



19 February 2016

Project Manual for

# **CRISP POINT LIGHTHOUSE TOWER RESTORATION**

Crisp Point Light Historical Society  
County of Luce  
Newberry, Michigan

Richard Neumann Architect  
Petoskey, Michigan

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**ADVERTISEMENT FOR BIDS**

**PROJECT:**

Crisp Point Lighthouse Tower Restoration.

**OWNER REPRESENTATIVE:**

Crisp Point Light Historical Society, 450 W. Marr Road, Howell, MI 48855.

**DESCRIPTION:**

The project consists masonry restoration, and related work, of the Crisp Point Lighthouse tower, at Crisp Point, near Paradise, Michigan. The work consists of paint removal, brick masonry restoration and pointing, masonry cleaning, lead flashing, caulking, and painting.

This project is partially funded by a Michigan Lighthouse Assistance Program grant through the State Historic Preservation Office, Michigan State Housing Development Authority.

**BID DUE DATE:**

Bids will be received until **4:30 pm, Friday, April 22, 2016.**

**PROPOSAL:**

The Owner will receive fixed-price bids in the form of sealed proposals, for work set forth in the contract documents, in the public meeting room of the Howell Carnegie District Library, 314 W. Grand River Ave, Howell, MI 48843. Bid shall be in an envelope marked "Crisp Point Lighthouse Tower Restoration", and will be received in person from 2:00 - 4:30 pm, at which time bids will be publicly opened. Proposals received after time of opening will be returned unopened. Mailed or courier delivered bids may be sent to Rick Brockway, 450 W. Marr Road, Howell, MI 48855, but must be received no later than 6 pm, the day before the bid opening. Faxed or emailed bids will not be accepted.

**CONTRACT DOCUMENTS:**

Contract documents for bidding may be obtained from the office of the Architect, or any of the following:

Builders Exchange of Michigan  
Construction Association of Michigan  
Construction Market Data  
Construction News Service of Michigan  
Dodge Data and Analytics  
Home Builders Association of the Upper Peninsula

**RIGHTS RESERVED BY OWNER:**

The Owner reserves the right to waive any irregularities, reject any or all bids, or accept any bid when, in the opinion of the Owner, such action will best serve his interest.

**BID SECURITY:**

Each proposal must be accompanied by a Bid Guarantee in an amount equal to five percent (5%) of the proposal amount in the form of a certified check or bid bond payable to Crisp Point Light Historical Society as a guarantee of good faith that the bidder will enter a contract for the performance of the work.

CONTRACT SECURITY:

The successful bidder will be required to furnish Certificates of Insurance in accordance with the specifications. No Performance Bond, or Labor and Material Bond, will be required.

ARCHITECT:

Questions regarding this project may be directed to Richard Neumann Architect, 1540 Bear Creek Lane, Apt. A, Petoskey, MI 231/ 347-0931, r.neumann.arch@sbcglobal.net.

END OF ADVERTISEMENT FOR BIDS

**INSTRUCTIONS TO BIDDERS****AIA DOCUMENT A701 - 1997:**

American Institute of Architects document A701 - 1997 "Instructions To Bidders" is hereby made a part of these instructions the same as if bound herein, and shall be supplemented by the following requirements.

**COMPLIANCE WITH LAWS:**

Compliance with all applicable federal, state, and local laws, rules, and regulations is required of all bidders.

**CERTIFICATION REGARDING DEBARMENT**

All bidders shall submit with their Proposal form, the completed Certification Regarding Debarment, etc., herewith included under separate cover.

**PRE-BID MEETING:**

An optional pre-bid meeting is planned for bidders to avail themselves of the opportunity to learn about the existing circumstances of the Project, including the required scope of work, site circumstances, and access to the Crisp Point location. The pre-bid meeting will take place at the Whitefish Township Community Library, 7247 North M-123, Paradise, MI, 11:00 a.m., Friday, April 1, 2016. Representatives of the Owner and Architect will discuss the project and have photographs of the tower available, and answer questions. At their discretion, bidders may bring snowmobiles, and visit the site (the only feasible option at this time of the year). Anyone wishing to do so will be guided to the site by the CPLHS.

**BID SECURITY:**

As a guarantee of good faith, the proposal shall be accompanied by a certified check, bank draft or bid bond payable to Crisp Point Light Historical Society in an amount equal to five percent (5%) of the total amount of the proposal.

If any Bidder withdraws his bid within 30 days after the bid opening, or if a successful Bidder fails to execute a contract and/ or furnish satisfactory bonds and insurance (if required) within 15 days after notice of award, such bid security shall be forfeited to the Owner as liquidated damages.

The bid security of the next two lowest Bidders shall be retained until the bonds and insurance of the successful Bidder have been approved and a contract executed. The bid security of all other Bidders shall be returned within 10 days after the bid opening.

**PERFORMANCE BOND AND PAYMENT BOND:**

The successful bidder will not be required to furnish a Performance Bond, or a Labor and Material Bond.

END OF INSTRUCTIONS TO BIDDERS

**PROPOSAL**

PROJECT:

Crisp Point Lighthouse Tower Restoration

OWNER REPRESENTATIVE:

Crisp Point Light Historical Society, 450 W. Marr Road, Howell, MI 48855

ARCHITECT:

Richard Neumann Architect, 1540 Bear Creek Lane, Apt. A, Petoskey, MI 49770

BIDDER NAME, ADDRESS AND TELEPHONE:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROPOSAL:

The undersigned, having familiarized himself with all conditions likely to be encountered affecting the cost of the work and having carefully examined the contract documents including Instructions to Bidders, General Conditions, Supplementary General Conditions, Drawings and Specifications, and all addenda issued, does hereby propose to furnish all the labor, materials, tools, equipment, and services necessary to perform and complete in a workmanlike manner the work of all trades required in connection with the project as set forth in the contract documents, Drawings dated 22 January 2016, and Specifications dated 19 February 2016.

For consideration of the above requirements, the undersigned agrees to accept in payment the sums of (In case of discrepancy, the amount shown in words shall govern):

BASE BID:

(use figures) \_\_\_\_\_  
(use words) \_\_\_\_\_

VOLUNTARY ALTERNATES:

The undersigned quotes the following voluntary alternates to the Proposal stated above.

Deduction #1 \_\_\_\_\_ \$ \_\_\_\_\_  
Addition #1 \_\_\_\_\_ \$ \_\_\_\_\_

TIME OF COMPLETION:

The undersigned agrees to complete all aspects of the work provided for under the Base Bid proposal within a period not to exceed \_\_\_\_\_ calendar days from the date of the contract.

ADDENDA:

Receipt of the following addenda to the contract documents received during the bidding period is hereby acknowledged:

Addendum Number	_____	Dated	_____
Addendum Number	_____	Dated	_____
Addendum Number	_____	Dated	_____

CERTIFICATION:

The undersigned agrees to execute a contract for the described work in the form of American Institute of Architects document A101 - 1997 "Standard Form of Agreement Between Owner and Contractor", provided that he be notified of Proposal acceptance within 30 days of the bid due date.

I hereby certify that all statements are made on behalf of:

\_\_\_\_\_  
(Name of corporation, partnership or sole proprietorship submitting bid)

Signature	_____	Date	_____
Title	_____		
Address	_____		
Telephone	_____	Fax	_____

**GENERAL CONDITIONS**

**AIA DOCUMENT A201-1997 "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION":**

AIA Document A201 is hereby made a part of these specifications the same as if bound herein, and shall be supplemented by the following section of the specifications.

**SUPPLEMENTARY GENERAL CONDITIONS**

MODIFIED OR SUPPLEMENTED GENERAL CONDITIONS detailed hereafter change and/ or modify certain articles of AIA Document A201. Where any article is altered in part, the unaltered provisions of that article shall remain in full force and effect.

**ARTICLE 8 - TIME:**

Modify the following subparagraph:

8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, noted by the Bidder in the Proposal form under Calendar Days for Substantial Completion of the Project.

**ARTICLE 9 - PAYMENTS AND COMPLETION:**

9.4 CERTIFICATES FOR PAYMENT - Add the following paragraph:

9.4.3 Retainage shall be withheld as follows: Subject to other provisions of the Contract Documents, the amount of each progress payment shall be reduced by a retainage of five percent (5%) to be withheld from each progress payment request for work completed and for materials delivered and stored at the site for subsequent incorporation in the construction.

**ARTICLE 11 - INSURANCE AND BONDS:**

11.1 CONTRACTOR'S LIABILITY INSURANCE - add the following subparagraphs:

11.1.4 During the term of the Contract, the Trade Contractor and each Subcontractor shall, at their own expense, purchase and maintain the following insurance in companies properly licensed to do business in the State of Michigan and satisfactory to the Owner as provided in the General Conditions. The liability insurance required shall be written to include the Owner and the Architect as additional insured.

11.1.5 Workers' Compensation, including Occupational Disease and Employer's Liability Insurance:

- .1 Statutory - Amounts and coverage as required by the State of Michigan, including provisions for voluntary benefits as required in labor union agreements and including the "All States" endorsement.
- .2 Employer's Liability - At least \$ 500,000. each occurrence.



11.1.6 Comprehensive General Liability including coverage for Premises Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad Form Property Damage including Completed Operations, with limits not less than those stated below:

- .1 Bodily Injury including Personal Injury Liability.  
     \$ 2,000,000. Each Occurrence  
     \$ 2,000,000. Aggregate
- .2 Property Damage including Completed Operations Broad Form.  
     \$ 2,000,000. Each Occurrence  
     \$ 2,000,000. Aggregate
- .3 Contractual Liability (Hold Harmless).  
     \$ 2,000,000. Each Occurrence - Bodily Injury  
     \$ 2,000,000. Each Occurrence - Property Damage  
     \$ 2,000,000. Aggregate - Property Damage

11.1.7 Comprehensive Automobile Liability including coverage for owned, long-term leased, non-owned and hired vehicles, with limits not less than those stated below:

- .1 Bodily Injury  
     \$ 1,000,000. Each Person  
     \$ 1,000,000. Each Occurrence
- .2 Property Damage  
     \$ 1,000,000. Each Occurrence

11.1.8 Liability Insurance may be arranged by Comprehensive General Liability and Comprehensive Automobile Liability policies for the full limits required, or by a combination of underlying Comprehensive Liability policies for lesser limits with the remaining limits provided by an Excess or Umbrella Liability policy.

11.1.9 Excess or Umbrella Liability over and above primary insurance, with limits not less than those stated below:

- .1 Umbrella Excess Liability  
     \$ 2,000,000.

#### ARTICLE 13 - MISCELLANEOUS PROVISIONS:

13.1 GOVERNING LAW - add the following subparagraph:

13.1.2 MIOSHA - The Contractor and Subcontractors shall make themselves aware of and remain in compliance with MIOSA requirements, PA 154, 1975, "Construction Safety Standards".

13.1.3 Michigan Right-to-Know Law - The Contractor and Subcontractors shall conform to the provisions of the Michigan Right-to-Know Law, PA 80, 1986, for the safe handling of hazardous chemicals through training, communication, and Material Safety Data Sheets.

END OF SUPPLEMENTARY GENERAL CONDITIONS

GENERAL CONDITIONS & SUPPLEMENTARY GENERAL CONDITIONS SGC - 2

**SECTION 01010 - SUMMARY OF THE WORK**

Project Description: The project consists masonry restoration, and related work, on the Crisp Point Lighthouse tower, at Crisp Point, near Paradise, Michigan. The work is as described in the Contract Documents prepared by Richard Neumann Architect, Drawings dated 22 January 2016 and Specifications dated 19 February 2016.

The Work: The Work consists of paint removal, brick masonry restoration and pointing, masonry cleaning, lead flashing, caulking, and painting.

Work Under Separate Contracts: Separate contracts may be issued by the Owner for certain aspects of the work not included as a part of the scope of work of these contract documents.

Contractor Use of Premises: During the work, the Contractor shall limit his use of the premises to the area involved in the project. The Contractor shall coordinate with the Owner to determine the best site location for storage of materials and equipment.

END OF SECTION 01010

**SECTION 01020 - ALLOWANCES**

Selected materials and equipment, and in some cases, installation are included in the Contract Documents by allowances. Allowances are established to defer selection until more information is available. Other requirements will be issued by a Change Order.

Types of allowances required include the following:

Lump sum allowances.

Selection and Purchase: At the earliest feasible date after Contract award, advise the Architect of the date when selection and purchase of each product or system described by an allowance must be completed to avoid delay.

Submittals: Submit proposals for purchase of products or systems included in allowances, in the form of Change Orders.

Submit invoices or delivery slips to indicate quantities of materials delivered for use in fulfillment of each allowance.

Inspection: Inspect products covered by an allowance promptly upon delivery for damage or defects.

Preparation: Coordinate materials and installation for each allowance with related materials and installations to ensure that each allowance item is integrated with related construction activities.

Unused Materials: Return unused materials for credit to the Owner, after installation has been completed and accepted.

If it is not feasible to return unused material, prepare unused material for the Owner's storage, and deliver to the storage space as directed. Otherwise, disposal is the Contractor's responsibility.

SCHEDULE OF ALLOWANCES:

**No allowance items are included.**

END OF SECTION 01020

**SECTION 01030 - ALTERNATES**

Definition: An alternate is an amount proposed by Bidders and stated on the Proposal that will be added or deducted from the Base Bid Amount if the Owner decides to accept a corresponding change in either scope of work or in products, materials, equipment, systems or installation methods described in the Contract Documents.

Coordination: Coordinate related work and modify or adjust adjacent work as required to ensure that work affected by each accepted alternate is complete and fully integrated into the project.

The Bidder shall refer to all appropriate sections of the specifications and drawings. All materials and workmanship, unless specifically noted otherwise, shall be of the same type and quality specified for similar work.

The Owner shall have the right to accept or reject any or all of the alternate prices requested herein.

**SCHEDULE OF ALTERNATES:****No alternate items are included.**

The Bidder may submit voluntary substitutions to the specified scope of work, and the corresponding alternate prices for such substitutions, in order to realize significant cost savings to the Owner without substantially changing the project.

END OF SECTION 01030

**SECTION 01300 - SUBMITTALS**

PROGRESS SCHEDULE:

Within 15 days of the date established for "commencement of the work", submit a progress schedule indicating each significant category of work to be performed.

SCHEDULE OF VALUES:

Prepare a schedule of values to show breakdown of Contract Sum into each significant category of work. Submit with first payment request. Revise each time schedule is affected by change order.

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES:

Submit shop drawings, product data, and samples for review and approval by the Architect for each category of work where requested in the specifications. Do not proceed with fabrication or installation of items until approval has been received.

SUBSTITUTIONS:

Construction methods and/or materials may be offered as substitutions. Such proposed shall be accompanied by full descriptive and technical data, plus difference in price, if any, and be submitted to the Architect in ample time for review and approval so as not to delay the progress of the work.

END OF SECTION 01300

**SECTION 01500 - TEMPORARY FACILITIES**

Summary: This Section specifies temporary facilities, including construction and support, and security and protection. Provide facilities ready for use. Maintain and modify as needed. Remove when no longer needed, or replaced by permanent facilities.

Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner or Architect, and will not be accepted as a basis for claims for a change order.

Regulations: Comply with applicable laws and regulations.

Conditions of Use: Keep facilities clean and neat. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload, or permit facilities to interfere with progress. Do not allow hazardous, dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

Materials and Equipment: Provide new materials and equipment, or undamaged previously used materials and equipment in serviceable condition, suitable for the use intended.

Temporary Construction and Support Facilities Installation:

Temporary Scaffolding and jacks: Provide such facilities as necessary for completion of the project. Take care to protect existing site and building during set-up, use, and dismantling. Repair any damage caused by use of such facilities.

Temporary Security and Protection Facilities Installation:

Barricades and Warning Signs: Comply with standards and code requirements for erection of barricades. Provide appropriate warning signs to inform personnel and the public of the hazard being protected against.

Environmental Protection: Operate temporary facilities and conduct construction by methods that comply with environmental regulations, and minimize the possibility that air, water, plants, and soil might be contaminated or polluted.

Aid to Navigation Protection: Crisp Point Light is an operating private aid to navigation. If the light beakon is planned to be obscured in any way after sunset, notify the Architect.

Termination and Removal: Remove each temporary facility when the need has ended, or replaced by a permanent facility. Repair damaged work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.

END OF SECTION 01500

**SECTION 01700 - PROJECT CLOSEOUT**

Substantial Completion: Before requesting inspection for certification of Substantial Completion, complete the following:

Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.

Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar record information.

Change-over to permanent locks and transmit keys to the Owner.

Complete start-up testing of systems, and instruction of the Owner's personnel. Remove temporary facilities from the site, along with construction tools, mockups, and similar elements.

Complete final clean up. Touch-up and repair and restore marred exposed finishes.

Inspection Procedures: On receipt of a request for inspection, the Architect will advise the Contractor of unfulfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

The Architect will repeat inspection when requested and assured that the Work has been substantially completed.

Results of the completed inspection will form the basis of requirements for final acceptance.

Final Acceptance: Before requesting inspection for certification of final acceptance and final payment, complete the following:

Submit final payment request with releases.

Submit a copy of the final inspection list stating that each item has been completed or otherwise resolved for acceptance.

Submit consent of surety to final payment.

Submit evidence of continuing insurance coverage complying with insurance requirements.

Record Drawings: Maintain a clean, undamaged set of black line copies of Contract Drawings and Shop Drawings. Mark up these drawings to show the actual installation. Mark whichever drawing is most capable of showing conditions accurately. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

Record Specifications: Maintain one copy of the Project Manual, including addenda. Mark to show variations in actual work performed in comparison with the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot be readily discerned later by direct observation.

Operating and Maintenance Instructions: Arrange for the installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance.

Final Cleaning: Employ experienced workers for final cleaning. Clean each surface to the condition expected in a commercial building cleaning and maintenance program. Complete the following before requesting inspection for certification of Substantial Completion:

Remove labels that are not permanent labels.

Clean exposed hard-surfaced finishes to a dust-free condition, free of stains, films and foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean.

Clean light fixtures and lamps.

Clean the site of rubbish, litter and other foreign substances. Sweep paved areas; remove stains, spills and other foreign deposits.

Removal of Protection: Remove temporary protection facilities.

Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION 01700



**SECTION 04300 - MASONRY PAINT REMOVAL**

GENERAL:

Summary: Work of this Section consists of paint removal from historic brick masonry.

Definitions:

Hazardous: As classified under USEPA regulations.

Low-Pressure Spray: 100 - 400 psi; 4 - 6 gpm.

Medium-Pressure Spray: 400 - 800 psi; 4 - 6 gpm.

Qualification: Work shall be performed by a firm with not less than five years successful experience in comparable paint removal projects.

All work shall be done by skilled and experienced tradesmen.

Test Areas: Before commencement of work, complete small test areas to determine precise cleaning procedures and demonstrate all aspects of the paint removal procedure to assure desired results. Start project work only upon receipt of written approval of the test areas by the Architect. Approved areas shall be used as the standard reference for acceptance or rejection of all masonry paint removal on the project.

Job Conditions: Product efficiency is reduced during cold weather. Surface and air temperatures should be a minimum of 50 degrees F during application.

MATERIALS & EQUIPMENT:

Storage and Handling of Materials:

All materials shall be kept dry and protected from weather and contamination.

Paint Remover:

“Prosoco” EnviroKlean SafStrip 8, neutral pH, low-odor, water-rinsable, solvent-type gel formulation, containing no methanol or methylene chloride.

Residue Collection Materials:

Materials and equipment necessary for the collection and containment of lead-based hazardous residue.

Spray Equipment for Water:

Equipment capable of controlled spray application of water at pressures, volume & temperature (if any) indicated, with not less than 15 degree fan-shaped spray tip.

EXECUTION:

Protection:

Take environmental precautions to protect Lake Superior, sand dunes, and plant materials from exposure to paint stripping compound and solublized residue.

Applicators shall take precautions to protect eyes and skin from exposure to alkaline paint stripping compound.

All window glass, metal and painted surfaces to remain, and the solar collection panel shall be protected from exposure during the stripping process using polyethylene, liquid-strippable masking agent, or other proven protective.

Pedestrian sidewalk traffic shall be diverted from work area. Beware of wind drift and take precautions to protect vehicles and plant materials.

Preparation: Prepare the surface by removing loose, peeling paint using medium-pressure spray or by scraping. Surface shall be dry before applying stripper.

Paint Removal:

Comply with recommendations of paint remover product manufacturer.

Apply a thick coating of paint remover with synthetic brush or deep-nap roller.

Allow paint remover to remain on surface (dwell time) for period recommended by manufacturer or determined by test areas to achieve desired result.

Agitate periodically with stiff-fiber brush, if determined by test areas to achieve desired result.

Thoroughly rinse the stripper and solublized paint with cold water applied by medium-pressure spray.

Collect and contain all solublized residue to prevent contamination of the environment.

Apply an appropriate neutralizer and rinse as recommended by paint remover mfr. in order to prevent an alkaline residue that may cause an unsightly white haze.

Clean-up:

Remove all stripper and solublized paint from finished surfaces, sidewalk and paving, and leave job site in a clean, orderly and acceptable condition.

Contain, transport, and dispose of all solublized residue and contaminated collection materials in accordance with all federal, state, and local regulations.

END OF SECTION 04300

**SECTION 04500 - MASONRY RESTORATION**

GENERAL:

Summary: Work of this Section consists of restoring historic brick masonry including:

Replacing deteriorated brick to match original configurations;  
Pointing deteriorated brick mortar joints.  
Replacing lead flashing - see Section 07600 Sheet Metal Flashing & Trim.

QUALITY ASSURANCE:

Comply with appropriate provisions of ACI 530/ 530.1 - 13, and ASTM C 270.

Qualification: Work shall be performed by a firm with not less than five years successful experience in comparable masonry restoration projects.

All work shall be done by skilled and experienced tradesmen.

All work shall be executed under the continuous supervision and direction of a competent mason.

All mortar mixing shall be done by the same experienced and competent workman for the duration of the job.

Mortar Analysis: Before commencement of work, Contractor shall have a mortar analysis completed to determine the composition of the existing historic mortar. Analysis shall be done by a recognized materials testing laboratory with experience analyzing historic mortar. Start project work only upon completion of the mortar analysis, and receipt of written approval by the Architect, of a proposed new mortar mix matching the historic mortar.

Test Areas: Before commencement of work, complete small test areas demonstrating all aspects of the restoration procedure, including raking out and pointing of joints and the reconstruction of deteriorated masonry. Mix different mortars using coarse and fine sands to duplicate the historic mortar. Start project work only upon receipt of written approval of the test areas by the Architect. Approved areas shall be used as the standard reference for acceptance or rejection of all masonry restoration on the job.

Storage and Handling of Materials:

All materials shall be kept dry and protected from weather and contamination. Masonry units shall be stacked on pallets.

Manufacturers' labels and seals shall be intact upon delivery at job site.

Any material that has deteriorated or been contaminated shall not be incorporated into the work.

Job Conditions: Comply with the requirements of "Construction and Protection Recommendations for Cold Weather Masonry Construction", Technical Notes, Brick Institute of America.

All materials shall be kept above 45 degrees F.

No mortar shall be placed when the temperature is 40 degrees F and falling.

Repointing shall not be done at temperatures above 80 degrees F, unless shading and water-misted burlap over new work is provided to control evaporation from mortar.

Newly laid masonry and pointed mortar shall be protected against freezing until it is set and dry.

Newly laid masonry and pointed mortar shall be protected from excessive exposure to rain until the surface is thumb-print hardened.

Safety: Workmen raking out joints shall be protected from the effects of dust during cutting-out operations by wearing adequate protective equipment.

#### MATERIALS:

##### Masonry Materials:

Brick: Units shall be existing sound brick salvaged by the Contractor, and new brick of size, shape, color, surface texture, and physical properties to match original brick.

Size: 8 inches long x 2-3/8 inches high.

##### Mortar Materials:

Portland Cement: ASTM C 150, Type 1. Use non-staining, no air-entrainment, grey and/ or white portland cement as necessary to match original mortar appearance as closely as possible.

Hydrated Lime: ASTM C 207, Type S.

Aggregate: ASTM C 144. Natural sand shall be selected to produce mortar color matching original. Match size, texture, and gradation of existing original mortar. Do not use beach sand.

Water: Clean and potable, free of oils, acids, alkalis, and organic matter.

Mortar Mix:

Measure cementitious and aggregate materials in a dry condition by volume or equivalent weight and mix in a clean mechanical mixer.

Mixing: Because prehydration greatly reduces mortar shrinkage and improves workability, prehydrate all mortar. Thoroughly mix all ingredients dry; then mix again, adding only enough water to produce a damp unworkable mix which will retain its form when pressed into a ball. After keeping mortar in this dampened condition for two hours, add sufficient water to bring it to proper consistency. Too much water reduces strength and increases shrinkage; add water sparingly. To improve workability, increase air entrainment and plasticity. To insure thorough mixing, mortar shall be mixed a total of at least 10 minutes before using. Do not use anti-freeze compounds to lower the freezing point of mortar.

Use mortar within 30 minutes of final mixing; do not retemper or use partially hardened material.

Mortar mix shall be proportioned as determined by the required approved mortar analysis.

INSTALLATION:Masonry Restoration:

Remove loose, damaged, spalled, or deteriorated brick at locations indicated. Clean remaining brick at edges of removal areas by removing mortar, dust, and loose debris.

Reconstruct missing or removed areas with new or salvaged brick to match bonding and coursing pattern of existing masonry.

Tool exposed mortar joints in reconstructed areas to match joints of surrounding existing brickwork.

Complete masonry reconstruction work to match original historic masonry in all respects.

Masonry Pointing:

Deteriorated joints are defined as having: loose or missing mortar, excessively soft mortar, powdery or crumbling mortar, cracks that weaken the bond between units, or voids.

Rake out mortar from deteriorated joints to depths equal to 2-1/2 times their widths but not less than 1/2", nor less than required to expose sound, unweathered mortar. Leave clean joints with bond surfaces of masonry exposed and reveals with square backs.

Remove all nails, brackets, flashing, and other built-in fittings not to be retained.

Retain sound adjacent mortar joints in their present state.

Take care not to damage masonry units adjacent to joints being cut out.

Cutting out of deteriorated mortar shall be done by hand with hammer and chisel, with a pneumatic chisel as specified below, or as otherwise approved by the Architect in writing.

Permitted tool shall be a Barre Short Stroke Pneumatic Carving Tool, Type B or D, as manufactured by "Trow & Holden Co., Inc.", Barre, Vermont, 1/ 800/ 451-4349. The chisel shall have a round shank and be hand held in place in the tool with no retainer. The width of the cutting edge and the diameter of any portion of the chisel blade which enters the masonry joint shall not exceed 3/ 4 of the width of the mortar joint. The compressor activating the tool shall have a variable pressure control and be regulated to provide air pressure consistent with effective cutting of the mortar.

Rinse masonry surfaces with water to remove dust and mortar particles. At time of pointing provide damp joint surfaces free of standing water. Apply and compact first layer of mortar to areas where existing mortar was removed to depths greater than surrounding areas. After depth of joints are uniform, apply pointing mortar in thin layers, compacting each in turn, after each previous layer becomes thumbprint hard.

Tool joints to match surrounding original joints, after final layer of mortar has set.

Complete masonry pointing work to match original historic masonry in all respects.

Cleaning:

Excess mortar shall be immediately removed from adjacent surfaces.

Clean masonry with bristle brush as work proceeds.

Wash completed sections of wall from top to bottom by hand washing with stiff nylon or bristle brushes and clean water, spray applied at low pressure.

END OF SECTION 04500

**SECTION 04600 - MASONRY CLEANING**

**GENERAL:**

Summary: The work of this Section includes brick masonry cleaning.

Submittals:

Product Data: For each type of product.

Qualification: Work shall be performed by a firm with not less than five years successful experience in comparable paint removal projects.

All work shall be done by skilled and experienced tradesmen.

Test Areas: Before commencement of work, complete small test areas to determine precise cleaning procedures, such as dilution rate, and demonstrate all aspects of the cleaning procedure to assure desired results. Start project work only upon receipt of written approval of the test areas by the Architect. Approved areas shall be used as the standard reference for acceptance or rejection of all masonry cleaning on the project.

Job Conditions: To obtain best cleaning results, surface and air temperatures should be a minimum of 40 degrees F during application. Do not clean when temperatures are below freezing or will be overnight.

**MATERIALS & EQUIPMENT:**

Storage and Handling of Materials:

All materials shall be kept dry and protected from weather and contamination.

Cleaner:

“Prosoco” EnviroKlean Safety Klean low corrosion masonry cleaner.

Spray Equipment for Water:

Equipment capable of controlled spray application of water at pressures, volume & temperature (if any) indicated, with not less than 15 degree fan-shaped spray tip.

**EXECUTION:**

Protection:

Take environmental precautions to protect Lake Superior, sand dunes, and plant materials from exposure to masonry cleaner.

Applicators shall take precautions to protect eyes and skin from exposure to alkaline paint stripping compound.

All window glass, metal and painted surfaces to remain, and solar collection panel shall be protected from exposure during the cleaning process using polyethylene, liquid-strippable masking agent, or other proven protective.

Pedestrian sidewalk traffic shall be diverted from work area. Beware of wind drift and take precautions to protect vehicles and plant materials.

Preparation:

All caulking and sealing shall be in place and thoroughly cured before cleaning.

Cleaning:

Comply with recommendations of cleaning product manufacturer.

Commence and complete cleaning within 14 - 28 days of masonry restoration work.

Use clean water to pre-wet surface to be cleaned. Apply cleaner liberally using low pressure spray (50 psi max), roller, or masonry washing brush, according to mfr's recommendations. Do not apply with high pressure spray. Let cleaning solution dwell 3 - 5 minutes. Reapply, and use light scrubbing action on surface. Do not let cleaning solution dry into the masonry; if solution starts to dry, reapply.

Rinse with clean water, using a concentrated stream of water on each section, taking care to keep the wall below wet until after it has been completely rinsed.

Clean-up:

Remove all protections, equipment and debris, and leave job site in a clean, orderly and acceptable condition.

Contain, transport, and dispose of all trash materials in accordance with all federal, state, and local regulations.

END OF SECTION 04600



**SECTION 07600 - SHEET METAL FLASHING & TRIM**

**GENERAL:**

Summary: The work of this Section includes:

Lead flashing.

Submittals:

Product Data: For each type of product.

Quality Assurance: Comply with "Architectural Sheet Metal Manual" by SMACNA, conforming to dimensions and profiles shown.

Fabricator Qualifications: Employ skilled workers who custom fabricate metal flashing and trim similar to that required for this Project, and whose products have a record of successful in-service performance.

Performance Requirements: Install sheet metal flashing to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking and fastener disengagement.

**PRODUCTS:**

Flashing:

Flashing Type: Step flashing.

Sheet Metals:

Lead Sheet: Provide 0.063" thick lead sheet.

Underlayment Materials:

Self-Adhering, High-Temperature Sheet: Minimum 30 mils thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.

Fasteners: Suitable fasteners designed to withstand design loads and provide noncorrosive performance.

Elastomeric Sealant: ASTM C 920, elastomeric polyurethane, polysulfide or silicone polymer sealant, of type, grade, class, and use classifications required to seal joints in flashing and trim and remain watertight.

**FABRICATION:**

Custom fabricate sheet metal flashing to comply with SMACNA recommendations. Shop fabricate items where practical, based on field measurements for accurate fit.

Provide for thermal expansion of running sheet metal work by overlaps of expansion joints in fabricated work. Conceal fasteners and expansion provisions where possible.

Step Flashing: Fabricate from the following materials:

Lead: 0.063" thick.

**INSTALLATION:**

Coordinate installation of sheet metal flashing with interfacing and adjoining construction to provide a leakproof, secure and noncorrosive installation.

Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures.

Anchor work in place with noncorrosive fasteners, adhesives, setting compounds, and other materials and devices as recommended by manufacturer of each material or system. Provide for thermal expansion and building movements. Comply with recommendations of "Architectural Sheet Metal Manual" by SMACNA.

Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in mortar joints and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints a minimum of 4 inches.

Seal moving joints in metal work with elastomeric joint sealants, complying with requirements specified in Section 07900 Joint Sealers.

**CLEANING AND PROTECTION:**

On completion, remove unused fasteners; clean-off excess sealants.

Clean metal surfaces of substances which could cause corrosion, or that interfere with uniform oxidation and weathering.

END OF SECTION 07600

**SECTION 07900 - JOINT SEALANTS****GENERAL:**

Summary: Work of this Section includes sealants for the following applications, including those specified by reference to this Section:

Exterior joints in the following vertical and non-traffic horizontal surfaces:

Joints between different materials.  
Other joints as indicated.

Submittals: Product data including certified test reports for joint sealants evidencing compliance with requirements, mfr's color charts and warranties.

**PRODUCTS:**

Compatibility: Provide joint sealants, joint fillers and other related materials that are compatible with one another and with joint substrates under service and application conditions, as demonstrated by testing and field experience.

Colors: Provide color of exposed joint sealants indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated, complying with ASTM C 920 requirements.

One-Part Non-sag Urethane Sealant for Use NT: Type S; Grade NS; Class 25; and Uses NT, M, A, and O.

Sealant Backings, General: Nonstaining, compatible with joint substrates, sealants, primers and other joint fillers; approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

Plastic Foam Joint-Fillers: Preformed, compressible, resilient, nonwaxing, non-extruding strips of plastic foam of material indicated below, and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

Either flexible, open-cell polyurethane foam or nongassing, closed-cell polyethylene foam, unless otherwise indicated, subject to approval of sealant manufacturer.

Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing bond between sealant and joint filler or other materials at back of joint.

Primer: As recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

EXECUTION:

General: Comply with joint sealant manufacturers' instructions applicable to products and applications indicated.

Elastomeric Sealant Installation Standard: Comply with ASTM C 962.

JOINT SEALER SCHEDULE:

JOINT SEALER	DESCRIPTION OF JOINT CONSTRUCTION AND LOCATION WHERE JOINT SEALANT IS TYPICALLY APPLIED
One-Part Urethane Sealant Traffic (NT)	Exterior and interior joints in vertical surfaces of concrete and masonry; between concrete and masonry; between concrete; between metal and concrete; interior and exterior overhead joints.

Install joint sealants indicated in joints fitting descriptions and locations listed, as well as in locations identified on Drawings.

END OF SECTION 07900

**SECTION 09900 - PAINTING**

**GENERAL:**

Summary: Work of this Section includes surface preparation and painting of:

Exterior brick masonry.

Submittals: Product data for each paint system indicated, including mfr's technical information.

Quality Assurance: Applicator qualifications shall include a firm experienced in applying paints whose work has resulted in a record of successful performance.

**PRODUCTS:**

Materials for priming coats, undercoating and finish coat shall be first line products manufactured by producer of choice, subject to compliance with requirements.

Products for priming coats, undercoating and finish coat shall be of the same mfr.

Delivery and Storage: Deliver materials to job site in new, original, and unopened containers bearing manufacturer's name, trade name, and label analysis. Store as indicated in accordance with manufacturer's instructions.

**SURFACE PREPARATION:**

Perform preparation and cleaning procedures in strict accordance with coating manufacturer's instructions for each substrate condition.

Remove hardware and accessories, and similar items in place and not to be painted, or provide surface-applied protection. Reinstall removed items and remove protective coverings at completion of work.

Prepare masonry surfaces and similar materials to be painted by removing efflorescence, chalk, dust, dirt, grease and oils. Do not paint over surfaces where alkalinity or moisture content exceeds manufacturer's recommendations.

Filling of holes, cracks, etc. shall be done after first coat of primer or finish. Fill all holes flush with adjoining surfaces in neat and workmanlike manner.

**APPLICATION:**

Protection: All window glass, metal and painted surfaces to remain, and solar collection panel shall be protected during painting using polyethylene, liquid-strippable masking agent, or other proven protective.

Job Conditions: Do not apply paint in snow, rain, fog or mist, or when relative humidity exceeds 85%, or when the temperature is above or below manufacturer's recommendations. Do not apply paint to damp or wet surfaces.

Protection: Protect work of other trades. Correct any painting related damages by cleaning, repairing or replacing, and refinishing.

Material Preparation: Mix, prepare, and store painting and finishing materials in accordance with manufacturer's directions.

Apply painting and finishing materials in accordance with manufacturer's directions. Use applicators and techniques best suited for materials and surfaces to which applied.

Apply additional coats when undercoats, stains or other conditions show through final paint coat, until paint film is of uniform finish, color and appearance.

Apply each material at not less than manufacturer's recommended spreading rate, to provide a total dry film thickness of not less than 4.0 mils for entire coating system of prime and finish coats for 3-coat work.

Completed work shall be uniform, of approved color, smooth and free of sags, runs, defective brushing and clogging. Make edges of paint adjoining other materials or colors sharp, clean and without overlapping.

Clean-up: Remove all paint spots from finished surfaces and leave job site in a clean, orderly and acceptable condition.

#### PAINT SCHEDULE:

The kinds and numbers of coats on the various surfaces shall be as follows:

Finish No. 1: Exterior Brick Masonry / Painted

Primer: 1 coat "SW" Loxon Masonry Primer.

Finish: 2 coats "SW" A-100 Exterior Latex Satin.

Colors shall be as selected by the Architect.

END OF SECTION 09900