

MEMO

TO: CHRISTIAN COUNTY BOARD OF EDUCATION

FROM: Brad Hawkins, Chief Operations Officer

Andrew Owens, Architect, Sherman, Carter, & Barnhart

DATE: March 14, 2019

RE: Gateway/Breathitt Campus Change Order

We are requesting approval of the following change order for the Gateway/Breathitt project to fully utilize our grant funds.

Owner-initiated Change Order to demolish existing abandoned roof-top mechanical equipment and ductwork and remove existing roof assembly. Pricing to install the owner's preferred modified bitumen roofing over the area impacted by this renovation (refer to roof plan) was competitively solicited, and 3 proposals were received by A&K.

Each roofer submitted a price for each of the following options, with Preferred Roofing as the low-price proposal. Options 2 and 4 reduce the roof replacement scope to not reroof the existing loading dock area. Change order assumes acceptance of low-cost proposal Option 1, which is the Architect's recommendation. Refer to PRA #5

Option 1 – Reroof Entire Scope Area with Modified Bitumen Roof with Roof Crickets

Option 2 – Reroof Partial Scope Area with Modified Bitumen Roof with Roof Crickets – Omit Roofing at Existing Aluminized Roof Membrane

Option 3 - Reroof Entire Scope Area with Modified Bitumen Roof with Flood Coat

Option 4 – Reroof Partial Scope Area with Modified Bitumen Roof with Flood Coat – Omit Roofing at Existing Aluminized Roof Membrane



AIA[®] Document G701[™] – 2017

Change Order

PROJECT: *(Name and address)*
Gateway Academy - Breathitt Center
705 N Elm Street
Hopkinsville, KY 42240
Breathitt Center
715 North Drive
Hopkinsville, KY 42240

CONTRACT INFORMATION:
Contract For: Gen. Constr.
Date:

CHANGE ORDER INFORMATION:
Change Order Number: 001
Date: March 14, 2019

OWNER: *(Name and address)*
Christian County Schools
200 Glass Avenue
Hopkinsville, KY 42241

ARCHITECT: *(Name and address)*
Sherman Carter Barnhart Arch PLLC
2405 Harrodsburg Road
Lexington, KY 40504

CONTRACTOR: *(Name and address)*
A & K Construction, Inc.
100 Calloway Court
Paducah, KY 42001

THE CONTRACT IS CHANGED AS FOLLOWS:

(Insert a detailed description of the change and, if applicable, attach or reference specific exhibits. Also include agreed upon adjustments attributable to executed Construction Change Directives.)

Partial roof replacement, refer to attached backup information for details.

The original Contract Sum was	\$ 1,580,967.60
The net change by previously authorized Change Orders	\$ 0.00
The Contract Sum prior to this Change Order was	\$ 1,580,967.60
The Contract Sum will be increased by this Change Order in the amount of	\$ 363,678.00
The new Contract Sum including this Change Order will be	\$ 1,944,645.60

The Contract Time will be increased by Zero (0) days.
The new date of Substantial Completion will be

NOTE: This Change Order does not include adjustments to the Contract Sum or Guaranteed Maximum Price, or the Contract Time, that have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.

Sherman Carter Barnhart Arch PLLC
ARCHITECT *(Firm name)*

A & K Construction, Inc.
CONTRACTOR *(Firm name)*

Christian County Schools
OWNER *(Firm name)*

Andrew H Owens
SIGNATURE

SIGNATURE

SIGNATURE

Andrew Owens
PRINTED NAME AND TITLE

PRINTED NAME AND TITLE

PRINTED NAME AND TITLE

March 14, 2019
DATE

DATE

DATE

FACPAC Contract Change Order Supplemental Information Form (Ref# 51005)

Form Status: Saved

Tier 2 Project: Gateway-Breathitt Campus Renovations

BG Number: 18-351

District: Christian County (115)

Status: Active

Phase: Schematic Design (View Checklist)

Contract: A & K Construction , 0001, General Construction

Type: General Contractor

Proposed

Change Order Number	1
Time Extension Required	No
Date Of Change Order	3/14/2019
Change Order Amount To Date	Increase

Construction Contingency

Calculations below are project wide. Remaining negative Construction Contingency may require the submission of a revised BG1.

Current Approved Amount:	\$733,295.52
Net Approved COs:	\$0.00
Remaining After Approved COs:	\$733,295.52
Net All COs:	\$378,103.00
Remaining After All COs:	\$355,192.52

This Requested Change Order Amount \$363,678.00

+/-

Change In A/E Fee This Change Order \$30,912.63

+/-

Change In CM Fee This Change Order

+/-

Remaining Construction Contingency

Balance

Contract Change Requested By Local Board of Education

Contract Change Reason Code Owner

Change Order Description And Justification

Demolition of existing abandoned mechanical equipment and ductwork. Demolition of existing roofing and insulation. Replacement of existing roof with new modified bitumen roofing.

Cost Benefit To Owner

Cost is fair and reasonable.

Contract unit prices have been utilized No
to support the cost associated with this
change order.

Detailed Cost Breakdown

Contract unit prices have not been utilized, provide a detailed cost breakdown which separates labor, material, profit and overhead.

Detail Item	Amount	Percent of Total
Labor	\$212,277.00	58.37 %
Materials	\$100,834.00	27.73 %
Profit and Overhead	\$47,435.89	13.04 %
Bond Insurance	\$3,131.11	0.86 %
Cost Breakdown Total:	\$363,678.00	

Cost for this Change Order supported Yes
by an alternate bid or competitive price
quote

Explain Why

No roofing was part of initial bid. Three prices were solicited by the Contractor for roofing.

**Change Order Supplemental Information Form Signature
Page (Online Form Ref# 51005)**

Andrew H Owens
Architect

3-14-19

Date

Construction Manager

Date

Finance Officer

Date

Local Board of Education Designee

Date

Gateway/Breathitt Renovations
A & K Construction, Inc.
Proposal Request 5
3/14/2019

Project #1964-18

OPTION 1 GARLAND GRANULATED WITH CRICKETS

Partial Roof Replacement

Per Request of Architect

See Attached

1. Remove ductwork, roof drains, install new roof drains, remove HVAC units
provide temporary caps, cap existing ductwork
piping below roof

See Attached

Labor	22,500.00
Equipment	3,600.00
Materials	6,600.00

2. Infill openings in roof per details - Approximately 30 openings

See Attached

Labor	5,500.00
Equipment	500.00
Material	2,600.00

3. Garland Granulated roof with crickets

Labor/Equipment	170,177.00
Material	91,634.00

4. Demolition Dumpsters for HVAC materials and Roofing Materials

Equipment	10,000.00
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Division	Contractor	Sub Labor/Equip	Material	Total
1 HVAC/Plumbing	Mechanical Consultants	\$ 26,100.00	\$ 6,600.00	\$ 32,700.00
2 Roof Deck Infills	Mechanical Consultants	\$ 6,000.00	\$ 2,600.00	\$ 8,600.00
3 Roofing	Preferred Roofing	\$ 170,177.00	\$ 91,634.00	\$ 261,811.00
4 Dumpsters	A&K Construction, Inc.	\$ 10,000.00	\$ -	\$ 10,000.00
Sub-Total		\$ 212,277.00	\$ 100,834.00	\$ 313,111.00
Bond				\$ 3,131.11
Overhead/Profit				\$ 47,435.89
Total				\$ 363,678.00

NOTE: I have included the quotes for this work. Clarifications should be acknowledged.

NOTE: Demo work does not include any material that contains asbestos or other hazardous material.
If encountered the owner will have to remediate.

OPTION 2 GARLAND GRANULATED WITH CRICKETS / DEDUCT ALUMINIZED AREA FROM BID

Partial Roof Replacement

Per Request of Architect		See Attached
1.	Remove ductwork, roof drains, install new roof drains, remove HVAC units provide temporary caps, cap existing ductwork piping below roof	See Attached
	Labor	22,500.00
	Equipment	3,600.00
	Materials	6,600.00
2.	Infill openings in roof per details - Approximately 30 openings	See Attached
	Labor	5,500.00
	Equipment	500.00
	Material	2,600.00
3.	Garland Granulated roof with crickets	
	Labor/Equipment	170,177.00
	Material	91,634.00
3B.	Remove aluminized section of roofing	
	Labor/Equipment	-27,230.00
	Material	-11,670.00
4	Demolition Dumpsters for HVAC materials and Roofing Materials	
	Equipment	10,000.00

Division	Contractor	Sub		Total
		Labor/Equip	Material	
1 HVAC/Plumbing	Mechanical Consultants	\$ 26,100.00	\$ 6,600.00	\$ 32,700.00
2 Roof Deck Infills	Mechanical Consultants	\$ 6,000.00	\$ 2,600.00	\$ 8,600.00
3 Roofing	Preferred Roofing	\$ 170,177.00	\$ 91,634.00	\$ 261,811.00
3B Roofing	Preferred Roofing	\$ (27,230.00)	\$ (11,670.00)	\$ (38,900.00)
4 Dumpsters	A&K Construction, Inc.	\$ 10,000.00	\$ -	\$ 10,000.00
Sub-Total		\$ 185,047.00	\$ 89,164.00	\$ 274,211.00
Bond				\$ 2,742.11
Overhead/Profit				\$ 41,542.89
Total				\$ 318,496.00

NOTE: I have included the quotes for this work. Clarifications should be acknowledged.

NOTE: Demo work does not include any material that contains asbestos or other hazardous material.
If encountered the owner will have to remediate.

OPTION 3 GARLAND WITH FLOOD COAT, ROCK AND NO CRICKETS

Partial Roof Replacement

Per Request of Architect		See Attached
1.	Remove ductwork, roof drains, install new roof drains, remove HVAC units provide temporary caps, cap existing ductwork piping below roof	See Attached
	Labor	22,500.00
	Equipment	3,600.00
	Materials	6,600.00
2.	Infill openings in roof per details - Approximately 30 openings	See Attached
	Labor	5,500.00
	Equipment	500.00
	Material	2,600.00
3.	Garland Roof with flood coat, rock & no crickets	
	Labor/Equipment	201,290.00
	Material	86,267.00
4.	Demolition Dumpsters for HVAC materials and Roofing Materials	
	Equipment	10,000.00

Division	Contractor	Sub Labor/Equip	Material	Total
1 HVAC/Plumbing	Mechanical Consultants	\$ 26,100.00	\$ 6,600.00	\$ 32,700.00
2 Roof Deck Infills	Mechanical Consultants	\$ 6,000.00	\$ 2,600.00	\$ 8,600.00
3 Roofing	Preferred Roofing	\$ 201,290.00	\$ 86,267.00	\$ 287,557.00
4 Dumpsters	A&K Construction, Inc.	\$ 10,000.00	\$ -	\$ 10,000.00
Sub-Total		\$ 243,390.00	\$ 95,467.00	\$ 338,857.00
Bond				\$ 3,388.57
Overhead/Profit				\$ 51,336.43
Total				\$ 393,582.00

NOTE: I have included the quotes for this work. Clarifications should be acknowledged.

NOTE: Demo work does not include any material that contains asbestos or other hazardous material.
If encountered the owner will have to remediate.

OPTION 4 GARLAND WITH FLOOD COAT, ROCK, NO CRICKETS / DEDUCT ALUMINIZED AREA**Partial Roof Replacement**

Per Request of Architect		See Attached
1.	Remove ductwork, roof drains, install new roof drains, remove HVAC units provide temporary caps, cap existing ductwork piping below roof	See Attached
	Labor	22,500.00
	Equipment	3,600.00
	Materials	6,600.00
2.	Infill openings in roof per details - Approximately 30 openings	See Attached
	Labor	5,500.00
	Equipment	500.00
	Material	2,600.00
3.	Garland Roof with flood coat, rock & no crickets	
	Labor/Equipment	201,290.00
	Material	86,267.00
3B.	Remove aluminized section of roofing	
	Labor/Equipment	-29,820.00
	Material	-12,780.00
4	Demolition Dumpsters for HVAC materials and Roofing Materials	
	Equipment	10,000.00

Division	Contractor	Sub		Total
		Labor/Equip	Material	
1 HVAC/Plumbing	Mechanical Consultants	\$ 26,100.00	\$ 6,600.00	\$ 32,700.00
2 Roof Deck Infills	Mechanical Consultants	\$ 6,000.00	\$ 2,600.00	\$ 8,600.00
3 Roofing	Preferred Roofing	\$ 201,290.00	\$ 86,267.00	\$ 287,557.00
3B Roofing	Preferred Roofing	\$ (29,820.00)	\$ (12,780.00)	\$ (42,600.00)
4 Dumpsters	A&K Construction, Inc.	\$ 10,000.00	\$ -	\$ 10,000.00
Sub-Total		\$ 213,570.00	\$ 82,687.00	\$ 296,257.00
Bond				\$ 2,962.57
Overhead/Profit				\$ 44,883.43
Total				\$ 344,103.00

NOTE: I have included the quotes for this work. Clarifications should be acknowledged.

NOTE: Demo work does not include any material that contains asbestos or other hazardous material.
If encountered the owner will have to remediate.



AIA[®] Document G709[™] – 2018

Proposal Request

PROJECT: *(name and address)*
Gateway Academy - Breathitt Center
705 N Elm Street
Hopkinsville, KY 42240
Breathitt Center
715 North Drive
Hopkinsville, KY 42240

CONTRACT INFORMATION:
Contract For: General Construction
Date:

Architect's Project Number: 1808
Proposal Request Number: 002
Proposal Request Date: March 6, 2019

OWNER: *(name and address)*
Christian County Schools
200 Glass Avenue
Hopkinsville, KY 42241

ARCHITECT: *(name and address)*
Sherman Carter Barnhart Arch PLLC
2405 Harrodsburg Road
Lexington, KY 40504

CONTRACTOR: *(name and address)*
A & K Construction, Inc.
100 Calloway Court
Paducah, KY 42001

The Owner requests an itemized proposal for changes to the Contract Sum and Contract Time for proposed modifications to the Contract Documents described herein. The Contractor shall submit this proposal within 7 calendar days or notify the Architect in writing of the anticipated date of submission.

(Insert a detailed description of the proposed modifications to the Contract Documents and, if applicable, attach or reference specific exhibits.)

Demolish existing roof system and provide new modified bitumen roof system to the extents shown per the attachment. Demolish existing abandoned rooftop ductwork, equipment, ladders and accessories to extents of new roofing. Where ductwork is terminated, provide new insulated closure equal to existing ductwork insulation. Extents of ductwork demolition shall be verified with MPE Engineer. Provide and install sloped rigid insulation crickets at all existing and new curbs and supports as required for positive drainage. Demolish existing roof drains, furnish and install new roof drain assemblies in existing openings in areas of new roofing.

Attachment: PR 2.1

THIS IS NOT A CHANGE ORDER, A CONSTRUCTION CHANGE DIRECTIVE, OR A DIRECTION TO PROCEED WITH THE WORK DESCRIBED IN THE PROPOSED MODIFICATIONS.

REQUESTED BY THE ARCHITECT:

Matt Montgomery
PRINTED NAME AND TITLE

EXIST. ROOF TO REMAIN IN
SHADED AREAS, TYP. _____

SECTION 075500
MODIFIED BITUMEN ROOFING

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Provide all labor, equipment, and materials to install the roof system over the properly prepared substrate.
- B. Tear off and properly dispose of the roof down to the deck.
- C. On concrete deck, install ASTM D-41 Asphalt Primer at ½ to 1 gallon per 100 sq. ft. On lightweight concrete deck, mechanically fasten a vented base sheet per FM 1-90 wind uplift fastening patterns.
- D. Install 2" polyisocyanurate insulation and ½" High Density Fiberboard Insulation in Type III asphalt.
- E. Install a modified membrane built-up roof system that base modified membrane and top ply of modified membrane in Type III Asphalt. Install a flood coat of polymer modified cold process coal tar pitch and gravel. The system will meet all performance characteristics, warranty requirements, and manufacturer's inspections as set forth in the specification.
- F. A three course of mastic and mesh shall be installed on all vertical flashing joints.
- G. Install emulsified acrylic architectural coating on top of parapet walls.
- H. Alternate #1 is to eliminate flood and gravel on the roof.
- I. Alternate #2 is sq.ft. cost of removal/replacement of lightweight concrete.
- J. Provide roof opening closure per Detail E/AO.3 (Refer to Addendum No. 2 Sheet Add-2.2). Provide Roof Curb Cap per Roof Curb Cap Detail, Sheet H4.1. All existing openings to be abandoned are to be filled with batt insulation prior to being capped.

1.2 REFERENCES

ASTM D-41	Specification for Asphalt Primer Used in Roofing, Damp proofing and Waterproofing
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ASTM D-312	Specification for Asphalt Used in Roofing
ASTM D-451	Test Method for Sieve Analysis of Granular Mineral
	Surfacing for Asphalt Roofing Products
ASTM D-1079	Terminology Relating to Roofing, Waterproofing and
	Bituminous Materials
ASTM D-1227	Specification for Emulsified Asphalt Used as a Protective
	Coating for Roofing
ASTM D-1863	Specification for Mineral Aggregate Used as a Protective
	Coating for Roofing
ASTM D-2178	Specification for Asphalt Glass Felt Used as a Protective
	Coating for Roofing
ASTM D-2822	Specification for Asphalt Roof Cement
ASTM D-2824	Specification for Aluminum-Pigmented Asphalt Roof
	Coating
ASTM D-4601	Specification for Asphalt Coated Glass Fiber Base Sheet
	Used in Roofing
ASTM D-5147	1991 Test Method for Sampling and Testing Modified
	Bituminous Sheet Materials
ASTM D-6162	Standard Specification for Styrene Butadiene Styrene
	(SBS) Modified Bituminous Sheet Materials Using a
	Combination of Polyester and Glass Fiber Reinforcements
ASTM D-6163	Standard Specification for Styrene Butadiene Styrene
	(SBS) Modified Bituminous Sheet Materials Using Glass
	Fiber Reinforcements
ASTM E-108	Test Methods for Fire Test of Roof Coverings
FM	Factory Mutual
NRCA	National Roofing Contractors Association
UL	Underwriters Laboratories

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Roofing system manufacturer shall have a minimum of 12 years experience in manufacturing bitumen roofing products in the United States and be ISO 9001 certified.
- B. Installer Qualifications: Installer (Roofer) shall be specializing in modified bituminous roof application with minimum 5 years experience and who is certified by the roofing system manufacturer as qualified to install manufacturer's roofing materials.
- C. Installer's Field Supervision: Require Installer to maintain a full-time Supervisor/Foreman on job site during all phases of bituminous sheet roofing work and at any time roofing work is in progress, proper supervision of workmen shall be maintained. A copy of the specification shall be in the possession of the Supervisor/Foremen and on the roof at all times.

- D. It shall be the Contractor's responsibility to respond immediately to correction of roof leakage during construction. If the contractor does not respond within 24 hours, the Owner has the right to hire a qualified contractor and backcharge the original contractor.
- E. Insurance Certification: Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.
- F. Pre-application Roofing Conference: Approximately 2 weeks before scheduled commencement of modified bitumen roof system installation and associated work meet at project site with installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in the around roofing must precede or follow roofing work (including mechanical work if any), Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where applicable) Owner's insurers, test agencies and governing authorities.

Objectives to include:

1. Review foreseeable methods and procedures related to roofing work.
2. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work performed by other trades.
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 required submittals both completed and yet to be completed.
6. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment and facilities needed to make progress and avoid delays.
7. Review required inspection, testing, certifying and material usage accounting procedures.
8. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not mandatory requirement).
9. Record (contractor) discussion of conference including decisions and agreements (or disagreements) reached and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
10. Review notification procedures for weather or non-working days.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
- B. Store and handle roofing sheets in a dry, well-ventilated, weather-tight place to ensure no possibility of significant moisture exposure. Store rolls of felt and other sheet materials on pallets or other raised surface. Stand all roll materials on end. Cover roll goods with a canvas tarpaulin or other breathable material (not polyethylene).
- C. Do not leave unused materials on the roof overnight or when roofing work is not in progress unless protected from weather and other moisture sources.
- D. It is the responsibility of the contractor to secure all material and equipment on the job site. If any material or equipment is stored on the roof, the contractor must make sure that the integrity of the deck is not compromised at any time. Damage to the deck caused by the contractor will be the sole responsibility of the contractor and will be repaired or replaced at his expense.

1.5 MANUFACTURER'S INSPECTIONS

- A. 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 job site inspections a minimum of two days a week.
 - 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 of the project and based on manufacturer's observation and tests that manufacturer has observed no applications procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.6 PROJECT CONDITIONS

- A. Weather Condition Limitations: Do not apply roofing membrane during inclement weather or when a 40% chance of precipitation is expected.
- B. Do not apply roofing insulation or membrane to damp deck surface.

- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
- D. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.

1.7 SEQUENCING AND SCHEDULING

- A. Sequence installation of modified bituminous sheet roofing with related units of work specified in other sections to ensure that roof assemblies including roof accessories, flashing, trim and joint sealers are protected against damage from effects of weather, corrosion and adjacent construction activity.
- B. All work must be fully completed on each day. Phased construction will not be accepted.

1.9 WARRANTY

- A. Membrane Manufacturer upon completion of installation and acceptance by the owner, the manufacturer will supply to the Owner a Thirty Year n NDL Warranty. The roofing system manufacturer will cover all costs of repairs to the modified membrane system and flashing system necessary to stop any leak which occurs during the warranty period. The material manufacturer will warrant and guarantee all work against defects in material, equipment, or workmanship, because of the following:
 - 1. Deterioration of the roofing membrane or flashing systems resulting from ordinary wear and tear by the elements.
 - 2. Workmanship by the approved roofing contractor in the application of the roofing system.
 - 3. Splits or breaks in the membrane not caused by structural movement or failure or any movement of the material underlying the roofing membrane or base flashing.
 - 4. Slippage of the roofing membrane or base flashings.
- B. In addition to the warranties indicated here-in-before and here-in-after, the contractor shall provide a 2-year Weathertight Warranty in which all materials and workmanship (including but not limited to insulation system, membrane roofing system, membrane flashing system and sheet metal work) shall be unconditionally warranted in writing to be

weathertight by the roofing contractor for a period of 2 years from the date of the final inspection and acceptance of the project.

PART 2 - PRODUCTS

2.1 GENERAL

- A. When a particular trade name or performance standard is specified it shall be indicative of a standard required.
- B. Any alternates not approved in writing will be immediately rejected by the owner.

2.2 DESCRIPTION

- A. Modified bituminous roofing work including but not limited to:

- 1. One ply of modified membrane base bonded to the prepared substrate with hot bitumen.
- 2. The hot bitumen will consist of ASTM D-312 Type III steep asphalt.

Softening Point	185°F - 205°F
Flash Point	500°F
Penetration @ 77°F	15-35 units
Ductility @ 77°F	2.5 cm

- 3. All flashings will be set in bitumen and will be one ply of SBS base flashing ply covered by an additional layer of modified bitumen membrane.
- 4. The top ply of modified membrane will be:
 - a. (Styrene-Butadiene-Styrene) rubber modified roofing membrane with a dual fiberglass reinforced scrim.
- 5. The surfacing will be a flood coat of cold process modified coal tar pitch and ASTM D-1863 roofing aggregate consisting of pea gravel.

a. Cold Applied Flood Coat Adhesive: heavy bodied, fiber-reinforced, polymer modified coal tar pitch top coat.
Performance Requirements:

1. Non-Volatile Content ASTM D4479 30%
2. Density ASTM D1475 9.0 lbs./gal. (1kg/L)
3. V.O.C. ASTM D3960 Less than 270 g/L
4. Viscosity Stroboscopic ASTM D4449 120,000 grams
5. Flash Point ASTM D93 105°F (41°C)

2.3 BITUMINOUS MATERIALS

- A. Asphalt Primer: V.O.C. compliant, ASTM D-41.
- B. Asphalt Roofing Mastic: V.O.C. compliant, ASTM D-2822, Type II.
- C. Interply Adhesive
 1. Shall meet ASTM Specifications D-312 Type III.

2.4 SHEET MATERIALS

A. FIELD AND FLASHING PLIES

Flashing Base Ply

1. SBS modified membrane with woven fiberglass scrim reinforcement with the following minimum performance requirements according to ASTM D-5147.

Properties: FINISHED MEMBRANE

Tensile Strength (ASTM D-5147)

2 in/min. @73.4 ± 3.6°F
lbf/in

MD 205 lbf/in CMD 205

Tear Strength (ASTM D-5147)

2 in/min. @ 73.4 ± 3.6°F

MD 295 lbf CMD 280 lbf

Elongation at Maximum Tensile (ASTM D-5147)

± 3.6°F MD 4.5%

CMD 5.0%

B. Base Field Ply

Properties: FINISHED MEMBRANE

Tensile Strength (ASTM D-5147)

2 in/min. @73.4 ± 3.6°F
lbf/in

MD 100 lbf/in CMD 100

Tear Strength (ASTM D-5147)

2 in/min. @ 73.4 ± 3.6°F

MD 110 lbf CMD 110 lbf

Elongation at Maximum Tensile (ASTM D-5147)

± 3.6°F MD 4.5%

CMD 4.0%

Low Temperature Flexibility (ASTM D-5147) Passes -20°F (-28.8°C)

C. Modified Flashing Top Ply-(Field Top Ply Alternate #1)

Mineral Surfaced Modified Membrane

SBS modified membrane with woven fiberglass scrim reinforcement with the following minimum performance requirements according to ASTM D-5147.

Tensile Strength (ASTM D-5147)

2 in/min. @ 73.4 ± 3.6°F
50 mm/min. @ 23 ± 3°C

MD 220 lbf/in CMD 220 lbf/in
MD 38.5kN/m CMD 38.5kN/m

Tear Strength (ASTM D-5147)

2 in/min. @ 73.4 ± 3.6°F
50 mm/min. @ 23 ± 3°C

MD 300 lbf CMD 300 lbf
MD 1335 N CMD 1335 N

Elongation at Maximum Tensile (ASTM D-5147)

2 in/min. @ 73.4 ± 3.6°F
50 mm/min. @ 23 ± 3°C

MD 4.5% CMD 4.5%

Low Temperature Flexibility (ASTM D-5147)
(-32°C)

Passes -30°F

D. MODIFIED MEMBRANE-Top Ply Base Option
PROPERTIES: Finished Membranes

Properties: FINISHED MEMBRANE

Tensile Strength (ASTM D-5147)

2 in/min. @73.4 ± 3.6°F
lbf/in

MD 205 lbf/in CMD 205

Tear Strength (ASTM D-5147)

2 in/min. @ 73.4 ± 3.6°F

MD 295 lbf CMD 280 lbf

Elongation at Maximum Tensile (ASTM D-5147)

± 3.6°F

MD 4.5%

CMD 5.0%

2.5 SURFACINGS

A. Aggregate: To conform to ASTM D-1863.

1. Pea Gravel

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrate surfaces to receive modified bitumen sheet roofing system and associated work and conditions under which roofing will be installed. Do not proceed with roofing until unsatisfactory conditions have been corrected in a manner acceptable to Roof System Manufacturer.

3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.
- B. Insurance/Code Compliance: Where required, install and test the roofing system to comply with governing regulation and specified insurance requirements.
- C. Protect other work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore other work damaged by installation of the modified bituminous roofing system work.
- D. Coordinate installing roofing system components so that insulation and roofing plies are not exposed to precipitation or left exposed overnight. Provide cut-offs at end of each day's work to cover exposed ply sheets and insulation with two (2) plies of #15 organic roofing felt set in full moppings of bitumen and with joints and edges sealed with roofing cement. Remove cut-offs immediately before resuming work.
- E. Asphalt Bitumen Heating: Heat and apply bitumen according to EVT Method as recommended by NRCA. Do not raise temperature above

minimum normal fluid-holding temperature necessary to attain EVT (plus 5°F at point of application) more than 1 hour prior to time of application. Determine flash point, finished blowing temperature, EVT, and fire-safe handling temperature of bitumen either by information from manufacturer or by suitable test. Do not exceed recommended temperature limits during bitumen heating. Do not heat to a temperature higher than 25° below flash point. Discard bitumen that has been held at temperature exceeding finishing blowing temperature (FBT) for more than 3 hours. Keep kettle lid closed except when adding bitumen.

- F. Bitumen Mopping Weights: For interply mopping, apply bitumen at the rate of approximately 25 lb. of bitumen per roof square. For a flood coat, apply bitumen at the rate of approximately 60-70 lb. of bitumen per square (plus or minus 25 percent on a total job average basis).
- G. Substrate Joint Penetrations: Prevent bitumen from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.
- H. Apply roofing materials as specified herein unless recommended otherwise by manufacturer's instructions. Keep roofing materials dry before and during application. Do not permit phased construction. Complete application of roofing plies, modified sheet and flashing in a continuous operation. Begin and apply only as much roofing in one day as can be completed that same day.
- I. Cut-Offs: At end of each day's roofing installation, protect exposed edge of incomplete work, including ply sheets and insulation. Provide temporary covering of two (2) plies of #15 organic roofing felt set in full moppings of bitumen with joints and edges sealed.

3.3 BASE PLY INSTALLATION

- A. Install one ply of modified membrane in 25 lb. per sq. of bitumen.
- B. Lap ply sheet ends eight inches. Stagger end laps twelve inches minimum.
- C. Extend plies two inches beyond top edges of cants at wall and projection bases.
- D. Install base flashing ply to all perimeter and projection details.

3.4 HPR MODIFIED MEMBRANE APPLICATION

- A. The modified membrane shall then be solidly bonded to the base layers with specified asphalt at the rate of 25 to 30 lbs. per 100 square feet.

- B. The roll must push a puddle of asphalt in front of it with asphalt slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.
- C. Apply pressure to all seams to ensure that the laps are solidly bonded to substrate.
- D. Subsequent rolls of modified shall be installed across the roof as above with a minimum of 4" side laps and 8" end laps. The end laps shall be staggered. The modified membrane shall be laid in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
- E. Apply asphalt no more than five feet ahead of each roll being embedded.
- F. Extend membrane 2" beyond top edge of all cants in full moppings of the specified asphalt as shown on the drawings.

3.5 FLASHING MEMBRANE INSTALLATION (GENERAL)

- A. All curb, wall and parapet flashings shall be sealed with an application of mastic and mesh on a daily basis. No condition should exist that will permit moisture entering behind, around or under the roof or flashing membrane.
- B. Prepare all walls, penetrations and expansion joints to be flashed and where shown on the drawings with asphalt primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
- C. The modified membrane will be used as the flashing membrane and will be adhered to an underlying base flashing ply with specified asphalt unless otherwise noted in these specifications and nailed off 8" O.C. at all vertical surfaces.
- D. The entire sheet of flashing membrane must be solidly adhered to the substrate.
- E. Seal all vertical laps of flashing membrane with a three-course application of mastic and fiberglass mesh.
- F. Counter flashing, cap flashings, expansion joints, and similar work to be coordinated with modified bitumen roofing work are specified in other sections.
- G. Roof accessories, miscellaneous sheet metal accessory items, including

pipings vents and other devices to be coordinated with the roofing system work are in other sections.

3.6 APPLICATION OF SURFACING

A. Aggregate Surfacing

1. Apply surfacing materials in the quantities specified (500 lbs. per square for aggregate). After felt flashings, tests, repairs, and corrective actions have been completed and approved. Uniformly embed aggregate in a flood coat of bitumen.
2. Aggregate shall be dry and placed in a manner required to form a compact, embedded overlay. To aid in proper embedment, aggregate may be lightly rolled provided that there is not damage to the built-up roofing membrane.
3. Alternate #1 -Mineral surface

3.7 CLEANING

- A. Remove drippage of bitumen adhesive from all walls, windows, floors, ladders and finished surfaces.
- B. In areas where finished surfaces are soiled by asphalt or any other sources of soiling caused by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their instructions.

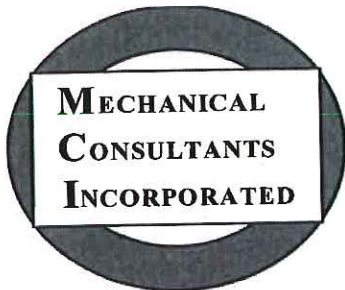
3.8 FINAL INSPECTION

- A. At completion of roofing installation and associated work, meet with Installer, installer of associated work, Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of roofing system.
- B. Walk roof surface areas of the building, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party attending.
- C. The Roofing System Manufacturer reserves the right to request a thermographic scan of the roof during final inspection to determine if any damp or wet materials have been installed. The thermographic scan shall

be provided by the Roofing Contractor at a negotiated price.

- D. If core cuts verify the presence of damp or wet materials, the Roofing Contractor shall be required to replace the damaged areas at his own expense.
- E. Repair or replace (as required) deteriorated or defective work found at time above inspection to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- F. The Contractor is to notify the Owner upon completion of corrections.
- G. Following the final inspection, acceptance will be made in writing by the material manufacturer.

END OF SECTION



MECHANICAL CONSULTANTS INC.

MECHANICAL CONTRACTOR

7727 Old Ky 81 Owensboro, Ky 42301
Phone: 270-785-9505 Fax: 270-785-9212
srickard@mci-mechanical.com

March 13, 2019

MCI job # 38155 CO # 02

A&K Construction
Attn: Ricky Tabers

Re: PRA #2.1 – Roof Replacement and associated work

Dear Ricky:

Per the PRA #2.1 we have priced the requested change. Scope of work is as follows.

- Remove existing roof drains as shown
- Provide and Install new roof drains and accessories, connect to existing piping below roof
- Remove all existing ductwork and supports off of roof – will have to work along with roofer for a portion of this removal
- Includes temporary caps for openings as required
- Remove existing HVAC units, fans, etc. off of roof and dispose of offsite
- Cap existing ductwork at new roof limits that will remain after demolition (see option below for it's removal)

Total price \$ 32,700

Breakdown:

Materials - \$6,600
Labor - \$22,500
Equipment - \$3,600

Options:

MCI to provide and install 16-gauge sheet metal and 18 gauge angle iron to fill +/- 30 2'x2' openings that will be left in the concrete deck.....Add \$8,600

MCI to remove remaining HVAC Equipment, Ductwork, Piping off of roof....Add \$10,200
(This would remove all major remaining HVAC equipment and ductwork and allow the roof to have a cleaner appearance. Structural steel platform would remain...see adder below for it's removal)

MCI to remove structural steel platform around existing Mechanical Equipment.....Add \$17,500
(This would eliminate everything from the remaining roof except minor curbs, vents, etc.)

Notes:

Dumpster for ductwork and other materials removed to be provided by A&K. MCI will scrap the units and support steel, so we will not need a dumpster for those.

Sincerely,
Mechanical Consultants Inc.

Shawn Rickard
Vice-President

♦ INDUSTRIAL
♦ ROOFING
♦ SHEET METAL

Preferred

Construction Services, Inc.

3/12/2019

Mr. Ricky Tabor
A & K Construction
Paducah, KY

RE: Christian County Breathitt

Option 3	Base Bid I- Garland w/ rock no crickets	\$287,557.00
Option 4	Base Bid Alternate deduct	\$42,600.00
Option 1	Base Bid II: Garland granulated with crickets	\$261,811.00
Option 2	Base Bid II Alternate deduct	\$38,900.00

No wood nailers, no demolition, no structural

Sincerely:

Includes Demolition of All Roofing

Dave Coudret

P.O. BOX 283 ♦ 3069 OHIO DRIVE ♦ HENDERSON, KY 42419-0283 ♦ 270-827-5800 ♦ 270-826-3273 (Fax)
EVANSVILLE, IN 812-471-1480 ♦ OWENSBORO, KY 270-926-8055

270-993-5868 Dave