive any and all informalities, and to disregard all non-conforming, nonresponsive or conditional bids, or to increase or decrease or omit any item or items, to waive any and all informalities, and to disregard all nonconforming, nonresponsive or conditional bids. ORC 153.011 may apply. Each bid must contain the full name of every party or all parties submitting the proposal. Each bidder must submit evidence of its experience on projects of similar size and complexity. All contractors and subcontractors shall comply with the equal employment opportunity requirements of Ohio Administrative Code Chapter 123, the Governor's Executive Order of 1972 and Governor's Executive Order 84-9. The contract shall be awarded to the lowest and best bidder.

Wage Rates – Each employee employed by the contractor or any subcontractor and engaged in work on the project under this contract shall be paid prevailing wage rates for Public Improvements as provided by the appropriate Sections of the Ohio Revised Code. For further information, contact the Lake County Prevailing Wage Coordinator 440-350-2013. This shall occur regardless of any contractual relationship which may be said to exist between the contractor or any subcontractor and such employee.

The Prevailing Wage Determination Schedule for this project is available for review at the office of the Owner's Prevailing Wage Coordinator and via the internet at https://wagehour.com.ohio.gov/w3/webwh.nsf/wrlogin/?openform(click on link for Labor and Worker Safety).

Bidders may also access this Legal Notice to Bidders via the internet at www.lakecountyohio.gov, click on ***Legal Notices to Bidders*** in the middle of this page to link to the Legal Notice site and on the Ohio Newspaper Association public notices website, www.publicnoticesohio.com.

BY ORDER OF THE BOARD OF COUNTY COMMISSIONERS in and for Lake County, Ohio.

John R. Hamercheck, President
John Plecnik, Vice President
Mark Tyler, Commissioner
Jennifer Bell, Clerk

PUBLISH: **THE NEWS HERALD- July 15, 2022**
posted on the Lake County Website
posted on Lake County bulletin board
posted on www.publicnoticesohio.com

BID DOCUMENTS AND FORMS

INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

1.1 Sealed bids shall be received by the Owner at the location specified and until the time and date specified in the Legal Notice.

1.2 Each bid shall contain the full name and address of each person or company interested, the bidder shall distinctly so state the fact.

1.3 Bid forms must be completed in ink or by typewriter. Any corrections to the bid forms prior to submission must be initialed by the person signing the bid. Failure to submit any bid form(s) or other required document(s) may be cause for rejection of the bidder's bid at the sole discretion of the Owner.

1.4 Bids by Corporations must be executed in the corporate name by the President, Vice President, or other officer accompanied, by evidence of authority to sign and the corporate seal must be affixed and attested by the Secretary on the Corporate Resolution form.

1.5 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature.

1.6 All names must be typed or printed below the signature.

1.7 The bid shall contain an acknowledgment of receipt of all Addenda.

1.8 If a Bidder wishes to withdraw its bid prior to the opening of bids, it shall state its purpose in writing to the Owner before the time fixed for the opening, and when reached the bid shall be handed to the bidder unread.

1.9 After the opening of bids, no Bidder may withdraw its bid for a period of 60 days.

PART 2 EXAMINATION OF CONTRACT DOCUMENTS

2.1 Before submitting a bid, each Bidder must

A. Examine the Contract Documents thoroughly;

B. Visit the site to familiarize one's self with local conditions that may in any manner affect cost; progress, or performance of the work.

C. Familiarize one's self with Federal, State, and local laws, ordinances, rules and regulations, including the American Rescue Plan Act (ARPA), that may in any manner affect cost, progress or performance of the work; and

D. Study and carefully correlate Bidder's observations with the Contract Documents.

2.2 It is the responsibility of the Bidder to promptly notify the Owner's Representative of all conflicts, errors, ambiguities, or discrepancies that the bidder has discovered in or between the Contract Documents and such other related documents and/or site conditions.

2.3 Reference is made to the Specific Project Requirements for the identification of any reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the work which have been relied upon by the Owner's Representative in preparing the drawings and specifications. Owner will make copies of such reports available to any Bidder requesting them if not made available with the bid documents. These reports are neither guaranteed as to accuracy or completeness; nor are they part of the Contract Documents. Before submitting his bid each Bidder will, at their own expense, make such additional investigations and tests as the Bidder may deem necessary to determine their bid for performance of the work in accordance with the time, price and other terms and conditions of the Contracts Documents.

2.4 Upon request, the Owner will provide each Bidder access to the site to conduct such reasonable investigations and tests as each Bidder deems necessary for submission for its bid.

2.5 The lands upon which the work is to be performed rights-of-way for access thereto, and other lands designated for use by Bidder in performing the work are identified on the drawings.

2.6 The submission of a bid will constitute an incontrovertible representation by the Bidder that they have complied with every requirement of this section and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the work.

2.7 All questions about the meaning or intent of the Bidding and Contract Documents are to be directed to the Owner's Representative in writing. Interpretations or clarifications considered necessary by the Owner's Representative in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by the Owner's Representative as having received the Bidding Documents. Questions received less than 7 days prior to the date for opening Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

PART 4 CONTRACTOR'S QUALIFICATION

4.1 Bidder shall provide information relating to similar projects completed within the past 5 years and shall include a list of projects currently under construction including status and contact person. Bidders experience shall demonstrate capabilities to undertake this type of project in both size and scope.

4.2 Bidder shall own, have rental or lease agreements for, or otherwise have readily available any and all equipment and tools necessary for proper execution of the work. The Owner reserves the right to request lists of equipment or tools available for the project including sources.

4.3 Bidder shall provide pertinent information to the Owner relative to any pending suits or outstanding liens. If no information is provided by the Bidder, the Owner shall assume that any such suits or liens do not exist.

4.4 The Owner may require the same or similar information on any or all subcontractors proposed by the Bidder.

4.5 The Contractor and all Sub-Contractors shall complete the enclosed Responsible Contractor Checklist. Failure to accurately complete the form may result in disqualification of the bid

PART 5 SUBCONTRACTORS

5.1 The Bidder shall state the appropriate contract from the names of all Subcontractors proposed and the items of work they are to be assigned. All work not assigned to Subcontractor shall be assumed by the owner to be performed by the Bidder.

5.2 The successful Bidder shall not subcontract work totaling more than 50% of the total contract.

5.3 The Owner reserves the right to approve all Subcontractors proposed by the Bidder. If the Owner, after due investigation, rejects the use of a proposed Subcontractor, the apparent successful Bidder may either submit an acceptable substitution without increase in bid price or decline substitution and withdraw its bid without sacrificing its bid security. Any listed subcontractor to whom the Owner does not make written objection prior to award of contract, shall be deemed acceptable to the Owner.

5.4 Requests for changes of Subcontractor by the Bidder after the award shall be subject to the Owner's approval and shall not change the contract bid prices.

5.5 No contractor shall be required to employ any Subcontractor, person or organization against whom he has reasonable objection.

PART 6 BID REVIEW BY OWNER

6.1 The Owner reserves the right to reject any and all bids, to waive any and all informalities, and to disregard all nonconforming, nonresponsive or conditional bids.

6.2 All extensions and totals of unit prices and quantities submitted as part of the bid shall be considered informal until verified by the Owner. All bids must be made on the forms contained herein and the bid prices must be written therein, in figures only. Unit prices shall be separately written for "Unit Price Labor," "Unit Price Material," and "Total Unit Price" for each item listed. Should an error in addition and/or multiplication be determined while checking the Contractor's math and verifying his total bid, the "Unit Price labor" and the "Unit Price Material" figures shall govern in determining the correct "Total Unit Price" and the correct "Item Total."

6.3 In evaluating bids, the Owner may consider:

A. The qualifications and experience of the Bidder, proposed subcontractors, and principal material suppliers as outlined in the plans and specifications.

B. Financial ability and soundness of the Bidder and proposed subcontractors.

C. Completeness of all bid forms and bid requirements.

D. Alternates and unit prices requested in the Bid Forms

E. Unit prices or schedules of values that are or appear to be unbalanced

F. Previous contractual experience with the Owner.

G. Whether or not the bid package complies with the prescribed requirements.

H. Any other matter allowed by law or local ordinance or resolution

6.4 Owner may conduct further investigations as he deems necessary to assist in the evaluation of any bid and to establish the responsibility, qualifications, and financial ability of the Bidders, proposed Subcontractors, and other persons and organizations to do the work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

6.5 Owner reserves the right to reject the bid of any Bidder who does not pass any such evaluation to Owner's satisfaction.

6.6 The Contract award shall be based on the lowest and best bid for the base bid and selected alternate items (if any) for this project.

PART 7 BID SECURITY

7.1 Each bid must be accompanied by a certified or cashier's check in the amount of 10% of the amount bid, an irrevocable letter of credit in the amount of 10% of the amount bid or an original bond in the amount of 100% of the amount bid per ORC 153.54 and 153.571. The certified or cahier's check, or irrevocable letter of credit shall be from a financial institution authorized to transact business in the State of Ohio and acceptable to the Owner. The bond shall be underwritten by a Surety Company authorized to transact business in the State of Ohio having an Ohio agent and listed on the most current Department of the Treasury Circular 570, "Surety Companies Acceptable on Federal Bonds." The bond shall be a "Bid Guarantee and Contract bond" ("rollover bond") per O.R.C. sections 153.54 and 153.571 submitted for the full amount of the bid including all alternates, if any.

7.2 The certified or cashier's check, irrevocable letter of credit, or bid bond shall be made payable to the Owner and shall serve as a guarantee that in the event the bid is accepted and a contract is awarded to the successful Bidder, the contract will be executed by the bidder including any certifications, certificates or additional bonds required by the contract.

7.3 Failure on the part of the successful Bidder to execute the contract documents will cause the certified or cashier's check, irrevocable letter of credit, or bid bond to be forfeited to the Owner as damages.

A. If the Owner awards the contract without rebidding, the Bidder (and the Surety on his bond if a bid bond was submitted) shall be liable to the Owner for a penal sum not to exceed the

difference between the low bid and the next lowest and best Bidder or 10% of the amount of the bid, whichever is less.

B. If the Owner does not award the Contract to the next lowest and best Bidder but resubmits the project for bidding; the Bidder (and the Surety on his bond if a bid bond was submitted) shall be liable to the Owner for a penal sum not to exceed the costs in connection with the resubmission of bids or 10% of the amount of the bid, whichever is less.

7.4 Checks or letters of credit for bid security of all bidders will be returned in the manner and timeframe stipulated in the Ohio Revised Code.

PART 8 CONTRACT BOND AND MAINTENANCE BOND

8.1 As security for faithful performance and payment of all obligations under the Contract, the owner shall require and the successful Bidder shall furnish either:

A. "Bid Guarantee and Contract Bond" (AKA "rollover bond") per Ohio Revised Code Sections 153.54 and 153.57

B. Contract Bond per Ohio Revised Code Sections 153.54 and 153.57, in the amount of 100% of the Contract Price.

8.2 The Contractor shall provide a maintenance bond in the amount of 10% of the final contract amount which shall cover correction of the work for a period of three years, and the correction period shall start upon Final Acceptance of the entire project and final payment by the Owner.

8.3 The bonds shall be underwritten by a Surety Company authorized to transact business in the State of Ohio having an Ohio agent and listed on the most current Department of the Treasury Circular 570, "Surety Companies Acceptable on Federal Bonds."

8.4 Nothing in the performance of the Owner's Representative's service to the Owner in connection with this project shall in any way imply any undertaking for the benefit of the successful Bidder, its subcontractor(s), or the surety of any of them.

PART 9 AWARD AND EXECUTION OF CONTRACT

9.1 Upon the Owner's decision to enter into a contract, the successful bidder will receive the unsigned contract documents. Within 10 days after receiving the documents, the successful Bidder shall sign and deliver to the Owner said contract documents including any certifications, certificates, or additional bonds required by the contract.

9.2 The Owner shall execute the Contract within 60 days after the day of the bid opening. When necessary and by mutual consent between the Owner and the successful Bidder, this 60-day period may be extended.

9.3 The date of the Owner's signature on the Contract Agreement shall be the effective contract date.

9.4 The Owner shall execute and deliver to the successful Bidder two (2) sets of fully executed contract documents.

PART 10 INSURANCE

10.1 Verification of limits for public liability, property damage, automobile, Worker's Compensation, or any other insurance required by the provisions of this Contract must be submitted to the Owner prior to execution of the Contract.

A. The limits of liability for the insurance required shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

i. State	Statutory
ii. Applicable Federal (e.g., Longshoreman's)	Statutory
iii. Employer's Liability	1,000,000

B. Bodily Injury and Property Damage, Combined Single Limit (CSL) (Except Products and Completed Operations) Property Damage liability insurance will provide Explosion, Collapse, and Underground coverage where applicable.

Each Occurrence	1,000,000
General Aggregate	2,000,000

C. Automobile Liability – Owned, Non-Owned, Hired Contractor may provide split limits or combined single limit.

i. Split Limits

Bodily Injury, Each Person:	1,000,000
Each Occurrence	1,000,000
Property Damage, Each Occurrence	1,000,000

ii. Combined Single Limit

Bodily Injury and Property Damage,	
Each Occurrence	1,000,000

iii. Umbrella Excess Liability-as needed to increase Primary Policy to specified limits.

10.2 All insurance shall be endorsed so that it cannot be cancelled or non-renewed for any reason in less than 30 days after a written notice of such proposed action by the Insurer is given to the Owner. The cancellation clause on the Certificate(s) of Insurance shall read as specified in the Supplementary Conditions and failure to submit an insurance certificate and/or policy endorsement verifying same shall be reason for the Owner to consider the Contractor non-responsive in complying with the requirements for contract execution and may be cause for forfeiture of the Bid Security to Owner.

10.3 The Contractor's Liability Insurance policy(s) shall be endorsed such that limits are on a Per Project basis.

10.4 The Contractor shall also provide an Owner's and Contractor's Protective Policy for the following limits:

A. Each Occurrence	1,000,000
B. General Aggregate	2,000,000

PART 11 NON-COLLUSION AFFIDAVIT

11.1 Each bid must be accompanied by a completed Non-collusion Affidavit provided within the contract documents.

11.2 Where there is reason to believe collusion or combination among bidders exists, the Owner reserves the right to reject the bid of those concerned.

PART 12 DELINQUENT PERSONAL PROPERTY STATEMENT

12.1 Included with the contract documents is a Delinquent Personal Property Statement to be filled out by the successful Bidder.

PART 13 ORIGINAL DOCUMENTS

1.1 All bid forms, contract forms, bonds and any other bid documents or contract documents requiring signatures shall be submitted with original signatures. No photo copies, faxed copies or e-mails of signed documents shall be accepted.

PART14 WAGE RATES

14.1 The Contractor agrees that each individual employed by the Contractor or any Subcontractor engaged in work on the project under this contract shall be paid by prevailing wage established by the Department of Industrial Relations of the State of Ohio as detailed in the section titled "Wage Rates." This shall occur regardless of any contractual relationship which may be said to exist between the Contractor or any Subcontractor and such individual.

PART 15 EQUAL EMPLOYMENT OPPORTUNITY (EEO) REQUIREMENTS

15.1 The Contractor's EEO Certification Form must be completed and submitted with the bid.

PART 16 DEBARMENT

16.1 Assurance Certification Regarding Debarment and Contracting must be completed and submitted with their bid.

PART 17 PAYMENT STRUCTURE

17.1 Contractor shall submit an application for payment filled out and signed by the Contractor covering the work completed as of the date of the application and accompanied by supporting documentation, no more than once a month. Until the project is 50% complete, the Contractor will be paid 92% of the estimated value of labor and material completed in acceptable form. After the project is 50% complete, no further funds shall be retained and the contractor shall be paid 100% of the estimated value of labor and material completed in acceptable form, provided that the Contractor is making satisfactory progress and there is no specific cause for greater withholding. Upon the Owner's agreement that the project is substantially complete, the Retainage may be reduced to twice the value of the remaining punch list work subject to the approval of the Owner.

PART 18 ACKNOWLEDGEMENT OF PROCUREMENT POLICY AND FUNDING UNDER AMERICAN RECOVERY PLAN ACT – STATE AND LOCAL FISCAL RECOVERY FUND

18.1 Contractor will be required to submit an acknowledgement that the Project is intended to be funded by funds awarded to the County under the American Recovery Plan Act – State and Local Fiscal Recovery Fund (ARPA) and that the Project is subject to compliance with the County's ARPA Procurement Policy.

EXPERIENCE RECORD

The Bidder is required to list previous work, give references, and other detailed information that will enable the Owner to determine Bidders qualifications for the contract. Please provide 5 years of information. Data submitted in another form must contain all the requested information. You may copy this sheet as required.

Project Name: ____

Description of work:____

Check box: Prime Contractor: ( ) or Sub Contractor: ( )

Total Project Cost: $________________ Bidder's Amount: $________________

% Complete, or Date completed: ________________________

Project Owner: ____

Contact Person: ________________________ Phone:(_____)________________________

Owner's Representative: ____

Contact Person: ________________________ Phone: (_____)________________________

Bonding Company: ____

Project Name: ____

Description of work:____

Check box: Prime Contractor: ( ) or Sub Contractor: ( )

Total Project Cost: $________________ Bidder's Amount: $________________

% Complete, or Date completed: ________________________

Project Owner: ____

Contact Person: ________________________ Phone:(_____)________________________

Owner's Representative: ____

Contact Person: ________________________ Phone: (_____)________________________

Bonding Company: ____

Project Name: ____

Description of work:____

Check box: Prime Contractor: ( ) or Sub Contractor: ( )

Total Project Cost: $________________ Bidder's Amount: $________________

% Complete, or Date completed: ________________________

Project Owner: ____

Contact Person: ________________________ Phone:(_____)________________________

Owner's Representative: ____

Contact Person: ________________________ Phone: (_____)________________________

Bonding Company: ____

LIST OF SUBCONTRACTORS

The BIDDER shall state below, the Subcontractors they propose to utilize to accomplish the work under this contract. Give the name, address and type of work to be performed by each Subcontractor. Subcontractors will be required to complete Equal Employment Opportunity forms contained herein before award of the contract.

EQUAL OPPORTUNITY EMPLOYMENT
ASSURANCE OF COMPLIANCE

_____ (hereinafter called "BIDDER") hereby agrees that it will comply with Title VI of the Civil Rights Act of 1964 (P.S. 88-352) to the end that in accordance with Title VI of that Act and the regulation, no person in the United States shall, on the ground of race, color, creed or national origin be excluded from employment by the BIDDER and hereby gives assurance that it will immediately take any measure to effectuate this agreement.

This ASSURANCE is given in consideration of and for the purpose of complying with the Equal Opportunity Employment section in the Instructions to BIDDERS and to generally qualify the BIDDER for award of the contract. The BIDDER recognizes and agrees that such contracts or purchase agreement will be extended in reliance on the representations and agreements made in this assurance, and that the OWNER shall reserve the right to seek judicial enforcement of this assurance. This assurance is binding on the BIDDER, its successors, transfers, and assignees. Furthermore, the person whose signature appears below is authorized to sign this assurance on behalf of the BIDDER.

_____ _____

DATE SIGNATURE

_____

TITLE

_____

FIRM

EQUAL EMPLOYMENT OPPORTUNITY AFFIDAVIT

STATE OF: **OHIO**

COUNTY OF: **LAKE**

_____ being first duly sworn, deposes and says that he is _____ (President, Secretary, etc.) of the party who made this proposal; that such party as BIDDER does not and shall not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin. If awarded the BID and contract under this proposal, said party shall take affirmative action to insure that all applicants for employment shall be considered, without regard to their race, religion, color, sex or national origin. If successful as the lowest and best BIDDER under the foregoing proposals, this party shall post nondiscrimination notices in conspicuous places available to employees and applicants for employment setting forth the provisions of this affidavit.

Furthermore, said party agrees to abide by the assurances found in Section 153.54 of the Ohio Revised Code in the Contract Provisions with the OWNER if selected as the successful BIDDER by the OWNER.

_____
Signature

_____
Affiant

_____
Company/Corporation

_____
Address

_____
City/State/Zip

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

_____
Notary

(Seal)

NONCOLLUSION AFFIDAVIT

State of: **OHIO**

County of: **LAKE**

_____ of _____ being first duly sworn, deposes and says that he/she is _____(sole owner, a partner, president, secretary, etc.) of the above named CONTRACTOR, the party making the foregoing BID; that such BID is not made in the interest of or on behalf of any undisclosed person, limited liability company, partnership, company, association, organization, or corporation; that such BID is genuine and not collusive or sham; that said BIDDER has not directly or indirectly induced or solicited any other BIDDER to put in a false or sham BID, and has not directly or indirectly colluded, conspired, connived, or agreed with any BIDDER or anyone else to put in a sham BID, or that any one shall refrain from bidding; that said BIDDER has not in any manner, directly or indirectly, sought by agreement, communication or conference with any one to fix the BID price, or of that of any other BIDDER, or to fix any overhead, profit, or cost element of such BID price, or of that of any other BIDDER, or to secure any advantage against the OWNER awarding the contract or any one interested in the proposed contract; that all statements contained in such BID are true; and, further, that said BIDDER has not, directly or indirectly, submitted his BID price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid and will not pay any fee in connection therewith, to any corporation, partnership, company, association, organization, limited liability company, BID depository, or to any member or agent thereof, or to any other individual except to such person or persons as have a partnership or other financial interest with said BIDDER in his general business.

Signed: _____

Printed Name:_____

Subscribed and sworn to before me this

_____ day of _____ , 20 ___ .

(Seal)

ASSURANCE OF COMPLIANCE
DEBARMENT AND CONTRACTING

_____ (hereinafter called "BIDDER") hereby represents and warrants as follows:

1. Debarment/ Exclusion. BIDDER is not excluded from doing business with the federal government (see www.sam.gov/SAM/), the State of Ohio and any political subdivision thereof and acknowledges that any contract with BIDDER shall be null and void should BIDDER become barred or excluded from doing business with the federal government, the State of Ohio or any political subdivision of the State of Ohio.

2. Never Contract with the Enemy. BIDDER is not actively imposing and shall not actively oppose the United States or coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged and acknowledges that any contract with BIDDER shall be null and void should BIDDER or any subcontractor become so barred.

3. "Huawei ban". BIDDER agrees that any contract issued to the BIDDER by the County for the Project shall not be used to procure or obtain equipment, services or systems that uses covered telecommunications equipment or services a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunication equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

This ASSURANCE is given in consideration of and for the purpose of complying with the County's ARPA Procurement Policy and to generally qualify the BIDDER for award of the contract. The BIDDER recognizes and agrees that such contracts or purchase agreement will be extended in reliance on the representations and agreements made in this assurance, and that the OWNER shall reserve the right to seek judicial enforcement of this assurance. This assurance is binding on the BIDDER, its successors, transfers, and assignees. Furthermore, the person whose signature appears below is authorized to sign this assurance on behalf of the BIDDER.

_____ _____

DATE SIGNATURE

_____

TITLE

_____

FIRM

Bond No. _____ **BID GUARANTY BOND**

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned _____as Principal_____and_____as Sureties, are hereby held and firmly bound unto THE BOARD OF LAKE COUNTY COMMISSIONERS as OWNER and 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 penal sum referred to herein shall be the dollar amount of the principal's bid to the obligee, incorporating any additive or deductive alternate bids 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 100 percent of the BID including any alternates which may be accepted. 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 _____ , 20____ . THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that 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 plans, details, specifications and bills of material; 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 the resubmission, of printing new contract documents, required advertising, and printing and mailing notices to prospective bidders, whichever is less, then the 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 the awarding of the contract enters into a proper contract in accordance with the bid, plans details, specifications, and bills of material, which said contract is made part of this bond the same as though set forth herein:

Now also, if the said _____ shall well and faithfully do and perform the things agreed by _____ to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, material, suppliers, 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 materials supplier 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 the said contractor in or to the plans or specifications therefore shall in any wise affect the obligations of the said surety on its bond.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations, have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

	PRINCIPAL	SURETY
By:		
By:		

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and must not exceed the underwriting limitation. Surety companies and their agents or attorneys-in-fact must be authorized to transact business in the State where the PROJECT is located and shall furnish proof to such authorization in the BID.

CORPORATE RESOLUTION

I, _____, Secretary of _____ an _____ Corporation hereby certifies that the following is a true and correct copy of a resolution dually adopted by the Board of Directors of , on _____ , 20____ , to wit:

"Resolved, that _____ of this Company, namely, _____ be and he hereby is authorized and directed to enter into any and all Contracts, BID Guaranty and Performance Bonds with the Board of Lake County Commissioners , for the purpose of furnishing labor and materials as to _____ at such price and upon terms and conditions, including any amendments or modifications thereto, as said in his sole discretion deem best, and that said actions shall be binding on the Corporation."

"Resolved, further, that said _____ be, and he further is hereby authorized and directed to execute and deliver unto said Board of Lake County Commissioners other instruments which in his discretion he shall deem necessary to carry out the foregoing resolution."

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Corporation at this _____ Day of _____ , 20___, and I further certify that said resolution is still in full force and effect.

_____

Signature

_____

Name

_____

Title

_____

Date

(SEAL)

Lake County Board of Commissioners
BID PROPOSAL FORM
McKinley Community Outreach Center Building Roof Replacement Project
Bid is submitted to:
Board of Lake County Commissioners
105 Main Street, Building A, 5th Floor, Suite 512
Painesville, Ohio 44077

Proposal for McKinley Community Outreach Center Building Roof Replacement Project located in Willoughby and in accordance with the approved plans. Upon acceptance of this Proposal, it shall become part of the Contract.
Due to the volatility of the supply chain within the roofing market future price escalations will be paid via a change order. The contractor will be required to substantiate any cost increases from the time of bid up until the time of the project. This may include providing pricing information from the manufacturers/suppliers, original quotes, invoices of what was changed, etc. Requested escalations will not be paid without back up paperwork.

THE UNDERSIGNED, as Bidder, declares that he has or they have carefully examined the site of the work and the form of the Contract, together with the Specifications, Plans and Profiles for the above named Improvement, and that he or they will contract to provide all necessary labor, machinery, tools and appliances and other means for the construction, and do all work called for by said Contract and said specifications, plans, and profiles and furnish all materials called for by said Contract and said specifications, plans and profiles and furnish all materials called for in the contract, plans, and specifications on file in the Office of the Lake County Board of Commissioners and in the manner therein prescribed and according to the requirements of the Owner's Representative as therein provided or to furnish materials after receipt of written notice from the Owner's Representative to begin the work, upon the following terms and for the following prices submitted herein:

ITEM #	DESCRIPTION	QUANTITY	UNIT	LABOR	MATERIAL	UNIT PRICE	TOTAL
1	Drain Insert	_____	_____	_____	_____	_____	_____
2	Drain Assembly from the pipe connection up. Internal plumbing not included.	_____	_____	_____	_____	_____	_____
3	Wood Deck Replacement Per Square Foot	_____	_____	_____	_____	_____	_____
4	Wood Deck Repair Per Square Foot	_____	_____	_____	_____	_____	_____
5	Steel Deck Replacement Per Square Foot	_____	_____	_____	_____	_____	_____
6	Steel Deck Replacement Per Square Foot	_____	_____	_____	_____	_____	_____
7	Wood Deck Replacement Per Square Foot	_____	_____	_____	_____	_____	_____
8	Wood Deck Repair Per Square Foot	_____	_____	_____	_____	_____	_____
9	Concrete Deck Replacement Per Square Foot	_____	_____	_____	_____	_____	_____

10	Concrete Deck Repair Per Square Foot	_____	_____	_____	_____	_____	_____
11	Wood Nailer Replacement Per Lineal Foot	_____	_____	_____	_____	_____	_____
12	Construction Contingency Allowance	____1____	___LUMP___	__----____	_____----____	_____----_____	$45,000.00
						Informal Bid Total	_____

The Bidder hereby acknowledges receipt of the following addenda:

Addendum No. _____ _____ _____ _____

Date _____ _____ _____ _____

We (or I) do hereby agree that in the event of failure on our part to contract as aforesaid (provided this Proposal is accepted) the Bid Bond, Check or Letter of Credit accompanying this Proposal shall be forfeited to the Owner as liquidated damages for the difference between this bid and the awarded Contract price, not to exceed the amount of the bond. We further agree that the Owner may reject any or all bids.

By signature below, I hereby certify that I have examined the insurance requirements in the specifications and that the types and amounts of the same are currently in effect or will be obtained and kept in effect for the project duration. Verification will be provided to the Owner subsequent to the issue of the Notice of Award.

Submitted by,

_____	_____	_____
Firm, Corporation, or Individual	Officer's Name and Title (typed)	Telephone No.
_____	_____	_____
Street Address	Officer's Signature	Fax No.
_____	_____	_____
City, State, Zip Code	Date	email

Note: Evidence of authority to sign and the corporate seal must be affixed and attested by the Secretary.

SUBSTANTIAL COMPLETION DATE: 120 days after Notice to Proceed.

FINAL COMPLETION AND RESTORATION TO BE COMPLETED BY: 180 days after Notice to Proceed.

PRICES TO INCLUDE

Any work shown on the plans or required in the specification but not paid for separately as a bid item shall be included in the cost of other bid items. The amount bid shall include the following:

1. All labor, materials, tools, equipment and transportation necessary for the proper execution of the work in accordance with Contract Documents.
2. All assistance required by the Owner's Representative to verify compliance with the Contract Documents, including measuring for final pay quantities.
3. Project coordination and scheduling.
4. Detailed breakdown of lump sum bid items as requested by the Owner's Representative.
5. All provisions necessary to protect workmen, the general public and property along the work in accordance with the Contract Documents and OSHA requirements.
6. All costs for inspection by a representative of the Owner. Costs for all other inspection required herein.
7. Reimbursement to Owner for costs for re-inspection or re-testing of any work not installed in compliance with the Contract Documents.
8. All provisions included as described or implied in this Prices to Include Section for each Bid Item listed.
9. Mobilization, including toilet facilities for duration of the project.
10. Preconstruction video.
11. Bonds and insurances and/or endorsements required to fully comply with and adhere to the Contract specifications.
12. Completion and execution of all work shown, specified, or implied regardless of specific mention of such work in this section herein. Costs for all work items not specifically mentioned herein shall be included in the related items bid.

1.01 Bid Item 12 – Construction Contingency Allowance

A. The Contractor shall include a Construction Contingency Allowance of $45,000 in the bid proposal grand total. The Construction Contingency Allowance shall be used as specified by the Owner during construction as a general payment mechanism for agreed upon additional work that may include deck replacement and unforeseeable site conditions.

B. Bid Item 12 provides an allowance for which the contractor can perform additional work as directed by the Owner, and the work shall be included in a pay application. Use of this allowance shall be with written authorization of the Owner.

C. All unused allowance funds shall be credited back to the Owner upon completion of the project.

Lake County, Ohio Responsible Contractor Checklist

Failure to accurately complete this form may result in disqualification of the bid. The County will use this information during the bid review process. All subcontractors are also subject to the approval of the Administrator, or their designee, based on the following considerations and are required to submit the same documentation. You may use additional pages if needed.

Company/Contractor _____

Contact _____ Title _____

Address _____

City _____ State _____

Zip _____

Phone _____ Fax _____

Email _____

Federal ID # _____

Project Title: _____

1. Provide a description of experience with projects of comparable size, complexity, and cost within the past five years that demonstrates the contractor's ability and capacity to perform at least fifty percent (50%) of the project with its own forces.

2. Has your company bid on any public project within the last five years in which your company was disqualified?

   No_____ Yes_____ If Yes, Explain_____

3. Provide documentation from projects during the past five years detailing timeliness of performance, quality of work, extension requests, findings, fines and penalties imposed and payment thereof, including liquidated damages, liens, history of claims for extra work, and contract defaults with explanations of same.

4. Provide documentation of financial responsibility, including but not limited to a bid bond/performance guarantee.

5. Has your company had any suspension or revocation of any professional licenses of any director, officer, owner or managerial employee to the extent that any such licensure is necessary to perform the work contemplated by the contract?

   No_____ Yes_____ If Yes, Explain_____

6. In the last five years, has your company committed any OSHA violations or received any OSHA citations?

   No_____ Yes_____ If Yes, Explain and provide a description and explanation of the remediation or other steps taken regarding such violations and notices of violation(s) and/or citations_____

7. Has your company committed any violations within the previous five years pertaining to unlawful intimidation or discrimination against any employees by reason of race, creed, color, disability, sex or national origin and/or violations of an employee's civil or labor rights, or equal employment opportunities?

   No_____ Yes_____ If Yes, Explain_____

8. Has your company been involved in litigation in which it has been named as a defendant or third party defendant in an action involving a claim for personal injury or wrongful death arising from performance of work related to any project in which it has been engaged within the previous five years? Please include copies of all pleadings.

   No_____ Yes_____ If Yes, Explain_____

9. Has your company, any of its high level management personnel, or any of its owners been convicted of a federal or state criminal offense, including embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion or receiving stolen property?

   No_____ Yes_____ If Yes, Explain_____

10. Has your company, high level management personnel, or any of its owners been convicted of a criminal offense in connection with the obtaining, attempting to obtain, and/or performing any public or private contract?

    No_____ Yes_____ If Yes, Explain_____

11. Has your company committed any violations of the prevailing wage law and any other federal or state labor laws including, but not limited to, child labor laws, failure to pay wages, or unemployment insurance tax delinquencies or unfair labor practices within the past five years?

    No_____ Yes_____ If Yes, Explain_____

12. Has your company committed any violations of workers' compensation laws?

    No_____ Yes_____ If Yes, Explain_____

13. Has your company, its officers, directors, owners and/or managerial employees been convicted or indicted for any crime within the past five years? This includes previous companies in which current principals of your company or subcontractors were affiliated.

    No_____ Yes_____ If Yes, Explain_____

14. Has your company had a performance bond canceled or had a claim made on a performance bond over the previous five years?

No_____ Yes_____ If Yes, Explain_____

15. Has your company failed to file any required tax returns or pay any required taxes to any governmental entity?

No_____ Yes_____ If Yes, Explain_____

16. Does your company have a substance abuse program that includes testing and treatment?

No_____ Yes_____ If Yes, Explain_____

17. Does your company have a written safety and health program that includes, but is not limited to training, inspections, and complaint procedures?

No_____ Yes_____ If Yes, Explain_____

18. Does your company have documentation to demonstrate that it currently employs or has a reliable source for hiring sufficient, legal, qualified, skilled, and safety trained workers to perform the project?

No_____ Yes_____ If Yes, Explain_____

19. Does your company provide health insurance?

No_____ Yes_____ If Yes, Explain_____

20. Does your company offer or participate in an apprenticeship program, dual training program, or an internship program?

No_____ Yes_____ If Yes, identify and explain if such programs are recognized, formal, accredited, and/or certified, paid, long-term training programs for skilled jobs._____

21. Does your company hire independent contractors (IRS Form 1099) to perform its work?

No_____ Yes_____ If Yes, Explain_____

22. Does your company have any familial relationship between the owners or employees with any elected or appointed officials or managerial employees of Lake County?

No_____ Yes_____ If Yes, Explain_____

23. Has your company identified all work to be subcontracted?

No_____ Yes_____ If Yes, Explain_____

_____
Signature

_____
Affiant's Printed Name

_____
Company/Corporation

_____
Address

_____
City/State/Zip

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

_____
Notary

(Seal)

CONTRACT FORM

NOTICE OF AWARD

To: _____(BIDDER)

Project description: McKinley Community Outreach Center Roof Replacement

The OWNER has considered the BID submitted by you on August 3, 2022 (BID Date) for the above described WORK in response to its Advertisement for BIDS and Information for BIDDERS. You are the apparent successful BIDDER.

The BID PRICE for your contract **is $**_____

Six (6) sets of each of the proposed CONTRACT DOCUMENTS (excluding drawings) accompany this NOTICE OF AWARD.

Six (6) sets of the drawings will be delivered separately or otherwise made available to you immediately.

You are required by the Information for BIDDERS to comply with the following conditions precedent within 10 DAYS of the date of this NOTICE OF AWARD; that is by: _____

1) You must deliver to the OWNER six (6) fully executed counterparts of the AGREEMENT, including all the CONTRACT documents.

2) You must deliver with the executed AGREEMENT, the PAYMENT AND PERFORMANCE BONDS and the Insurance Certificate as specified in the Instructions to BIDDERS, the General Conditions, and the Supplementary Conditions.

If you fail to execute said Agreement and to furnish said BOND within ten (10) days from the date of this notice, said OWNER will be entitled to consider all your rights arising out of the OWNER's acceptance of your BID as abandoned and as a forfeiture of your BID guaranty subject to the liability as set forth in Section 153.54 of the Ohio Revised Code. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE TO AWARD to the OWNER.

Dated this _____. THE BOARD OF LAKE COUNTY COMMISSIONERS
(OWNER)

By _____
Jason Boyd, County Administrator
LAKE COUNTY, OHIO

ACCEPTANCE OF AWARD

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____(BIDDER)
this _____ day of _____ , 20_____ .

BY _____

_____
Name and Title

cc: CONTRACTOR'S Surety
Surety's Agent
LAKE COUNTY ADMINISTRATION by Certified Mail

THE CONTRACTOR SHALL FURNISH THE FOLLOWING ITEMS WITHIN 10 DAYS OF NOTIFICATION OF AWARD

CERTIFICATE OF INSURANCE FOR CONTRACTOR'S PUBLIC LIABILITY INSURANCE POLICY

CERTIFICATE OF INSURANCE FOR OWNER'S AND CONTRACTOR'S PROTECTIVE POLICY

CERTIFICATE OF WORKERS COMPENSATION

CONTRACT BOND THAT COMPLIES WITH ORC 153.54 AND 153.57

*not required if a bond complying with ORC 153.54 and 153.571 (rollover bond) was submitted at time of bid

CONTRACT BOND

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

_____ as Principal and

_____ as Sureties, are hereby held and firmly

bound unto _____ in the penal sum of

_____ Dollars ($_____) for the payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our

heirs, executors, administrators, successors, and assigns.

Signed this _____ day of _____, 20_____. THE CONDITION OF

THE ABOVE OBLIGATION IS SUCH, that whereas the above named Principal did on the _____day

of _____, 20____, enter into an Agreement with _____

which said Agreement Is made a part of this Bond the same as though set forth herein;

Now, if the said Principal shall well and faithfully do and perform the things agreed by them to be done and performed according to the terms of said Agreement; 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 Agreement, 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 OWNER as obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect until three years beyond the date of final acceptance; 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 the said Agreement or in or to the drawings of specifications therefor shall in any way affect the obligations of said Surety on its Bond.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in_____(number) counterparts,

each one of which shall be deemed an original, this _____ day of _____,

20____.

PRINCIPAL _____

Attest: By _____

(SEAL) Name _____

_____ Title _____
Witness as to Principal

SURETY _____

Attest:

(SEAL)

_____ By _____
Witness as to Surety Attorney-in-Fact

SURETY COMPANY ADDRESS: SURETY AGENT'S ADDRESS:

_____ _____
Street Agency Name

_____ _____
City State Zip Street

_____ _____
Phone City State Zip

_____
Phone

Note: If CONTRACTOR is Partnership, all partners should execute Bond.

Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and must not exceed the underwriting limitation.

Surety companies must be authorized to transact business in the state where the project is located and shall furnish proof of such authorization.

DELINQUENT PERSONAL PROPERTY STATEMENT

_____, having been awarded a contract by the Board of Lake County Commissioners, hereby affirms under oath, pursuant to Ohio Revised Code Section 5719.042, that at the time the bid was submitted, my company (was) (was not) charged with delinquent personal property taxes on the General Tax List of Personal Property of Lake County, Ohio.

If such charge for delinquent personal property tax exists on the General List of Personal Property of Lake County, Ohio, the amount of such due and unpaid delinquent taxes, including due and unpaid penalties and interest shall be set forth below.

A copy of this statement shall also be incorporated into the contract made between the Board of Lake County Commissioners and _____ , and no payment shall be made with respect to any contract unless such statement has been so incorporated as a part thereof.

Delinquent Personal Property Tax $ _____

Penalties $ _____

Interest $ _____

By: _____

Title: _____

Subscribed in my presence, and sworn to before me, this _____ day of _____, 20___.

_____
NOTARY PUBLIC

(Seal)

LEGAL AND FISCAL OFFICERS

On this _____ day of _____, 20____, I , _____ , Assistant Prosecuting Attorney of the Lake County, hereby approve the foregoing CONTRACT with (CONTRACTOR) as to form.

Charles E. Coulson
PROSECUTING ATTORNEY OF LAKE COUNTY

By: _____
Assistant Prosecuting Attorney

♦ • ♦ • ♦ • ♦ • ♦ • ♦

I, Christopher A. Galloway, duly elected Auditor of Lake County, Ohio, do hereby certify that a copy of the foregoing agreement has been received by me and that I hereby certify that the amount of $ _____ is Lake County Department of Utilities portion required to meet the payment of this agreement with _____. (CONTRACTOR), has been lawfully appropriated or authorized or directed for such purpose of complying with the terms and conditions of the foregoing agreement, and is in the Treasury or in the process of collection to the _____(Project name)_____(Project number)_____(Fund Number) and the same is free from any previous encumbrances.

WITNESS MY HAND this_____ day of _____ , 20 _____ , at Painesville, Ohio.

By: _____
Christopher A. Galloway
Lake County Auditor

CONTRACT

THIS AGREEMENT is dated the _____ day of _____, 20 _____.

BY AND BETWEEN _____ , hereinafter called CONTRACTOR and the BOARD OF LAKE COUNTY COMMISSIONERS, hereinafter called the OWNER for _____, hereinafter called the PROJECT.

WITNESSETH: That the said CONTRACTOR has agreed and by this presents does agree with the OWNER for the consideration hereinafter mentioned and contained, and under penalty expressed in a bond bearing even date with these presents, and herein contained or hereunto annexed, to furnish at his own cost and expense, all the necessary tools, materials, labor, and tests in an expeditious, substantial and workmanlike manner, the equipment and appurtenances herein contemplated, commencing work within 20 days of the Notice to Proceed and executing the work within the time and in the manner specified and in the conformity with the requirements set forth in this Contract.

The following form essential parts of the Contract (may vary with job)

1. Advertisement for Bids/Public Notice to Bidders
2. Instruction to Bidders
3. Bid Forms and Proposal
4. Contract Forms and Exhibits
5. Contract Bond
6. Contract Provisions
7. General Conditions
8. Supplementary Conditions
9. Specifications
10. Specific Project Requirements
11. Prevailing Wage Rate Schedule
12. Contract Drawings

The Contractor agrees and understands that the work on this contract shall be subject to the acceptance of the Owner based upon and in accordance with the contract specifications and contract plans and drawings on file in the office of the Owner.

The Contractor acknowledges and agrees that this contract is subject to the Lake County, Ohio American Rescue Plan Act Procurement Guidance Document (the Procurement Policy) attached hereto and incorporated herein by reference. The Contractor agrees for itself and any subcontractor engaged in work on the Project under this contract, to be bound by and comply with all provisions of the Procurement Policy.

The Contractor agrees that each individual employed by the Contractor or any Subcontractor engaged in work on the Project under this contract shall be paid prevailing wage established by the Department of Industrial Relations of the State of Ohio or the U.S. Department of Labor (Davis-Bacon Act) as detailed in the section titled "Wage Rates". This shall occur regardless of any contractual relationship which may be said to exist between the Contractor or any Subcontractor and each such individual.

The Contractor shall proceed with the said work in a prompt and diligent manner and shall do the several parts thereof, at such times and in such order as the Owner may direct. Further he shall complete the whole of said work in accordance with the specifications and contract drawings to the satisfaction of the Owner on or before the time stated.

It is hereby mutually agreed that the Owner is to pay and the Contractor is to receive, as full compensation for furnishing all materials and labor in building, constructing and testing and in all respect completing the herein described work and appurtenances in the manner and under the conditions herein specified, the prices

stipulated in the proposal herein contained or hereto annexed and the total contract sum is $_ _____.

The contract shall be in full force and effect from the date of execution by the parties.

IN WITNESS WHEREOF: The parties hereunto affixed their signatures the day and year first mentioned above.

Contractor: _____Witness:

BY: _____ _____

Lake County Board of Commissioners Witness:

BY: _____ _____
John R. Hamercheck, President

Board of Commissioners

Jason W. Boyd, Administrator

lakecountyohio.gov

MEMO

TO: BCC

FROM: Jason W. Boyd, County Administrator

RE: American Rescue Plan Act: Procurement Document

DATE: Tuesday, February 22, 2022

Pursuant to American Rescue Plan Act (ARPA) allocation, the attached "Lake County, Ohio American Rescue Plan Act (ARP) Procurement Guidance Document" will be used in ARPA funded projects and compliments the Uniform Administrative Requirements prepared by Mr. Matas.

This will be on a forthcoming agenda.

REVIEWED

Commissioners of Lake County, Ohio

PRESIDENT

Attest

CLERK 2-24-22

105 Main Street
Building A, Suite 513
Painesville, Ohio 44077
Office: 440-350-2745

Lake County, Ohio American Rescue Plan Act (ARP) Procurement Guidance Document:

PREAMBLE

Lake County has received approximately $44 million in Federal ARPA funds. According to the home.treasurv.gov, the ARPA has the following project objectives:

1. Support urgent COVID-19 response efforts to continue to decrease spread of the virus and bring the pandemic under control.

2. Replace lost revenue for eligible state, local, territorial, and Tribal governments to strengthen support for vital public services and help retain jobs.

3. Support immediate economic stabilization for households and businesses.

4. Address systematic public health and economic challenges that have contributed to the inequal impact of the pandemic.

Lake County, via subrecipient agreements, may distribute funds to private businesses, local governmental entities, and/or non-profits in accordance with state and federal law, policies, and guidance.

This procurement policy was developed by the Lake County Commissioner's Office. It was created to guide personnel who are involved in the County's administration of American Rescue Plan funds in the County's role as a grant recipient of the US Treasury.

The contents of this publication are intended to convey general information only and do not constitute legal advice. This publication does not constitute or create an attorney-client relationship. If you need legal advice, please contact an attorney directly. This procurement policy is intended to help County actors and any sub-recipients of ARP funds comply with federal rules and regulations related to procurement transactions. You should review this policy thoroughly.

This policy is informed by the following legal requirements/sources:

- Federal laws/regulations: Federal rules/guidance, that dictate when competitive procurement processes are required, avoidance of conflicts of interest and other ethical concerns, including but not limited to 2 C.F.R. 5 200.318(c) and other regulations noted in the following section.
- Uniform Guidance and ARP-specific award terms: Like with all federal awards of funds, ARP funds come with terms specific to that award. In addition, the US Treasury as provided and continues to provide guidance, rules, and assistance in the form of formalized rules (initially an "Interim Final Rule" IFR) codified at 31 CFR Part 35, and answers to Frequently Asked Questions (FAQ), and most recently the Final Rule, 31 CFR Part 35, RIN 1505-AC77, that must be followed. Moreover, the award of ARP funds are specifically conditioned upon compliance with all the following:

- Federal regulations applicable to this award include, without limitation, the following:
- Uniform Administrative Requirements, Cost Principals, and Audit Requirements for Federal Awards, 2 C.F.R. Part 200, other than such provisions as Treasury may determine are inapplicable to this Award and subject to such exceptions as may

be otherwise provided by Treasury. Subpart F — Audit Requirements of the Uniform Guidance, implementing the Single Audit Act.

- Universal Identifier and System for Award Management (SAM), 2 C.F.R. Part 25, pursuant to which the award term set forth in Appendix A to 2 C,F.R. Part 25.
- Reporting Subaward and Executive Compensation Information, 2 C.F.R. Part 170, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 170.
- OMB' Guidelines to Agencies on Governmentwide Debarment and Suspension (Non-procurement), 2 C.F.R. Part 180, including the requirement to include a term or condition in all lower tier covered transactions (contracts and subcontracts described in 2 C.F.R. Part 180, subpart B) that the award 'is subject to 2 C.R.R. Part 180 and Treasury's implementing regulation at 31 C.F.R. Part 19.
- Recipient Integrity and Performance Matters, pursuant to which the award term set forth in 2 C.F.R. Part 200, Appendix Xlll to Part 200,
- Governmentwide Requirements for Drug-Free Workplace, 31 C.F.R. Part 20.
- New Restrictions on Lobbying, CFR. Part 21.
- Uniform Relocation Assistance and Real Property Acquisitions Act of 1970 (42 U.S.C. 554601-4655) and implementing regulations.

- Generally applicable federal environmental laws and regulations.
- Statutes and regulations prohibiting discrimination applicable to this award include, without limitation, the following:
  - Title VI of the Civil Rights Act of 1964 (42 U.S.C. 55 2000d et seq.) and Treasury's implementing regulations at 31 C.F,R, Part 22 which prohibit. discrimination on the basis of race, color, or national origin under programs or activities receiving federal financial assistance;
  - The Fair Housing Act, Title Vlll of the Civil Rights Act of 1968 (42 U.S.C. SS 3601 et seq.), which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status; or disability;
  - Section 504 of Rehabilitation Act of 1973, as amended (29 U.S.C. 5 794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance;
  - The Age Discrimination Act of 1975, as amended (42 U.S.C.. 6010 et seq.), and Treasury's implementing regulations at 31 C.F.R. Part 23, which prohibit discrimination on the basis of age in program or activities receiving federal financial assistance; and
  - Title Il of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. SS 12101 et seq.), which prohibits discrimination on the basis of disability under programs, activities, and services provided or made available by state and local governments or instrumentalitiesor agencies thereto.

- Ohio state laws: Supplementing federal rules/guidance, are state provisions that dictate the competitive procurement processes are required, avoidance of

conflicts of interest and other ethical concerns. These include competitive procurement laws included in R.C. 307.86, and R.C.153.66, and related statutes. These also include laws prohibiting conduct that amounts to fraud, theft, embezzlement or the like and incrude, but are not limited to, any conduct covered by R.C. 2921.41 Theft in Office; R.C. 2921.42 Having an Unlawful Interest in a Public Contract; R.C. 2921.43 Soliciting or Receiving Improper Compensation; and, R.C. 2921.431 Soliciting Political Contributions from Public Employees.

- County policy: Policies contained jn the Lake County Personnel Manual apply to the conduct of county employees engaged in ARP-eligible procurement processes. Those include prohibitions against: unlawful discrimination and harassment; engaging in unethical conduct; acts constituting conflicts of interest; and nepotism. These policies are public records maintained by the Lake County Commissioners.

To assure compliance with the law, all parties involved in the procurement process expected to document the basis for their decisions, retain all re.cords related to those acts/decisions for a period of no less than five (5) years after all funds are expended, and be ready to make those records available to the federal awarding authority an any state or federal auditing authorityr including but not necessarily limited to the US Treasury, the US Government Accountability Office, the Ohio Auditor of State.

1. Introduction and Purpose.

In keeping with its commitment to maintain the highest standards of conduct and ethics in all of its conduct; including distribution of ARP fu nds, Lake County (The "County") has adopted this Procurement Policy ("Policy") to ensure that goods and services paid for by the County through ARP funding, and any other revenue sources lawfully U pooled" with an ARP-eligible project are obtained in a cost-effective manner and in compliance with applicable federal and state laws.

The acquisition processes described in this Policy apply to all purchases made by any county actor involved in the procurement, contracting for, or completion of any ARP-eligible project. Subrecipients may a}so be subject to prior funding source approval and additional requirements imposed by grants or contracts. Project Directors are responsible for•reviewing any such additional requirements, bringing them to the attention of the County Commissioners' office, and ensuring that contractors and vendors perform in accordance with the terms, conditions, and specifications of their contracts or purchase orders.

2. Code of Conduct,

Lake County employees and any of its agents shall not participate in the selection, award, or administration of a contract of they have a real or apparent conflict of interest. Such a conflict arises when the employee or agent has any immediate family member (spouse, child, parent, parent-in-law, sibling, or sibling-in-law); partner; or an organization that. employs, or is about to employ, and of the above who has a direct or indirect financial or other interest in or will receive a tangible personal benefit from a firm or individual considered for the contract award, If in do.ubt, the employee should consult all of the legal sources referenced in the Preamble hereto and/or consult legal counsel.

In addition, Employees and their agents shall not solicit or acceptßifts, money, gratuities, favors, or anything of monetary value from vendors, prospective vendors, parties. to subcontracts, or any other person or entity that receives, or may receive, compensation for providing goods or performing services for the County. All award recipients shall be provided with, and expected to review, this policy for disclosing, reviewing and addressing actual and potential conflicts of interest.

3. Procurement Requirements and Considerations.

A. Competition. All procurements shall be conducted in a manner that complies with law as it relates to competitive procurement processes thus .allowing, to the maximum extent practical, fair and open competition. Procurements shall:

i, Avoid noncompetitive practices that may restrict or eliminate •competition, including but not limited to:

a. Unreasonable qualification requirements.

b. Unnecessary experience and excessive bonding requirements.

c. Noncompetitive pricing practices between firms or affiliated companies.

d. Noncompetitive contracts to consultants on retainer contracts.

e. Organizational conflicts of interest.

f. Specifying '*brand name" only instead of allowing "an equal to" product.

g. Arbitrary actions.

h. Utilizing a prequalified firm or company, even if under a monetary threshold that would permit procurement without other competitive processes, excessively and to the exclusion of other prequalified firms or companies.

ii. Not intentionally split a single purchase into two or more separate purchases to avoid dollar thresholds that require more formal procurement methods.

iii. Exclude contractors that develop or draft specifications, requirements, statements of work, or invitations for bids or requests for a proposal from competing for such procurement.

iv. Include in any prequalified list an adequate number of current, qualified vendors, firms, or products. Prequalification of firms or companies shall be done not less frequently than every eighteen (18) months.

v. Not preclude potential bidders from qualifying during the solicitation period unless required by law due to being lawfully barred from being considered.

vi. Not use any geographic preferences (state, focal, or tribal) in the evaluation of bids or proposals, except where expressly mandated or encouraged by applicable Federal statutes.

vii. Any procurement to be made based upon a representation that the vendor is a sole source of the product or services shall be accompanied by a written explanation and a price/cost justification as to why a different supply/product/improvement that would avoid need for a sole-source vendor is not practical.

B. Profit For sote source procurements or when cost analysis is used, profit must be negotiated as a separate element of the procurement price.

i, To establish a fair and reasonable profit, consider: complexity of work performed, risk borne by contractor, contractor's investment, amount of subcontracting, quality of contractor's record and past performance, and industry profit rates in surrounding geographical area for similar work,

ii. The County may not use either the cost plus a percentage of cost, or percentage of construction cost methods of contracting.

C. Minoritv Owned, Women Owned, and Small Business Vendors. The County is committed to taking all necessary affirmative steps to assure that minority businesses, women's business enterprises and labor surplus area firms ('t MWSB Vendors") are used whenever possible. Such steps include:

i. Placing qualified MWSB Vendors on solicitation lists when such vendors submit sufficient documentation of qualifications; ii, Soliciting MWSB Vendors whenever they are potential sources;

iii. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by MWSB Vendors;

iv. Establishing delivery schedules* where requirement permits, which encourage participation by MWSB Vendors;

v. using services and assistance, as appropriate, of such organizations as Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and

vi. Requiring the prime contractor, if subcontracts are used, to take affirmative steps listed in paragraphs (i) through (v) of this section as noted just above.

D. Minimum Bonding Requirements, For construction or facility improvement contracts or subcontracts exceeding $250,000, the requirements for bonding shall, at a minimum, be as follows:

i. A bid guarantee from each bidder is equivalent to five percent of the bid price.

ii: A performance bond on the part of the contractor is for 100% of the contract price.

iii. A payment bond on the part of the contractor is for 100% of the contract price.

iv. All bonds required in this section are obtained from companies holding certificates of authority as acceptable sureties pursuant to the surety requirements for companies doing business with the United States (31 CFR Part 223).

E. Solicitations. All Solicitations shall incorporate a clear and accurate description of the technical requirements for products or services to be procured. Descriptions:

i. Must not contain features which unduly restrict competition.

ii.. May include a statement of the qualitative nature of material, product or service to be. procured.

.iii. When necessary, must set forth minimum essential characteristics and standards necessary to satisfy its intended use.

iv. Must avoid detailed product specifications if at all possible.

v, May use a 'I brand name or equivalent" description to define performance or other salient requirements when impractical or uneconomical to make a clear and accurate description of teChnical requirements. Specific named brand features required to be met must be clearly stated.

via Must identify all requirements which offerors must fulfill and all other factors to be used in evaluating bids and proposals.

F. Considerations. The County should consider taking the following actions when procuring goods and services:

i. Conduct a lease vs. purchase analysis, when appropriate, including for property and large equipment.

ii. Consolidate or break out procurements to obtain a more economical purchase, if possible

iii. Use state and local intergovernmental or inter-entity agreements, or common or shared goods and services, where appropriate. Provided, however, that steps are first taken to make sure that the process used by these other entities comply with federal procurement processes applicable to ARP procurements and obtaining documentation of that fact.so that it can be properly accounted for and put in the County's federal schedule.

iv. Use federal excess and surplus property in lieu of purchasing new equipment and. property, if feasible and reduces project costs.

v. Use value engineering clauses to offer reasonable Opportunities for cost reductions in construction contracts for projects of sufficient size.

vie Use time and materials contracts only if no other contract is suitable and the contract includes a ceiling price that the contractor exceeds at his/her/their own risk. If such contract is negotiated and awarded, the County must assert a high degree of oversight to obtain reasonable assurance that the contractor is suing efficient methods and effective cost controls.

4. Procurement Methods

A. All procurements. ACE procurements made under this policy shall:

i. Be necessary, at a reasonable cost, documented, not prohibited by law or the applicable funding source, and made in accordance with this Policy.

ii. Avoid acquiring unnecessary or duplicative items.

iii. Engage responsible vendors who possess the ability to perform successfully under the terms and conditions of a proposed procurement. The County shall consider: vendor integrity, public policy compliance, past performance record and financial and technical resources.

B. Standard Methods, For transactions mee.ting the specifications set forth in Exhibit I "Standard Methods of Procurement", the County shall follow the applicable procurement method set forth therein.

C. Exceptions to Standard Methods.

i. Sole Source. Procurement by Solicitation of a proposal from a single source may only be used if one of the following apply and are documented to the satisfaction of Lake County Administrator:

a. The amountofthe procurement does not exceed the micro-purchase threshold of $50,000 and to the maximum extent practicable efforts are made to distribute such purchases equitably among qualified suppliers;

b. item is onEy available from a single source;

c. Public exigency or emergency will not permit any delay;

d. Federal awarding agency or pass-through expressly authorizes in response to a request; or

e. After soliciting a number of•sourcesj competition is determined inadequate.

ii. Other.. Recognized acquisition methods acceptable for federal procurement, whereby competitive process has been done by others (cooperative purchase agreements, etc.) Provided, however, that steps are first taken to make sure that the process used by these other entities comply with federal procurement processes applicable to ARP procurements and obtaining documentation of that fact so that it can be properly accounted for and put in the County's federal schedule. [Note: Ohio "state contract" procurement is not competitive for federal procurement.]

5. Procurement Procedures, Generally.

See Exhibit 2 for a simplified version of Lake County's Procurement process.

6. Selection Process.

Documentation shall be maintained in order to reconstruct how a selection of a vendor was made. This includes retention of all rating/ranking materials, pre-qualified vendor submittals; as well as all bid documents. Formal/final selection of a vendor shall be documented by•a notation expiaining. the selection decision that shall include factors favoring the selection and/or disfavoring a vendor not granted the contract.

The department/office seeking the procurement/contract shall document the factors it considered and weighed in the selection process and who did the selection review unless the basis for the selection is obvious, for example clearly the•lowest bid.

7. Contract Provisions.

All ARP County procurement contracts that exceed the self-certified micro purchase amount (i.e. $50,000) shall use the standard contract attached hereto as Exhibit 4 as this is the most expeditious manner to assure that all contracts comply with the Uniform Guidance's mandate for required contractual terms. This contract should generally be used for all smaller amounts should the contract envision vendors being expected to provide engineering, construction or installation services. Only the Lake County Administrator shall permit any deviation from this practice.

Any vendors shall assume the responsibility for being knowledgeable of which terms apply to these funds by accessing relevant information from the US Treasury's website, https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribalgovernments/state-and-local-fiscal-recovery-funds and/or consulting their own counsel.

8. Contract Disputes.

The Lake County Administrator shall be notified as soon as any County employee becomes aware that a dispute about a contracted purchase or construction has surfaced. At that point, the Lake County Administrator shall work with the vendor to address the dispute in an informal way rather than resort to a formal process outlined in the contract. Any resolution shall be documented and reviewed for legality.

9. Miscellaneous Documentation

Unless these provisions are already included in a contract signed by a vendor, the County shall assure all of the following.

A. Debarment/Exclusion. The County shall confirm and document that the vendor is not excluded from doing business with the federal government (see www.sam.gov/SAM/) or state government (ohioauditor.gov/findings.html) before entering into a contract. If the County enters into a contract and thereafter were to learn that the vendor has become barred, the County shall terminate or void in whole or in part any subaward or contract with a person or entity listed in SAM as a prohibited or restricted source.

B. Never Contract with the Enemy. The County shall exercise due diligence to ensure that none of the funds, including supplies and services, received under the County's ARP grant or cooperative agreement is provided directly or indirectly (including through subawards or contracts) to a person or entity who is actively opposing the United States or coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities. If the County enters into a contract and thereafter were to learn that the vendor has become barred, the County shall terminate or void in whole or in part any subaward or contract with such person or entity.

C. Lobbying Certificate. The County shall obtain signed Lobbying Certificates substantially in the form that appears as part of Exhibit 5.

D. Civil Right, Equal Opportunity, etc. The County shall obtain signed Certificates addressing these matters substantially in the form that appears as part of Exhibit 5.

E. "Huawei ban". The County shall make reasonable efforts to not obligate or loan or expend funds received through ARP to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services or systems that uses covered telecommunications equipment or services a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunication equipment produced by Huawei Technologies Company or ZTE Corporatjon (or any subsidiary or affiliate of such entities) including:

    i. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Handzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).

ii. Telecommunications or video surveillance services provided by such entities or using such equipment.

iii. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligenceor the Director if the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

F. Domestic preferences for procurements. As appropriate and to the extent consistent with law, the County should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials p.roduced in - the- United States (including but not limited to iron, aluminum* steel, cement, and other manufactured products), For purposes of this section: (i) "Produced in the United States!' means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings occurred in the United States. (iii) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

G. Records. The County shall maintain records sufficient to detail history of each procurement transaction. These records must include, but are not limited to:

i. A description and supporting documentation showing rationale for procurement method including a cost-price analysis (unless vendor islowest

ii. Selection of contract type; iii. Written price or rate quotations (such as catalog. price, online price, emaif or written quote), if applicable; iv. Copies of advertisements, requests for proposals, bid sheets or bid proposal packets;

v. Reasons for vendor selection or rejection, including Finance Committee and Board minutes, rejection letters and award letter; and vi. The basis for the contract price.

10. Compliance with this Policy

Program Directors and, where applicable, the Lake County Administrator, shall maintain oversight to ensure that contractors and vendors perform in accordance with the terms, conditions, and specifications of contracts or purchase orders. Violations of this policy may result in disciplinary action, up to and including termination.

EXHIBIT 1

Standard Methods of Procurement

WARNING: Ohio and Federal procurement procedures are different. Compliance with one will not assure compliance with the other. For ARP procurements, the County needs to follow most restrictive. Legal Review by the Prosecutor's Office and/or Lake County Administrator required.

Requirements of federal law

Type	Threshold	Method
Micro-purchase	<$50,000 [self-certified Resolution attached p.v]	Price must be reasonable based upon research, experience, history and/or comparison of other available prices Must solicit some form of price or rate quotation Periodically distribute purchases equitability among qualified vendors
Small Purchase	$50,000.01<$250,000 [Simplified Acquisition Threshold Resolution attached p.vi]	Price must be reasonable based upon research, experience, history and/or comparison of other available prices Obtain written price or rate quotations from at least two additional qualified vendors Example documentation: catalog price, online price, email or written quote
Sealed Bids	>$250,000 [To be used when realistic/adequate specifications can be completed and procurement lends itself to a fixed price for product or services.]	Pre-Solicitation Conduct cost or price analysis Solicitation Publicly advertise invitation for bids Include specifications or information sufficient for bidders to respond Provide adequate time to respond Solicit a sufficient number of bids by use of prequalified lists, and/or publication Bid Review/Selection Open bids at time and place set forth in invite Award to lowest responsive and responsible bidder May reject bids for sound, documented reason Award written, fixed price contract

Competitive Proposals	>$250,000	Pre-Solicitation Conduct cost or price analysis Solicitation Publicly advertise request for proposals Identifies all evaluation factors and their relative importance Solicit bids from at least 2 vendors Proposal Review/Selection Consider all proposals to maximum extent practical - Use written method to conduct technical evaluations of the proposals. Such written methods should identify factors considered and weight given to factors Award contract to bidder with most advantageous proposal, considering price and other factors Award fixed price or cost-reimbursement contract

Requirements of state law

Type	Threshold	Method
Pre-Qualified Professional Design Services R.C 153.71	<$50,000	Must be pre-qualified Price must be reasonable and negotiated Periodically distribute purchases equitably among qualified vendors
Pre-Qualified Professional Design Services R.C 153.69	$50,000 +	Must be pre-qualified At least three qualified vendors must be ranked unless fewer than three vendors are not qualified and that conclusion is documented in writing Price must be reasonable and negotiated Periodically distribute purchases equitably among qualified vendors
Professional Design Services by RFQ or RFP	Any $ amount	Pre-Solicitation Conduct cost or price analysis Solicitation Publicly advertise invitation for responses Include specifications or information sufficient for interested parties to respond Provide adequate time to respond Solicit a sufficient number of responses by use of prequalified lists, and/or publication Review/Selection [redacted] Open responses at time and place set forth in invite [redacted] Award to most qualified after evaluation May reject responses for sound, documented reason [redacted] Award written, fixed price contract
Construction [Emergency] R.C. 307.86	>$50,000<$100,000	- Emergency declaration by unanimous vote of the Board of County Commissioners - Conduct cost or price analysis in the form of three quotes

Construction [NonEmergency] R.C. 30786	>$50,000	Pre-Solicitation Conduct cost or price analysis Solicitation Publicly advertise invitation for bids Include specifications or information sufficient for bidders to respond Provide adequate time to respond Solicit a sufficient number of bids by use of prequalified lists, and/or publication Review/Selection [redacted] Open bids at time and place set forth in invite [redacted] Award to lowest responsive and responsible bidder May reject bids for sound, documented reason [redacted] Award written, fixed price contract
Construction Project Initiated by Competitive Proposals	Any	Pre-Solicitation Conduct cost or price analysis Solicitation Publicly advertise request for proposals

		Identifies all evaluation factors and their relative importance Solicit bids from at keast two vendors. Review/Selection Consider all proposals to maximum extent practical Use written method to conduct technical evaluations of the proposals Award contract to bidder with most advantageous proposal* considering price and other factors Award fixed price or cost-reimbursement contract

EXHIBIT 2

County ARPA Procurement Procedures

A. [Frequency of Procurement].

1. A Procurement Period •is the period o.f time after the initial procurement procedure, i.e., a quote or request for proposals, and before the County must conduct a new procurement process.
2. Unless otherwise stated, Procurement Periods can vary in length.
    a. Factors to consider when setting a Procurement Period: length of funding source contract, complexity of funding source requirements, type of service to be provided, customization needed.
3. Generally, the County should conduct a procurement process for most goods and services every year unless a contract extending multiple years for the goods or services has already been entered into, In any event, the frequency at which the County conducts procurement:processes should be reasonable and should take into account funding source requirements as well as the nature of the goods and services procured. Unless otherwise required to occur earlier, the default is for the County to conduct a procurement every five years. B. [New Contract/Purchase Order]

1. The County determines the applicable and appropriate procurement method.
    a. If micro-purchase or small purchase methods are appropriate, conduct procurement as outlined in this Policy and retain appropriate documentation of quotes and vendor selection, etc. If prior approval is required for the purchase, refer to step 2.
    b, If sealed or •competitive bid methods are required, complete steps 2 through 5.
2. If ARP funding source approval is required, work with Lake County Administrator to obtain. Depending on the procurement method used, the County department .wishing to enter into a contract completes the Procurement Checklist form and submits the entire set of relevant documents to the Lake County Administrator as .part of the approval process.
3. Designated Staff from the department wishing to enter •into a contract or the Lake County Administrator formalizes completion of the process for final dedication of funds by assuring that the proposed action meets with' approval of the Prosecutor, and if necessary, certification of available funds by the Auditor.
4. The Lake County Administrator will then arrange to have the Board of County Commissioners dedicate/obiigate an appropriate amount of funds by formai resolution/purchase order.
5. Once a resolution is approved, Designated Staff from the department wishing to enter into a contract will formalize the completion of remaining steps (e.g. completion of a bid/RFQ and appropriate publications, etc.)

C. [Extension/Renewal of Existing Contract/Purchase Order]

1. For excess procurements of up to $175,000, the County may amend or renew an existing contract/purchase order to extend its term if any adjustment in price is deemed reasonable pursuant to a costinalysis and all other terms remain the same. This option should generally be limited to situations where there have been additional costs that were not reasonably anticipated.
    a. The Project Director should take steps to foresee when this is about to occur such that an amendment can be addressed prior to expenditure ofthe initially dedicated funds.
    b. The Project Director shall document why this additional cost was not reasonably foreseeable.
    c. This process may not be used to circumvent a proper competitive process by accepting a low-cost bid or proposal only to have it increased in this manner.

2. For excess procurements over $175,000, a new procurement process will generally be undertaken whether by new bidding, RFQ/RFP, or new ranking of pre-qualified vendors as may be appiicable.
3. In instances where an extension of a contract causes the combined total of the contract (i.e. the original cost plus the cost of any extension(s)) to exceed a simplified acquisition threshold of $250,000, a new/full procurement process shall be done, except in the event:
    a. Where the initial contract was entered into without knowledge or expectation of it being funded by American Rescue Plan dollars and the extension of the contract in and of itself does not meet that threshold; and
    b. Only if the US Treasury has by rule, or FAQ, expressly permitted this type of contract extension/modification to exclude consideration •of the procurement process associated with the original contract.

Exhibit 3

Lake County Office of Planning & Community Development
American Rescue Plan Procurement Checklist

Please complete and submit this form prior to work start and at the conclusion of the project. Submit this form and any attachments by email to:Jason.Boyd@lakecountyohio.gov or by mail to: Lake County Commissioners Office, 105 Main Street, Painesville, OH 44077.

1.General Information

Agency or Community Name	Contact Person & Title (Primary Grant Administrator)
Direct Telephone No.	E-Mail

Project Title	

2. Procurement Method Used (check one)
   - ___ Sealed Bids Competitive Proposals Small Purchases
   - ___ Non-Competitive Proposals (prior approval required for this method)

3. Project Milestones Check if completed:
   - ___ Project specifications were prepared
   - ___ Bid advertisement appeared in newspaper
   - ___ Pre-bid meeting was conducted
   - ___ Affirmative steps were taken for contracting with small businesses, MBEs, WBEs, and labor surplus firms.
   - ___ Adequate number of responses received
     Contract was awarded
   - ___ Pre-construction meeting was conducted
     Construction has commenced
   - ___ Construction is completed
   - ___ Final walk-thru meeting was conducted
   - ___ Final payment was issued to the contractor
   - ___ Final pay request was submitted to the County
     - Final pay request includes: Pay request form, Contractor's invoice, Proof of payment to contractor, Pictures of completed project

4. Documentation

   PEease submit the following documents as they become available (digital or hard-copy), Check if provided:
   - ___ Project Specifications
   - ___ Pre-bid meeting minutes or notes
     List:of Subcontractors
   - ___ Bid package or RFP/RFQ
   - ___ Bid summary sheet
   - ___ Print outs from review of the Federal debarred and suspended list at sam.gov (federal) and auditor.state.oh.us (state)
   - ___ Contract between Subrecipient and General Contractor
   - ___ Pre-construction meeting minutes or notes
   - ___ Final walk-thru meeting minutes or notes
   - ___ Proof of payment to Vendor(s) (cancelled checks)

5. Adjusted Project Specific Information

   Have changes in the budget or scope developed since the Subrecipient Agreement was finalized?

   .No
   - ___ Yes (Please complete the section below.)

     a) Amount of ARPA Funds Awarded $_____
     b) Matching Funds $_____
     c) Total Cost of Project $_____

Total # of persons project will serve: _____
Total # of households project will serve: _____

Modifications to project design (descr.iption): _____

6. Additional Comments:

7. Sign Below:

_____
Signature

_____ _____
Title Date

End of form

Exhibit 4

Insert contract template, if Prosecutor's office has a standard contract

Exhibit 5

Acknowledgement of

Lake County Ohio Procurement Policy

i acknowledge that I have reviewed and understand the policies and guidelines with the document provided by Lake County, Ohio. I understand it is my responsibility to comply with and implement all policies and procedures included in Lake County, Ohio's policy document.

_____

Vendor Signature

_____

Vendor Print Name

_____

Date

NOTICE TO PROCEED

To: _____ Date: _____

Project:

McKinley Community Outreach Center Roof Replacement_____

You are hereby notified that the Contract Time under the above stated Contract will commence to run on _____, 20 _____.

THEREFORE:

The date of SUBSTANTIAL COMPLETION is _____ **,** 20_____.

The date for FINAL COMPLETION of all work is. _____, 20_____.

THE BOARD OF LAKE COUNTY COMMISSIONERS
(OWNER)

By: _____
Jason Boyd, County Administrator
LAKE COUNTY, OHIO

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged

BY _____(CONTRACTOR)

this ___ day of _____ , 20 ____ .

BY _____(CONTRACTOR'S REPRESENTATIVE)

Name _____(print)

Title _____

NOTICE OF COMMENCEMENT OF A
PUBLIC IMPROVEMENT PURSUANT TO
REVISED CODE No. 1311.252

State of Ohio)
) ss:
County of Lake)

Mr. Jason Boyd (the "Affiant"), being first duly sworn, says that:

1. Affiant is the County Administrator of the COUNTY OF LAKE, 105 MAIN STREET, PAINESVILLE, OH 44077 (the "Public Authority").

2. The Public Authority will be commencing a public improvement identified as follows;

3. The following lists the name, address and trade of each of the principal contractors working on this public improvement:

NAME AND ADDRESS	TRADE	DATE OF FIRST EXECUTED CONTRACT FOR THE PUBLIC IMPROVEMENT

4. The following lists the names and addresses of the sureties for all of those principal contractors:

PRINCIPAL CONTRACTORS	NAME OF SURETY	ADDRESS OF SURETY

5. For the purpose of serving an affidavit pursuant to Revised Code No. 1311.26, service may be made upon the following representative of the Public Authority: John R. Hamercheck, President.

FURTHER AFFIANT SAYETH NAUGHT.

Signature - _____
Jason Boyd, County Administrator

SWORN TO BEFORE ME and subscribed in my presence this _____ day of _____,20__.

(SEAL) _____
Notary Public

MCKINLEY COMMUNITY OUTREACH CENTER ROOF REPLACEMENT

ESCROW WAIVER

In accordance with a certain Contract between the <<Owner Muni>>, <<Owner State>>, (hereinafter referred to as "the Owner") and <<Contract Name>>, (hereinafter referred to as "the Contractor") it is mutually agreed by and between the parties hereto that because of the short-term duration of the within contract, no escrow account will be established pursuant to Sections 153.13, 153.14 and 15.63 of the Ohio Revised Code nor shall any interest be paid on any retainage.

CONTRACTOR

_____

Contractor, President

LAKE COUNTY BOARD OF COMMISSIONERS

_____

John R. Hamercheck, President

For Lake County Auditor's Use Only

No:

Please check one:

Rate:
Type:

____ **New** _____ **Change**

LAKE COUNTY, OHIO
VENDOR INFORMATION REQUEST FORM

(In lieu of W-9 Please Type or Print)

VENDOR NAME: (as shown on your income tax return):

BUSINESS NAME (DBA - Doing Business As) if applicable and different from name above:

STREET ADDRESS:

CITY:

STATE: *ZIP CODE:*

PHONE NUMBER: ( )

"REMIT TO" ADDRESS (If different from above):

STREET ADDRESS:

CITY:

STATE: *ZIP CODE:*

TYPE OF BUSINESS (Please check one):

(1) Corporation *(4) Government*

(2) Partnership *(5) Non-Profit Organization*

(3) Sole Proprietor (individual) *(6) Limited Liability Company (LLC)*

TYPES OF GOODS/SERVICES PROVIDED:

FEDERAL TAX IDENTIFICATION NUMBER: **The TIN provided must match the name given on line 1 above to avoid backup withholding. ** (Must be 9 digits)

EMPLOYER IDENTIFICATION NUMBER

or

SOCIAL SECURITY NUMBER:

(If S.S.N., print individual's name if different from vendor name above)

Certification: Upon penalties of perjury, I certify that:

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

NAME: (signature required)

TITLE:

DATE:

CHANGE ORDER

Order No. _____

Date: _____

NAME OF PROJECT: MCKINLEY COMMUNITY OUTREACH CENTER ROOF REPLACEMENT

OWNER: THE BOARD OF LAKE COUNTY COMMISSIONERS

CONTRACTOR: _____

The following changes are hereby made to the CONTRACT DOCUMENTS:

Justification:

Change to the CONTRACT PRICE:

Original CONTRACT PRICE: ..... $_____

Current CONTRACT PRICE adjusted by previous CHANGE ORDER ..... $_____

The CONTRACT PRICE due to this CHANGE ORDER will be (increased) (decreased) by: $_____

The new CONTRACT PRICE including this CHANGE ORDER will be ..... $_____

The CONTRACT TIME will be (increased) (decreased) by _____ calendar days.

The date for completion of all work will be _____ (Date).

Requested by: (Contractor)	DATE	John R. Hamercheck, President	DATE
Recommended by: (Owner's Representative)	DATE	John T. Plecnik, Vice President	DATE
Accepted by: Jason Boyd, County Administrator	DATE	Mark Tyler, Commissioner	DATE

Invoice Date: _____ Application No: _____

For Period Ending: _____

Project No: _____

Project Name: _____

Owner: Board of Lake County Commissioners
105 Main Street
Painesville, Ohio 44077

Contractor: _____
_____
_____

Original Contract Price: _____

Pay Period From: _____
To: _____

Change Order #1: _____

Change Order #2: _____

Current Contract Amount: _____

Total Amount Completed:	_____
Retainage (8% of the first 50%)	_____
92% of Stored Material	_____
Less Previous Payments:	_____
Less Credits Due to Owner:	_____
Amount to be Paid:	_____

The undersigned Contractor certifies that the above materials and services have been furnished and performed in accordance with the conditions of the contract for the above work, and that payment has not been received and therefore is due and to be paid on said contract.

Application Submitted by:	**Approvals:**
Company Address	Signature Date
Signature Date	Signature Date
Recommended By:	
Signature Date	Signature Date
Signature Date	Signature Date

FINAL DOCUMENTATION PACKAGE

AFFIDAVIT OF PAYMENT

To All Whom It May Concern:

WHEREAS, the undersigned has been employed_____

_____

to furnish labor and materials for_____

_____work,

under a contract_____

for the improvement of the property described as_____

_____

in the_____of_____

County of _____State of_____

of which_____

_____is the Owner.

NOW, THEREFORE, this_____day of _____. 20 _____.

The undersigned, as the Contractor for the above-named Contract pursuant to the Conditions of the Contract hereby certifies that, except as listed below, he has paid in full or has otherwise satisfied all obligations for all materials and equipment furnished, for all work, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or his property might in any way be held responsible.

EXCEPTIONS: (If none, write "None". If required by the Owner, the Contractor shall furnish bond satisfactory to the Owner for each exception.)

ATTACHMENTS:
1. Consent of Surety to Final Payment. (Whenever Surety is involved, Consent of Surety is required.)
2. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
3. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers.
4. Contractor's Affidavit of Release of Liens.

_____(SEAL)
CONTRACTOR (Name of sole ownership, corporation or partnership)

_____(SEAL)
(Signature of Authorized Representative)

(Affix corporate
seal here)

AFFIDAVIT OF RELEASE OF LIENS

To All Whom It May Concern:

WHEREAS, the undersigned has been employed_____

_____

to furnish labor and materials for_____

_____work,

under a contract_____

for the improvement of the property described as_____

_____

in the_____of_____

County of _____State of_____

of which_____

_____is the Owner.

NOW, THEREFORE, this_____day of _____. 20 _____.

The undersigned, as the Contractor for the above-named Contract pursuant to the Conditions of the Contract hereby certifies that, except as listed below, he has paid in full or has otherwise satisfied all obligations for all materials and equipment furnished, for all work, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or his property might in any way be held responsible.

EXCEPTIONS: (If none, write "None". If required by the Owner, the Contractor shall furnish bond satisfactory to the Owner for each exception.)

ATTACHMENTS:
1. Contractor's Release of Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers.

_____(SEAL)
CONTRACTOR (Name of sole ownership, corporation of partnership)

_____(SEAL)
(Signature of Authorized Representative)

(Affix corporate seal here)

TITLE:_____

CERTIFICATE OF SUBSTANTIAL COMPLETION

To All Whom It May Concern:

WHEREAS, the undersigned has been employed_____

_____

to furnish labor and materials for_____

_____work,

under a contract_____

for the improvement of the property described as_____

_____

in the_____of_____

County of _____State of_____

of which_____

_____is the Owner.

NOW, THEREFORE, this_____day of _____. 20 _____.

The Work performed under this Contract has been reviewed and found to be substantially complete.

The Date of Substantial Completion is hereby established as

which is also the date of commencement of all warranties and guarantees required by the Contract Documents.

DEFINITION OF DATE OF SUBSTANTIAL COMPLETION

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Owner's Representative when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner may occupy the Work or designated portion thereof for the use for which it is intended.

A list of items to be completed or corrected, prepared by the Contractor and verified and amended by the Owner's Representative is appended hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

_____ _____ _____

OWNER'S REPRESENTATIVE BY
DATE

The Contractor will complete or correct the Work on the list of items appended hereto within days from the above Date of Substantial Completion.

_____ _____ _____

CONTRACTOR BY DATE

The Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at (time) on
(date).

OWNER BY DATE

CONSENT OF SURETY COMPANY TO FINAL PAYMENT

To All Whom It May Concern:

WHEREAS, the undersigned has been employed_____

_____

to furnish labor and materials for_____

_____work,

under a contract_____

for the improvement of the property described as_____

_____

in the_____of_____

County of _____State of_____

of which_____

_____is the Owner.

NOW, THEREFORE, this_____day of _____. 20_____.

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the (here insert name and address of Surety Company)

_____ , SURETY COMPANY,

on bond of (here insert name and address of Contractor)

_____ ,CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to (here insert name and address of Owner)

_____ ,OWNER,

as set forth in the said Surety Company's bond.

IN WITNESS WHEREOF,

the Surety Company has hereunto set its hand this day of 20 .

_____

Surety Company

_____

Signature of Authorized Representative

Attest:

(Seal):

_____

Title

FINAL WAIVER OF LIEN

To All Whom It May Concern:

WHEREAS, the undersigned has been employed_____

_____

to furnish labor and materials for_____

_____work,

under a contract_____

for the improvement of the property described as_____

_____

in the_____of_____

County of _____State of_____

of which_____

_____is the Owner.

NOW, THEREFORE, this_____day of _____. 20_____.

for and in consideration of the sum of (E)_____

Dollars paid simultaneously herewith, the receipt whereof is hereby acknowledged by the undersigned, the undersigned does hereby waive and release any lien rights to, or claim of lien with respect to and on said above described premises, and the improvements thereon, and on the monies or other considerations due or to become due from the owner, on account of labor, services, material, fixtures, apparatus or machinery heretofore or which may hereafter be furnished by the undersigned to or for the above described premises by virtue of said contract.

(F)_____(SEAL)

(Name of sole ownership, corporation or partnership)

(Affix corporate seal here)

_____(SEAL)

(Signature of Authorized Representative)

TITLE:_____

INSTRUCTIONS FOR FINAL WAIVER

(A) Person or firm with whom you agreed to furnish either labor, or services, or materials, or both.

(B) Fill in nature and extent of work; strike the word labor or the word materials if not in your contract.

(C) If you have more than one contract on the same premises, describe the contract by number if available, date and extent of work.

(D) Furnish an accurate enough description of the improvement and location of the premises so that it can be distinguished from any other property.

(E) Amount shown should be the amount actually received and equal to total amount of contract as adjusted.

(F) If waiver is for a corporation, corporate name should be used, corporate seal affixed and title of officer signing waiver should be set forth: if waiver is for a partnership, the partnership name should sign and designate himself as partner.

CONTRACTOR'S CERTIFICATION OF COMPLETION

TO:

DATE_____

PROJECT_____

JOB NO. _____

CONTRACT NO._____

ATTN: Resident Project Rep.

OWNER_____

FROM: _____

(Firm or Corporation)

This is to certify that I, _____ am an authorized

official of _____

workin in the capacity of _____

and have been properly authorized by said firm or corporation to sign the following statements pertaining to the subject contract:

I know of my own personal knowledge, and do hereby certify, that the work of the contract described above has has been performed, and materials used and installed in every particular, in accordance with, and in conformity to, the contract drawings and specifications.

The contract work is now complete in all parts and requirements, and ready for your final inspection.

I understand that neither the determination by the Owner's Representative-Architect that the work is complete, nor the acceptance thereof by the Owner, shall operate as a bar to claim against the Contractor under the terms of the guarantee provisions of the contract documents.

BY_____

TITLE_____

FOR_____

GENERAL CONDITIONS

SECTION 007200
GENERAL CONDITIONS

PART 1 GENERAL

1.1 DEFINITIONS

A. The contract document consists of the AGREEMENT, the GENERAL CONDITIONS of the contract, the DRAWINGS and the SPECIFICATIONS, including all revisions hereto.

B. The Owner, the Contractor and the Owner's Representative shall be indicated as such throughout these documents. The term Contractor as used herein shall designate the successful bidder to whom the roof contract is awarded.

C. The term Owner shall be understood to be the Lake County Board of Commissioners.

D. The term Owner's Representative shall be understood to mean the representative of the Garland Company and the primary roof material manufacturer.

1.2 OWNER'S REPRESENTATIVE STATUS

A. The Owner's Representative shall have general Rights of Inspection of the work and is the agent of the Owner in all matters pertaining to the work as provided in the Contract Documents. The Owner's Representative has the authority to stop work whenever such stoppage may be necessary to ensure the proper execution of the contract and shall have authority to reject any and all materials, whether worked or unworked, if such materials are not in accordance with the plans and specifications.

1.3 CONDTION OF SITE

A. The bidders shall visit the site before submitting their bids and determine the field conditions affecting their work. In considering the bids, the Owner will assume that the bidders are aware of all items, pertinent to their work and have made allowance for same in their bids.

1.4 VERIFICATION OF DIMENSIONS AND ELEVATIONS

A. Dimensions and elevations indicated on the drawings in reference to existing structures or utilities are the best available data but are not guaranteed by the Owner's Representative and the Owner's Representative will not be responsible for their accuracy. Before bidding on any paperwork dependent upon the data involved, the Contractor shall field check and verify all dimensions, grades, lines, levels or other conditions of limitations at the site to avoid construction errors. If any work is performed by the Contractor or any of his/her subcontractors prior to adequate verification or applicable data, any resultant extra cost for adjustment of work as required to conform to existing limitations, shall be assumed by the Contractor without reimbursement or compensation by the Owner.

1.5 PROTECTION OF OWNER'S OPERATIONS

A. The Contractor shall erect such barriers, tarpaulins, doors, etc., as may be necessary to protect the Owner's operations while work is in progress. Any such openings that are essential to carrying on the work shall be securely closed by the Contractor when not in use to protect the Owner's operations.

1.6 PROTECTION OF WORK AND PROPERTY

A. The Contractor shall maintain adequate protection of all his/her work from damage and shall protect the Owner's and adjacent property from injury or loss arising from this contract. He/she shall provide and maintain at all times any danger signs, guards and/or obstructions necessary to protect the public and his/her workmen from any dangers inherent with or

created by the work in progress. He/she shall hold the Owner harmless from any loss arising due to injury or accident to the public or his/her workmen, or from theft of materials stored at the job site. All materials will be stored in locations other than on roof surfaces except as necessary and shall then be placed on plywood or other type of material to protect the roof surface at all times.

B. Before starting any work, the Contractor shall protect all grounds, copings, paving and exterior of all buildings where work will be performed.

C. In those areas where materials will be raised to the roof area, a protective covering shall be placed from the base of the wall extending up and over the top edge of the roof. This coverage shall be wide enough to assure that the exterior walls do not become stained or soiled during roofing operations.

D. Any areas of the building or grounds which have become stained or damaged in any way shall be repaired or replaced by the Contractor prior to the final inspections. The method of repair used must be acceptable to both the Owner and the Owner's Representative.

1.7 MATERIAL STORAGE AND CLEAN-UP

A. The Contractor shall keep the premises free from rubbish at all times and shall arrange his/her material storage so as not to interfere with the Owner's operations. At the completion of the job, all the unused material and rubbish shall be removed from the site. The ground shall be raked clean and the building shall be broom cleaned. If the Contractor refuses at any time to remove his/her debris from the premises, or to keep the working area clean, such cleaning will be completed by the Owner and deducted from the balance due the Contractor.

B. The Contractor shall also remove drippage of bitumen or adhesive from all walls, windows, floors, ladders and finished surfaces. Failure to do so will result in the work being done by others and the cost shall be deducted from the balance due the Contractor.

C. Materials must be delivered with manufacturer's label intact and legible. Labels must be affixed to the outside of the package stating the type of product, name and address of the manufacturer. All materials shall be stored and protected against weather, vandalism, and theft. Any materials found to be damaged or missing shall be replaced by the Contractor at no cost to the Owner.

1.8 INSPECTION OF WORK

A. Where the drawings or specifications require the inspection and approval of any work in progress by the Owner's Representative, the Contractor shall give that Representative ample notice to allow for scheduling the inspection, which shall be made promptly to avoid delay of work. If work has progressed without the required inspections or approval by the Representative, it shall be uncovered for inspection at the Contractor's expense.

B. Uncovering of work not originally inspected, or uncovering questioned work may be ordered by the Owner's Representative and it shall be done by the Contractor. If examination proves such work to be incorrectly done or not done in accordance with the plans and specifications, the Contractor shall bear all cost of the reexamination. If the work is proven correctly installed, all such expense shall be born by the Owner.

1.9 INSPECTION OF WORK IN PROGRESS AND UPON COMPLETION

A. If directed by the Owner's Representative, the Contractor shall cut not more than four (4) cores, of approximately 200 square inches each, from every newly constructed roof area, in

order to establish the amount of materials used per square foot, and shall restore all such areas to sound and watertight conditions as prior to the core testing.

B. In the event that such core cuts disclose any deficiency in materials, or soundness of construction, the Contractor shall, at his/her own expense, apply additional materials or otherwise correct the deficiencies to the satisfaction of the Owner's Representative.

C. Noncompliance with the terms of this specification and ensuing contract can result in either the cancellation of the contract, or complete replacement of the defective areas at the Contractor's expense. In the event of cancellation, the Owner will not be obligated to compensate the Contractor for any work undertaken in a defective manner

D. Damages caused by water infiltration resulting from the failure of the Contractor to secure each day's work in a weather tight manner, will be corrected at the Contractor's expense. Included as damages will be all labor costs incurred by the Owner as a result of such water infiltration.

E. The Owner will require the Owner's Representative to examine the work in progress, as well as upon completion, in order to ascertain the extent to which the materials and procedures conform to the requirements of these specifications and to the published instructions of the Manufacturer.

F. The authorized Owner's Representative shall be responsible for:
1. Keeping the Owner informed on a periodic basis as to the progress and quality of the work;
2. Calling to the attention of the Contractor those matters he/she considers to be in violation of the contract requirements;
3. Reporting to the Owner any failure or refusal of the Contractor to correct unacceptable practices;
4. Conducting preliminary and subsequent job-site meetings with the Contractor's official job representative;
5. Supervising the taking of test cuts, and the restoration of such areas;
6. Rendering any other inspection services which the Owner may designate; and
7. Certifying, after completion of the work, the extent to which the Contractor has complied with these specifications as well as to the published instructions of the Manufacturing Company.

G. The presence and activities of the Owner's Representative shall in no way relieve the Contractor of his/her contractual responsibilities.

1.10 MISCELLANEOUS UTILITIES

A. Electrical power will be furnished by the Owner for small tools only. All connections to the electrical system will be furnished by the Contractor.

B. Water for concrete, mortar, washing and drinking purposes will be furnished by the Owner. Any connections to the water system shall be completed by the Contractor.

C. At the completion of the work, or when the above connections are no longer required, the Contractor shall remove all connections and leave the facilities in a condition at least as satisfactory as prior to the commencement of his/her work.

D. Toilet facilities will be provided by the Contractor. The Contractor will be responsible for supplying a portable toilet on the job-site. The Contractor's personnel are not permitted to enter the building without proper authorization from the Owner or Owner's Representative.

1.11 CHANGES OR EXTRA WORK

A. The Owner may, without invalidating the original contract, order such changes or additions as may from time to time be deemed desirable. In so doing, the contract price shall be adjusted, as stated below, with all work being done under the conditions of the original contract except for such adjustments in extension of time as may be acceptable to the Owner. The value of such extra work shall be determined in one of the following ways:
   1. By firm adjustment;
   2. By cost plus with a guaranteed maximum;
   3. By cost with a fixed fee; or
   4. By unit cost.

B. All work covered by unit prices submitted by the Contractor in his/her proposal must be covered by a written work order. The Owner's Representative will prepare the work order in triplicate covering the quantity of work and the total cost of the work. The work order which will be written at the end of each day, will be signed by the Owner's Representative and the Contractor's foreman and/or superintendent.

1.12 CORRECTION OF WORK PRIOR TO FINAL PAYMENT

A. The Contractor shall promptly remove any work that does not meet the requirements of the plans and specifications or is incorrectly installed or otherwise disapproved by the Owner of the Owner's Representative as failing to meet the intent of the plans and specifications. The Contractor shall promptly replace any such work without expense to the Owner and shall bear the cost of making good all work of other contractors, or the Owner, destroyed or damaged by such removal or replacement.

1.13 CORRECTION OF WORK AFTER FINAL PAYMENT

A. The Contractor shall guarantee all materials and workmanship for three (3) years from date of final payment of the contract by the Owner. Any defects which may arise during this period shall be promptly repaired by the Contractor including any damage done to the Owner's property due to such defects.

1.14 DEDUCTION FOR UNCORRECTED WORK

A. If the Owner deems it unacceptable to have the Contractor correct work which has been incorrectly done, a deduction from the contract price shall be agreed upon therefore. Such a deduction from the contract price shall in no way affect the Contractor's responsibility for defects which may occur nor his/her ability for correcting them, and damage caused by them.

1.15 JOB CONDITIONS

A. All surfaces to be covered shall be smooth, dry, and free from dirt, debris, and foreign material before any of this work is installed. Pumping equipment shall be located on the ground at a safe distance from building; the location being subject to the approval of the

Owner. The Contractor shall be responsible for guarding against fires, and shall provide suitable fire extinguishers conveniently located at the site. Competent operators shall be in attendance at all times equipment is in use. Materials shall be stored neatly in areas designated by the Owner and dispersed so as to present a minimum fire hazard. Loads placed on the roof at any point shall not exceed the safe load for which the roof is designed.

B. There is NO SMOKING allowed inside any buildings and the Contractor shall be responsible for enforcement of this job rule at all times with his/her personnel.

C. The Contractor should be aware of Owner's property when tearing off the existing roof. This is required for removal of dirt, silt, debris, roof membrane and insulation from the roof surface in order to preserve the ecology, eliminate unsightly conditions and protect building faces. Specific locations will be discussed at the pre-bid conference.

D. All shingled roofing materials must be stored on a pallet or otherwise raised off of the roof. The materials are to be protected per the manufacturer's instructions.

E. Rolled Roofing Materials: All rolled roofing materials must be stored standing on end on a pallet or otherwise raised off of the roof. The materials are to be covered in a proper manner to assure that they will not become wet prior to application. Any materials that become wet or damaged must be removed from the job-site and replaced at the Contractor's expense.

F. Ladders: Any ladders used on this project must be in good condition. The ladder must also be secured at the roof line at all times while in use. All ladders must be O.S.H.A. approved.

G. No drugs or alcoholic beverages are permitted on the grounds.

H. The Contractor shall place necessary barriers and/or protection around or under all work areas where his/her operations involve risk of injury to plant.

I. The Contractor will also protect the building structure from damage in the process of the job. In the event that damage does occur to any property or equipment, or the Owner's work in process, notification must be made within two (2) working days of the incidents to the Owner and Owner's Representative.

J. During the progress of the job, if waste material and rubbish are found or damage resulting from the Contractor's operations is found, or the Contractor does not comply with the requirement by keeping the premises free of accumulations and correct the damage, it shall be the Owner's prerogative to hire personnel to do so; and the cost of this work will be deducted from the balance due the Contractor.

K. Existing roof top equipment walls, windows, etc. shall be completely protected by masking or other effective methods. Any mastics or asphalt must be cleaned off metal surfaces.

L. The Contractor is responsible for protecting all materials from the elements. If any material, such as insulation, becomes wet, it cannot be installed and must be replaced at the Contractor's expense. NOTE: Insulation and rolled roofing materials must be covered with waterproof tarps at the end of each work day. Plastic wrappers supplied by the insulation manufacturer are not acceptable substitutes for tarps. The Owner's Representative will reject any covering method material which does not adequately protect roofing materials.

M. Anyone guilty of willful destruction or unlawful removal of company property will be dismissed from the job and is subject to prosecution by law.

N. Any lawns damaged by Contractor vehicles will be restored with a stand of grass at the Contractor's expense. Any damaged pavements will likewise be restored at the Contractor's expense.

O. The Contractor must verify that all materials can be installed to accommodate the building design, pertinent codes and regulations, and the manufacturer's current recommendations.

P. The Contractor will ensure that all substances are clean, dry, sound, smooth, and free of dirt, debris, and other contamination before any materials are supplied.

Q. Any isolated areas that must be torn off and replaced will be built-up to the height of the existing roof prior to the installation of the new roofing membrane system.

1.16 WORKMANSHIP

A. All materials will be securely fastened and placed in a watertight, neat and workmanlike manner. All workmen shall be thoroughly experienced in the particular class or work upon which they are employed. All work shall be done in accordance with these specifications and shall meet the approval of the Owner or Owner's Representative. The Contractor's representative or job supervisor shall have a complete copy of specifications and drawings on the job-site at all times.

B. Contractor shall plan and conduct the operations of the work so that each section started on one day is complete and thoroughly protected before the close of work for that day.

1.17 INSULATION

A. Insulation shall have accurate dimensional stability so as to properly conform to the surfaces of the roof, cants, curbs, pipes, etc. Joints between boards shall be tight and insulation shall be held back ½" from vertical surfaces and sumps. Insulation shall be protected from the weather at all times. No more insulation shall be laid than can be completely covered with roof materials on the same day. A base sheet shall not be considered as a proper weather barrier.

B. Insulation that becomes wet during or after installation shall be removed and replaced with dry insulation. If roofing is in place, the roofing shall be also replaced. All replacing work shall be done at no added cost to the Owner.

1.18 ROOF DECK

A. Contractor shall notify the Owner or Owner's Representative of any unforeseen areas of wet insulation. Where the damage is serious and extensive, it will be the Owner's prerogative to authorize removal and replacement of deteriorated roofing, insulation and repair of the vapor barrier, if present. Where damage to the roof deck is found, the Contractor shall furnish the Owner with a unit price for removal and replacement of the damaged deck.

1.19 SAFETY

A. Contractor shall conform to requirements as designated by the United States Federal Government (O.S.H.A.). Contractor shall abide by all regulations as outlined in the O.S.H.A. handbook and shall have a handbook on location at all times.

B. Contractors hereby acknowledged that they and their workers have undergone Safety Training and shall at all times act in compliance with all NRCA recommended safety compliance rules and regulations.

1.20 WORK HOURS AND DAYS

A. When the Contract is awarded, the Contractor will contact the Owner's Representative to arrange the work schedule and the hours of the day that the workmen may be on the building.

1.21 COMPLIANCE WITH LAWS

A. The Contractor shall give notices, pay all fees, permits and comply with all laws, ordinances, rules and regulations bearing on the conduct of work.

1.22 OWNER'S RULES

A. The Contractor and all his/her personnel/agent(s) shall abide by all rules created by the Owner. The Contractor must contact the Owner's Representative for specific information regarding the rules governing all operations of the project.

B. The Contractor shall properly notify all employees of conditions relating to roof areas with very poor condition and which will be worked on. After such notification, the Contractor must take all necessary precautions to ensure the safety of his/her employees as well as the building personnel.

C. THE CONTRACTOR SHALL "HOLD HARMLESS" THE MATERIAL MANUFACTURER, AGAINST ANY LITIGATION ARISING FROM ANY ACCIDENTS DURING THE COURSE OF THE CONTRACT.

1.23 SAFETY AND ECOLOGY

A. The Contractor(s) shall conform to the requirements as designated by the United States Federal Governments (e.g., O.S.H.A).

1.24 ANTI-DISCRIMINATION IN EMPLOYMENT

A. Contractors and subcontractors shall not discriminate against any employees or applicant for employment, to be employed in performance of his/her contract, with respect to his/her hire, tenure, terms, conditions or privileges of employment because of his/her race, color, gender, sexual preference, religion, national origin, or ancestry.

PART 2 INSTRUCTIONS TO BIDDERS

2.1 QUESTIONS

A. Technical questions regarding this bid can be directed to: Tim Hollo, (440) 523-9946.

B. If the Contractor feels a conflict exists between what is considered good roofing practice and these specifications, he/she shall state in writing all objections prior to submitting quotations.

C. It is the Contractor's responsibility, during the course of the work, to bring to the attention of the Owner's Representative any defective membrane, insulation or deck discovered which has not been previously identified.

2.2 RESPONSIBILITY FOR MEASUREMENTS AND QUANTITIES

A. The Bidding Contractors shall be solely responsible for all accuracy of all measurements and for estimating the material required to satisfy these specifications.

2.3 DISCREPANCIES AND ADDENDA

A. Should a Bidder find any discrepancies in the Drawings and Specifications, or should he be in doubt as to their meaning, he/she shall notify the Owner's Representative at once, who will send a written Addendum to all Bidders concerned. Oral instructions or decisions, unless confirmed by Addenda, will not be considered valid, legal or binding.

B. No extras will be authorized because of the Contractor's failure to include work called for in the Addenda in his/her bid.

C. It shall be the responsibility of all Bidders to call to the Owner's Representative's attention at the pre bid meeting, any discrepancies which may exist between or with any of the contract documents, or any questions which may arise as to their true meaning.

D. Modifications to the specifications (if necessary) will be followed by an addendum; no verbal discussions or agreements shall be recognized.

2.4 WARRANTY

A. A written warranty which will commence from date of acceptance by Manufacturer must be supplied with the roof installation. This warranty will cover all defects in workmanship and materials. Damages caused by storm, vandalism and other trades are not included in the warranty. This warranty shall be from the manufacturer (See further, Statement of Policy).

B. A three (3) year workmanship warranty is required from the Contractor for all remedial maintenance done under the terms of this contract.

2.5 COMPLIANCE WITH LAWS

A. The Contractor shall give notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of work.

PART 3 --- CONTRACTOR'S INSTRUCTIONS

1.1 CONTRACTOR'S LICENSE

A. All pertinent state and local licenses will be required.

1.2 QUALIFICATION OF BIDDERS

A. Provide State of Ohio pre-certification forms.

1.3 BUILDING PERMITS

A. The acquisition of the applicable permits and associated costs to obtain said permits will the responsibility of the successful Contractor.

1.4 JOB COORDINATION

A. Contractor is responsible for daily communication with the Owner or Owner's Representative relating to areas of roof work in order that the Owner may adequately protect tenant's personal belongings, and the people themselves against possible damage or injury. Contractor is also responsible for policing and protecting areas involving removal and replacement of roof projections, defective decking or other work involving deck penetration.

1.5 CLEAN-UP

A. Accumulated debris shall be removed periodically to assure maximum safety and sanitation at all times. At completion of work, the Contractor shall remove all excess material and debris from the site and leave all roof surfaces free from accumulations of dirt, debris and other extraneous materials. The Contractor shall also remove any and all drippage of bituminous materials from the face of the buildings, floor, window, ladders and other finished surfaces.

1.6 INSPECTIONS

A. Before any material applications are made, the Owner or his/her representative and the material supplier representative shall be available to ensure a complete understanding of the specification.

B. The accepted Material Manufacturer will have a representative on site a minimum of three (3) times a week to verify compliance with the specifications, answer questions that may arise and provide on-going inspection services.

C. A final inspection shall be conducted by Owner, Contractor, and the Owner's Representative upon being notified of completion of specified work and clean-up.

PART 4 – STATEMENT OF POLICY

4.1 APPROVED CONTRACTORS

A. The roof systems must be applied only by those contractors who have received approval from the Material Manufacturer for such installations. No guarantees will be issued when installation has been performed by a non-approved contractor.

4.2 ROOFING SEQUENCE

A. Phase roofing is not acceptable. Any insulation or base layers laid in any one day must be covered with the properly installed roof system that same day. Failure to do so will void any warranties and no guarantee will be issued for the roofing system.

4.3 ACCEPTABILITY OF COMPLETED WORK

A. The acceptability of completed roofing work will be based on its conformance to the contract requirement. The Material Manufacturer is not obligated to accept non-conforming work, and such non-conforming work may be rejected. The rejected work shall be promptly replaced or corrected in a manner and by methods approved by the Material Manufacturer at the Contractor's expense. The Material Manufacturer will instruct the Contractor's foreman and work crew on the proper methods of installation of the roofing system, and will follow-up on a regular basis to inspect the work being done. Any deficiencies from the specified work

noted by the Material Manufacturer will be immediately reported to the Owner, along with recommended corrective actions necessary. The Material Manufacturer will not act in a supervisory capacity, and will not be responsible for the Contractor's errors or omissions.

END OF SECTION

SPECIFICATIONS

SECTION 010100

SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. All provided documents.

1.2 SUMMARY OF WORK – per the provided scope of work, specifications, and drawings.

1.3 INTENT OF THE SPECIFICATIONS

A. The intent of these specifications is to describe the material and methods of construction required for the performance of the work. In general, it is intended that the drawings shall delineate the detailed extent of the work. When there is a discrepancy between drawings, referenced specifications, and standards and this specification, this specification shall govern.

1.4 PROTECTION

A. The contractor shall use every available precaution to provide for the safety of the property owner, visitors to the site, and all connected with the work under the Contract.

B. All existing facilities both above and below ground shall be protected and maintained free of damage. Existing facilities shall remain operating during the period of construction unless otherwise permitted. All access roadways must remain open to traffic unless otherwise permitted.

C. Barricades shall be erected to fence off all construction areas from operations personnel.

D. Safety Requirements:

1. All application, material handling, and associated equipment shall conform to and be operated in conformance with OSHA safety requirements.

2. Comply with federal, state, and local and owner fire and safety requirements.

3. Advise owner whenever work is expected to be hazardous to owner employees and/or operations.

4. Maintain a crewman as a floor guard whenever roof decking is being repaired or replaced.

5. Maintain proper fire extinguisher within easy access whenever power tools,
roofing kettles, and torches are being used. A MINIMUM OF A 2 HOUR FIRE WATCH SHALL BE STRICTLY ADHERED TO WHENEVER PROPANE TORCHES ARE IN USE.

6. ALL SAFETY REQUIREMENTS OF THE BUILDING OWNER MUST BE
FOLLOWED. NO EXCEPTIONS WILL BE PERMITTED. SAFETY ORIENTATION MEETING REQUIRED PRIOR TO PERFORMING ANY WORK.

1.5 HOUSEKEEPING

A. Keep materials neat and orderly.

B. Remove scrap, waste and debris from the project area.

C. Maintenance of clean conditions while work is in progress and cleanup when work is completed shall be inn strict accordance with the "General Conditions" of this contract.

D. Fire protection during construction.

E. Follow all requirements established by the building owner.

1.6 ASBESTOS

A. HANDLE AND DISPOSE ALL ASBESTOS CONTAINING MATERIALS (see attached asbestos survey for known hazardous material locations) PER OHIO EPA and OSHA GUIDELINES

B. PROJECT CLOSE OUT DOCUMENTS: PROVIDE A CERTIFICATE THAT ALL ASBESTOS CONTAINING MATERIALS HAVE BEEN PROPERLY DISPOSED.

END OF SECTION

SECTION 05000

RETROFIT STEEL SUB-PURLINS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Retrofit steel sub-purlins.

1.2 RELATED SECTIONS

A. Section 0 11 00 Summary of Work

1.3 REFERENCES

A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

B. ASTM A 1011/A 1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product data, including installation instructions.

B. Shop Drawings: Submit manufacturer's shop drawings for sub-purlins indicating gauge, yield strength, flange and web sizes, cut-out dimensions, and punch pattern for attachment holes in base flange. Submit signed and stamped KY Licensed Engineer of the roofing panel manufacturers metal roofing and wall panel system.

C. Design Data: Submit design data from the metal roofing manufactures engineering department indicating table of wind uplift capacity of sub-purlins.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened bundles, containers, and packaging, with labels clearly identifying product name and manufacturer.

B. Storage:

1. Store materials in accordance with manufacturer's instructions.

2. Protect sub-purlins from corrosion, deformation, and other damage.

3. Store sub-purlins off ground, with 1 end elevated to provide drainage.

C. Handling: Protect materials during handling and installation from corrosion, deformation, and other damage.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Roof Hugger, Inc. as approved by Garland for Single Source Warranty

B. Top Hat Framings Systems, LLC. as approved by Garland for Single Source Warranty

C. Or Approved equal.

2.2 RETROFIT STEEL SUB-PURLINS

A. Retrofit Notched Sub-Purlins: “Roof Hugger” or approved equal per the metal panel specification.

1. Description:

a. 1-piece, custom-punched, Z-section.

b. Pre-punched to nest into existing rib profiles.

c. Pre-punched for fasteners.

d. Fastens directly into existing purlins or joists with fasteners.

2. Material: Galvanized steel, ASTM A 653 or A 1011, G-90, yield strength 50 KSI.

3. Thickness: 16 gauge.

4. Base Flange: Pre-punch base flange to manufacturer's standard unless otherwise specified.

5. Top Flange: Nominally 2” unless otherwise specified.

6. Length: Nominally 10’-0” long or per manufacturer’s recommendations.

B. Fasteners

1. Attachment to Existing Purlins: #12-14 threads per inch, DP3 self-drilling fastener.

a. Length: Required to penetrate existing purlins in accordance with fastener attachment standards.

2. Sub-Purlins Installed Mid-Span: #12-14 threads per inch, DP3 self-drilling fasteners or equal into sub-rafter structure, #17-14 into existing panel when indicated and #1016 DP3 pancake head through Hugger top flange into sub-rafter when indicated. PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive sub-purlins. Notify Roof Panel Manufacturer if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

B. Verify existing purlins and eave struts are in good serviceable condition, without rust-thru of flanges.

C. Field Verify Before Installation of Sub-Purlins:

1. Existing panel profile and panel rib dimensions.

2. Existing panel run-out by measuring roof over several 20-foot areas to confirm panels were installed on module and in-square. Note variations.

3.2 INSTALLATION

A. Install sub-purlins in accordance with manufacturer's instructions at locations indicated on the standard details or Engineered Drawings if provided.

B. Limit installation of sub-purlins to amount that can be roofed over each day.

C. Install 2 fasteners per linear foot.

D. Install sub-purlins directly over existing purlins and fasten to existing purlin through existing panel pan section.

E. Loosely lay Sub-rafters over the existing panel high ribs and between the existing purlins. Sub-rafter spacing and number of fasteners shall be as specified on the engineered drawings or as specified in the Roof Hugger Product Approval.

F. Press the Roof Hugger sub-purlins over the sub-rafters on the existing purlin lines in areas where they are specified and install #12-14 DP3 fasteners (or as specified) through the base flange of the Hugger sub-purlin, through the sub-rafter and then into the existing purlins being careful to maintain the alignment of the sub-rafters.

G. Install Huggers onto the sub-rafters between the existing purlins as specified with #12-14 threads per inch, DP3 fasteners, typically one fastener on each side of the sub-rafter unless otherwise specified.

H. Where the Roof Hugger is attached to the existing roof panel the pre-punched base flange hole should be drilled out to the correct diameter to allow for the installation of a #17-14 fastener through the Roof Hugger and into the existing roof panel.

I. Where the Roof Hugger passes over the fitted sub-rafter a #10-16 pancake head fastener should be installed through the top flange of the Roof Hugger into the top of the new fitted sub-rafter.

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 SUMMARY:

A. This portion of the specification sets forth the general requirements, including the quality and type of materials required for the installation of all lumber used for wood curbs, nailing strips, miscellaneous blocking material, unexposed fillers, fascia, edging strips, deck replacement, etc

B. Provide new wood nailers and blocking as needed for roof areas 8 and 9.

1.3 STORAGE:

A. All material specified herein shall be stored (after delivery to the site) so that it will be fully protected from damage and weather, and shall be piled to prevent warpage. All lumber shall be fully protected to maintain the original required moisture content as specified in item titled "Moisture Content".

1.4 OTHER REQUIREMENTS:

A. Dimensions indicated on the drawings are nominal dimensions (except where details show actual sizes) and shall be subject to the standard reductions required for surfacing or tolerances permitted by the grading rules. Unless otherwise indicated on drawings, all material shall be S4S (surfaced four sides).

1.5 PROTECTION:

A. All finished work shall be adequately protected against damage from any source.

1.6 COORDINATION:

A. Carpenters shall coordinate their work with that of the other trades so that progress continues without interruption.

PART 2 - PRODUCTS

2.1 WOOD - FRAMING AND CURBS:

A. GRADING RULES, GRADES, AND SPECIES

1. Lumber: Southern Pine, yellow pine, Douglas fir, spruce, ponderosa pine, larch or Hemlock and shall meet the following minimum grade requirement of construction standard (75% #1 and 25% #2); free from warping and visible decay. Lumber shall be graded according to the standard grading rules of the Southern Pine Inspection Bureau, the West

Coast Lumber Inspection Bureau, or the Western Wood Products Association. **TREATED LUMBER IS NOT TOBE USED.**

B. MOISTURE CONTENT

1. All lumber shall be air-dried or kiln-dried before treatment, so that the moisture content is not more than 19%. After treatment, it shall be kilndried at temperatures not exceeding 160 degrees F. (71 degrees C) so that the moisture content is not more than 19% at time of shipment.

C. PLYWOOD:

1. Grade: CDX or Cyme exterior Grade.

a. Minimum 3/4" thick in the roof field
b. Wall (below coping): thickness to match the coping stone overhang to ensure the wall is flush with the coping. c. Section E1: ensure all walls are flush & plumb.

2.2 MECHANICAL FASTENERS:

A. WOOD TO STEEL:

1. Acceptable Manufacturers:
a. Stainless Roofgrip screw; plastic disc - Buildex Div. of ITW, Itasca, IL.
b. Stainless Dekfast screw: plastic disc - Construction Fasteners, Inc., Wyomissing, PA.
c. Fabco Fastening Systems, West Newton, PA: Stainless Insul-Fixx screw with; plastic plate, Stainless Plate-Fixx screw
d. Stainless Kwik-Deck; plastic disc - Atlas Bolt & Screw Div., Trans Union Fastener Corp., Ashland, OH.
e. Olympic #12-11 Stainless Steel Deck Screw or #14-10 Heavy Duty All Purpose Screw; three inch diameter plastic - Olympic Manufacturing Group, Inc., Agawam, MA.
f. Glasfast (plastic disc) - Owens-Corning Fiberglas Corp., Toledo, OH.

g. Perma Fastener, stainless, plastic plate - International Permalite, Inc., Oak Brook, IL.

2. Screw Length: Sufficient to engage steel, wood deck 1 inch.

B. WOOD TO WOOD:

1. Type: Stainless Steel, common, annular ring nail. Length: Sufficient to penetrate underlay blocking 1-1/4 inches.

2. Acceptable Manufacturers:

a. Hillwood Manufacturing Co., Cleveland, OH.
b. Independent Nail, Inc., Bridgewater, MA.
c. W.H. Maze Co., Peru, IL.
d. National Nail Corp., Grand Rapids, MI.

C. WOOD TO MASONRY:

1. Acceptable Manufacturers:

a. Tapcon 1/4" diameter, Phillips pan head anchor - Buildex Div. of ITW, Itasca, IL.
b. Confas - Construction Fasteners, Inc., Wyomissing, PA.
c. Con-fixx - Fabco Fastening Systems, West Newton, PA.
d. #14-10 Heavy Duty all Purpose Screw - Olympic Manufacturing Group, Inc., Agawam, MA.
e. Tru-Fast fastener (stainless steel) - The Tru-Fast Corp., Bryan, OH.

2. Length: Sufficient to provide 1-1/2 inch embedment.

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D. WOOD TO HOLLOW MASONRY:

1. Acceptable Manufacturers:

a. Sleeve Anchor by Hilti Fastening Systems, Tulsa, OK.
b. Rawly Hollow Masonry Anchor by the Rawlplug Co., Inc., New Rochelle, NY.

2. Length: As recommended by manufacturer

PART 3 - EXECUTION

3.1 CARPENTRY:

A. At roof edge to receive metal fascia, around all roof top penetration perimeters, and under any flashing component that is to have a roof flange mechanically fastened to roofing substrate; Mechanically attach wood blocking. Blocking thickness: Equal to common 1 x 4", 1 x 6" 2x4", 2x6", 2x8", 2x10", 2x12".

B. Fasteners shall be installed in two rows staggered. Spacing in any one row shall not exceed 24 inches. Within eight feet of outside corners, spacing shall not exceed twelve inches in any one row.

C. Where required, offset blocking layers twelve inches, weave corners.

D. Lumber shall be accurately cut to the work requirements and shall be well fastened.

E. Bolted fastenings shall have washers of adequate size under both heads and nuts. Nails shall be of correct size and quantity for proper fastening. Oversized nails that will result in splitting shall not be used. All fasteners shall be stainless steel.

F. Section I: Install gutter nailer a 1/2" lower than the roof insulation.

G. Ensure all walls are flush and plum with the adjacent coping stones.

END OF SECTION

SECTION 07 22 00

ROOF DECK AND INSULATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Conditions of the Contract and Division 01 Specification Sections apply to this section.

1.2 SUMMARY

A. Section includes roof insulation over the properly prepared deck substrate.

1.3 REFERENCES

A. American Society for Testing and materials (ASTM):
1. ASTM A167 Standard Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip.
2. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process.
3. ASTM B29 Standard Specification for Refined Lead.
4. ASTM B32 Standard Specification for Solder Metal.
5. ASTM C165 Standard Test Method for Measuring Compressive Properties of Thermal Insulation.
6. ASTM C208 Standard Specification for Cellulosic Fiber Insulation Board.
7. ASTM C209 Standard Test Method for Cellulosic Fiber Insulating Board.
8. ASTM C272 Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
9. ASTM C1396 Standard Specification for Gypsum Wallboard.
10. ASTM C518 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
11. ASTM C578 Standard Specification for Perlite Thermal Insulation Board.
12. ASTM C728 Standard Test Methods for Fire Test of Roof Coverings.
13. ASTM C1289 Standard Specification for Faced Rigid Polyisocyanurate Thermal Insulation.
14. ASTM D5 Standard Test Method for Penetration of Bituminous Materials.
15. ASTM D36 Standard Test Method for Softening Point of Bitumen (Ring and Ball Apparatus).

16. ASTM D312 Standard Specification for Asphalt Used in Roofing.
17. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
18. ASTM D1621 Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
19. ASTM D1622 Standard Test Method for Apparent Density of Rigid Cellular Plastics.
20. ASTM D1863 Standard Specification for Mineral Aggregate Used on Built-Up Roofs.
21. ASTM D2126 Standard Test Method for Response off Rigid Cellular Plastics to Thermal Humid Aging.
22. ASTM D2178 Standard Specification for Asphalt Glass Felts used in Roofing and Waterproofing.
23. ASTM D4601 Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
24. ASTM D5147 Standard Sampling and Testing Modified Bituminous Sheet Material.

B. Cast Iron Soil Pipe Institute, Washington, D.C. (CISPI)

C. Factory Mutual Research (FM):
1. Roof Assembly Classifications.

D. National Roofing Contractors Association (NRCA):
1. Roofing and Waterproofing Manual.

E. Underwriters Laboratories, Inc. (UL):
1. Fire Hazard Classifications.

F. Warnock Hersey (WH):
1. Fire Hazard Classifications.

G. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)

H. Steel Deck Institute, St. Louis, Missouri (SDI)

I. Southern Pine Inspection Bureau, Pensacola, Florida (SPIB)

J. Insulation Board, Polyisocyanurate (FS HH-I-1972)

K. Insulation Board, Thermal (Fiberboard) (FS LLL-1-535B)

1.4 SUBMITTALS

A. Product Data: Provide manufacturer's specification data sheets for each product in accordance with Division 01 Section Submittal Procedures. 01300.

B. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type.

C. Provide a sample of each insulation type.

D. Shop Drawings
   1. Submit manufacturer's shop drawings indicating complete installation details of tapered insulation system, including identification of each insulation block, sequence of installation, layout, drain locations, roof slopes, thicknesses, crickets and saddles.
   2. Shop drawing shall include: Outline of roof, location of drains, complete board layout of tapered insulation components, thickness and the average "R" value for the completed insulation system.

E. Certification
   1. Submit roof manufacturer's certification that insulation fasteners furnished are acceptable to roof manufacturer.

   2. Submit roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.5 QUALITY ASSURANCE

A. Fire Classification, ASTM E-108.

B. The system must be a Factory Mutual (FM) approved roof system with an accompanying Roof Nav Number.

C. Manufacturer's Certificate: Certify that roof system furnished is approved by Factory Mutual, in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.

D. Manufacturer's Certificate: Certify that the roof system is adhered properly to meet or exceed the requirements of FM 1-90.

E. Pre-installation meeting: Refer to Division 07 roofing specifications for preinstallation meeting requirements.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.

B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.

C. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins).

D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the site.

PART 2 – PRODUCTS

2.1 PRODUCTS, GENERAL

A. Basis of Design: Materials, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.

B. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.
   1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section. That specification section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.

2. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Owner or Owner's Representative.
3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.

4. The Owner's decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.2 INSULATION MATERIALS

A. Thermal Insulation Properties and Approved Insulation Boards.
   1. Rigid Polyisocyanurate Roof Insulation; ASTM C1289:
      a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
      b. Thickness: PER THE DRAWINGS.
      c. R-Value: Minimum 5.7 per 1 inch.
      d. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1.
      e. Acceptable Products:
         1) ENRGY-3; Johns Manville
         2) Atlas Roofing Corp ACF Foam -II
         3) Hunters Panels LLC, H-Shield
         4) Or Approved Equivalent
   2. Tapered Polyisocyanurate Roof Insulation; ASTM C1289:
      a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
      b. Thickness: PER THE DRAWINGS
      c. Average R-Value: 25 minimum.
      d. Tapered Slope: Sumped Drains: 1/4"
      e. Crickets & Saddles: minimum twice the roof slope.
      f. Compliances: UL, WH or FM listed under Roofing Systems Federal
         Specification HH-I-1972, Class 1
      g. Acceptable Products:
         1) ENRGY 3; Johns Manville
         2) Atlas Roofing Corp ACF Foam -II
         3) Hunters Panels LLC, H-Shield
         4) Or Approved Equivalent
   3. Roof Field: High Density Fiberboard Roof insulation; ASTM C208
      a. Qualities: Rigid, composed of interlocking fibers factory blended treated with asphalt on the top side.

b. Board Size: Four feet by four feet (4’ x 4’)
c. Thickness: Minimum1/2"
d. Compliances: UL, WH, FM listed under Roofing Systems.
e. Acceptable Manufacturers:
    1) Blue Ridge; Structodeck
    2) Temple Inland
    3) GAF Building Materials Corporation
    4) FescoBoard; JM
    5) Georgia-Pacific
    6) Approved Equivalent

4. Section E1: Securock Roof Board
    a. Qualities: Nonstructural, noncombustible, homogenous composition panel.
    b. Board Size: Four by eight feet (4’x8’).
    c. Thickness: One half (1/2) inch.

    d. R-Value: .5
    e. Compliances: UL. WH or FM listed under Roofing Systems.
    f. Manufacturer: USG
5. Section E1: Dens-Deck Prime Roof Board
    a. Qualities: Nonstructural glass mat faced, noncombustible, waterresistant treated gypsum core panel.
    b. Board Size: Four feet by four feet (4’x4’).
    c. Thickness: One half (1/2) inch.
    d. R-Value: .56
    e. Compliances: FM listed under Roofing Systems. 6. Section J: Unfaced Fiberglass Batten Insulation
    a. 2" thickness.

2.3 RELATED MATERIALS

A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of perlite or organic fiberboard, as per the approved manufacturer.
    1. Acceptable Manufacturers:
        a. The Garland Company, Inc.
        b. Celotex
        c. Johns Manville
        d. GAF
        e. Approved Equivalent
    2. Fire Resistant for torch applications:
        a. Mineral Wool/Roxul Wool

B. Protection Board: Pre-molded semi-rigid asphalt composition board one half (1/2) inch.

C. Roof Board Joint Tape: Six (6) inches wide glass fiber mat with adhesive compatible with insulation board facers.

D. Insulation Adhesive Hot Applied System Asphalt: ASTM D312, Type III Steep Asphalt.

E. Insulation Adhesive Cold Applied System:
1. Garland Co, Insul-Lock II: Dual-component, high rise foam adhesive as recommended by insulation manufacturer and approved by FM indicated ratings. a. Tensile Strength (ASTM D412)……250 psi
   b. Density (ASTM D1875)……..8.5 lbs./gal.
   c. Viscosity (ASTM D2556)……22,000 to 60,000 cP.
   d. 2 `Peel Strength (ASTM D903)…..17 lb/in.
   e. 3 `Flexibility (ASTM D816)……Pass @ -70°F

F. Fasteners: Corrosion resistant screw fastener as recommended by roof membrane manufacturer. Factory Mutual Tested and Approved.
   1. OMG C-R Assembled Base Sheet Fastener (1.7 in.)
   2. Derbigum Americas, Inc. Perlok BSF (1.7 in.) PART 3

– EXECUTION

3.1 EXECUTION, GENERAL

A. Comply with requirements of the specifications.

3.2 INSPECTOR OF SURFACES

A. Roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.
   1. Verify that work which penetrates roof deck has been completed.
   2. Verify that wood nailers are properly and securely installed.
   3. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
   4. Do not proceed until defects are corrected.
   5. Do not apply insulation until substrate is sufficiently dry.
   6. Broom clean substrate immediately prior to application.
   7. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.
   8. Verify that temporary roof has been completed.

3.3 INSTALLATION

A. Attachment with Bitumen
   1. Over the entire deck surface, prime concrete surfaces with asphalt primer at the rate of 1 (one) gallon per one hundred (100) square feet.
   2. Embed one layer of rigid insulation board in solid moppings of hot asphalt at the rate and temperature recommended by insulation manufacturer. Stagger end joints of boards so all open joints will be eliminated. Walk in each piece of insulation and leave boards completely adhered to deck. Each insulation board shall be butt firmly against adjoining panels. All open joints shall be eliminated.
   3. Embed second layer of insulation board in solid moppings of hot asphalt after first layer has been attached as recommended by insulation manufacturer. Stagger end joints of boards so all open joints will be eliminated. Walk in each piece of insulation and leave boards completely adhered to base felt or deck. Each insulation board shall be butt firmly against adjoining panels. All open joints shall be eliminated.
   4. Approved insulation shall be tapered around roof drains and scuppers. Tapered insulation sump shall start with a thickness of one-half at drain bowl to the specified dimension of three feet from the center line of the drain. Install tapered insulation sump in such a way to provide proper slope for runoff. Shape insulation with tool as required so completed surface is smooth and flush with ring of drain. Under no circumstances will the membrane be left unsupported in an area greater that one

quarter (1/4) inch. Install recovery board over tapered insulation sump as required.

5. Approved recovery board one half (1/2) inch thickness shall be installed over base tapered insulation using hot asphalt at the rate of approximately thirty three (33) pounds per square.
6. All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit a minimum of one quarter (1/4) inch away from the vertical surface.
7. Install no more insulation at one time than can be roofed on the same day.
8. Install temporary water cut-offs at completion of each day's work and remove upon resumption of work.
9. Cant Strips/Tapered Edge Strips: Install preformed forty five (45) degree cant strip at junctures of vertical surfaces. Provide preformed, tapered edge strips at perimeter of edges of roof that do not terminate at vertical surfaces and/or indicated on the drawings.
10. Tape joints of insulation as per manufacturer's requirements.

B. Attachment with Mechanical Fasteners

1. Approved insulation board shall be fully attached to the deck with an approved mechanical fastening system. As a minimum, the amount of fasteners shall be in accordance with manufacturer's recommendation for FM I-90 system. Otherwise, a minimum of one fastener per two square feet shall be installed.
2. Filler pieces of insulation require at least two fasteners per piece if size of insulation is less than four square feet.
3. Spacing pattern of fasteners shall be as per manufacturer's recommendations to meet the FM requirements. Placement of any fastener from edge of insulation board shall be a minimum of three inches, and a maximum of six (6) inches.
4. Minimum penetration into deck shall be as recommended by the fastener manufacturer. There is a one (1) inch minimum for metal, wood and structural concrete decks where not specified by the manufacturer. For gypsum and cement-wood fiber decks, penetration shall be determined from pull-out test results with a minimum penetration of one and one-half (1 ½) inches.
5. Gypsum and cementitious wood fiber decks: Where the roof deck is visible from the building interior, the contractor shall ensure no penetration of fasteners through underside of the deck. Any holes or spalling caused by fastener installation shall be repaired by the roofing contractor. Where the new roof system thickness exceeds an amount so that a minimum of 1 ½ of penetration cannot be achieved with an Olympic TB Fastener, or approved equivalent, then (and only then) toggle bolts may be used to secure installation to the deck.

6. Tape joints of insulation as per manufacturer's requirements.
    a. Zone 1: 11 fasteners Per Board
    b. Zone 2: 17 fasteners Per Board
    c. Zone 3: 22 fasteners Per Board

C. Attachment with Insulation Adhesive Approved by Factory Mutual (FM).
1. Ensure all surfaces are clean, dry, free of dirt, debris, oils, loose ore embedded gravel, unadhered coatings, deteriorated membrane and other contaminants that may inhibit adhesion.
2. Apply insulation adhesive directly to the substrate using a ribbon pattern with one quarter to one half (1/4-1/2) inch wide beads 12 inches o.c., using either the manual applicator or an automatic applicator, at a rate of one (1) gallon per one hundred (150) square feet per cartridge.
3. Immediately place insulation boards into wet adhesive. Do not slide boards into place. Do not allow the adhesive to skin over before installing insulation boards.
4. Briefly step each board into place to ensure contact with the adhesive. Substrates with irregular surfaces may prevent the insulation board from making positive contact with the adhesive. Relief cuts or temporary weights may be required to ensure proper contact.
5. All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit a minimum of one quarter (1/4) inch away from the vertical surface.
6. Tape joints of insulation as per manufacturer's requirements.
7. **FM Adhesive Pattern**:
    a. Zone 1: 3/4", 12" O.C. Beads Per Board
    b. Zone 2: 3/4", 12" O.C. Beads per Board
    c. Zone 3: 3/4", 12" O.C. Beads Per Board

3.4 CLEANING

A. Remove debris and cartons from roof deck. Leave insulation clean and dry, ready to receive roofing membrane.

3.5 CONSTRUCTION WASTE MANAGEMENT

A. Remove and properly dispose of waste products generated during installation. Comply with requirements of authorities having jurisdiction.

END OF SECTION

SECTION 074100

METAL ROOF PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Standing seam metal roofing system.

B. Standing seam metal roofing accessories.

C. Metal roofing accessories.

1.2 REFERENCES

A. ASTM A 792/A 792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc AlloyCoated by the Hot-Dip Process.

B. ASTM A 875 - Standard Specification for Steel Sheet, Zinc-5 % Aluminum Alloy-Coated by the Hot-Dip Process

C. ASTM D 1056 - Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.

D. ASTM D 3575 - Standard Test Methods for Flexible Cellular Materials made from Olefin Polymers.

E. ASTM E 84 - Standard Test for Surface Burning Characteristics of Building Materials.

F. ASTM E 1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.

G. ASTM E 1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.

H. ASTM E 1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems.

I. ASTM E 2140 - Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head.

J. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

K. UL 263 - Fire Tests of Building Constructions and Materials.

L. UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.

M. UL 1897 - Uplift Test for Roof Covering Systems.

N. ICC-ES AC166 - Test Procedure for Wind Driven Rain Resistance of Metal Roof Coverings.

O. SMACNA - Architectural Sheet Metal Manual.

P. NRCA - The NRCA Roofing and Waterproofing Manual.

1.3 DESIGN / PERFORMANCE

REQUIREMENTS A. Standing Seam Roofing

System: R-Mer Span

1. Thermal Expansion and Contraction:
    a. Completed metal roofing and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.
    b. Design temperature differential shall be not less then 200 degrees F.
    c. Interface between panel and clip shall provide for unlimited thermal movement in each direction along the longitudinal direction.
    d. Location of metal roofing rigid connector shall be at roof ridge unless otherwise approved by the roof system manufacturer. Metal ridge connector may require design as per job conditions by specified manufacturer.
2. Uniform Wind Load Capacity:
    a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
        1) Design Code: ASCE 7, Method 2 for Components and Cladding.
        2) Safety Factor: 1.67 after any load reduction or material stress increase.
        3) Importance Factor of III, 1.
        4) Wind Speed: 116 mph.
        5) Ultimate Pullout Value: 829 pounds per each of the two fasteners holding the panel anchor to the roof decking or framing system.
        6) Exposure Category: C 7) Design Roof Height: 15 feet.
        8) Minimum Building Width: 22 feet.
        9) Roof Pitch: 1.5 inches per foot.
        10) Roof Area Design Uplift Pressure:
            a) Zone 1 - Field of roof 24.6 psf.
            b) Zone 2 - Eaves, ridges, hips, and rakes 27.6 psf.
            c) Zone 3 - Corners 35 psf.
    b. ASTM E 1592: Capacity shall be determined using pleated airbag method in accordance with ASTM E 1592, testing of sheet metal roof panels. Allowable safe working loads shall be determined by dividing the ultimate test load by the safety factor specified above.

c. Underwriters' Laboratories, Inc., (UL), wind uplift resistance classification: Roof assembly shall be classified as Class 1-90, as defined by UL 580

3. Uniform Positive Load Capacity.
   a. Dead Load: Loading of the roof structure, due to tear off of existing, and/or installation of new roofing materials shall not exceed the present loading due to weight of the existing roofing system.
   b. Installed roof system shall carry positive uniform design loads with a maximum system deflection of L/180 as measured at the rib (web) of the panel.
4. ASTM E 1680: Static pressure air infiltration (roof panels):
   a. Pressure Leakage Rate:
      1) 1.57 PSF 0.0012 cfm/sq.ft.
      2) 6.24 PSF 0.0001 cfm/sq.ft.
      3) 20.0 PSF 0.0011 cfm/sq.ft.
5. ASTM E 1646: Static pressure water infiltration (roof panels):
   a. Pressure Result:
      1) 5 Gal. /Hr. per S.F. and Static No Leakage
      2) Pressure of 20.0 Psf for 15 minutes
6. Capacities for gauge, span or loading other than those tested may be determined by interpolation of test results within the range of test data. Extrapolations for conditions outside test range are not acceptable.
7. Water penetration (dynamic pressure): No water penetration, other than condensation, when exposed to dynamic rain and 70 mph wind velocities for not less than five minutes duration, when tested in accord with principles of AAMA 501.1.

1.4 SUBMITTALS AND SUBSTITUTIONS

A. Product Data: Submit product data, test reports, and certifications in accordance with quality assurance and performance requirements specified herein.

B. Design Loads: Submit manufacturer's minimum design load calculations according to ASCE 7, Method 2 for Components and Cladding. In no case shall the design loads be taken to be less than those specified herein.

C. Shop Drawings: Prepared specifically for this project; showing dimensions of metal roofing and accessories, fastening details and connections and interface with other products.

D. Selection Samples: For each finish product specified, two complete sets of samples representing manufacturer's full range of available colors and textures.

E. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

F. Closeout Submittals:
   1. Provide manufacturer's maintenance instructions that include recommendations for periodic checking and maintenance of installed roof system.
   2. Provide executed copy of manufacturer's warranty.

G. Substitutions
   1. The materials outlined herein are the type of materials that should be used in this project. When a particular make or trade name is specified, it shall be indicative of the minimum standard required. The bidder must disclose in his/her bid package the manufacturer that is intended to be used on this Project if other than the listed manufacturers. If no manufacturer is listed, the bidder's bid is accepted only with the use of the Basis of Design manufacturer and the bidder must use the Basis of Design manufacturer.
   2. Bidder will not be allowed to change materials after the bid opening date.
   3. If an alternate material is bid, the material must be equal or exceed the specifications, and submitted by the bidding Roofing Contractor to the Owner for approval and include the following:
      a. Written application with explanation of why it should be considered
      b. Material product data sheets
      c. A certificate from an accredited testing laboratory comparing the physical and performance attributes of the proposed material with those materials denoted as pre-approved systems or the characteristics noted in the material specification section.
      d. A list of at least five (5) jobs where the proposed alternate material was used under similar conditions. These jobs shall be located within fifty (50) miles of this project. Each job must be at least five (5) years old, and each must be available for inspection by the Owner.
      e. The manufacturer must have a current ratio of 5:1 (current assets to current liabilities) and demonstrate such with an **audited** financial statement supported by an affidavit from a third party. Manufacturer must not have been in Chapter 11 bankruptcy during the last five (5) years or settled litigation or paid fines to a public agency in excess of $20 million dollars. The manufacturer must also have current ISO 9001:2000 certification for the manufacturing of the products to be utilized on this project.
      f. A sample warranty by the manufacturer of the standing seam metal roofing system. The manufacturer must be the organization that physically manufacturers and guarantees the standing seam metal roofing system.
      g. Bidding contractor, if making a request for substitution, represents that he/she personally investigated the proposed product or method and determined that it is equal or superior in all respects to that specified. He/she will provide the

same guarantee for substitution as the products specified, waives all claims for additional cost related to substitution, and will reimburse the owner for all redesign cost for accommodation of the substitute.

H. The Owner reserves the right to be the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that has met ALL specified requirement criteria.

I. Alternate material submissions shall be sent to the Owner by the bidding Roofing Contractor. Only substitutes approved in writing by the Owner will be considered.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:
   1. Manufacturer shall have in place a documented, standardized quality control program such as ISO-9001 approval.
   2. Company specializing in manufacturing the products specified in this section with minimum 12 years documented experience.

B. Installer Qualifications: Certified and approved installer of the sheet metal roofing manufacturer with a minimum of 5 years' experience with said manufacturer.

C. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work and at any time roofing work is in progress. Maintain proper supervision of workmen. Maintain a copy of the specifications in the possession of the Supervisor/Foremen and on the roof at all times.

D. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer.

1.6 PRE-INSTALLATION CONFERENCE

A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.

B. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Owner, roofing system manufacturer's representative.

C. Objectives include:
   1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
   2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
   3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.

4. Review roofing system requirements, Drawings, Specifications and other Contract Documents.
5. Review and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
6. Review required inspection, testing, certifying procedures.
7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
8. Record conference including decisions and agreements reached. Furnish a copy of

records to each party attending.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

B. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
1. Store materials above ground, on skids.
2. Protect material with waterproof covering and allow sufficient ventilation to prevent condensation buildup or moisture entrapment on the materials.

1.8 PROJECT CONDITIONS AND MANUFACTURER'S INSPECTIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. When the project is in progress, the roofing system manufacturer will provide the following:
1. Keep the Owner informed as to the progress and quality of the work as observed.
2. Provide daily job site with reports to the Owner. The reports will include pictures of the days progress made by the contractor and a detailed written report as to the work performed that day.
3. Report to the Owner in writing any failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
4. Confirm after completion that manufacturer has observed no application procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.9 WARRANTY

A. Warranty:
1. 30-year, no dollar limit, warranty.
2. Provide installers 3-year warranty covering roofing system installation and water-

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design System: Panel shall be the R-Mer Span system as manufactured by The

Garland Company which is located at: 3800 E. 91st St.; Cleveland, OH

44105 B. Or approved equal per the specifications.

2.2 STANDING SEAM METAL ROOFING

A. R-Mer Span:
1. Width of Standing T-Seam Panel: 1 inch T-seam.
a. 16 inches.
2. Standing Seam: 2-3/8 inch tall mechanically seamed with factory installed hot melt sealant in-seam cap. Panel/Cap is configured with a total of 4 layers of metal surrounding anchor clip.
3. Panel Profile: Provided with minimum 1-1/2 inches wide elevated mesa's every 2 inches on center continuous throughout panel.
a. Slope: Open Purlins or Solid Substrate down to 1/4:12.
4. Panel material:
a. Galvanized steel 2-gauge, G90, smooth as per ASTM A 653.

5. Flashing and flat stock material: Fabricate in profiles indicated on Drawings of same material, thickness, and finish as roof system, unless indicated otherwise.
6. Coated Finish:
    a. Exposed surfaces for coated panels:
        1) Two coat coil applied, baked-on full-strength (70% resin) fluorocarbon coating system (polyvinylidene fluoride, PVF2), applied by manufacturer's approved applicator.
    b. Unexposed surfaces for coated panels shall be baked-on polyester coating with .20 to .30 dry film thickness (TDF).
7. Accessory Components:
    a. Anchor Clips:
        1) Concealed Standard Anchor Clips: Clips 16-gauge galvanized steel, 1 piece clip with projecting legs for additional panel alignment and provision for unlimited thermal movement in each direction along the longitudinal dimension.
    b. Fasteners:
        1) Concealed fasteners: Corrosion resistant steel fasteners (zinc plated, stainless steel or equal) designed to meet structural loading requirements.
        2) Exposed fasteners: Series 410 stainless steel fasteners or 1/8 inch diameter stainless steel waterproof rivets. All exposed fasteners shall be factory painted to match the color of the standing seam panels.
    c. Closures: Factory precut closed cell foam meeting ASTM D 1056 or ASTM D 3575, enclosed in metal channel matching panels when used at hip, ridge, rake, and jamb.
    d. Provide all miscellaneous accessories for complete installation.

2.3 STANDING SEAM METAL ROOFING ACCESSORIES

A. Sealant:
1. Concealed Applications: Non-Curing Butyl Sealant - Schnee-Morehead, Inc. SM5430 Acryl-R, or equal.
2. Exposed Applications: UV Resistant Tripolymer Sealant - Geocel Corporation, 2300 Tripolymer Sealant, or equal.
3. S-5 Snow Color Guard System. PART 3 EXECUTION

3.1 EXAMINATION

A. Examine surfaces to receive metal roofing. Notify the Owner in writing of any defective conditions encountered. Starting of work shall constitute acceptance of such conditions.

B. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets are in place, and nailing strips located.

C. Correct defective conditions before beginning work.

3.2 INSTALLATION

A. Install in conformance with the NRCA Roofing and Waterproofing Manual and Manufacturers installation requirements.

B. Form panel shape as indicated on Drawings, accurate in size, square, and free from distortion or defects.

C. Install underlayment and eave protection sheet underlayment as recommended by the Manufacturer.

D. Coordinate with installation of batten, unfaced insulation as specified in Section 072000.

E. Install all panels continuous from ridge to eave. Transverse seams are not permitted.

F. Panel lengths that exceed maximum shipping lengths shall be field rolled on equipment owned by the panel manufacturer. Seam sealant must be factory applied.

G. Exposed fasteners, screws and/or roof mastic are unacceptable and will be rejected. System configuration only allows for exposed fasteners at panel overlap, if required, and at trim details in accordance with the Manufacturer's requirements.

H. Where not otherwise indicated conform to SMACNA details including flashings and trim.

I. Install sealants where indicated to clean dry surfaces only without skips or voids..

J. Install metal edge treatment in accordance with the manufacturer's instructions and the approved shop drawings.

K. Install metal roofing accessories in accordance with the manufacturer's instructions and the approved shop drawings.

L. Clip spacing 5’ on center.

M. Install 1 row of S-5 Snow Retention Color Guard.

3.3 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 075500
MODIFIED BITUMINOUS MEMBRANE

ROOFING PART 1 GENERAL

1.1 SECTION INCLUDES

A. Cold Applied 2-Ply Asphalt

Roofing B. Cold Applied 2-Ply Coal

Tar Roofing

C. Hot Applied 2-Ply Asphalt Roofing

D. Accessories.

E. Edge Treatment and Roof Penetration Flashings.

F. All Provided Sections

1.2 DESIGN / PERFORMANCE REQUIREMENTS

A. Perform work in accordance with all federal, state and local codes.

B. The system must be a Factory Mutual (FM) approved roof system with an accompanying Roof Nav Number.

C. Exterior Fire Test Exposure: Roof system shall achieve FM Class rating for roof slopes indicated on the Drawings as follows:
1. Factory Mutual Class A Rating.

D. Design Requirements:
1. Uniform Wind Uplift Load Capacity
a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
1) Design Code: ASCE 7, Method 2 for Components and Cladding.
2) Importance Category:
a) III.
3) Importance Factor of:
a) 1.0
4) Wind Speed: 120 mph
5) Exposure Category:
a) B.
6) Design Roof Height: feet.
7) Minimum Building Width: 27 feet.
8) Roof Pitch: ¼”
9) Roof Area Design Uplift Pressure:
a) Zone 1 - Field of roof 15.5 psf
b) Zone 2 - Eaves, ridges, hips and rakes 26.1 psf
c) Zone 3 – Corners 39.3 psf
2. Live Load: 20 psf, or not to exceed original building design.
3. Dead Load:

a. Installation of new roofing materials shall not exceed the dead load capacity of the existing roof structure.

E. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S. Federal Government's Energy Star program.

1.3 SUBMITTALS

A. The Roof Assembly must have a Roof Nav number indicating the system has been Factory Mutual tested and is Factory Mutual approved.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions.

C. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.

D. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins.

E. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

F. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.

G. Manufacturer's Fire Compliance Certificate: Certify that the roof system furnished is approved by Factory Mutual (FM) with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.

H. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147. Testing must be performed at 77 deg. F. Tests at 0 deg. F will not be considered.

I. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.4 DISCLOSURE OF MATERIALS AND SUBSTITUTIONS

A. The materials outlined herein are the type of materials that should be used in this project. When a particular make or trade name is specified, it shall be indicative of the minimum standard required. The bidder must disclose in his/her bid package the manufacturer that is intended to be used on this Project if other than the Basis of Design

manufacturer. If no manufacturer is listed, the bidder's bid is accepted only with the use of the Basis of Design manufacturer and the bidder must use the Basis of Design manufacturer. B. Bidder will not be allowed to change materials after the bid opening date.

C. If an alternate material is bid, the material must be equal or exceed the specifications, and submitted by the bidding Roofing Contractor to the Owner/Owner's represenattive for approval and include the following:

1. Written application with explanation of why it should be considered.
2. Material product data sheets.
3. A certificate from an accredited testing laboratory comparing the physical and performance attributes of the proposed material with those materials denoted as preapproved systems or the characteristics noted in the material specification section, including but not limited to the following:
4. Modified roofing membrane(s) and flashings substantiating Flexibility, Tensile Strength and Tear Strength. Test results must be dated, notarized and be on testing laboratory stationary. Testing for SBS membrane must follow standard ASTM D 5147 test methods. Testing shall be performed at 77◦F. Tests at 0◦F shall not be considered.
5. A list of at least five (5) jobs where the proposed alternate material was used under similar conditions. These jobs shall be located within fifty (50) miles of the job site. Each job must be at least five (5) years old, and each must be available for inspection by the Owner/Owner's Representative.
6. The manufacturer must have a current ratio of 6:1 (current assets to current liabilities) and demonstrate such with an **audited** financial statement supported by an affidavit from a third party. Manufacturer must not have been in Chapter 11 bankruptcy during the last five (5) years. The manufacturer must also have current ISO 9001:2000 certification for the manufacturing of the products to be utilized on this project.
7. A sample warranty by the manufacturer of the modified bitumen membrane roofing system. The manufacturer must be the organization that physically manufacturers and guarantees the modified roofing membrane.
8. All products must be in accordance with the Health, Safety and Environmental Control (H, S & E) Regulations, e.g., No asbestos materials, no harmful solvent release materials, etc.
9. The Factory Mutual Roof Nav Assembly for the requested system meeting or exceeding all aspects of the specifications.

D. In making a request for submission, Bidder/Contractor represents:

1. He/she has personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.

2. He/she will provide the same guarantee for substitution as for the product and method specified.

3. He/she will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.

4. He/she waives all claims for additional cost related to substitution, which consequently become apparent.

5. Cost data is complete and includes all related cost under his/her contract or other contracts, which may be affected by the substitution.

6. He will reimburse the Owner for all redesign cost for accommodation of the substitute.

7. The Owner reserves the right to be the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that has met ALL specified requirement criteria.

8. Alternate material submissions shall be sent to the Owner by the bidding Roofing Contractor. Only substitutes approved in writing by the Owner will be considered.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.

C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.

D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.

E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

G. Material Manufacturer's Representative:

1. The materials manufacturer issuing the final guarantee on this roofing project must have a full-time employee with field experience in all phases of built up roofing. This employee will serve as Manufacturer's Representative during the project.

2. The Manufacturer's Representative cannot be associated with or work for any distributor or contractor, or have any financial association with either. Agents/inspectors who represent more than one manufacturer are excluded.

3 . Further, the Manufacturer's Representative will provide in writing (upon request of the Owner) and signed by an officer of the corporation, complete acceptance of the terms listed under (MATERIALS MANUFACTURER'S REPRESENTATIVE). He must also supply the name and phone number of the officer of the corporation who will be signing the document.

a. The materials manufacturer's representative will be required to examine the work in progress to the completion of the specified work, in order to assist in ascertaining the extent to which the materials and procedures conform to the requirements of these specifications and to the published instructions of the material manufacturer.

b. The authorized material manufacturer's field representative shall be responsible for:

(1) Rendering any inspection services, the Owner's Representative may request.

(2) Keeping the Owner's Representative informed after inspections as to theprogress and quality of the work as observed.

(3) Calling to the attention of the Contractor those matters observed which he considers to be in violation of the contract requirements.

(4) Reporting to the Owner's Representative in writing any failure or refusal of the Contractor to correct unacceptable practices called to his attention.

(5) Supervise the taking of test cuts and the restoration of such areas.

(6) Confirming, after completion of the work and based on his observations and tests, that he has observed no application procedures in conflict with the specifications, other than those that may have been previously reported. Final payment will not be released until this confirmation has been received by the Owner.

c. The presence and activities of the material manufacturer's representative shall in no way relieve the Contractor of his contractual responsibilities. In the event of a dispute, the Owner's Representative shall have final authority.

1.6 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to commencing Work of this section.

B. Review installation procedures and coordination required with related Work.

C. Inspect and make notes of job conditions prior to installation:
1. Record minutes of the conference and provide copies to all parties present.
2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Owner.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.

B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.

D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.

E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Owner.

F. Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

1.8 COORDINATION

A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

1.9 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.10 WARRANTY

A. Upon completion of the work, provide the Manufacturer's written and signed Edge-To-Edge NDL System Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installer, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition including Garland Metal Components.
   1. Warranty Period:
      a. 30-years from date of acceptance.
      b. 90-MPH Wind Rating
   2. The Warranty shall not require any written renewals.

B. Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
   1. Warranty Period:
      a. 3-years from date of acceptance.

1.11 MANUFACTURER'S INSPECTIONS

A. Provide daily job site inspections **with reports to the Owner and all other applicable parties.** The reports will include pictures of the days progress made by the contractor and a detailed written report as to the work performed that day.

C. The roofing manufacturer will provide an annual inspection of the roof system with a detailed report outlining the inspection. The report will notify the owner of any routine housekeeping such as cleaning of the drains, storm damage, etc.

D. The Owner has the right to hire a third-party inspector if the inspection requirements are not met. The contractor will be back charged for this service at the rate of $500 per inspection.

E. The roofing manufacturer will provide an annual inspection of the roof system with a detailed report outlining the inspection. The report will notify the owner of any routine housekeeping such as cleaning of the drains, storm damage, etc. There is to be no cost associated and it is to take place for the life of the warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Garland Company, Inc. (The); 3800 E. 91st St., Cleveland, OH 44105. ASD. Toll Free: 800-321-9336. Phone: 216-641-7500. Fax: 216-641-0633. Web Site: www.garlandco.com.

B. Or Approved Equal Per the Specifications.

2.2 COLD APPLIED 2-PLY ROOF SYSTEM - STRESSPLY, OPTIMAX, OR VERSIPLY

A. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
   1. FlexBase 80:

B. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
   1. StressPly Plus:

C. Interply Adhesive: (1 and 2)
   1. Weatherking :

D. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive:
   1. HPR Tri-Base Premium:

E. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
   1. StressPly Plus:

F. Flashing Ply Adhesive:
   1. Flashing Bond:

G. Surfacing: Must wait 30 days prior to application or approval from the roof system manufacturer.
   1. Aggregate/Flood Coat
      a. Black-Knight/Black-Stallion Cold:
      b. #8 Silica, Wash Grade Pea Gravel
   2. Surface Coatings
      a. Silver-Shield:

2.3 COLD APPLIED 2-PLY COAL TAR ROOFING – MILLENNIUM (**Drain Sumps Only**)

A. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
   1. Millennium Base:

B. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with interply adhesive.
   1. Millennium FR Mineral:

C. Interply Adhesive: (1 and 2)
   1. Black-Knight/Black-Stallion Cold:

2.4 HOT APPLIED 2-PLY ASPHALT ROOFING - STRESSPLY, OPTIMAX, OR VERSIPLY

A. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:

1. FlexBase 80:

B. Interply Adhesive: (1 and 2) 1. Generic Type III Asphalt:

C. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive: except torch sheet.

1. HPR Tri-Base Premium:

D. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
except torch sheet.
1. StressPly Plus:

E. Surfacing:
1. Aggregate/Flood Coat
   a. Black-Knight/Black-Stallion Cold:
2. Surface Coatings
   a. Silver-Shield:

2.5 ACCESSORlES:

A. Roof Insulation: In accordance with Section 072200.

B. Red Rosin paper over all wood deck areas.

2.6 EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

A. Pre-Manufactured Edge Metal: R-Mer Force Flash-less Snap-On Fascia Cover and Splice Plate.
1. Zinc-coated steel, ASTM A653, coating designation G-90, in thickness of 22-gauge, , 36" to 48" by coil length, chemically treated, commercial or lock-forming quality

B. Pre-Manufactured Coping Cap: R-Mer Edge Coping Cap Cover and Splice Plate.
1. Zinc-coated steel, ASTM A653, coating designation G-90, in thickness of 22-gauge, 36" to 48" by coil length, chemically treated, commercial or lock-forming quality.

C. Pre-Manufactured Edge Metal: R-Mer Force Flash-less Snap-On Fascia Extruded Base Anchor and Components.
1. Base Anchor: 6005A-T61 extruded aluminum.
2. Compression Seal for top of anchor: TPE thermoplastic elastomer.
3. Sealant for Flange: Green-Lock Sealant XL: Single-component high performance 100% solids, interior and exterior polyether joint sealant.

D. Pre-Manufactured Coping Cap: R-Mer Edge Coping Chairs

1. Zinc-coated steel, ASTM A653, coating designation G-90, in thickness of 0.0635 nom./ 16 gauge, 36" to 48" by coil length, chemically treated, commercial or lockforming quality.

E. Pre-Manufactured Edge Metal Finishes:
   1. Exposed and unexposed surfaces for mill finish flashing, fascia, and coping cap, as shipped from the mill
   2. Exposed surfaces for coated panels:
      a. Steel Finishes: fluorocarbon finish. Epoxy primer baked both sides, .2-.25 mils thickness as approved by finish coat manufacturer. Weathering finish as referred by National Coil Coaters Association (NCCA). Provided with the following properties.
         1) Pencil Hardness: ASTM D3363, HB-H / NCCA II-2.
         2) Bend: ASTM D-4145, O-T / NCCA II-19
         3) Cross-Hatch Adhesion: ASTM D3359, no loss of adhesion
         4) Gloss (60 deg. angle): ASTM D523, 25+/-5%
         5) Reverse Bend: ASTM D2794, no cracking or loss of adhesion
         6) Nominal Thickness: ASTM D1005
            a) Primer: 0.2 mils

            b) Topcoat, 0.7 mils min
            c) Clear Coat (optional, only used with 22 ga. steel) 0.3 mils
         7) Color: Provide as specified. (Subject to minimum quantities)

F. Pitch pans, Rain Collar 22 gauge stainless or 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.

G. Drain Flashings should be 4lb (1.8kg) sheet lead formed and rolled.

H. Plumbing stacks should be 4lb (1.8kg) sheet lead formed and rolled.

I. Liquid Flashing - Tuff-Flash: An asphaltic-polyurethane, low odor, liquid flashing material designed for specialized details unable to be waterproofed with typical modified membrane flashings.
   1. Tensile Strength, ASTM D 412: 400 psi
   2. Elongation, ASTM D 412: 300%
   3. Density @77 deg. F 8.5 lb/gal typical PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.

C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.

D. If substrate preparation and other conditions are the responsibility of another installer, notify the owner of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. General: Clean surfaces thoroughly prior to installation.
   1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
   3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
   4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
   5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
   6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
   7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

B. Precast concrete:
   1. Decks shall be clean, dry, fully cured and free of flaws and attached securely to the supporting structure as recommended by the deck manufacturer.
   2. All joints shall be caulked or grouted.

   3. Concrete surfaces to receive roofing shall be fully primed at the rate of 1 gallon per 100 sq. ft.
   4. When applying roofing or insulation directly to the deck with asphalt, prime with asphalt/concrete primer, ASTM D41, at a rate of 1 gal/square (.4 L/m2) and allow the primer to dry prior to the application of the roofing system. Hold back bitumen at the joints approximately 4 inches (102 mm) to prevent bitumen drippage.
   5. Deck joints shall be stripped in with a 12 inch (305 mm) wide strip of modified membrane unadhered a minimum of 2 inches (51 mm) immediately on either side of the joint.

C. Metal Deck: Metal deck shall be installed as specified in Section
   1. Fastening of the deck should comply with the anticipated live and dead loads pertaining to the building as well as applicable Code.

2. Steel decks shall be minimum 22-gauge factory galvanized or zinc alloy coated for protection against corrosion.
3. Suitable insulation shall be mechanically attached as recommended by the insulation manufacturer.
4. Decks shall comply with the gauge and span requirements in the current Factory Mutual FM Approval Guide and be installed in accordance with Loss Prevention Data Sheet 1-28 or specific FM approval.
5. When re-roofing over steel decks, surface corrosion shall be removed, and repairs to severely corroded areas made. Loose or inadequately secured decking shall be fastened, and irreparable or otherwise defective decking shall be replaced.

D. Wood Deck:
1. Dimensional wood deck shall be minimum 1 inch (25 mm) thick, knotholes and cracks larger than 1/4 inch shall be covered with sheet metal. All boards shall be appropriately nailed and have adequate end bearing to the centers of beams/rafters. Lumber shall be kiln dried.
2. Plywood shall be a minimum 15/32 inch (11.9 mm) thick and conform to the standards and installation requirements of the American Plywood Association (APA).
3. If no roof insulation is specified, provide a suitable dry sheathing paper, followed by an approved base sheet nailed appropriately for the specified roof system, with 1 inch (25 mm) diameter caps and annular nails unless otherwise required by the applicable Code or Approval agency.
4. Insulation is to be mechanically attached in accordance with the insulation manufacturer's recommendations unless otherwise required by the applicable Code.
5. In all retrofit roof applications, it is required that deck be inspected for defects. Any defects are to be corrected per the deck manufacturer's recommendations and standards of the APA/Engineered Wood Association prior to new roof application.
6. Light metal wall ties or other structural metal exposed on top of the wood deck shall be covered with one ply of a heavy roofing sheet, such as HPR Glasbase Base Sheet, extending 2 inches to 6 inches (51 mm to 152 mm) beyond the metal in all directions. Nail in place before applying the base ply.

E. Insulation: Roof insulation is specified in Section 072200
1. All joints between layers should be staggered when multiple layers of insulation are installed. Insulation greater than 2.5 inches shall be installed in multiple layers.
2. Insulation shall be kept dry at all times. Install only as much insulation as can be covered with completed roofing membrane before the end of the day's work or prior to onset of inclement weather.
3. Edges shall butt tightly and all cuts shall fit neatly against adjoining surfaces to provide a smooth overall surface. Gaps of greater than 1/4 inch width shall be filled with insulation.
4. Install tapered insulation around roof drains and penetrations to provide adequate

slope for proper drainage.

5. Mechanically attached insulation shall be fastened in accordance with code and insurance requirements for the applicable geographic zone with the required number and type of fasteners and plates.
6. When asphalt or cold adhesive attachment is specified, the proposed insulation shall be compatible with the roof substrate, the proposed bitumen and the requirements of the specific membrane.
7. Hot asphalt application:
    a. Maximum 4 foot by 4 foot insulation boards shall be attached with hot asphalt.
    b. Asphalt for insulation attachment shall meet ASTM D 312 Type III or IV criteria, as dictated by the roof slope or other design conditions.
    c. Expanded polystyrene (EPS) materials shall not be installed with hot bitumen products.

3.3 INSTALLATION - GENERAL

A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.

B. General: Avoid installation of modified bitumen membranes at temperatures lower than 4045 degrees F. When work at such temperatures unavoidable use the following precautions:
1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.

C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water

D. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to

facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

3.4 INSTALLATION COLD APPLIED ROOF SYSTEM

A. Nailable Base Sheet: Install base sheet nailed to the substrate with the appropriate fastener and fastening pattern determined from your wind uplift calculation.

B. Base Ply: Cut base ply sheets into 18 foot lengths and allow plies to relax before installing. Install base sheet in Interply Adhesive: applied at the rate required by the manufacturer.
Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate.
Shingle in proper direction to shed water on each large area of roofing.
1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate
of 2 to 2-1/2 gallons per 100 square feet.
3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
5. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
6. Install base flashing ply to all perimeter and projection details.
7. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.

C. Modified Cap Ply(s): Cut cap ply sheets into 18 foot lengths and allow plies to relax before installing. Install in interplay adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plys specified. Shingle in proper direction to shed water on each large area of roofing.
1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
2. Solidly bond to the base layers with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.
4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.

5. Allow cold adhesive to set for 5 to 10 minutes before installing the top layer of modified membrane.
6. Extend membrane 2 inches beyond top edge of all cants in full moppings of the cold adhesive as shown on the Drawings.

D. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.

E. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06114.
1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.
2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.

F. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07620 or Section 07710. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.

G. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.

H. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.

4. Solidly adhere the entire flashing ply to the substrate. Secure the tops of all flashings that are not run up and over curb through termination bar fastened at 6 inches (152 mm) O.C. and sealed at top.
5. Seal all vertical laps of flashing ply with a three-course application of trowel-grade mastic and fiberglass mesh.
6. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

I. Flashing Cap Ply:
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
6. All stripping shall be installed prior to flashing cap sheet installation.
7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

J. Surface Coatings: Apply roof coatings in strict conformance with the manufacturer's recommended procedures.

3.5 INSTALLATION HOT APPLIED ROOF SYSTEM

A. Base/Felt Ply(s): Install base sheet or felt plies in twenty five (25) lbs (11.3kg) per square of bitumen shingled uniformly to achieve one or more plies over the entire prepared substrate. Shingle in direction of slope of roof to shed water on each area of roof. Do not step on base rolls until asphalt has cooled, fish mouths should be cut and patched.

1. Lap ply sheet ends 8 inches (203 mm). Stagger end laps 2 inches (304mm) minimum.
2. Install base flashing ply to all perimeter and projection details after membrane application.
3. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
4. Install base flashing ply to all perimeter and projection details.
5. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.

B. Modified Cap Ply(s): Solidly bond the modified membrane to the base layers with specified material at the rate of 25 to thirty 30 lbs. (11-13kg) per 100 square feet.
1. Roll must push a puddle of hot material in front of it with material slightly visible at all side laps. Use care to eliminate air entrapment under the membrane. Exercise care during application to eliminate air entrapment under the membrane.
2. Apply pressure to all seams to ensure that the laps are solidly bonded to substrate.
3. Install subsequent rolls of modified membrane as above with a minimum of 4 inch (101 mm) side laps and 8 inch (203 mm) end laps. Stagger end laps. Apply membrane in the same direction as the previous layers but stagger the laps so they do not coincide with the laps of the base layers.
4. Apply hot material no more than 5 feet (1.5 m) ahead of each roll being embedded.
5. Extend membrane 2 inches (50 mm) beyond top edge of all cants in full moppings of the specified hot material.

C. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.

D. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06114.
1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.
2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.

E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07620 or Section 07710. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.

F. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.

G. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
2. Prepare all walls, penetrations, expansion joints and surfaces to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base flashing ply with specified hot material unless otherwise noted in these specifications. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
4. Solidly adhere the entire sheet of flashing membrane to the substrate.
5. Seal all vertical laps of flashing membrane with a three-course application of trowelgrade mastic and mesh.
6. Coordinate counter flashing, cap flashings, expansion joints, and similar work with modified bitumen roofing work as specified.
7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.

H. Flood Coat/Aggregate:
1. Install after cap sheets and modified flashing, tests, repairs and corrective actions have been completed and approved.
2. Apply flood coat materials in the quantities recommended by the manufacturer.
3. Uniformly embed aggregate in the flood coat of cold adhesive at a rate recommended by the manufacturer.
4. Aggregate must be dry and placed in a manner required to form a compact, embedded overlay. To aid in embedment, lightly roll aggregate.

I. Flashing Cap Ply: Install flashing cap sheets by the same application method used for the cap ply.
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.

2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
6. All stripping shall be installed prior to flashing cap sheet installation.
7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

J. Surface Coatings: Apply roof coatings in strict conformance with the manufacturer's recommended procedures.

3.6 INSTALLATION EDGE TREATMENT AND ROOF PENETRATION FLASHING

A. Pre-Manufactured Flash-less Snap-On Metal Edge System:
1. Position base ply of the Built-Up and/or Modified Roofing membrane over the roof edge covering nailers completely, fastening eight (8) inches on center. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations. Cap sheet shall stop at the edge of the roof and shall not turn over the edge of the nailer.
2. Prior to installing the base anchor, assure a level plane is present. If not, shim the roof edge surface as required.
3. Extruded base anchor: Apply two 1/4" beads of Green-Lock Sealant XL or equal on the bottom surface of the top flange of the extruded anchor.
4. Set the extruded anchor on the edge and face fasten through pre-punched slots every
18 inches o.c. for 5.75 inch face fascia, and 18 inches o.c. staggered for any fascia size greater than 5.75 inches. Begin fastening 6 inches from ends.
5. Install Green-Lock Sealant XL or equal at the ends of the base frame to prevent water from running between base anchor joints.
6. Install compression seals every 40 inches on center in the slots located at the top of the extruded anchor.
7. Install fascia cover setting the top flange over the top flange and compression seals of the base anchor. Assure compression seals are in place during this process. Beginning on one end and working towards the opposite end, press

downward firmly (do not rotate) until "snap" occurs and cover is engaged along entire length of miter.

8. Install splice plate at each end of the base anchor and fascia cover prior to the installation of the next adjacent ten foot piece.

B. Roof Edge With Gutter:

1. Inspect the nailer to assure proper attachment and configuration. Increase slope at metal edge by additional degree of slope in first board.
2. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.
3. Install gutter and strapping.
4. Install continuous cleat and fasten at 6 inches (152 mm) o.c.
5. Install new metal edge hooked to continuous cleat and set in bed of roof cement. Fasten flange to wood nailer every 3 inches (76 mm) o.c. staggered.
6. Prime metal edge at a rate of 100 square feet per gallon and allow to dry. Do not prime for Green-Lock System lightly sand metal to improve bond.
7. Strip in flange with base flashing ply covering entire flange in bitumen with 6 inches (152 mm) onto the field of the roof. Assure ply laps do not coincide with metal laps.
8. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof.

C. Pre-manufactured Snap-On Coping Cap:

1. Install miters first.
2. Position base flashing of the Built-Up and/or Modified Roofing membrane over the wall edge covering nailers completely, fastening 8 inches on center. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.
3. Install minimum 16 gauge, 16 inch long by specified width anchor chair at [Contact Garland Representative] feet on center.
4. Install 6 inch wide splice plate by centering over 16 inch long by specified width anchor chair. Apply two beads of sealant to either side of the splice plate's center. Approximately 2 inches from the coping cap joint. Install Coping Cap by hooking outside hem of coping on outside face of anchor chair. Press downward on inside edge of coping until "snap" occurs and hem is engaged on the entire chair.

D. Surface Mounted Counterflashing:

1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm). Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of the roof.

4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9
inches (228 mm) on to the field of the roof. Apply a three-course application of mastic
and mesh at all vertical seams and allow to cure and aluminize.
5. Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
6. Secure counterflashing set on butyl tape above flashing at 8 inches (203 mm) o.c. and caulk top of counterflashing.

E. Expansion Joint:
1. Minimum curb height is 8 inches (203 mm) above finished roof height. Chamfer top of curb. Prime vertical curb at a rate of 100 square feet per gallon and allow to dry.
2. Mechanically attach wood cant to expansion joint nailers. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install compressible insulation in neoprene cradle.
4. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
5. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
6. Install pre-manufactured expansion joint cover. Fasten sides at 12 inches (609 mm)
o.c. with fasteners and neoprene washers. Furnish all joint cover laps with butyl tape between metal covers.

F. Area Divider:
1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical curb at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm)on to field of the roof.
4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
5. Install pre-manufactured cover. Fasten sides at 24 inches (609 mm) o.c. with fasteners and neoprene washers through slotted holes. Furnish all joint cover laps with butyl tape between metal covers.

G. Equipment Support:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
5. Install pre-manufactured cover. Fasten sides at 24 inches (609 mm) o.c. with fasteners and neoprene washers. Furnish all joint cover laps with butyl tape between metal covers.
6. Set equipment on neoprene pad and fasten as required by equipment manufacturer.

H. Curb Detail/Air Handling Station:
1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic

and mesh at all vertical seams and allow to cure and aluminize.

5. Install pre-manufactured counterflashing with fasteners and neoprene washers or per manufacturer's recommendations.
6. Set equipment on neoprene pad and fasten as required by equipment manufacturer.

I. Exhaust Fan:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb with 6 inches (152 mm) on to field of the roof.
4. Install a second ply of modified flashing ply installed over the base flashing ply, 9

inches (228 mm) on to field of the roof. Attach top of membrane to top of wood curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.

5. Install metal exhaust fan over the wood nailers and flashing to act as counterflashing. Fasten per manufacturer's recommendation.

J. Passive Vent/Air Intake:

1. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all plies over cant a minimum of 2 inches (50 mm).
3. Install base flashing ply covering curb with 6 inches (152mm) on to the field of the roof.
4. Install a second ply of modified flashing ply installed over the base flashing ply, 9 inches (228 mm) on to field of the roof. Attach top of membrane to top of wood curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
5. Install passive vent/air intake over the wood nailers and flashing to act as counterflashing. Fasten per manufacturer's recommendations.

K. Roof Drain:

1. Plug drain to prevent debris from entering plumbing.
2. Taper insulation to drain minimum of 24 inches (609 mm) from center of drain.
3. Run roof system plies over drain. Cut out plies inside drain bowl.
4. Set lead/copper flashing (30 inch square minimum) in 1/4 inch bed of mastic. Run lead/copper into drain a minimum of 2 inches (50 mm). Prime lead/copper at a rate of 100 square feet per gallon and allow to dry.
5. Install base flashing ply (40 inch square minimum) in bitumen.
6. Install modified membrane (48 inch square minimum) in bitumen.
7. Install clamping ring and assure that all plies are under the clamping ring.
8. Remove drain plug and install strainer.

L. Plumbing Stack:

1. Minimum stack height is 12 inches (609 mm).

2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
4. Install base flashing ply in bitumen.
5. Install membrane in bitumen.
6. Caulk the intersection of the membrane with elastomeric sealant.
7. Turn sleeve a minimum of 1 inch (25 mm) down inside of stack.

M. Heat Stack:
1. Minimum stack height is 12 inches (609 mm).
2. Run roof system over the entire surface of the roof. Seal the base of the stack with

elastomeric sealant.
3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
4. Install base flashing ply in bitumen.
5. Install modified membrane in bitumen.
6. Caulk the intersection of the membrane with elastomeric sealant.
7. Install new collar over cape. Weld collar or install stainless steel draw brand.

N. Pitch Pocket Umbrella:
1. Run all plies up to the penetration.
2. Place the pitch pocket over the penetration and prime all flanges.
3. Strip in flange of pitch pocket with one ply of base flashing ply. Extend 6 inches (152 mm) onto field of roof.
4. Install second layer of modified membrane extending 9 inches (228 mm) onto field of the roof.
5. Fill pitch pocket half full with non-shrink grout. Let this cure and top off with pourable sealant.
6. Caulk joint between roof system and pitch pocket with roof cement.
7. Place a watershedding type bonnet over the top of the pitch pocket and clamp the top with a drawband collar. Caulk the upper edge of the band with an elastomeric sealant.

O. Liquid Flashing:
1. Mask target area on roof membrane with tape.
2. Clean all non-porous areas with isopropyl alcohol.
3. Apply 32 wet mil base coat of liquid flashing over masked area.
4. Embed polyester reinforcement fabric into the base coat of the liquid flashing.
5. Apply 48-64 wet mil top coat of the liquid flashing material over the fabric extending 2 inches (51 mm) past the scrim in all directions.
6. Apply minerals immediately or allow the liquid flashing material to cure 15-30 days and then install reflective coating.

3.7 INSTALLATION OF FINISHED SURFACE ROOF COATING

A. Roof Coating
1. The surface must be clean and free of debris.
2. Aluminizer – 1 coating at the rate of 2 gallons per 100 square feet.
3. Cold Process Coal Tar – flodd coat of 5 gallons per 100 square feet and immediately embed 425 to 450 lbs. of #8, silica grade, pea gravel.

3.8 CLEANING

A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations. B. Remove asphalt markings from finished surfaces.

C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.9 PROTECTION

A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.

B. Protect exposed surfaces of finished walls with tarps to prevent damage.

C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.

D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.

E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.10 FIELD QUALITY CONTROL

A. Inspection: Provide manufacturer's field observations at start-up and at intervals of approximately 30 percent, 60 percent and 90 percent completion. Provide a final inspection upon completion of the Work.
1. Warranty shall be issued upon manufacturer's acceptance of the installation.
2. Field observations shall be performed by a Sales Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
3. Provide observation reports from the Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.11 SCHEDULES

A. Base (Ply) Sheet:

1. FlexBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a dual fiberglass reinforced scrim, performance requirements according to ASTM D 5147.
   a. Tensile Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39 kN/m
   b. Tear Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
   c. Elongation at Maximum Tensile, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 7% XD 7%
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 7% XD 7%
   d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34.4 deg. C)

B. Modified Cap (Ply) Sheet:

1. StressPly Plus: 105 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing membrane incorporating recycled rubber and reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade S a. Tensile Strength, ASTM D 5147
   1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
   2) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
   b. Tear Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
   c. Elongation at Maximum Tensile, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6F MD 8% XD 8%
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
   d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C) 2. Millennium FR Mineral (Sumped Drains Only): 160 mil SBS (Styrene-Butadiene- Styrene) Mineral Surfaced Coal Tar polymer modified membrane with fire retardant characteristics utilizing polyester and fiberglass reinforcement. a. Tensile Strength, ASTM D 5147

1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
2) 50mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m

b. Tear Strength, ASTM D 5147
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
2) 50mm/min. @ 23 +/- +2 deg. C MD 2224 N XD 2224 N

c. Elongation at Maximum Tensile, ASTM D 5147
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 3.5% XD 3.5%
2) 50mm/min. @ 23 +/- 2 deg. C MD 3.5% XD 3.5%

d. Low Temperature Flexibility, ASTM D 5147, Passes -76 deg. F (-60 deg. C)

C. Interply Adhesive:
1. Weatherking:Rubberized, polymer modified cold process asphalt roofing bitumen V.O.C. compliant ASTM D 3019. Performance Requirements:
a. Non-Volatile Content ASTM D 4479 70%
b. Density ASTM D1475 8.9 lbs./gal.
c. Viscosity Stormer ASTM D562 400-500 grams
d. Flash Point ASTM D 93 100 deg. F min. (37 deg. C)
e. Slope: up to 3:12
2. Black-Knight/Black-Stallion Cold: Rubberized, polymer modified cold process coal tar roofing bitumen
a. Non-Volatile Content ASTM D 4479 77%
b. Density ASTM D1475 9.4lb./gal.
3. Generic Type III Asphalt: Hot Bitumen, ASTM D 312, Type III steep asphalt having the following characteristics:
a. Softening Point 185 deg. F - 205 deg. F
b. Flash Point 500 deg. F
c. Penetration @ 77 deg. F 15-35 units
d. Ductility @ 77 deg. F 2.5 cm

D. Flashing Base Ply:
1. HPR Tri-Base Premium: 60 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass and polyester composite scrim, performance requirements according to ASTM D 5147.
a. Tensile Strength, ASTM D 5147:
1) 2 in/min. @ 73.4 +/- 3.6 deg. F: MD 330 lbf/in XD 330 lbf/in
2) 50 mm/min. @ 23 +/- 2 deg. C MD 57.5 kN/m XD 57.5 kN/m
b. Tear Strength, ASTM D5147:
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 550 lbf XD 550 lbf
2) 50 mm/min. @ 23 +/- 2 deg. C MD 2446 N XD 2446 N
c. Elongation at Maximum Tensile, ASTM D5147:
1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 7% XD 9%
2) 50 mm/min. @ 23 +/- 2 deg. C MD 7% XD 9%

E. Flashing Ply Adhesive:

1. Flashing Bond: Asphalt roofing mastic V.O.C. compliant, ASTM D 4586, Type II trowel grade flashing adhesive.
    a. Non-Volatile Content ASTM D 4479 70 min.
    b. Density ASTM D 1475 8.3 lbs./gal. (1kg/l)
    c. Flash Point ASTM D 93 103 deg. F (39 deg. C)
2. Generic Type III Asphalt: Hot Bitumen, ASTM D 312, Type III steep asphalt having the following characteristics:
    a. Softening Point 185 deg. F - 205 deg. F
    b. Flash Point 500 deg. F
    c. Penetration @ 77 deg. F 15-35 units
    d. Ductility @ 77 deg. F 2.5 cm

F. Surfacing:
1. Flood Coat/Aggregate:
    a. Black-Knight/Black-Stallion Cold: Coal Tar protective roof coating; heavybodied, fiber reinforced, cold process polymer modified, coal tar roof coating having the following characteristics: 1) Weight/Gallon 9.0 lbs./gal. (1.07 g/cm3)
        2) Solids by weight 87%
        3) Viscosity; Brookfield Heliopath, 2.5 rpm 120,000 cPs
        4) Roofing Aggregate: ASTM D 1863
            a) #8 Wash Grade, Silica Grade Pea gravel.
2. Flashing Cap (Ply) Sheet:
    a. StressPly Plus: 105 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing membrane incorporating recycled rubber and reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade S
        1) Tensile Strength, ASTM D 5147
            a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
            b) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
        2) Tear Strength, ASTM D 5147
            a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
            b) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
        3) Elongation at Maximum Tensile, ASTM D 5147
            a) 2 in/min. @ 73.4 +/- 3.6F MD 8% XD 8%
            b) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
        4) Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)
3. Surface Coatings:
    a. Surfacing:

1) Silver-Shield: ASTM D 2824 aluminum coating fibered aluminum roof coating fibered aluminum roof coating having the following characteristics:
   a) Flash Point 100 deg. F (38 deg. C) min.
   b) Weight/Gallon 8.2 lbs./gal. (1.0 g/cm3)
   c) Viscosity (75 deg. F) 100 - 125 K.U

END OF SECTION
SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SECTION INCLUDES:

A. Provide all labor, equipment, and materials fabricate and install the following.
   1. Pre-manufactured metal edge, extenders and trim.
   2. Surface mounted wall counter flashings over bituminous base flashing.
   3. Metal flashings.
   4. Counterflashing's over bituminous base flashing.
   5. Counterflashing's at roof mounted equipment and vent stacks.
   6. Counterflashing's for roof accessories.
   7. Counterflashing's at walls and penetrations.
   8. Lead flashing for bituminous membranes.
   9. Other components.

1.2 RELATED SECTIONS

A. All Provided Sections

1.3 QUALITY ASSURANCE

A. Reference Standards

   1. Comply with details and recommendations of SMACNA Manual for workmanship, methods of joining, anchorage, provisions for expansion, etc.
   2. ANSI/SPRI ES-1 Testing & Certification.

B. If required, fabricator/installer shall submit work experience and evidence of adequate financial Responsibility. The owner's representative reserves the right to inspect fabrication facilities in determining qualifications.

C. Successful contractor must obtain all components of roof system from a single manufacturer including any roll good materials if required. Any secondary products that are required, which cannot be supplied by the specified manufacturer, must be recommended and approved in writing by primary manufacturer prior to bid submittal.

D. Manufacturer shall have in place a documented, standardized method for maintaining quality control such as ISO-9001 approval.

E. The roof material manufacturer shall conduct daily jobsite inspections of work in progress as described herein and shall furnish written documentation of all such inspections.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible.

B. Stack pre-formed and pre-finished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

C. Prevent contact with materials which may cause discoloration or staining.

1.7 JOB CONDITIONS

A. Determine that work of other trades will not hamper or conflict with necessary fabrication and storage requirements for pre-formed metal roofing system.

B. Protection:

1. Provide protection or avoid traffic on completed roof surfaces.

2. Do not overload roof with stored materials.

3. Support no roof-mounted equipment directly on the roofing system.

C. Ascertain that work of other trades which penetrates the roof or is to be made watertight by the roof, is in place and approved prior to installation of roofing.

1.8 DESIGN AND PERFORMANCE CRITERIA

A. ANSI/SPRI ES-1 (Pre-manufactured Metal Edge)

1. ANSI/SPRI ES-1 test reports must be submitted for specific project wind uplift requirements per Section 1.15 Design and Performance Criteria within the Torch Applied Modified Bituminous Membrane Roofing specification.

B. Thermal expansion and contraction:

1. Completed metal edge system shall be capable of withstanding unlimited thermal expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.

1.9 WARRANTIES

A. Material Manufacturer's Warranty

1. Pre-finished metal material shall require a written 30-year non-prorated warranty covering fade, chalking and film integrity. The material shall not show a color change greater than 5 NBS color units per ASTM D-2244 or chalking excess of 8 units per ASTM D-659. If either occurs material shall be replaced per warranty, at no cost to the Owner.

B. Contractor's Warranty

1. The Contractor shall provide the Owner with a notarized written warranty assuring that all sheet metal work including caulking and fasteners to be
watertight and secure for a period of two (2) years from the date of final acceptance of the building. Warranty shall include all materials and workmanship required to repair any leaks that develop, and make good any damage to other work or equipment caused by such leaks or the repairs thereof.

C. Manufacturer's Warranty

1. Warranty shall also include the modified bitumen roof system and premanufactured metal edge system, and shall be a single-source Edge-to-Edge warranty provided by ONE manufacturer. Warranty will include the roof systems, pre-manufactured metal edge, flashings, and the transition between all systems.

A. 30 Year Edge to Edge No Dollar Limit

2. At the request of the Owner, the Manufacturer will provide an annual inspection.

The request for annual inspections shall be applicable for the life of the warranty.

3. The warranty shall not require ant written renewals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Metal systems (pre-manufactured metal edge system, slip flashings, etc.), are to be comprised of 22-gauge steel, coated on both sides with an epoxy primer and on the weathering surface with a polyvinylidene fluoride (Kynar) coated finish. Equipment counter flashings and slip flashings shall be mill finish or a stadard color per the owner's choice. Pitch pockets shall be either stainless steel or 20 oz. copper, and have all corners welded or soldiered, and a continuous deck flange at corners.

1. Materials – 22-gauge steel

B. Pre-Manufactured Edge Metal: R-Mer Force Flash-less Snap-On Fascia Cover and Splice Plate. R-Mer Force Coping
   1. Per Section 075500, 2.6
   2. Or Approved Equal per the Specifications

C. Flat Stock = 22-gauage steel

D. Pitch pockets shall be 22-gauge stainless steel, 20 oz. copper, or approved equal. All corners soldered or welded, and a continuous deck flange at corners.

E. Miscellaneous Metals and Flashings:

1. Surface Mounted Counter Flashings: matching color, 22-gauage steel

2. Slip Counter flashings: 22-gauage steel

3. Equipment Slip Flashing: 22-gauage steel

4. Equipment Support Flashing: 22-gauage steel

5. Solder for Stainless Steel: ASTM B 32, Grade Sn60, used with an acid flux of type recommended by stainless-steel sheet manufacturer; use a noncorrosive rosin flux over tinned surfaces.

6. Solder for Copper: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.

7. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed

heads with material being fastened. Exposed fasteners shall have a neoprene or other suitable weatherproofing washer.

8. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil dry film thickness per coat.

9. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

10. Sealing Tape: Pressure sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.

11. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.

12. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.

13. Roofing Cement: ASTM D 4586, Type I, asbestos free, asphalt based.

14. Zinc-Coated Steel Sheet: ASTM A526, 0.20% copper, 26 gauge (0.0179"); designation G90 hot-dip galvanized, mill phosphatized.

15. Stainless Steel Sheet: Type 302/304, ASTM A167, 26-gauge, (0.0217"), annealed except dead soft where fully concealed by other work, 2D (dull) finish.

16. Copper Sheet: ASTM B370, 20 oz., temper HOO (cold-rolled).

17. Lead-Coated Copper Sheet: ASTM B101. Type I, Class A (12-15 1 lb. of lead coating per 100 sq. ft.), 17.1 oz. (0.022").

18. Zinc Alloy Sheet: Zinc with 0.6% copper and 0.14% titanium; 0.27" thick (21 gauge); standard (soft) temper, mil finish.

2.2 RELATED MATERIALS

A. Metal Primer: Zinc chromate type.

B. Plastic Cement: ASTM D 4586

C. Sealant: As required by material manufacturer.

D. Lead: Meets Federal Specification QQ-L-201, Grade B, four pounds per square foot.

E. Solder: ANSI/ASTM B32; 95/05 type.

F. Flux: FS O-F-506.

G. Underlayment: Ply of specified base flashing modified membrane or approved equal.

H. Fasteners:

1. Nails and Fasteners: Non-ferrous metal or hot dipped galvanized fasteners complying with ASTM A153 and connectors complying with ASTM A653, Class G185; Type 304 or Type 316 stainless steel fasteners and connectors shall be used with new generation of pressure-treated wood; except that hard copper nails shall be used with copper; aluminum or stainless steel nails shall be used with aluminum; and stainless steel nails shall be used with stainless steel. Fasteners shall be self-clinching type of penetrating type as recommended by the manufacturer of the wood blocking/nailer material. Nails and fasteners shall be flush-driven through flat metal discs of not less than one (1) inch diameter. Omit metal discs when one-piece composite nails or fasteners with heads not less than one (1) inch diameter are used.

2. Fastening shall conform to ANSI/SPRI ES-1 and/or Factory Mutual 1-90 requirements or as stated on section details, whichever is more stringent and per the manufacturer's requirements.

I. Metal Termination Bars:

1. Shall be heavy flat bar aluminum unless otherwise recommended by membrane manufacturers.

2. Material shall be .125” x 1” (minimum) aluminum conforming to ASTM B-221, mill finish. Bars shall have holes for fasteners at 6” o.c. maximum.

PART 3 - EXECUTION

3.1 PROTECTION

A. Isolate contact areas of dissimilar metals with heavy asphalt or other approved coating, specifically made to stop electrolytic action.

3.2 GENERAL

A. Install work watertight, without waves, warps, buckles, fastening stress, or distortion, allowing for expansion and contraction.

B. Fastening of metal to walls and wood blocking shall comply with ANSI-SPRI ES-1, SMACNA Architectural Sheet Metal Manual, Factory Mutual 1-100 wind uplift specifications and/or manufacturer's recommendations whichever is of the highest standard.

C. All accessories or other items essential to the completeness of sheet metal installation, whether specifically indicated or not, shall be provided and of the same material as item to which applied.

3.3 INSPECTION

A. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets are in place, and nailing strips located.

B. Verify membrane termination and base flashings are in place, sealed, and secure.

C. Beginning of installation means acceptance of existing conditions.

D. Field measure site conditions prior to fabricating work.

3.4 SHOP FABRICATED SHEET METAL

A. Miscellaneous trip, counter flashings, slip metal, etc.

B. Installing Contractor shall be responsible for determining if the sheet metal systems are in general conformance with roof manufacturer's recommendations.

C. Metal work shall be shop fabricated to configurations and forms in accordance with recognized sheet metal practices.

D. Hem exposed edges.

E. Angle bottom edges of exposed vertical surfaces to form drip.

F. All corners for sheet metal shall be lapped with adjoining pieces fastened and set in sealant.

G. Install sheet metal to comply with ANSI/SPRI, SMACNA and NRCA standards, and per the manufacturer’s instructions.

3.5 FLASHING MEMBRANE INSTALLATION

A. ROOF DRAIN

1. Prime lead at a rate of 100 square feet per gallon and allow to dry.

2. Set lead flashing (30" square minimum) in a 1/4" bed of mastic.

3. Install specified roof flashing system.

4. Install metal clamping ring and strainer. Stop all plies short of the clamping ring and seal edge with a three-course application of the specified liquid applied flashing system and reinforcing mesh.

B. PLUMBING STACK

1. Prime flange and sleeve at a rate of 100 square feet per gallon and allow to dry.

2. Install properly sized sleeves in a 1/4" bed of roof cement.

3. Turn sleeve a minimum of 1" down inside of stack or lead caps on pipes 2” or less in diameter.

4. Caulk intersection of the membrane and flange with asphalt roof cement.

C. EQUIPMENT SUPPORTS/EXHAUST VENTS

1. Steel counterflashing and/or slip flashing extender shall be provided with watertight accessories such as miters, transitions, end caps, etc. and finished to match.

2. Accessories: Joint covers, corners, fasteners, strip flashing at joinings, fastening, and other accessories shall be included.

3. On small units, install an steel extender will be installed under the existing counterflashing or curb lip to cover the newly installed roof flashing system by at least 4 inches. The new extender will be secured with fasteners and neoprene washers every 8 inches on center.

D. PITCH POCKET

1. Prime flange and sleeve at a rate of 100 square feet per gallon and allow to dry.

2. Install properly sized and prefabricated stainless steel or copper pitch pockets with welded watertight joints in a 1/4" bed of roof mastic.

3. Install specified two ply roof flashing system.

4. Caulk intersection of the flashing membrane and flange with asphalt roof cement.

5. In accordance with project the detail, fill pitch pocket with non-shrink grout and pourable sealer.

E. CURB DETAIL/AIR HANDLING STATION

1. Steel slip flashing extender shall be provided with watertight accessories such as miters, transitions, end caps, etc. and finished to match.

2. Accessories: Joint covers, corners, fasteners, strip flashing at joinings, fastening, and other accessories shall be included.

3. Over the termination bar, steel extender will be installed under the existing counterflashing or curb lip to cover the newly installed roof flashing system by at least 4 inches. New counterflashing will be secured with fasteners and neoprene washers every 8 inches on center.

END OF SECTION

EA GROUP
Environmental Analysis and Management

May 23, 2022

Mr. Jason Boyd
Lake County Commissioners
71 North Park Place
Painesville, Ohio 44077

RE: **Suspect Asbestos-Containing Roofing Sampling and Analysis** McKinley Outreach Center, 1200 Lost National Road, Willoughby, Ohio OH44712

Description of Work

EA Group, Mentor, Ohio was contracted by Lake County Commissioners to conduct sampling and analysis of designated suspect asbestos-containing materials (ACMs), limited to roofing materials, associated with McKinley Outreach Center at 1200 Lost Nation Road in Willoughby, Ohio. Sampling was performed on April 26, 2022 by EA Group representative Corey Falatic.

Asbestos Sampling

EA Group's licensed Asbestos Hazard Evaluation Specialist Corey Falatic, ES36126, secured samples of the designated suspect ACMs, in the designated areas, on April 26, 2022. Homogeneous Groups of suspect ACM are identified on the *Asbestos Inspection Data Sheet* forms in Appendix A, which includes a schematic of the roof systems and general sampling locations. Classification of any positively identified ACM has been made per National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations, with additional notations for potential Occupational Safety and Health Administration (OSHA) compliance purposes, if warranted.

Objective and Limitations of the Inspection

The objective of this project was to sample and analyze designated suspect ACM, limited to roofing materials, associated with McKinley Outreach Center in Willoughby, Ohio, pursuant to NESHAP and OSHA regulations. The work did not constitute a "survey" or "inspection" for the presence of suspect ACM, and sampling was *strictly limited* to the designated suspect materials in the designated areas, all as identified by the on-site representative. No other materials or areas were assessed.

Asbestos Analysis

The bulk samples were analyzed by polarized light microscopy for asbestos content at or through the Laboratory Division of EA Group, which is accredited by the National Institute of Standards and Technology – National Voluntary Laboratory Accreditation Program. The United States Environmental Protection Agency requires all materials containing greater than one percent asbestos by weight to be considered asbestos-containing materials. Composite or layered analyses were performed, depending on the nature of a material. If an initial analysis indicated less than 10%

7118 Industrial Park Boulevard • Mentor, Ohio 44060-5314
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EA GROUP
Environmental Analysis and Management

May 23, 2022

Lake County Commissioners

asbestos, additional analysis (point-counting) was conducted. In all cases that at least one sample from a homogeneous group [Group] was determined to be ACM, the Group as a whole is considered ACM regardless of the results for any other samples from that Group. Analytical results are provided in Appendix A.

Results of Asbestos Analysis

The materials that were sampled as suspect and were determined to contain regulated amounts of asbestos are identified in Table 1, which also includes materials determined to be non-ACM (no asbestos detected). Any activities that involve the handling or disturbance of ACM should be carried out by a licensed abatement contractor or other appropriately trained personnel in accordance with all applicable regulations.

If you have any questions or concerns regarding the above information, please contact the undersigned. Thank you for consulting EA Group.

Sincerely,

EA Group

Timothy S. Bowen, Director ES36126

Corey Falatic, Vice President/Technical

Table 1 Summary of Results - McKinley Outreach Center Roof Systems, Willoughby, Ohio

Group	ID # OH44712	MATERIAL DESCRIPTION	Material Type	RESULT
A	01	Roof Flashing; Black	M/NF1	**[+],B**
A	02	Roof Flashing; Black	M/NF1	0,B
B	03	Built-Up Roof; Black	M/NF1	0
B	04	Built-Up Roof; Black	M/NF1	0
C	05	Roof Flashing	M/NF1	**[+]**
C	06	Roof Flashing	M/NF1	**[+]**
D	07	Built-Up Roof	M/NF1	0
D	08	Built-Up Roof	M/NF1	0
E	09	Roof Flashing; Silver	M/NF1	**[+]**
E	10	Roof Flashing; Silver	M/NF1	**[+]**
F	11	Built-Up Roof	M/NF1	0
F	12	Built-Up Roof	M/NF1	0
G	13	Roof Flashing	M/NF1	**[+],B**
G	14	Roof Flashing	M/NF1	**[+],B**
H	15	Built-Up Roof	M/NF1	0
H	16	Built-Up Roof	M/NF1	0
I	17	Roof Flashing; Silver/Black	M/NF1	**[+],B**
I	18	Roof Flashing; Silver/Black	M/NF1	**[+],B**

Group = Homogeneous Group identification

Material Type: S = Surfacing
T = Thermal System Insulation
M = Miscellaneous
NF1 = Non-Friable Category I
NF2 = Non-Friable Category II

Result: 0 = non-ACM
[+] = ACM
B = verified by layering & point-counting

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APPENDIX A

Asbestos Inspection Data Sheet(s),
Schematic(s) of Sample Locations,
and
Laboratory Analytical Report(s)

ASBESTOS INSPECTION DATA SHEET
KEY

Client and Project: Information provided by either Work Order or Scope of Work

Building: Name or address of building.

Functional Space: A room, group of rooms, or homogeneous area designated by the inspector to prepare management plans, design abatement projects, or conduct response actions.

Location: Location of homogeneous material being sampled or occurrence of homogeneous material.

Group:- An arbitrary designation (number or letter) assigned to each homogeneous material (material that is uniform in color and texture, serves the same function, and was installed at the same time) encountered during sampling.

ID #: A sample number assigned by the inspector which begins with the work order number (OHXXXXX) at the top of the column and then a unique sample number for each sample. May include an additional suffix (e.g., building ID, sampling date).

Material Description: Distinguishing characteristics that may include system type, function, size, color, shape etc.

Quantity: Defined as square feet (SF) [default], linear feet (LF), or individual number of fittings or miscellaneous items, each (EA)

Material Type: Abbreviations provided on the form as:

S Surfacing Material (troweled or sprayed-on)

T Thermal System Insulation (TSI)

M Miscellaneous (Friable, unless otherwise noted): **NF1** - Non-friable Category I **NF2** - Non-friable Category II

Material Condition: Typically noted only for general surveys (e.g., for O&M planning purposes).

ND No Damage. The material is in visibly good condition with no apparent/obvious damage.

D Damage. Material has damage to less than 10% of the entire homogeneous group or less than 25% of a localized section of the homogeneous group.

SD Significant Damage. Material has damage to greater than 10% of the entire homogeneous group or greater than 25% of a localized section of the homogeneous group.

Friable: When dry, an asbestos-containing material [ACM] is considered friable if it can be crumbled, pulverized, or reduced to powder by hand pressure

Result: 0 = material determined to be non-ACM (no asbestos); **[+]** = material determined to contain a regulated amount of asbestos (confirmed ACM)

Additional notations may be included for specific samples or materials for further clarification, which would be defined under "Comments"

EA GROUP

ASBESTOS INSPECTION DATA SHEET

Client: Lake County Commissioners	1200 Lost National Road, Willoughby, Ohio	Building: McKinley Outreach Center

Project: Suspect ACM Sampling & Analysis				Functional Space: As Indicated					
LOCATION	**Group**	**ID # OH44712**	**MATERIAL DESCRIPTION**	**Quantity**	**Material**		**FRIABLE**	**RESULT**	**NOTES**
					Type	**Cond**			
Exterior; Roof A	A	01	Roof Flashing; Black	200	M/NF1		N	**[+],B**	
	B	03	Built-Up Roof; Black					0	
Exterior; Roof B	A	02	Roof Flashing; Black	250	M/NF1		N	**[+][0,B]**	
	B	04	Built-Up Roof; Black					0	
Exterior; Roof D	C	05	Roof Flashing	75	M/NF1		N	**[+]**	
	C	06	Roof Flashing		M/NF1		N	**[+]**	
	D	07	Built-Up Roof					0	
	D	08	Built-Up Roof					0	
Exterior; Roofs E & F	A	---	Roof Flashing; Black	280	M/NF1		N	**[ ]+**	
	B	---	Built-Up Roof; Black					0	
	I	17	Roof Flashing; Silver/Black	120	M/NF1		N	**[+],B**	
	I	18	Roof Flashing; Silver/Black		M/NF1		N	**[+],B**	

MATERIALS:

TYPE:

S - Surfacing

T - Thermal

QUANTITY = Square Feet unless noted

LF = Linear Feet; EA = each

NQ = not quantified

FRIABLE:

COMMENTS:

[+][0], [+][0,B] = Sample non-ACM or trace but at least one other sample from Group confirmed ACM; Group considered ACM

0,B = trace (≤ 1%) asbestos; non-ACM by EPA but OSHA may apply

M - Miscellaneous	Y = Regulated ACM (RACM) by definition	
NF1 - Non-friable Cat. I	N = not RACM by definition	Sampling limited to designated material(s) in designated area(s)
NF2 - Non-friable Cat. II	NF1/NF2 may be friable due to condition	
N/S = not suspect	or may become friable during reno/demo	
CONDITION: [if relevant]	**RESULT:**	
ND - No Damage	0 - Non-ACM	
D - Damage	**[+]** = ACM [no other assessment required]	
SD - Significant Damage	B = Verified by layering/point counting	

EA GROUP

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Mentor, OH 44060-5314
(440) 951-3514

EAG Technician(s): Corey Falatic ES 36126 EAG OH44712

Survey Date(s): April 26, 2022

ASBESTOS INSPECTION DATA SHEET

Client: Lake County Commissioners 1200 Lost National Road, Willoughby, Ohio

Building: McKinley Outreach Center

Project: Suspect ACM Sampling & Analysis

Functional Space: As Indicated

LOCATION	Group	ID # OH44712	MATERIAL DESCRIPTION	Quantity	Material		FRIABLE	RESULT	NOTES
					Type	Cond			
Exterior; Roof C	G	13	Roof Flashing	50	M/NF1		N	**[+],B**	
	G	14	Roof Flashing		M/NF1		N	**[+],B**	
	H	15	Built-Up Roof					0	
	H	16	Built-Up Roof					0	
Exterior; Roof G	A	---	Roof Flashing; Black	150	M/NF1		N	**[+]**	

	B	---	Built-Up Roof; Black					0	
Exterior; Mechanical/HVAC Roofs	E	09	Roof Flashing; Silver	110	M/NF1		N	**[+]**	
	E	10	Roof Flashing; Silver		M/NF1		N	**[+]**	
	F	11	Built-Up Roof					0	
	F	12	Built-Up Roof					0	

MATERIALS:
TYPE:
S - Surfacing
T - Thermal
M - Miscellaneous
NF1 - Non-friable Cat. I
NF2 - Non-friable Cat. II
N/S = not suspect
CONDITION: [if relevant]
ND - No Damage
D - Damage
SD - Significant Damage

QUANTITY = Square Feet unless noted
LF = Linear Feet; EA = each
NQ = not quantified
FRIABLE:
Y = Regulated ACM (RACM) by definition
N = not RACM by definition
NF1/NF2 may be friable due to condition or may become friable during reno/demo
RESULT: 0 - Non-ACM
[+] = ACM [no other assessment required]
B = Verified by layering/point counting

COMMENTS:

[+][0], [+][0,B] = Sample non-ACM or trace but at least one other sample from Group confirmed ACM; Group considered ACM
0,B = trace (≤ 1%) asbestos; non-ACM by EPA but OSHA may apply

Sampling limited to designated material(s) in designated area(s)

EA GROUP
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EAG Technician(s): Corey Falatic ES 36126 EAG OH44712

Survey Date(s): April 26, 2022

F:\PROJECTS\ASB\OH44531-OH45281\OH44712, LAKE COUNTY COMMISSION, LAKE COUNTY OMM, DWG.VSD

447
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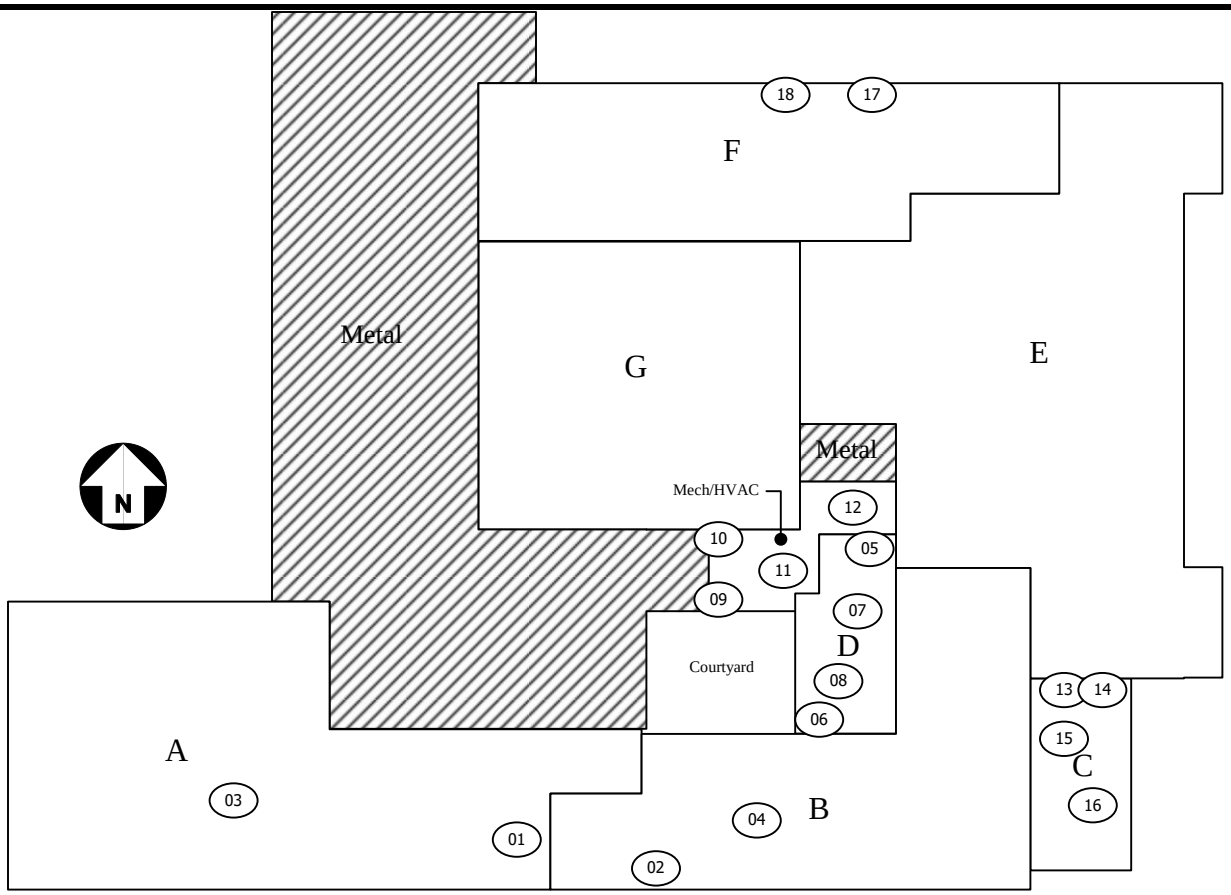

KEY

01 Asbestos sample number and general locatio

DRAWING FOR GENERAL REFERENCE PURPOSES ONLY.
ACTUAL CONFIGURATIONS MAY DIFFER FROM THOSE SHOWN;
ANNOTATIONS BY EA GROUP. REFER TO SURVEY FOR DETAILS
NO SCALE.

Asbestos Sampling Locations Diagram

McKinley Outreach Center

1200 Lost Nation Road, Willoughby, Ohio

EAG No.	OH42532	Date:	July 18, 2019	Figure 1

EA GROUP

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Environmental Analysis
and Management

Lake County Commissioners
P.O. Box 490
Painesville, OH 44077
Jason Boyd

Client Project:McKinley Outreach Center, Roof S&A
EA Group Workorder Number:220400286
Received on April 26, 2022

The following analytical report contains results as requested for samples submitted to EA Group. The results included in this report have been reviewed for compliance with the analytical methods indicated in this report. All data has been found to be compliant with accepted laboratory protocol, except as noted in the QC narrative. Industrial hygiene reports, air and/or surface concentrations results are based upon sampling information provided by the client. Analyst initials of REF indicate analysis performed at a subcontract facility.

If you have questions, comments or require further assistance regarding this report, please contact your client services representative or one of the individuals listed below.

Data or reporting:
Debbie Lauer - Lab Manager Mike Herbert - General Manager
dlauer@eagroupohio.com mherbert@eagroupohio.com

Sample tracking, supplies:
Sample Receiving
sreceiving@eagroupohio.com

Invoice Related:
Bonnie Renbarger - Office Manager
brenbarger@eagroupohio.com

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Laboratory Analytical Report

Lake County Commissioners
P.O. Box 490
105 Main Street
Painesville, OH 44077
Attention:
Jason Boyd

Project Identification
McKinley Outreach Center, Roof S&A

OH44712
Purchase Order:

EA Group
Order Number
2204-00286

Carl R. Eggebraaten
Microscopist

Deborah L. Lauer
Laboratory Manager

May 4, 2022

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EA GROUP
Environmental Analysis and Management

Project Summary

The following analytical report contains the results as requested for samples submitted to EA Group. The results included in this report have been reviewed for compliance with the analytical methods indicated in this report. All data have been found to be compliant with accepted laboratory protocol. Exceptions, if any, are noted below.

Sample Summary

Sample Receive Date: 4/26/2022

EAG Sample Identification	Client Sample Identification	EAG Sample Identification	Client Sample Identification
220400286-01A	OH44712-01	220400286-02A	OH44712-02
220400286-03A	OH44712-03	220400286-04A	OH44712-04
220400286-05A	OH44712-05	220400286-06A	OH44712-06
220400286-07A	OH44712-07	220400286-08A	OH44712-08
220400286-09A	OH44712-09	220400286-10A	OH44712-10
220400286-11A	OH44712-11	220400286-12A	OH44712-12
220400286-13A	OH44712-13	220400286-14A	OH44712-14
220400286-15A	OH44712-15	220400286-16A	OH44712-16
220400286-17A	OH44712-17	220400286-18A	OH44712-18

Quality Control Narrative

This report contains data which was produced by a subcontracted laboratory

NVLAP Lab Code 101165-0 for Asbestos Analysis. IATL, Inc.

9000 Commerce Parkway, Suite B

Mt. Laurel, NJ 08054

 Unless noted, soil, sludge, and sediment results are reported on dry weight basis.
The "Sample Reporting Limit" is based on the method used for analysis and does not refer to any regulatory limit.

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

7118 Industrial Park
Mentor OH 44060

Report No.: 659770 - PLM
Project: OH44712
Project No.: 2204-00286

Client: EAG482

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7417438
Client No.: OH44712-01

Analyst Observation: Black Shingle
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
30 Cellulose

Percent Non-Fibrous Material:
70

Lab No.: 7417438(L2)
Client No.: OH44712-01

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
PC 1.2 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
20 Cellulose

Percent Non-Fibrous Material:
78.8

Layers not separable.

Lab No.: 7417439
Client No.: OH44712-02

Analyst Observation: Black Shingle
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
30 Cellulose

Percent Non-Fibrous Material:
70

Lab No.: 7417439(L2)
Client No.: OH44712-02

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/27/2022
Date Analyzed: 05/03/2022
Signature: ABecker
Analyst: Aidan Becker

Approved By: Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Percent Asbestos:
PC 0.75 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
20 Cellulose

Percent Non-Fibrous Material:
79.25

Layers not separable.

Lab No.: 7417440
Client No.: OH44712-03

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
20 Cellulose

Percent Non-Fibrous Material:
80

Layers not separable.

Lab No.: 7417441
Client No.: OH44712-04

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
20 Cellulose

Percent Non-Fibrous Material: 80

Layers not separable.

7118 Industrial Park
Mentor OH 44060

Report No.: 659770 - PLM
Project: OH44712
Project No.: 2204-00286

Client: EAG482

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7417442

Analyst Observation: Black Roof Material

Location:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/27/2022
Date Analyzed: 05/03/2022
Signature: ABecker
Analyst: Aidan Becker

Approved By: Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client No.: OH44712-05 | **Client Description:** | **Facility:**

Percent Asbestos: ***20*** *Chrysotile* | Percent Non-Asbestos Fibrous Material: 10 Cellulose | Percent Non-Fibrous Material: 70

Lab No.: 7417443 | **Analyst Observation:** Black Roof Material | **Location:**
Client No.: OH44712-06 | **Client Description:** | **Facility:**

Percent Asbestos: ***20*** *Chrysotile* | Percent Non-Asbestos Fibrous Material: 10 Cellulose | Percent Non-Fibrous Material: 70

Lab No.: 7417444 | **Analyst Observation:** Black Roof Material | **Location:**
Client No.: OH44712-07 | **Client Description:** | **Facility:**

Percent Asbestos: *None Detected* | Percent Non-Asbestos Fibrous Material: 30 Cellulose | Percent Non-Fibrous Material: 70

Lab No.: 7417444(L2) | **Analyst Observation:** Black Tar | **Location:**
Client No.: OH44712-07 | **Client Description:** | **Facility:**

Percent Asbestos: *None Detected* | Percent Non-Asbestos Fibrous Material: None Detected | Percent Non-Fibrous Material: 100

Lab No.: 7417444(L3) | **Analyst Observation:** Brown Insulation | **Location:**
Client No.: OH44712-07 | **Client Description:** | **Facility:**

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/27/2022
Date Analyzed: 05/03/2022
Signature: ABecker
Analyst: Aidan Becker

Approved By: Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
15 Cellulose

Percent Non-Fibrous Material:
85

Lab No.: 7417445
Client No.: OH44712-08

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
5 Fibrous Glass

Percent Non-Fibrous Material: 95

7118 Industrial Park
Mentor OH 44060

Report No.: 659770 - PLM
Project: OH44712
Project No.: 2204-00286

Client: EAG482

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7417445(L2)
Client No.: OH44712-08

Analyst Observation: Black Tar
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 7417445(L3)
Client No.: OH44712-08

Analyst Observation: Brown Insulation
Client Description:

Location:
Facility:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/27/2022
Date Analyzed: 05/03/2022
Signature: ABecker
Analyst: Aidan Becker

Approved By: Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
15 Cellulose

Percent Non-Fibrous Material:
85

Lab No.: 7417446
Client No.: OH44712-09

Analyst Observation: Dk Brown Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
20 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
80

Lab No.: 7417447
Client No.: OH44712-10

Analyst Observation: Dk Brown Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
20 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
80

Lab No.: 7417447(L2)
Client No.: OH44712-10

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
10 Cellulose

Percent Non-Fibrous Material:
90

Lab No.: 7417448
Client No.: OH44712-11

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material: 100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/27/2022
Date Analyzed: 05/03/2022
Signature: ABecker
Analyst: Aidan Becker

Approved By: Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

7118 Industrial Park
Mentor OH 44060

Report No.: 659770 - PLM
Project: OH44712
Project No.: 2204-00286

Client: EAG482

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7417448(L2) **Analyst Observation:** Brown Insulation **Location:**
Client No.: OH44712-11 **Client Description:** **Facility:**

Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: 20 Cellulose
Percent Non-Fibrous Material: 80

Lab No.: 7417449 **Analyst Observation:** Black Roof Material **Location:**
Client No.: OH44712-12 **Client Description:** **Facility:**

Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: None Detected
Percent Non-Fibrous Material: 100

Lab No.: 7417449(L2) **Analyst Observation:** Brown Insulation **Location:**
Client No.: OH44712-12 **Client Description:** **Facility:**

Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: 20 Cellulose
Percent Non-Fibrous Material: 80

Lab No.: 7417450 **Analyst Observation:** Black Roof Material **Location:**
Client No.: OH44712-13 **Client Description:** **Facility:**

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/27/2022
Date Analyzed: 05/03/2022
Signature: ABecker
Analyst: Aidan Becker

Approved By: Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Percent Asbestos:
PC 5.2 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
94.8

Lab No.: 7417451
Client No.: OH44712-14

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
PC 4.8 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
95.2

Lab No.: 7417452
Client No.: OH44712-15

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
15 Cellulose

Percent Non-Fibrous Material: 85

Sample received wet

7118 Industrial Park
Mentor OH 44060

Report No.: 659770 - PLM
Project: OH44712
Project No.: 2204-00286

Client: EAG482

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7417452(L2)
Client No.: OH44712-15

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/27/2022
Date Analyzed: 05/03/2022
Signature: ABecker
Analyst: Aidan Becker

Approved By: Frank Ehrenfeld

Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Sample received wet

Lab No.: 7417452(L3)
Client No.: OH44712-15

Analyst Observation: Brown Insulation
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
20 Cellulose

Percent Non-Fibrous Material:
80

Sample received wet

Lab No.: 7417453
Client No.: OH44712-16

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
15 Cellulose

Percent Non-Fibrous Material:
85

Sample received wet

Lab No.: 7417453(L2)
Client No.: OH44712-16

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Sample received wet

Lab No.: 7417453(L3)
Client No.: OH44712-16

Analyst Observation: Brown Insulation
Client Description:

Location:
Facility:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/27/2022
Date Analyzed: 05/03/2022
Signature: ABecker
Analyst: Aidan Becker

Approved By: Frank Ehrenfeld

Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
20 Cellulose

Percent Non-Fibrous Material:
80

Sample received wet

Lab No.: 7417454
Client No.: OH44712-17

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
PC 3.8 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
96.2

7118 Industrial Park
Mentor OH 44060

Report No.: 659770 - PLM
Project: OH44712
Project No.: 2204-00286

Client: EAG482

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 7417455
Client No.: OH44712-18

Analyst Observation: Black Roof Material
Client Description:

Location:
Facility:

Percent Asbestos:
PC 3.5 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
96.5

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 4/27/2022
Date Analyzed: 05/03/2022
Signature: ABecker
Analyst: Aidan Becker

Approved By: Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

7118 Industrial Park
Mentor OH 44060

Report No.: 659770 - PLM
Project: OH44712
Project No.: 2204-00286

Client: EAG482

Appendix to Analytical Report

Customer Contact: Mike Herbert
Method:40 CFR Appendix E to Subpart E of Part 763, interim method for the Determination of Asbestos in Bulk Insulation Samples, USEPA 600, R93-116 and NYSDOH ELAP 198.1 as needed.

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service:
customerservice@iatl.com **iATL Office**
Manager:wchampion@iatl.com **iATL Account**
Representative: Semih Kocahasan
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Bulk Building Materials
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and in our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA LAP LLC, or any agency of local, state or province governments nor of any agency of the U.S. government.

Information Pertinent to this Report:

Analysis by US EPA 600 93-116: Determination of Asbestos in Bulk Building Materials by Polarized Light Microscopy (PLM).

Certifications:

- NIST-NVLAP No. 101165-0
- NYSDOH-ELAP No. 11021
- AIHA-LAP, LLC No. 100188

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ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

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CERTIFICATE OF ANALYSIS

Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. PC Trace represents a <0.25% amount. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analytical Methodology Alternatives: Your initial request for analysis may not have accounted for recent advances in regulatory requirements or advances in technology that are routinely used in similar situations for other qualified projects. You may have the option to explore additional analysis for further information. Below are a few options, listed as the matrix followed by the appropriate methodology. Also included are links to more information on our website.

Bulk Building Materials that are Non-Friable Organically Bound (NOB) by Gravimetric Reduction techniques employing PLM and TEM: ELAP 198.6 (PLM-NOB), ELAP 198.4 (TEM-NOB) See additional information at the end of this appendix.

7118 Industrial Park
Mentor OH 44060

Report No.: 659770 - PLM
Project: OH44712
Project No.: 2204-00286

Client: EAG482

Loose Fill Vermiculite Insulation, Attic Insulation, Zonolite (copyright), etc.: US EPA 600 R-4/004 (multi-tiered analytical process)
Sprayed On Insulation/Fireproofing with Vermiculite (SOF-V): ELAP 198.8 (PLM-SOF-V)

Soil, sludge, sediment, aggregate, and like materials analyzed for asbestos or other elongated mineral particles (ex. erionite, etc.): ASTM D7521, CARB 435, and other options available

Asbestos in Surface Dust according to one of ASTM's Methods (very dependent on sampling collection technique – by TEM): ASTM D 5755, D5756, or D6480

Various other asbestos matrices (air, water, etc.) and analytical methods are available.

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a list with highlighted disclaimers that may be pertinent to this project. For a full explanation of these and other disclaimers, please inquire at **customerservice@iatl.com**.

1) Note: No mastic provided for analysis.
2) Note: Insufficient mastic provided for analysis.
3) Note: Insufficient material provided for analysis.
4) Note: Insufficient sample provided for QC reanalysis.
5) Note: Different material than indicated on Sample Log / Description.
6) Note: Sample not submitted.
7) Note: Attached to asbestos containing material.
8) Note: Received wet.
9) Note: Possible surface contamination.
10) Note: Not building material. 1% threshold may not apply.
11) Note: Recommend TEM-NOB analysis as per EPA recommendations.
12) Note: Asbestos detected but not quantifiable.
13) Note: Multiple identical samples submitted, only one analyzed.
14) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.080%.
15) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.125%.
16) Note: This sample contains >10% vermiculite mineral. See Appendix for Recommendations for Vermiculite Analysis.

Recommendations for Vermiculite Analysis:

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

Report Date: 5/3/2022

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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).Please contact your client representative for pricing and turnaround time options available.

iATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004).

For New York State customers, NYSDOH requires disclaimers and qualifiers for various vermiculite containing samples that direct analysis via ELAP198.6 and ELAP198.8 for samples that contain >10% vermiculite mineral where ELAP198.6 may be used to evaluate the asbestos content of the material. However, any test result using ELAP198.6 will be reported with the following disclaimer: “ELAP198.6 method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing >10% vermiculite.”

Further information on this method and other vermiculite and asbestos issues can be found at the following: Agency for Toxic Substances and Disease Registry (ATSDR) www.atsdr.cdc.gov, United States Geological Survey (USGS) www.minerals.usgs.gov/minerals/, US EPA www.epa.gov/asbestos. The USEPA also has an informative brochure "Current Best Practices for Vermiculite Attic Insulation" EPA 747F03001 May 2003, that may assist the health and remediation professional. NYS customers please follow current NYSDOH ELAP requirements per policy on subject of surfacing and vermiculite, May 6, 2016, Testing Requirements for Surfacing Material Containing Vermiculite (https://www.wadsworth.org/sites/default/files/WebDoc/I198_8_02_2.pdf)

The following is a summary of the analytical process outlines in the EPA 600/R-04/004 Method:

1)**Analytical Step/Method:** Initial Screening by PLM, EPA 600R-93/116
Requirements/Comments: Minimum of 0.1 g of sample. ~0.25% for most samples.

7118 Industrial Park
Mentor OH 44060

Client: EAG482

2)**Analytical Step/Method:**Wet Separation by PLM Gravimetric Technique, EPA R-04/004 **Requirements/Comments:** Minimum 50g** of dry sample. Analysis of "Sinks" only.

3)**Analytical Step/Method:**Wet Separation by PLM Gravimetric Technique, EPA R-04/004 **Requirements/Comments:** Minimum 50g** of dry sample. Analysis of "Floats" only.

4)**Analytical Step/Method:**Wet Separation by TEM Gravimetric Technique, EPA R-04/004 **Requirements/Comments:** Minimum 50g** of dry sample. Analysis of "Sinks" only.

5)**Analytical Step/Method:**Wet Separation by TEM Gravimetric Technique, EPA R-04/004
Requirements/Comments:
Minimum 50g** of dry sample.
Analysis of "Suspension" only.
*With advance notice and confirmation by the laboratory.
**Approximately 1 Liter of sample in double-bagged container (~9x6 inch bag of sample).

Report No.: 659770 - PLM
Project: OH44712
Project No.: 2204-00286

New York State Department of Health requires that samples originating from NYS that they categorize as Non-friable Organically Bound materials can only be confirmed as None Detected for asbestos by method 198.4. See the table below for a list of those materials. (ENVIRONMENTAL LABORATORY APPROVAL PROGRAM CERTIFICATION MANUAL - ITEM No. 198.1, Revision Date 5/6/16)

*Asphalt Shingles, Caulking, Ceiling Tiles with Cellulose, Duct Wrap, Glazing, Mastic, Paint Chips, Resilient Floor Tiles, Rubberized Asbestos Gaskets, Siding Shingles,
Vinyl Asbestos Tile, NOB materials (other that SM-V) with <10% vermiculite, Any material (Friable or NOB other than SM-V) with >10% vermiculite.

Statistically derived uncertainty with any measure should be taken into consideration when reviewing and interpreting all reported data and results. A more comprehensive listing of accuracy, precision, and uncertainty as it impacts this method is available upon request.

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FIELD REQUEST FOR LABORATORY ANALYSIS

Company Name: Lake County BCC

Address: 105 Main St. PO Box 490
Painesville OH 44077

Attention: Mr. Jason Boyd

Customer Number: 0702212

Results Needed By:	
Normal:	RUSH:
Priority:	(confirm w/ lab)
Date:	Time:

Telephone: _____ Fax No: _____

e-mail: _____

Sampled by: _____

Project Name: McKinley Outreach Center, Roof S+A Project Number OH 44712

Rush Authorized by: _____ Project Category: ASB

Special Billing/Reporting: _____

Is this a VAP project requiring VAP lab analysis? Yes _____ No _____

Internal Contact: Bowen

CHAIN OF CUSTODY

Relinquished by		Received by	
Name	Date/Time	Name	Date/Time
[illegible]	04/26/22 1125	Michele Corman	4/26/22 1344

F:\TEMPLATES\FORMS\REVFRMS\ASB_RFLA.Rev.XLS

EA GROUP

EA GROUP CONSULTING DIVISION
REQUEST FOR LABORATORY ANALYSIS - ASBESTOS BULK SAMPLING LOG

Page 1 of 1

Sample No.	Homog. Group	1	2
OH44712-01	A	X	
-02	↓	↓	
-03	B	↓	
-04	↓	↓	
-05	C	↓	
-06	↓	↓	
-07	D	↓	
-08	↓	↓	
-09	E	↓	
-10	↓	↓	
-11	F	↓	
-12	↓	↓	
-13	G	↓	
-14	↓	↓	
-15	H	↓	
-16	↓	↓	
-17	I	↓	
-18	↓	↓	

Sample No.	Homog. Group	1	2

Sample No.	Homog. Group	1	2

Analytes: 1 PLM (standard) 2 PLM (full) Point Count: ____ or ALL (enter # or circle ALL)

Hygienist: Cifalatic Sampling Date: 04/26/22

Comments:

Preliminary Pressure Calculations

Tim Hollo

Willoughby

OH

McKinley Community Outreach /2/2022

Sales Rep A

THE GARLAND COMPANY, INC.
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p. (216) 641-7500 • f. (216) 641-0633 • 800-321-9336 • www.garlandco.com

Project NameCity

Roof SectionsState

Design CodeBase Velocity	ASCE 7-16	ASD	PressureGcpi = 0.55
Exposure CategoryRoof Type	C		
Risk Cat. , Importance FactorEdge	III , 1		Zones
Wind SpeedZone 2 width	116	=	
Design Roof Height:Zone 3 width	15	=	
Minimum Building WidthZone 3	180	mph	0.13
length = Roof Pitch (X, Y): =	12	ft	
Roof Angle=	0.62		
Parapet ≥ 36" Entire Roof=	No	deg	

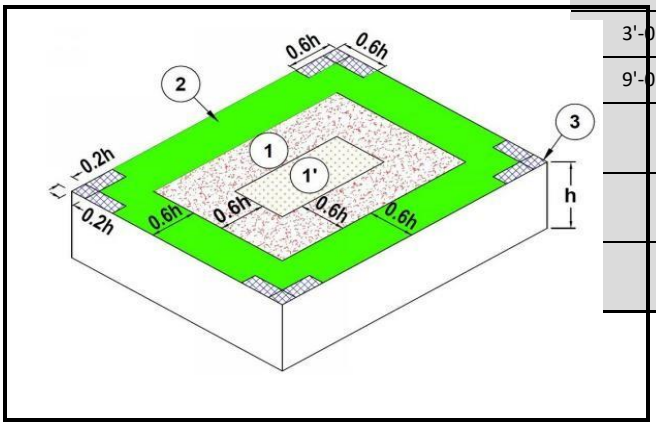
14.9 psf

Gable

Deck Type Concrete

Notes:

Zone Image



9'-0"
3'-0"
9'-0"

Zone Pressures (psf)

ZONE 1'	ZONE 1	ZONE 2	ZONE 3			Zone 4	Zone 5
21.6	33.6	42.5	55.9			22.1	26.2
FM 1-45	FM 1-75	FM 1-90	FM 1-120				

Wall Perimeter Wall Corner

Notes:

THE GARLAND COMPANY, INC.	**Coping**
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Sales Rep	Tim Hollo		
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	A	State	OH

ANSI/SPRI ES-1 COPING PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	16.67	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	15.31	psf
Horizontal Design Pressure:	26.87	psf
Vert. Design Pressure:	57.42	psf

ES-1 Tested Coping System

Product Designation: ES-C24-20-60-16

System Description: R-Mer Edge Snap on Coping 16'' x 24 Ga w/ 20 GA Anchor Chairs at 60'' o.c.

Maximum Tested Front Load: 46.9 psf Max. Vertical Front Dim.: 6 inches

Maximum Tested Top Load:	100	psf
Max. Vertical Width:	16.00	inches
Maximum Tested Rear Load:	58.7	psf
Max. Vertical Rear Dim.:	4.00	inches

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Fascia

Sales Rep	Tim Hollo		
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	A	State	OH

ANSI/SPRI ES-1 FASCIA PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	16.67	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	15.31	psf
Horizontal Design Pressure:	26.87	psf

ES-1 Fascia Load

Vertical Face Dimension: 7.25 inches Fascia

Design Load: 44.88 psf

ES-1 Tested Fascia System

Product Designation: MEA-RMF-Fascia725-Z24

System Description: R-Mer Force Fascia 7.25'' x 24 GA w/ RMEBF-700 Base Frame

Maximum Tested Load:	320 psf
Max. Vertical Face Dim.:	7.25 inches

McKinley Community Outreach

Tim Hollo

Willoughby

OH

Preliminary B, E, & F **Pressure Calculations**

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Sales Rep

Project NameCity

Roof SectionsState

Design CodeBase Velocity	ASCE 7-16	ASD	PressureGcpi = 0.55
Exposure CategoryRoof Type	C		
Risk Cat. , Importance FactorEdge	III , 1		Zones
Wind SpeedZone 2 width	180	mph	= 0.13
Design Roof Height:Zone 3 width	15		=
Minimum Building WidthZone 3	116	ft	
length = Roof Pitch (X, Y):=	12		
Roof Angle=	0.62		
Parapet ≥ 36" Entire Roof=	No	deg	

14.9 psf

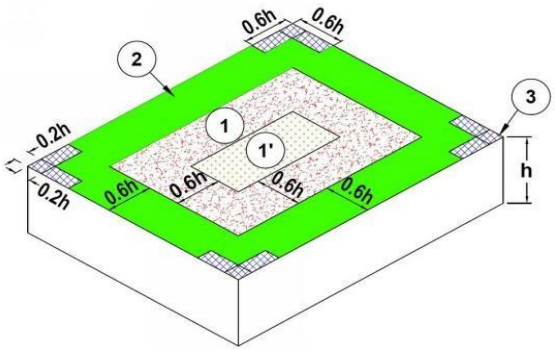
Gable

9'-0''
3'-0''
9'-0''

Deck Type: Wood

Notes:

Zone Image



Zone Pressures (psf)

Wall Perimeter | Wall Corner

ZONE 1'	ZONE 1	ZONE 2	ZONE 3			Zone 4	Zone 5
21.6	33.6	42.5	55.9			22.1	26.2
FM 1-45	FM 1-75	FM 1-90	FM 1-120				

Notes:

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		Sales Rep	Tim Hollo
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	B, E, & F	State	OH

ANSI/SPRI ES-1 COPING PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	16.67	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	15.31	psf
Horizontal Design Pressure:	26.87	psf
Vert. Design Pressure:	57.42	psf

ES-1 Tested Coping System

Product Designation: ES-C24-20-60-16

System Description: R-Mer Edge Snap on Coping 16'' x 24 Ga w/ 20 GA Anchor Chairs at 60'' o.c.

Maximum Tested Front Load: 46.9 psf Max. Vertical Front Dim.: 6 inches

Maximum Tested Top Load:	100	psf
Max. Vertical Width:	16.00	inches
Maximum Tested Rear Load:	58.7	psf
Max. Vertical Rear Dim.:	4.00	inches

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Fascia

		Sales Rep	Tim Hollo
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	B, E, & F	State	OH

ANSI/SPRI ES-1 FASCIA PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	16.67	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	15.31	psf
Horizontal Design Pressure:	26.87	psf

ES-1 Fascia Load

Vertical Face Dimension: 7.25 inches Fascia

Design Load: 44.88 psf

ES-1 Tested Fascia System

Product Designation: MEA-RMF-Fascia725-Z24

System Description: R-Mer Force Fascia 7.25'' x 24 GA w/ RMEBF-700 Base Frame

Maximum Tested Load:	320 psf
Max. Vertical Face Dim.:	7.25 inches

Preliminary Pressure Calculations

Tim Hollo

Willoughby

OH

McKinley Community Outreach /2/2022

Sales Rep C

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Project NameCity

Roof SectionsState

Design CodeBase Velocity	ASCE 7-16	ASD	PressureGcpi = 0.55
Exposure CategoryRoof Type	C		
Risk Cat. , Importance FactorEdge	III , 1		Zones
Wind SpeedZone 2 width	116	=	
Design Roof Height:Zone 3 width	15	=	
Minimum Building WidthZone 3	180	mph	0.25
length = Roof Pitch (X, Y):=	12	ft	
Roof Angle=	1.19		
Parapet ≥ 36" Entire Roof=	No	deg	

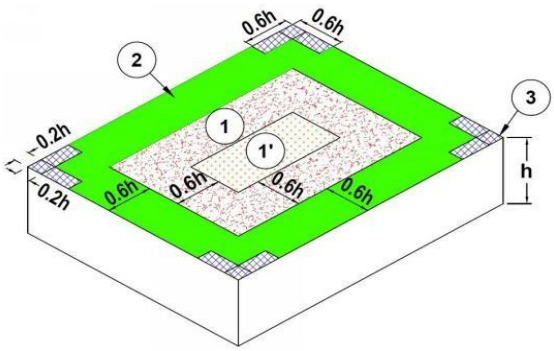
14.9 psf

Gable

Deck Type Steel

Notes:

Zone Image



9'-0"
3'-0"
9'-0"

Zone Pressures (psf)

ZONE 1'	ZONE 1	ZONE 2	ZONE 3			Wall Perimeter Zone 4	Wall Corner Zone 5
21.6	33.6	42.5	55.9			22.1	26.2
FM 1-45	FM 1-75	FM 1-90	FM 1-120				

Notes:

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Coping

		Sales Rep	Tim Hollo
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	C	State	OH

ANSI/SPRI ES-1 COPING PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	12.00	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	14.91	psf
Horizontal Design Pressure:	26.17	psf
Vert. Design Pressure:	55.92	psf

ES-1 Tested Coping System

Product Designation: ES-C24-20-60-16

System Description: R-Mer Edge Snap on Coping 16'' x 24 Ga w/ 20 GA Anchor Chairs at 60'' o.c.

Maximum Tested Front Load: 46.9 psf Max. Vertical Front Dim.: 6 inches

Maximum Tested Top Load:	100	psf
Max. Vertical Width:	16.00	inches
Maximum Tested Rear Load:	58.7	psf
Max. Vertical Rear Dim.:	4.00	inches

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Fascia

Sales Rep	Tim Hollo		
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	C	State	OH

ANSI/SPRI ES-1 FASCIA PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	12.00	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	14.91	psf
Horizontal Design Pressure:	26.17	psf

ES-1 Fascia Load

Vertical Face Dimension: 7.25 inches Fascia

Design Load: 43.71 psf

ES-1 Tested Fascia System

Product Designation: MEA-RMF-Fascia725-Z24

System Description: R-Mer Force Fascia 7.25'' x 24 GA w/ RMEBF-700 Base Frame

Maximum Tested Load:	320 psf
Max. Vertical Face Dim.:	7.25 inches

McKinley Community Outreach

Tim Hollo

Willoughby

OH

Preliminary G **Pressure Calculations**

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Sales Rep

Project NameCity

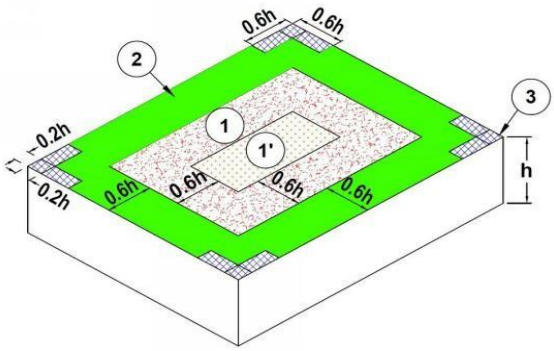
Roof SectionsState

Design CodeBase Velocity	ASCE 7-16	ASD	PressureGcpi = 0.55
Exposure CategoryRoof Type	C		
Risk Cat. , Importance FactorEdge	III , 1		Zones
Wind SpeedZone 2 width	116	=	
Design Roof Height:Zone 3 width	30	=	
Minimum Building WidthZone 3	64	mph	0.25
length = Roof Pitch (X, Y):=	12	ft	
Roof Angle=	1.19		
Parapet ≥ 36" Entire Roof=	No	deg	
			17.3 psf
			Gable
			18'-0''
			6'-0''
			18'-0''

Deck Type: Wood

Notes:

Zone Image



Zone Pressures (psf)

ZONE 1'	ZONE 1	ZONE 2	ZONE 3			Wall Perimeter Zone 4	Wall Corner Zone 5
25.0	38.8	49.2	64.7			25.6	30.3
FM 1-60	FM 1-90	FM 1-105	FM 1-135				

Notes:

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		Sales Rep	Tim Hollo
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	G	State	OH

ANSI/SPRI ES-1 COPING PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	32.50	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	17.61	psf
Horizontal Design Pressure:	30.90	psf
Vert. Design Pressure:	66.02	psf

ES-1 Tested Coping System

Product Designation: ES-C24-16-60-16

System Description: R-Mer Edge Snap on Coping 16'' x 24 Ga w/ 16 GA Anchor Chairs at 60'' o.c.

Maximum Tested Front Load: 74.4 psf Max. Vertical Front Dim.: 6 inches

Maximum Tested Top Load:	160	psf
Max. Vertical Width:	16.00	inches
Maximum Tested Rear Load:	93.9	psf
Max. Vertical Rear Dim.:	4.00	inches

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		Sales Rep	Tim Hollo
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	G	State	OH

ANSI/SPRI ES-1 FASCIA PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	32.50	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	17.61	psf
Horizontal Design Pressure:	30.90	psf

ES-1 Fascia Load

Vertical Face Dimension: 7.25 inches Fascia

Design Load: 51.60 psf

ES-1 Tested Fascia System

Product Designation: MEA-RMF-Fascia725-Z24

System Description: R-Mer Force Fascia 7.25'' x 24 GA w/ RMEBF-700 Base Frame

Maximum Tested Load:	320 psf
Max. Vertical Face Dim.:	7.25 inches

Preliminary Pressure Calculations

Tim Hollo

Willoughby

OH

McKinley Community Outreach /2/2022

Sales Rep H

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Project NameCity

Roof SectionsState

Design CodeBase Velocity	ASCE 7-16	ASD	PressureGcpi = 0.55
Exposure CategoryRoof Type	C		
Risk Cat. , Importance FactorEdge	III , 1		Zones
Wind SpeedZone 2 width	180	mph	= 0.13
Design Roof Height:Zone 3 width	15		=
Minimum Building WidthZone 3	116		
length = Roof Pitch (X, Y):=	12	ft	
Roof Angle=	0.62		
Parapet ≥ 36" Entire Roof=	No	deg	

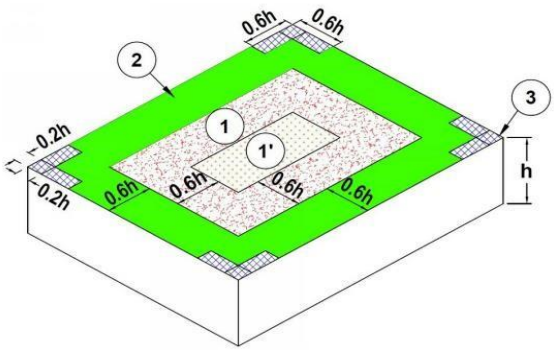
14.9 psf

Gable

Deck Type Wood

Notes:

Zone Image



9'-0"
3'-0"
9'-0"

Zone Pressures (psf)

ZONE 1'	ZONE 1	ZONE 2	ZONE 3			Wall Perimeter Zone 4	Wall Corner Zone 5
21.6	33.6	42.5	55.9			22.1	26.2
FM 1-45	FM 1-75	FM 1-90	FM 1-120				

Notes:

THE GARLAND COMPANY, INC.			**Coping**
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p. (216) 641-7500 • f. (216) 641-0633 • 800-321-9336 • www.garlandco.com		Sales Rep	Tim Hollo
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	H	State	OH

ANSI/SPRI ES-1 COPING PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	15.00	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	14.91	psf
Horizontal Design Pressure:	26.17	psf
Vert. Design Pressure:	55.92	psf

ES-1 Tested Coping System

Product Designation: ES-C24-20-60-16

System Description: R-Mer Edge Snap on Coping 16'' x 24 Ga w/ 20 GA Anchor Chairs at 60'' o.c.

Maximum Tested Front Load: 46.9 psf Max. Vertical Front Dim.: 6 inches

Maximum Tested Top Load:	100	psf
Max. Vertical Width:	16.00	inches
Maximum Tested Rear Load:	58.7	psf
Max. Vertical Rear Dim.:	4.00	inches

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Fascia

Sales Rep	Tim Hollo		
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	H	State	OH

ANSI/SPRI ES-1 FASCIA PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	15.00	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	14.91	psf
Horizontal Design Pressure:	26.17	psf

ES-1 Fascia Load

Vertical Face Dimension: 7.25 inches Fascia

Design Load: 43.71 psf

ES-1 Tested Fascia System

Product Designation: MEA-RMF-Fascia725-Z24

System Description: R-Mer Force Fascia 7.25'' x 24 GA w/ RMEBF-700 Base Frame

Maximum Tested Load:	320 psf
Max. Vertical Face Dim.:	7.25 inches

McKinley Community Outreach

Tim Hollo

Willoughby

OH

Preliminary | I | **Pressure Calculations**

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Sales Rep

Project NameCity

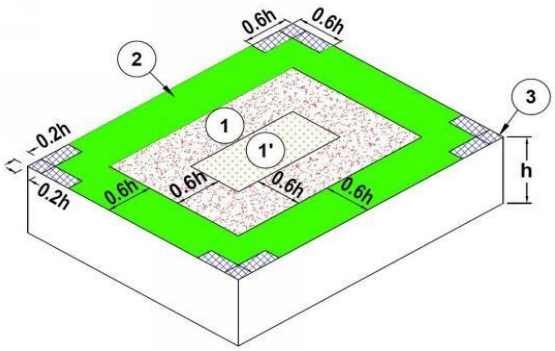
Roof SectionsState

Design CodeBase Velocity	ASCE 7-16	ASD	PressureGcpi = 0.55
Exposure CategoryRoof Type	C		
Risk Cat. , Importance FactorEdge	III , 1		Zones
Wind SpeedZone 2 width	116	=	
Design Roof Height:Zone 3 width	15	=	
Minimum Building WidthZone 3	180	mph	0
length = Roof Pitch (X, Y):=	12		
Roof Angle=	0.00	ft	
Parapet ≥ 36" Entire Roof=	No	deg	
			14.9 psf
			Gable
			9'-0''
			3'-0''
			9'-0''

Deck Type: Steel

Notes:

Zone Image



Zone Pressures (psf)

						Wall Perimeter	Wall Corner
ZONE 1'	ZONE 1	ZONE 2	ZONE 3			Zone 4	Zone 5
21.6	33.6	42.5	55.9			22.1	26.2
FM 1-45	FM 1-75	FM 1-90	FM 1-120				

Notes:

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		Sales Rep	Tim Hollo
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	I	State	OH

ANSI/SPRI ES-1 COPING PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	15.00	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	14.91	psf
Horizontal Design Pressure:	26.17	psf
Vert. Design Pressure:	55.92	psf

ES-1 Tested Coping System

Product Designation: ES-C24-20-60-16

System Description: R-Mer Edge Snap on Coping 16'' x 24 Ga w/ 20 GA Anchor Chairs at 60'' o.c.

Maximum Tested Front Load: 46.9 psf Max. Vertical Front Dim.: 6 inches

Maximum Tested Top Load:	100	psf
Max. Vertical Width:	16.00	inches
Maximum Tested Rear Load:	58.7	psf
Max. Vertical Rear Dim.:	4.00	inches

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		Sales Rep	Tim Hollo
Project Name	McKinley Community Outreach	City	Willoughby
Roof Sections	I	State	OH

ANSI/SPRI ES-1 FASCIA PRELIMINARY DESIGN

Project Data

Design Wind Speed:	116	mph
Metal Edge Height:	15.00	feet
Exposure Category:	C	
Importance Classification:	III	

Design Wind Pressure ASCE 7-16 ASD

Basic Velocity Pressure:	14.91	psf
Horizontal Design Pressure:	26.17	psf

ES-1 Fascia Load

Vertical Face Dimension: 7.25 inches Fascia

Design Load: 43.71 psf

ES-1 Tested Fascia System

Product Designation: MEA-RMF-Fascia725-Z24

System Description: R-Mer Force Fascia 7.25'' x 24 GA w/ RMEBF-700 Base Frame

Maximum Tested Load:	320 psf
Max. Vertical Face Dim.:	7.25 inches

Preliminary Pressure Calculations

Date 5/27/2022

Sales Rep	Tim Hollo
	Willoughby
	OH
Project NameCity	McKinley Community Outreach Center
	Roof J
Roof SectionsState	

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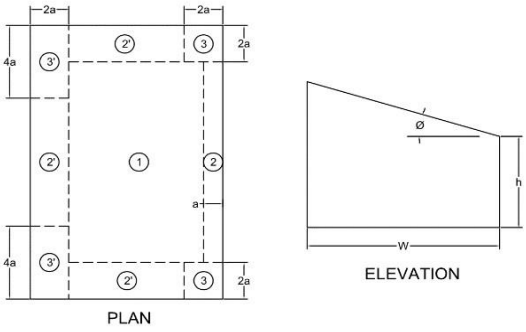
Design CodeBase Velocity	ASCE 7-16	ASD	PressureGcpi = 0.55	
Exposure CategoryRoof Type	C			
Risk Cat. , Importance FactorEdge	III , 1		Zones	
Wind SpeedZone 2 width	116	=		
Design Roof Height:Zone 2' width	15	=		
Minimum Building WidthZone 3	22	mph		1.5
width = Roof Pitch (X, Y):Zone 3	12			
length = Roof AngleZone 3' width	7.13	ft =		
Parapet ≥ 36" Entire RoofZone 3'	No	deg	length	=

Deck Type	Steel	Zone Image	3'-0"	14.9	psf
Deck Thickness	16 gauge				



Panel Type	R-Mer Span		
Width	16	in	
Material	24/24 G A Steel		
Fastener	Steel: Bl azer 1/4-14 HWH		
# per clip	2		
Safety Factor	3		
Clip Pry Coefficient	1.25		
Ultimate Pullout	829	psf	
Allowable Clip Load	442	psf	
Panel Safety Factor	1.67		

e	
3'-0"	
6'-0"	
6'-0"	
6'-0"	
6'-0"	
12'-0"	

Zone Pressures (psf)

Wall Perimeter Wall Corner

a =

ZONE 1	ZONE 2	ZONE 2'	ZONE 3	ZONE 3'		Zone 4	Zone 5
24.6	27.6	32.1	35.0	47.0		22.1	26.2

Clip Spacing ft / in

ZONE 1	ZONE 2	ZONE 2'	ZONE 3	ZONE 3'		Zone 4	Zone 5
5'-0''	5'-0''	5'-0''	5'-0''	5'-0''		5'-0''	5'-0''

Notes:

Attach clips to min 16ga Top Hats at 5'-0" OC.

The Garland Company

3800 East 91st Street

R-MER SNOW RETENTION DESIGN RESULTS

ASCE 7-10

Project: McKinley Community Outreach Center
Roof Section: SS Roofs
Sales Representative: Tim Hollo

Ground Snow Load	20	psf
Balanced Uniform Roof Snow Load	22	psf
Maximum Unbalanced Surcharge Load	7.77	psf
Unbalanced Width	9.99	feet Drift
From Higher Roof?	No	
Drift Height=	N/A	feet
Drift Width=	N/A	feet
Total Average Snow Load	25.5	psf
Roof Pitch	1.5	/12
Panel Width	16	in
Panel Type	R-Mer Span	
Panel Material	24 ga Galvanized	
Snow Guard Type	S-5! Color Gard	
Horizontal Run to Ridge	22	ft
Importance Factor	III	
Exposure	C	
Terrain Factor	Fully	
Thermal Factor	1.1	Safety Factor 2

Equivalent Uniform Design Snow load	25.5	psf vertical
Sliding Force	3.2	psf along slope
Tributary Vector Force	94	lbs per panel
Amount of Snow Guards	1	row(s)*
1/4" Cold Finish SS Bolts per Seam	1	Fixed Panel Connections:
1/8" SS Rivets Per Seam	2	use Rivets **OR** Bolts.

NOTE: If the S-5! Colorgard Snow Retention System is required, the above calculations require S-5! clamps to be attached at each seam.

NOTE: Set screw tension = 115 in-lbs. except for 22 gauge steel 22 gauge steel set screw tension = 150 in-lbs.

***REFER TO THE GARLAND STANDING SEAM SHOP DWG'S FOR LOCATION OF SNOW RETENTION SYSTEM.**

This calculation has been performed to determine the balanced, unbalanced, drifting and sliding snow loads on this project. The capacity of the building structure to withstand the weight of these loads has not been verified. The Garland Company, Inc. recommends a structural engineer be employed to verify the capacity of the building structure to withstand the weight of these snow loads.

WAGE RATES

PREVAILING WAGES

The Contractor agrees that each individual employed by the Contractor or any Subcontractor and engaged in work on the project under this contract shall be paid the prevailing wage established by the Department of Industrial Relations of the State of Ohio. This shall occur regardless of any contractual relationship which may be said to exist between the Contractor or and Subcontractor and such individual.

The Prevailing Wage Determination Schedule for this project is available for review at the office of the Owner's Prevailing Wage Coordinator and via the internet at https://wagehour.com.ohio.gov/w3/webwh.nsf/wrlogin/?openform(click on link for Labor and Worker Safety).

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.

LAW1003