PRELIMINARY DESIGN SUBMISSION

ROOF REPLACEMENT PROJECT

Chilmark Elementary School 8 State Street Chilmark, MA

March 27, 2014

RBA Project No. 2014028.00

Prepared by:



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TABLE OF CONTENTS

Preliminary Design Submission	Report	3 pages
Estimated Construction Cost		1 page
Photo Sheets		3 pages

SCHEMATIC DRAWINGS

Title Sheet	T-1
General Notes, Roof Compositions, & Key Plan	T-2
Roof Area Plan	R-1
Roofing Details	R-2

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March 27, 2014

Ms. Amelia C. Tierney, MCPPO School Business Administrator 4 Pine Street Vineyard Haven, MA 02568

Re: **Preliminary Design Submission** Roof Repair Project Chilmark Elementary School Building 8 State Street, Chilmark, MA RBA Project No. 2014028.00

Ms. Tierney:

We have completed the Investigation/Preliminary Design Phase. This Preliminary Design Submission documents our findings and includes photographic documentation, a detailed construction cost estimate, and schematic architectural drawings (roof plan & details).

I. SCHOOL BUILDING PROFILE

The Chilmark Elementary School is located at 8 State Street. It is single story steel framed building with a wood shingle façade, and steep-sloped shingle roofing and low-sloped metal roofing.

II. WORK PROGRAM

The goal is to address the water infiltration into the building by repairing the lower roof areas lowsloped metal roofs. The intended scope of the construction work includes the replacement or repair of the low-sloped metal roofing systems located on interconnected roof areas (approximately 4,080± SF).

III. DOCUMENTS REVIEWED

Construction documents dated June 29, 1998 and prepared by Thompson and Rose Architects were provided to us for review.

IV. OBSERVATIONS AND COMMENTS

On-site review of conditions included visual examinations and roof test cuts. Through these efforts it was determined that that numerous deficient roofing conditions exist within the metal roofing systems that exist at the lower roof areas. A brief summary of the existing conditions of the lower roof areas low-sloped metal roofs is as follows:

- Leaks are reported to occur at various locations beneath sections of the metal roofing.
- The metal roofing is comprised of formed lead coated copper panels that mechanically lock together at seams, installed over ice & watershield membrane, over wood decking. Fiberglass insulation exists below the wood roof decking in the ceiling (6±" which yields a R-value of 19)

Preliminary Design Submission Report Roof Replacement Project Chilmark School Page 2

- The slope of the roof is approximately 1-1/4" per foot. Although some sealant has been applied at seams that are located near the chimney and two valleys, most seams are not sealed or soldered, which is a necessary requirement to ensure watertightness.
- Roof drainage is achieved by lead coated copper gutters and downspouts that are in good condition. Capacity calculations yield adequate capacity.
- Rooftop penetrations include vent pipes and a chimney that is clad in lead coated copper.
- The lead coated copper roofing intersects the above roofline walls that are constructed of cedar shakes that are in fair to good condition.
- Snow slides are reported to occur over the doors.

Other Items

• Susan Stevens, School Principal, reports that heat loss and sometimes snow intrusion occurs at the louvers located in the bell tower. The bell tower and entryway immediately below the bell tower were not initially intended to enclose conditioned spaces. Currently the east end of the entryway is used as a school lunch serving area that is augmented with electric heaters during cold weather. The open louvers just outboard of the actual bell do not allow any heat retention and allow sporadic instances of wind blown snow infiltration. Further investigation into these conditions is recommended.

V. CONCLUSIONS AND RECOMMENDATIONS

Roof leakage occurs at numerous locations of the low-sloped metal roofing that exist at the lower roof areas. In our opinion the reason for the leakage is primarily due to the open seams that exist within the metal panels; the metal panels themselves are in good condition. Therefore we recommend repairs be implemented to ensure watertightness.

The recommended repairs include the installation of a heavy duty elastomeric waterproofing coating system to the existing lead coated copper roofing panels. This process includes waterproofing all seams by applying a reinforcing fabric mesh. Then coating the entire metal panel roof surface with a heavy duty elastomeric coating system. This system is available in a light grey color and will be warranted against leakage for 20 years. In general the Work will include:

- Pressure wash all surfaces of the lead coated copper roofing panels. Install an elastomeric primer coating, embed reinforcing fabric over all seams, and apply two application coats of the heavy duty elastomeric waterproofing product.
- Re-use existing gutters and downspouts.
- Install new snow guards over doors.

Preliminary Design Submission Report Roof Replacement Project Chilmark School Page 3

Project Schedule

The goal is to continue on with the design effort so the project can be bid during the spring months for summer 2014 construction. The following is a proposed project milestone schedule illustrating the timeline for each phase of work. As the project evolves the milestone schedule will be updated.

Preliminary Design & Final Design Phase

Investigation/Preliminary Design Submission Issued	3/27/14
Meeting to review Preliminary Design Submission	3/31/14
100% Construction Document Submission Issued	4/11/14
Meeting to review 100% Construction Document Submission	by 4/14/14

Bidding Phase

Notice to Central Register	4/8/14
Project out to bid	4/16/14
Pre bid meeting	4/23/14
General Bids due	4/30/14

Construction Phase

Award Contractor Contract	by 5/9/14
Pre-construction meeting	by 5/16/14
Shop Drawing/Submittal Phase Complete	by 5/30/14
Construction Phase	6/30/14 to 8/1/14

After your review please call to schedule a review meeting.

Sincerely,

Michal J. Flaherty RRC Senior Project Manager

RBA

RUSSO BARR ASSOCIATES, INC.

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	Preliminary Design Submission Estimated Const	ruction	Cost		
Project:	Roof Repair Project Chilmark Elementary School Chilmark, Massachusetts Project No. 2014028.00				Sheet 1 of 1 Date 3/27/14
1	1 Toject No. 2014020.00	Mat	torials 8	& Labor	5/2//14
	Description	Qty	Units	Unit Cost	Total
Chilmark I Roof repair Pressure w Install reinf heavy duty	Elementary School w/heavy duty reinforced elastomeric waterproofing coating. /ash all surfaces of the lead coated copper roofing panels. forcing mesh at all seams. Install primer coat and 2 finish coats of elastomeric waterproofing coating. Provide manufacturer's 20-year warranty.	4,080	SF	\$7.50	\$30,600
Install new Lodging, tri	snow guards over door entrances ucking, disposal and island expenses	40 1	LF EA	\$100.00 \$5,000.00	\$4,000 \$5,000
	SubTotal Construction Contingency (5%) Construction Cost Total				\$39,600 \$1,980 \$41,580
TOTAL CO	INSTRUCTION COST ESTIMATE				\$41,580

Preliminary Design Submission Chilmark Elementary School Chilmark, Massachusetts RBA Project No. 2014028.00



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ROOF REPAIR PROJECT CHILMARK SCHOOL 8 STATE STREET CHILMARK, MASSACHUSETT



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GENERAL NOTES, ROOF COMPOSITIONS & KEY PLAN ROOF AREA PLAN ROOF COATING DETAILS	Τ-Ι

PRELIMINAF

DESIGN



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LEGEND				
SYMBOL DESCRIPTION			-	_
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ROOF AREAS NOT IN CONTRACT				
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ROOF AREA PLAN SCALE: 1/8" = 1'-0"

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