

Sixth Avenue and Grant Street • P.O. Box 172760 • Bozeman, Montana 59717-2760 Phone: (406) 994-5413 • Fax: (406) 994-5665

ADDENDUM NO. 1 - OUTLINE AND SUMMARY INFORMATION

Project Name: <u>BART Farm Nutrition Center Roof Replacement</u> PPA No.: <u>18-2101</u>

Date: 3/14/19

To: All Plan Holders of Record

The Plans and Specification prepared by <u>Architecture 118</u> dated <u>February 28, 2019</u>, shall be clarified and added as follow. The bidder proposes to perform all the following clarifications or changes. It is understood that the Base Bid shall include any modification of Work or Additional Work that may be required by reason of the following change or clarifications.

The Bidders are to acknowledge the receipt of this Addendum by inserting its number and date into their Bid Forms. Failure to acknowledge may subject the Bidder to disqualification and rejection of the bid. This Addendum forms part of the Contract Documents as if bound therein and modifies them as follows:

I. ATTACHMENTS

A.Architecture 118 Addendum 1 Outline & Summary

ADDENDUM NO. 1 – OUTLINE AND SUMMARY INFORMATION



Project Name: BART Farm Nutrition Center Roof Replacement Location: Montana State University Owner: State of Montana

> Montana State University Bozeman, Montana

PPA No.: <u>18-2101 (A118 18-041)</u> Date: March 14, 2019

To: All Plan Holders of Record

Bidders are to acknowledge the receipt of this Addendum by inserting its number and date into their Bid Forms. Failure to do so may subject the Bidder to disqualification. This Addendum forms part of the Contract Documents as if bound therein and modifies them as follows:

I. PRIOR APPROVALS

- A. Substitution requests were submitted for the following materials:
 - 1. EPDM Roofing (Materials)
 - a. Proposed substitution:......TPO Roofing (GAF)
 - b. Status:Rejected
 - 2. EPDM Roofing (Materials)
 - a. Proposed substitution:......TPO Roofing (Mule Hide)
 - b. Status:Rejected
 - 3. EPDM Roofing (Manufacturer)
 - a. Proposed substitution:......EPDM Roofing (Mule Hide)
 - b. Status:Approved
- II. AMENDMENTS TO THE PROJECT MANUAL
 - A. None
- III. AMENDMENTS TO THE DRAWINGS
 - A. Sheet SPEC-2, Section 075323 (EPDM Roofing)
 - B. Sheet A-1, Drawing 1 (Roof Plan)
- IV. GENERAL INFORMATION
 - A. Existing Mechanical Equipment to be Removed
 - 1. Drawings indicate four locations of existing mechanical equipment and roof penetrations that are planned for removal.
 - 2. Owner intends to remove this equipment, to the greatest extent possible, prior to the commencement of the roofing project.
 - 3. Existing curbs, flashings, or flue penetrations may be left behind and fitted with temporary caps in an attempt to keep the building weather-tight ahead of the roofing project.

- 4. Roofing contractor will need to remove any temporary caps, curbs, flashings, etc., left behind by the Owner at the appropriate time to facilitate the roofing work.
- B. Parking Permits
 - 1. MSU parking permits are not required for vehicles parked at the BART Farm.
- C. Wind Uplift Resistance
 - 1. The attachment of the new overlay roofing system shall be as required to accommodate a working uplift loading of 30 lbs./sq. ft. minimum throughout.
- D. Building Occupancy
 - 1. Building use during the summer will be light. There will be a few people coming and going occasionally and there will be livestock in the surrounding pens.

V. ATTACHMENTS

- A. Substitution Request: TPO Roofing (2), EPDM Roofing Manufacturer (1)
- B. Pre-Bid Conference Meeting Notes
- C. Pre-Bid Conference Sign-In Sheet
- D. Pre-Bid Conference Agenda and Information
- E. Sheet SPEC-2
- F. Sheet A-1



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SUBSTITUTION REQUEST (PRIOR APPROVAL)

Project Title: Bart Farm Roof Replacement Location:

PPA No: ____

Bozeman, MT

Owner: MONTANA STATE UNIVERSITY Bidder (Sub-):

This request is submitted for the approval of the Architect. Bidder / Sub-Bidder shall submit one request in accordance with Bidders' Instructions and Information for each proposed substitution. All blanks are to be completed.

The material, system, or equipment defined by this Substitution Request is proposed as a replacement for the material, system, or equipment originally specified and defined as follows:

SECTION	PARAGRAPH	SPECIFIED MATERIAL, SYSTEM, OR EQUIPMENT
075323	2.2A	60 Mil Reinforced EPDM Roofing System

PROPOSED SUBSTITUTION: The material, system, or equipment being proposed is defined as follows:

60 Mil TPO Roofing System

- What are the differences between the specified material, system, or equipment and the proposed substitution? See attached data sheet
- Does the proposed substitution require dimensional changes on the Construction Drawings? (Y
- Does the proposed substitution require changes to the Work of other trades? (Y/N)
- Is the warranty for the proposed substitution comparable with that of the specified product? (ΣN)

By signing and submitting this request, the Bidder / Sub-Bidder represents that the function, appearance, and quality of the proposed substitution are equivilent or superior to the specified material, system, or equipment.

By signing and submitting this request, the Bidder / Sub-Bidder agrees to pay all costs, including architectural and engineering fees, associated with the incorporation of the proposed substitution into the Project.

Matthew St	ēns	hoel		3/6/19
SUBMITTED BY (BIDDER / SUB-BIDDER)			AUTHORIZED AGENT	DATE
Received:	DATI	3	_	
Architect's Action:		Rejected	Rejected – For reasons as follo EPDM ROOFING IS PREFERR	ows: ED AND WAS SPECIFIED
		Approved	☐ Approved as noted:	
ARCHITECTURE 11 REVIEWED BY (ARCHITECT)	8		Scott Stoch	11 MAR 2019

MSU Substitution Request Form 099 (Revised 062911)



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SUBSTITUTION REQUEST (PRIOR APPROVAL)

Project Title: Location:

PPA No: <u>18-2121</u> 18-2101

Owner: MONTANA STATE UNIVERSITY Bidd

farm nutrition center re-roof

2730 west garfield

Bidder (Sub-): advanced contracting services

This request is submitted for the approval of the Architect. Bidder / Sub-Bidder shall submit one request in accordance with Bidders' Instructions and Information for each proposed substitution. All blanks are to be completed.

The material, system, or equipment defined by this Substitution Request is proposed as a replacement for the material, system, or equipment originally specified and defined as follows:

SECTION	PARAGRAPH	SPECIFIED MATERIAL, SYSTEM, OR EQUIPMENT
075323	2.2a	manufacturers

PROPOSED SUBSTITUTION: The material, system, or equipment being proposed is defined as follows:

 mule hide roofing products
 ALL INFORMATION PROVIDED WAS FOR TPO ROOFING

- What are the differences between the specified material, system, or equipment and the proposed substitution? mulehide has the same properties and warranty as other manufacturers
- Does the proposed substitution require dimensional changes on the Construction Drawings? (Y/N)
- Does the proposed substitution require changes to the Work of other trades? (Y/N)
- Is the warranty for the proposed substitution comparable with that of the specified product? (\sqrt{N})

By signing and submitting this request, the Bidder / Sub-Bidder represents that the function, appearance, and quality of the proposed substitution are equivilent or superior to the specified material, system, or equipment.

By signing and submitting this request, the Bidder / Sub-Bidder agrees to pay all costs, including architectural and engineering fees, associated with the incorporation of the proposed substitution into the Project.

ADVANLED Comparted	SERVICAT ER)	ANTHONY JOHUSSY AUTHORIZED AGENT	<u>3-12-19</u> Date
Received:	DATE		
Architect's Action:	□ Rejected	Rejected – For reasons as follows: EPDM ROOFING IS PREFERRED AND WA	AS SPECIFIED
	□ Approved	□ Approved as noted:	
ARCHITECTURE 118 REVIEWED BY (ARCHITECT)	}	Scatt Stuch	12 MAR 2019

MSU Substitution Request Form 099 (Revised 062911)



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SUBSTITUTION REQUEST (PRIOR APPROVAL)

Project Title: Location:

PPA No: <u>18 2121</u> 18-2101

farm nutrition center re-roof

2730 west garfield

Owner: MONTANA STATE UNIVERSITY Bidder (Sub-): advanced contracting services

This request is submitted for the approval of the Architect. Bidder / Sub-Bidder shall submit one request in accordance with Bidders' Instructions and Information for each proposed substitution. All blanks are to be completed.

The material, system, or equipment defined by this Substitution Request is proposed as a replacement for the material, system, or equipment originally specified and defined as follows:

SECTION	PARAGRAPH	SPECIFIED MATERIAL, SYSTEM, OR EQUIPMENT
075323	2.2a	manufacturers

PROPOSED SUBSTITUTION: The material, system, or equipment being proposed is defined as follows: mule hide roofing products

INFORMATION PROVIDED WAS FOR EPDM ROOFING

• What are the differences between the specified material, system, or equipment and the proposed substitution? mulehide has the same properties and warranty as other manufacturers

- Does the proposed substitution require dimensional changes on the Construction Drawings? (Y/N)
- Does the proposed substitution require changes to the Work of other trades? (Y/N)
- Is the warranty for the proposed substitution comparable with that of the specified product? (\sqrt{N})

By signing and submitting this request, the Bidder / Sub-Bidder represents that the function, appearance, and quality of the proposed substitution are equivilent or superior to the specified material, system, or equipment.

By signing and submitting this request, the Bidder / Sub-Bidder agrees to pay all costs, including architectural and engineering fees, associated with the incorporation of the proposed substitution into the Project.

ADVANLED CONTRACTIFIC	SER ER)	VICho	ANTHONY Jotuss AUTHORIZED AGENT	<u>3-12-19</u> date
Received:	DATE	3		
Architect's Action:		Rejected	□ Rejected – For reasons as follows:	
		Approved	Approved as noted: EPDM ROOFING FROM MULE HIDE IS AC	CEPTABLE
ARCHITECTURE 118 REVIEWED BY (ARCHITECT)			Scott Stich	13 MAR 2019

MSU Substitution Request Form 099 (Revised 062911)

PRE-BID CONFERENCE - MEETING NOTES



Project Name: Location:	BART Farm Nutrition Center Roof Replacement Montana State University	PPA No.: Meeting Date:	<u>18-2101 (A118 18-041)</u> March 11, 2019
Owner:	State of Montana		
	Bozeman, Montana		
Attending:	Refer to Pre-Bid Conference Sign-In Sheet		

The following is a summary of the above referenced meeting:

I. PURPOSE OF MEETING

A. Pre-Bid Conference for above referenced project. Introductions were made and Contractor information was collected. Owner's Pre-Bid Agenda and Information document was provided to all in attendance.

II. ITEMS OF DISCUSSION

- A. Mechanical Equipment to be Removed
 - 1. Group discussed and viewed four locations where existing mechanical equipment is to be removed.
 - 2. Owner intends to remove existing equipment ahead of the roofing project.
 - 3. Additional clarification will be provided in upcoming addendum.
- B. Edge Details
 - 1. Contractors questioned edge detail requirements for the project.
 - 2. The group reviewed edge details in the plan set.
- C. Metal Flashing Materials
 - 1. Contractors questioned metal material requirements for the project.
 - 2. Specifications have been provided for shop-fabricated sheet metal flashing and trim, as well as manufactured roof specialties. Either approach will be acceptable for the project and are Contractor's options.
- D. Parking Permits
 - 1. Owner will confirm whether parking permits are required in this location of campus. Clarification will be provided in upcoming addendum.
- E. Job-Site Toilet
 - 1. Section 015000 requires a job-site toilet.
- F. Wind Speed Rating
 - 1. Roofing assembly is not designed to meet a specific wind speed rating.
 - 2. Actual wind uplift loadings have been calculated. Additional clarification will be provided in upcoming addendum.
 - 3. Some pull-testing of the existing metal roofing will be required.

G. Insulation Requirements

1. Only flute-fill insulation is required for this project.

H. Building Occupancy

- 1. Contractors questioned whether there would be many people using the building over the summer. Clarification will be provided in upcoming addendum.
- 2. Contractor staging requirements will be addressed at the Pre-Construction Conference.

III. FUTURE ACTION ITEMS

A. Addendum No. 1

Architecture 118

Scott Stroh

March 11, 2019

RECORDED BY (ARCHITECT)

AUTHORIZED AGENT

DATE

This information is forwarded to all those who attended the meeting. If any information summarized above is not correct, complete, or is inaccurate in any way, please notify the Authorized Agent listed above.

PRE-BID CONFERENCE SIGN-IN SHEET



PPA No.: 18-2101 (A118 18-041)

Meeting Date: March 11, 2019

Project Name: BART Farm Nutrition Center Roof Replacement Location: Montana State University Owner: State of Montana Montana State University

Bozeman, Montana

Please provide the following	g information:		
Name:	Company:	Phone:	Email:
Anthony Johnson	Advanced Contracting Services	<u>(406) 697-9197</u>	anthony@advancedcontractingservices.
			info

Samuel Brokenshire Alana Griffin Phillip Journey Michael Shamblin Scott Stroh	Ace Roofing Kruse Enterprises Inc. Journey & Sons, LLC Architecture 118 Architecture 118	(406) 578-2107 (406) 544-0162 (406) 209-0991 (406) 404-1777 (406) 404-1777	info samuel@aceroofingmt.com alana@kruseenterprisesinc.com pjourney@jandsmt.com michael@arch118.com scott.s@arch118.com



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PRE-BID CONFERENCE - AGENDA AND INFORMATION

Project Name: BART Farm Nutrition Center Re-Roof

PPA No.: 18-2101

Location: Site

Date: 3/11/19 @ 3:00pm

- I. CONTRACTOR SIGN-IN, COLLECT BUSINESS CARDS
- II. GREETINGS AND INTRODUCTIONS
 - A. Consultant: Scott Stroh, Architecture 118, o: 406-404-1777
 - B. MSU Project Manager: Jaclyn Liebscher, o: 406-994-5970; c: 406-579-5226

III. SUMMARY OF PROJECT

- A. The Work consists of:
 - 1. Overlay the existing metal roof with a new single-ply membrane.
 - 2. New flashing and trim. Color to match existing.
 - 3. Repair / renovation / removal of existing mechanical and electrical roof penetrations.
- B. Construction window is May 15 to August 15, 2019 (Final Acceptance i.e. Contractor is done and demobbed); \$200/day LDs.
- C. Construction budget is \$60,000 to \$70,000.
- D. General information:
 - 1. Work hours are 6am 6pm M-F. Weekend work shall be coordinated at least 3 days' ahead.
 - 2. Construction staging / access is to the northeast side of the building. Main entry needs to remain open.
 - 3. Safety first.
 - 4. No smoking.
 - 5. No radios.
 - 6. Daily cleanup will be required.
 - 7. Construction keys will be provided. Keep doors closed. Keep area secure.
- E. Ask questions up to Wednesday end of day for incorporation into Addendum 1 which will be issued no later than EOD Thursday, March 14.

IV. BIDDING PROCESS AND CONTRACT REQUIREMENTS

- A. Bids will be received until 2pm on March 21, 2019 at the office of Campus Planning, Design and Construction, Montana State University, Bozeman, Montana.
- B. The Bid Form has been provided within the Project Manual. Bidders are to execute the Bid Form completely, leaving no spaces blank.
- C. Information pertaining to the preparation and submission of the Bid, including information regarding bid security, substitutions, addenda, bonding requirements, permits, contractor qualifications, prevailing wage requirements, state taxes, etc., can be found in the <u>Bidders'</u> <u>Instructions and Information</u> section of the Project Manual.
- D. Information pertaining to liquidated damages can be found within the <u>Agreement</u> contained in the Project Manual.
- E. Information pertaining to insurance requirements can be found within the <u>General Conditions of the</u> <u>Contract</u> contained in the Project Manual.
- F. MCA Statutes Title 18 Chapter 2.

V. QUESTIONS PERTAINING TO THE BIDDING DOCUMENTS

VI. TOUR THE PROJECT SITE

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL 1.1 SECTION REQUIREMENTS

- Items indicated to be removed and salvaged remain Owner's property. Carefully detach Α. from existing construction, in a manner to prevent damage, and deliver to Owner. Include fasteners or brackets needed for reattachment elsewhere.
- Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- C. It is not expected that hazardous materials will be encountered in the Work. If hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

PART 2 - PRODUCTS

- 2.1 PEFORMANCE REQUIREMENTS
- Regulatory Requirements: Comply with EPA regulations and with hauling and disposal Α. regulations of authorities having jurisdiction. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.
- PART 3 EXECUTION
- 3.1 DEMOLITION
- Maintain services/systems indicated to remain and protect them against damage during Α. selective demolition operations. Before proceeding with demolition, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of the building
- В. Locate, identify, shut off, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
- C. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- Provide temporary weather protection to prevent water leakage and damage to structure D. and interior areas. F
 - Requirements for Building Reuse: Maintain existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing, excluding window assemblies and nonstructural roofing material) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.
 - Maintain existing interior nonstructural elements (interior walls, doors, floor coverings, and ceiling systems) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.

F. Neatly cut openings and holes plumb, square, and true to dimensions required. Use

- cutting methods least likely to damage construction to remain or adjoining construction. G. Remove demolition waste materials from Project site and legally dispose of them in an
- EPA-approved landfill. Do not burn demolished materials.
- Clean adjacent structures and improvements of dust, dirt, and debris caused by selective Η. demolition operations. Return adjacent areas to condition existing before selective demolition operations began. END OF SECTION 024119

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL 1.1 SUMMARY

A. This Section includes the following:

- Rooftop equipment bases and support curbs.
- Wood blocking and nailers.
- PART 2 PRODUCTS
- 2.1 WOOD PRODUCTS, GENERAL A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any ruleswriting agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - Factory mark each piece of lumber with grade stamp of grading agency.
- Provide dressed lumber, S4S, unless otherwise indicated.
- WOOD-PRESERVATIVE-TREATED LUMBER 2.2 Preservative Treatment by Pressure Process: AWPA C2. Α.
- Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
- 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
- MISCELLANEOUS LUMBER 2.3
- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following: 1. Blocking.
 - Nailers.
 - Rooftop equipment bases and support curbs.
- For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content of any species.
- C. For concealed boards, provide lumber with 19 percent maximum moisture content and the following species and grades:
- 1. Western woods, Construction or No. 2 Common grade; WCLIB or WWPA. 2.4 FASTENERS
- A. General: Provide fasteners of size and type indicated that comply with requirements specified.
- 1. Where rough carpentry is exposed to weather, in ground contact, pressurepreservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M. B. Power-Driven Fasteners: NES NER-272.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- Comply with AWPA M4 for applying field treatment to cut surfaces of preservativetreated lumber.
- D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following: NES NER-272 for power-driven fasteners.

Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code. END OF SECTION 06100

SECTION 061600 - SHEATHING PART 1 - GENERAL

- 1.1 SECTION REQUIREMENTS
- Submittals: ICC-ES evaluation reports for preservative-treated Α. PART 2 - PRODUCTS
- 2.1 WOOD PANEL PRODUCTS, GENERAL Plywood: DOC PS 1. Α.
- Oriented Strand Board: DOC PS 2. R
- 2.2 TREATED PLYWOOD
- Preservative-Treated Plywood: AWPA U1; Use Category UC2. Α. Use treatment containing no arsenic or chromium. Kiln-dry plywood after treatment to a maximum moisture
- Provide preservative-treated plywood for items indicated on contact with masonry or concrete or used with roofing, flas
- waterproofing. 2.3 ROOF SHEATHING
- Plywood Roof Sheathing: Exposure 1 sheathing.
- Oriented-Strand-Board Roof Sheathing: Exposure 1 sheathing. Β. PART 3 - EXECUTION
- 3.1 INSTALLATION

Securely attach to substrates with fasteners approved by roofi Α. and install a quantity and pattern of fasteners necessary to

loadings, based on field-conducted pull tests. END OF SECTION 061600

SECTION 070150.19 - PREPARATION FOR REROOFIN

- PART 1 GENERAL 1.1 SUMMARY
- Α. Section Includes:
 - Re-cover preparation of roof areas indicated on Drawing
- Removal of flashings and counterflashings. 1.2 PREINSTALLATION MEETINGS
- Preliminary Roofing Conference: Before starting removal Wor Α. Project site.
- 1.3 FIELD CONDITIONS
- Α Existing Roofing System: Metal panel roofing. В
- Owner will occupy portions of building immediately below reroo Conduct reroofing so Owner's operations are not disruption Provide Owner with not less than 72 hours' written not affect Owner's operations.
- Coordinate work activities daily with Owner.
- Protect building to be reroofed, adjacent buildings, walkways, s
- plantings, and landscaping from damage or soiling from reroofin
- Maintain access to existing walkways, corridors, and other a D. facilities.
- Conditions existing at time of inspection for bidding will be main E.
- practical. Limit construction loads on existing roof areas as required
- damaging deflection. Weather Limitations: Proceed with reroofing preparation
- forecasted weather conditions permit Work to proceed without roofing system or building. PART 2 - PRODUCTS
- 2.1 AUXILIARY REROOFING MATERIALS
- Α. General: Use auxiliary reroofing preparation materials recomm manufacturer for intended use and compatible with components PART 3 - EXECUTION
- 3.1 PREPARATION
- Seal or isolate windows that may be exposed to airborne subst Shut off rooftop utilities and service piping before beginning the Coordinate with Owner to shut down air-intake equipment in the
- 1. Cover air-intake louvers before proceeding with reroofi indoor air quality or activate smoke detectors in the duc D. During removal operations, have sufficient and suitable materia
- installation of temporary protection in the event of unexpected 3.2 DECK PREPARATION
- Inspect deck prior to installing new roofing materials... Α. В.
- If broken or loose fasteners that secure deck panels to one a observed, or if deck appears or feels inadequately attached, im 1. Do not proceed with installation until directed by Archite C. If deck surface is unsuitable for receiving new roofing or if stru
- suspect, immediately notify Architect. 1. Do not proceed with installation until directed by Archited 3.3 ROOF RE-COVER PREPARATION
- A. Remove irregularities from existing roofing that inhibit new conforming to substrate.
- Broom clean existing substrate. Verify that existing substrate is dry.
- 3.4 BASE FLASHING REMOVAL
- A. Remove existing base flashings.
 - 1. Clean substrates of contaminants, such as asphalt, debris.
- B. Do not damage metal counterflashings that are to remain. 1. Replace metal counterflashings damaged during remov
- same metal, weight or thickness, and finish as existing. C. Inspect parapet sheathing, wood blocking, curbs, and naile
- damage. Replace damaged materials as required. END OF SECTION 070150.19

SECTION 075323 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPD

	ROOFI	NG CENERAL	
d plywood.	1.1	SUMMARY	
	Α.	Section Includes: 1. Adhered ethylene-propylene-diene-terpolymer (EPDM) roofing system.	
		2. Substrate board.	
	1.2	PREINSTALLATION MEETINGS	
2.	A. 1.3	Preliminary Conference: Conduct conference at Project site. ACTION SUBMITTALS	
e content of 15 percent. Drawings and plywood in	A. B	Product Data: For each type of product. Shop Drawings: Include roof plans, sections, details, and attachments to other work	
shing, vapor barriers, and	D.	including the following:	
		 Base flashings and membrane terminations. Flashing details at penetrations. 	
a .	1.4 A	INFORMATIONAL SUBMITTALS	
5	Λ.	 Fastener-pullout test results and manufacturer's revised requirements for fastener 	
ing manufacturer. Provide	1.5	patterns. CLOSEOUT SUBMITTALS	
o withstand the specified	A. 1.6	Maintenance data.	
	A.	Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing	3
		manufacturer's special warranty.	
10	1.7 A.	WARRANTY Special Warranty: Manufacturer agrees to repair or replace components of roofing system	
		that fail in materials or workmanship within specified warranty period.	
igs.	PART 2 -	PRODUCTS	
	1 A.	Wind Uplift Resistance: The attachment of the new overlay roofing system shall be as	ł
rk, conduct conference at C	B	required to accommodate a working uplift loading of 30 lbs./sq. ft. minimum throughout.	
		slopes indicated; testing by a qualified testing agency. Identify products with appropriate	3
ofing area.	2.2	ETHYLENE-PROPYLENE-DIENE-TERPOLYMER (EPDM) ROOFING	
oted. otice of activities that may	Α.	Manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:	
		1. Carlisle SynTec Incorporated	
site improvements, exterior		 GenFlex Roofing Systems 	
ing operations. idjacent occupied or used	В.	4. Versico Roofing Systems EPDM Sheet: ASTM D 4637/D 4637M, Type II, scrim or fabric internally reinforced,	
ntained by Owner as far as		EPDM sheet.	E
	0.0	2. Exposed Face Color: Black.	c
to prevent excessive or	2.3 A.	AUXILIARY ROOFING MATERIALS General: Auxiliary materials recommended by roofing system manufacturer for intended	P
only when existing and but water entering existing		use and compatible with other roofing components. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.	1
	B.	Sheet Flashing: 60-mil-thick EPDM, partially cured or cured, according to application.	
	U.	thick, recommended by EPDM manufacturer for resistance to hydrocarbons, non-	
nended by roofing system ts of new roofing system.	D.	aromatic solvents, grease, and oil. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.	Р
	E. F	Bonding Adhesive: Manufacturer's standard.	2
tances.	1.	 Single-component, butyl splicing adhesive and splice cleaner. Man fastmade, standard, southatic ask has a shreen asimon and 2 incheside. 	
e vicinity of the Work.		2. Manufacturer's standard, synthetic-rubber polymer primer and 3-inch-wide minimum, butyl splice tape with release film.	
fing work that could affect ctwork.	G.	 Factory-applied seam tape, width as recommended by manufacturer. Lap Sealant: Manufacturer's standard, single-component sealant. 	
als on-site to facilitate rapid	H.	Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.	
	ı.	bars, approximately 1 by 1/8 inch thick; with anchors.	
another or to structure are	J.	flashings, molded pipe boot flashings, preformed inside and outside corner sheet	
nmediately notify Architect.		flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.	
ructural integrity of deck is	2.4	SUBSTRATE BOARDS	2
ect.	A. B.	Oriented-Strand-Board Sheathing: DOC PS 2, Exposure 1 sheathing, 1/2 inch nominal	2
ew recover boards from	C.	thickness. Substrate Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum board or	
		ASTM C 1278/C 1278M, fiber-reinforced gypsum board.	
	_	 Surface Finish: Factory primed. 	
	D.	Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate	
sheet materials, dirt, and	25	panel to roof deck. ROOF INSULATION	
al with counterflashings of	A.	Molded (Expanded) Polystyrene Board Insulation: Used for "flute filler."	
	3.1	EXAMINATION	
iers for deterioration and	А.	Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.	
	3.2 A	PREPARATION Perform fastener-nullout tests according to roof system manufacturer's written	2
	· · ·	instructions.	
	3.3 A.	Install roofing system according to roofing system manufacturer's written instructions.	
	В.	Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is	
		forecast. Remove and discard temporary seals before beginning work on adjoining	
	C.	Install roof membrane and auxiliary materials to tie in to existing roofing to maintain	
	3.4	weathertightness of transition. SUBSTRATE BOARD INSTALLATION	Ρ
	Α.	Install substrate board with long joints in continuous straight lines, with end joints staggered not less than 24 inches in adjacent rows.	3
		 At steel roof decks, install substrate board at right angle to flutes of deck. Tight but substrate board together 	
		 Cut substrate board to fit tight around penetrations and projections. 	
		 Fasten substrate board to existing steel roofing panels to resist uplift pressure at corners, perimeter, and field of roof according to roofing system manufacturers' 	
	35		
	э.5 А.	Coordinate installing roofing system components so insulation is not exposed to	
	В.	precipitation or ieπ exposed at end of workday. Comply with roofing system and insulation manufacturer's written instructions for installing	
	3.6	roof insulation. ADHERED ROOFING INSTALLATION	
	A.	Adhere roof membrane over area to receive roofing according to roofing system	
	В.	Unroll membrane roof membrane and allow to relax before installing.	
	C.	Start installation of rooting in presence of roofing system manufacturer's technical	

personnel. Accurately align roof membrane, and maintain uniform side and end laps of minimum D. dimensions required by manufacturer. Stagger end laps.

					7 [
<u>M)</u>			SECTION PART 1 - GE	077100 - ROOF SPECIALTIES NERAL		
	E.	Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required	1.1 SE	CTION REQUIREMENTS		
		by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.	A. Su B. Wa	bmittals: Product Data, Shop Drawings, and color Samples. arranties: Provide manufacturer's standard written warranty, signed by manufacturer		
	F.	In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeters.	ag	reeing to promptly repair or replace roof specialties that show evidence of deterioration factory-applied finishes within 20 years from date of Substantial Completion		\rightarrow \overline{z}
	G.	Apply roof membrane with side laps shingled with slope of roof deck where possible.	PART 2 - PR	DDUCTS		
	п.	1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight	A. Alu	iminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required.		
		seam installation. 2. Apply lap sealant and seal exposed edges of roofing terminations.	B. Alı for	iminum Extrusions: ASTM B 221, alloy and temper as recommended by manufacturer use and finish indicated.		
ork,		3. Apply a continuous bead of in-seam sealant before closing splice if required by	C. Alu	minum Finish: Two-coat fluoropolymer system with color coat containing not less than		
	I.	Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape.	D. Sta	ainless-Steel Sheet: ASTM A 240/A 240M, Type 304, No. 4 (fine directional satin)		
		 Firmly roll side and end laps of overlapping roof membrane to ensure a watertight seam installation. 	E. Pro	sh. epainted, Zinc-Coated Steel Sheet: ASTM A 653/A 653M, G90 coating designation,		MSU-CPDC
	J	 Apply lap sealant and seal exposed edges of roofing terminations. Factory-Applied Seam Tape Installation: Clean and prime surface to receive tape 	str AS	uctural quality, and coil coated prepainted by the coil-coating process to comply with TM A 755/A 755M		MONTANA STATE UNIVERSITY
ner	01	1. Firmly roll side and end laps of overlapping roof membrane to ensure a watertight	1.	Finish: Manufacturer's standard two-coat fluoropolymer system with color coat		BOZEMAN, MONTANA PHONE: 406.994.5413
		 Apply lap sealant and seal exposed edges of roofing terminations. 		containing not less than 70 percent PVDF resin by weight; complying with AAMA 621.		FAX: 406.994.5665
fina	K. 3.7	Adhere protection sheet over roof membrane at locations indicated. BASE FLASHING INSTALLATION	F. Fe G. Se	It Underlayment: ASTM D 226, Type II (No. 30), asphalt-saturated organic felts. If-Adhering Sheet Underlayment. High Temperature: Butyl or SBS-modified asphalt:	ĪĪ	
eive	Α.	Install sheet flashings and preformed flashing accessories, and adhere to substrates	sliµ L Ea	p-resisting-polyethylene surfaced; with release paper backing; cold applied.		
	В.	Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and	п. Fa	meet performance requirements.		7
tem	C.	allow to partially dry. Do not apply to seam area of flashing. Flash penetrations and field-formed inside and outside corners with cured or uncured	1.	Exposed Penetrating Fasteners: Gasketed screws with heads matching color of metal.		
	D	sheet flashing. Clean splice areas, apply splicing cement, and firmly roll side and end lans of overlapping	2. 3	Fasteners for Aluminum: Aluminum or Series 300 stainless steel.		7 <u></u>
\frown	υ.	sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges	4.	Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel		
eas ut.	E.	of sheet flashing terminations. Terminate and seal top of sheet flashings and mechanically anchor to substrate through	I. Bu	or hot-dip zinc-coated steel. tyl Sealant: ASTM C 1311, solvent-release butyl rubber sealant.		0 11
roof	3.8	termination bars. PROTECTING AND CLEANING	J. Bit 2.2 RC	uminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187. OF SPECIALTIES		
lale	Α.	Protect roofing system from damage and wear during remainder of construction period.	A. Co	pings: Manufactured coping system consisting of formed-metal coping cap, concealed		
are		system for deterioration and damage, describing its nature and extent in a written report,	an 1.	<u>Basis-of-Design Product:</u> Hickman, Permasnap Coping System; or a comparable		A
	B.	with copies to Architect and Owner. Correct deficiencies in or remove roofing system that does not comply with requirements,		product of one of the following: a. Metal-Era, Inc.		
		repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements		b. MM Systems Corporation.		
	C.	Clean overspray and spillage from adjacent construction using cleaning agents and	0	d. Approved equal.		
ed,	END OF	SECTION 075323	2. 3.	Pormed Aluminum: 0.040 Inch thick. Prepainted, Zinc-Coated Steel: 0.028 inch thick.		7 W
			B. Ro me	of-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on tal fascia cover and a continuous formed galvanized-steel sheet cant, 0.028 inch thick.		
	SECTI	ON 076200 - SHEET METAL FLASHING AND TRIM	mi	nimum, with extended vertical leg terminating in a drip-edge cleat.		5.
ded	1.1	SECTION REQUIREMENTS	1.	product of one of the following:		
on.	А. В.	Submittals: Product Data, Shop Drawings, and Samples. Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and		a. Metal-Era, Inc. b. MM Systems Corporation.		
nils	C	profiles shown unless more stringent requirements are indicated.		c. Petersen Aluminum Corporation.		
ion-	0.	construction to provide a leakproof, secure, and noncorrosive installation.	2.	Aluminum: 0.040 inch thick.		
	PART 2 · 2.1	- PRODUCTS SHEET METAL	3. PART 3 - EXI	ECUTION		
	Α.	Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, not less than 0.032 inch thick: and finished as follows:	3.1 IN A. Ge	STALLATION neral: Install roof specialties according to manufacturer's written instructions. Anchor		
/ide		1. Finish: Manufacturer's standard two-coat fluoropolymer system with color coat	roc	of specialties securely in place, with provisions for thermal and structural movement.		
		2. Concealed Finish: Manufacturer's standard white or light-colored acrylic or	b. cc	ere they will contact wood, ferrous metal, or cementitious construction.		
	B.	polyester backer finish. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, with No. 2D finish; not less than	C. Se sh	parate dissimilar metals with a bituminous coating or polymer-modified, bituminous eet underlayment.		
num	С	0.016 inch thick. Metallic-Coated Steel Sheet: Galvanized structural-steel sheet. ASTM A 653/A 653M	D. Be roo	d flanges in thick coat of asphalt roofing cement where required by manufacturers of of specialties for waterproof performance.		
ieet	0.	G90; 0.028-inch nominal thickness.	E. Sp	ace movement joints at a maximum of 12 feet with no joints within 18 inches of corners		
ieet nts,		containing not less than 70 percent PVDF resin by weight.	F. Fa	stener Sizes: Use fasteners of sizes that will penetrate wood blocking or sheathing not		Ш
		 Concealed Finish: Manufacturer's standard white or light-colored acrylic or polyester backer finish. 	les END OF SEC	s than 1-1/4 inches for nails and not less than 3/4 inch for wood screws. TION 077100		
inal	2.2 A	ACCESSORIES				
	В.	Self-Adhering Sheet Underlayment, High Temperature: Butyl or SBS-modified asphalt;	SECTION	077200 - ROOF ACCESSORIES		
d or	C.	Slip Sheet: Building paper, 3-lb/100 sq. ft. minimum, rosin sized.	TARTI-GE			
	D.	Fasteners: Wood screws, annular-threaded nails, self-tapping screws, self-locking rivets	1.1 56	CTION REQUIREMENTS		
with		and bolts, and other suitable fasteners.	A. Su B. Sh	CTION REQUIREMENTS bmittals: Product Data and Shop Drawings. eet Metal Standard: Comply with SMACNA's "Architectural Sheet Metal Manual."		3118
aie		 and bolts, and other suitable fasteners. 1. Exposed Fasteners: Heads matching color of sheet metal roofing using plastic caps or factory-applied coating. 	A. Su B. Sh PART 2 - PR 2 1 M4	CTION REQUIREMENTS bmittals: Product Data and Shop Drawings. eet Metal Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." DDUCTS		architecture one eighteen 115 east oak street bozeman mt 59715
410		 and bolts, and other suitable fasteners. 1. Exposed Fasteners: Heads matching color of sheet metal roofing using plastic caps or factory-applied coating. 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel. 	A. Su B. Sh PART 2 - PR 2.1 M/ A. Me	CTION REQUIREMENTS bmittals: Product Data and Shop Drawings. eet Metal Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." DDUCTS ATERIALS IteriALS		architecture one eighteen 115 east oak street bozeman mt 59715
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- F. Separate dissimilar metals with a bituminous coating or polymer-modified, bituminous
- sheet underlayment.

END OF SECTION 076200

