Contract 95117 - PO3-91004

Seppmann Mill Wall Repair, Minneopa State Park

I hereby certify that the following specification was prepared by me and that I am a duly registered architect under the laws of the State of Minnesota.

Robert C. Mack / Reg. No. 11981
June 1, 2016

SECTION 013591 - HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general protection and treatment procedures for designated historic spaces, areas, rooms, and surfaces in Project.

1.2 DEFINITIONS

A. Consolidate: To strengthen loose or deteriorated materials in place.

B. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Architect.

C. Remove: To take down or detach a nonhistoric item located within a historic space, area, or room, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

D. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

E. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

F. Salvage: To protect removed or dismantled items and deliver them to Owner[**ready for reuse**].

G. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.

H. Strip: To remove existing finish down to base material unless otherwise indicated.

1.3 PROJECT MEETINGS FOR HISTORIC TREATMENT

A. Preliminary Historic Treatment Conference: Before starting historic treatment work, **conduct** conference at **Project site**.
   1. Agenda: Discuss items of significance that could affect progress of historic treatment work, including review of the following:

      a. Fire-prevention plan.
      b. Governing regulations.
      c. Areas where existing construction is to remain and the required protection.
      d. Hauling routes.
      e. Sequence of historic treatment work operations.
      f. Storage, protection, and accounting for salvaged and specially fabricated items.

g. Existing conditions, staging, and structural loading limitations of areas where materials are stored.

2. Reporting: **Record** conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.

1.4 INFORMATIONAL SUBMITTALS

A. Historic Treatment Program: Submit 1**0 days** before work begins.

B. Fire-Prevention Plan: Submit 1**0 days** before work begins.

1.5 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: An experienced firm regularly engaged in historic treatments similar in nature, materials, design, and extent to this work as specified in each section.

B. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail the materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate this whole-Project historic treatment program with specific requirements of programs required in other historic treatment Sections.

C. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-prevention devices during each phase or process.

D. Safety and Health Standard: Comply with ANSI/ASSE A10.6.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION, GENERAL

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.

1. Use only proven protection methods, appropriate to each area and surface being protected.
2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where historic treatment work is being performed.
3. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
4. Protect floors and other surfaces along hauling routes from damage, wear, and staining.

B. Temporary Protection of Historic Materials:

1. Protect existing historic materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Architect.

3.2 PROTECTION FROM FIRE

A. General: Follow fire-prevention plan and the following:

1. Comply with NFPA 241 requirements unless otherwise indicated. **Perform duties titled "Owner's Responsibility for Fire Protection."**
2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.

    a. If combustible material cannot be removed, provide fire blankets to cover such materials.

3. Prohibit smoking by all persons within Project work and staging areas.

B. Fire Extinguishers, Fire Blankets, and Rag Buckets: Maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire-watch personnel are trained in fire-extinguisher and blanket use.

3.3 GENERAL HISTORIC TREATMENT

A. Have historic treatment work performed only by qualified historic treatment specialists.

B. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.

C. Perform surveys of Project Site as the Work progresses to detect hazards resulting from historic treatment procedures.

D. Follow the procedures in subparagraphs below and procedures approved in historic treatment program unless otherwise indicated:

1. Retain as much existing material as possible.
2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.

E. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by Architect.

F. Where missing features are indicated to be repaired or replaced, provide work with appearance based on accurate duplications rather than on conjecture, subject to approval of Architect.

G. Where work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

H. Identify new and replacement materials and features with permanent marks hidden in the completed Work to distinguish them from original materials. Record a legend of identification marks and the locations of the items on record Drawings.

END OF SECTION 013591

SECTION 041000 – MASONRY REPAIRS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Stone infill of voids in existing stone wall.

1.2 DEFINITIONS

A. Rebuilding (Setting) Mortar: Mortar used to set and anchor masonry in a structure, distinct from pointing mortar installed after masonry is set in place.

1.3 QUALITY ASSURANCE

A. Stone Repair Specialist Qualifications: Engage an experienced stone repair firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience in only installing standard unit masonry or new stone masonry is insufficient experience for stone repair work.

B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging stonework. Include provisions for supervising performance and preventing damage.

C. Submittals
1. Stone: Submit sample showing full range of colors, textures, and finishes
2. Sand: Submit sample showing full range of colors, shapes, and sizes
3. Mortar: Submit "hamburger patty" shaped sample showing color and texture

1.4 FIELD CONDITIONS

A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 STONE MATERIALS

A. Stone Matching Existing: Natural building stone of variety, size, and shape that match existing stone.
   1. For existing stone that exhibits a range of colors, texture, grain, veining, finishes, sizes, or shapes, provide stone that proportionally matches that range rather than stone that matches an individual color, texture, grain, veining, finish, size, or shape within that range.

B. Cutting New Stone: Cut each new stone so that, when it is set in final position, the rift or natural bedding planes will match the rift orientation of existing stones.

2.2 MORTAR MATERIALS

A. Masonry Cement: ASTM C 91/C 91M.

B. Mortar Sand: ASTM C 144.

   1. For existing stone that exhibits a range of colors, texture, grain, veining, finishes, sizes, or shapes, provide stone that proportionally matches that range rather than stone that matches an individual color, texture, grain, veining, finish, size, or shape within that range.

C. Water: Potable.

2.3 ACCESSORY MATERIALS

A. Setting Buttons and Shims: Resilient plastic, nonstaining to stone, sized to suit joint thicknesses and bed depths of stone units, less the required depth of pointing materials unless removed before pointing.

B. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:

   1. Previous effectiveness in performing the work involved.
   2. Minimal possibility of damaging exposed surfaces.
   3. Consistency of each application.
   4. Uniformity of the resulting overall appearance.
   5. Do not use products or tools that could leave residue on surfaces.

2.4 MORTAR MIXES

A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

B. Do not use admixtures in mortar unless otherwise indicated.

C. Mixes: Mix mortar materials in the following proportions:

1. Rebuilding (Setting) Mortar by Property: ASTM C 270, Property Specification, Type N unless otherwise indicated; with cementitious material limited to portland cement and lime or masonry cement.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Stabilize existing masonry wall by infilling void using natural stone.

B. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified

3.2 STONE REMOVAL

A. At locations indicated, remove stone that has deteriorated or is damaged beyond repair. Carefully remove entire units from joint to joint, without damaging surrounding stone, in a manner that permits replacement with full-size units. It is recognized that the voids are irregular and that the areas to receive replacement material will remain irregular.

B. Support and protect remaining stonework that surrounds removal area.

C. Maintain lintels and adjoining construction in an undamaged condition.

D. Notify Owner of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing stone backup, rotted wood, rusted metal, and other deteriorated items.

E. Clean stone surrounding removal areas by removing mortar, dust, and loose particles in preparation for stone replacement.

3.3 MASONRY REPLACEMENT

A. Install replacement materials into bonding and coursing pattern of existing stone.

1. Maintain joint width for replacement stone to match existing joints. It is recognized that the existing joints are irregular and that the repair work will also be irregular.
2. Use setting buttons or shims to set stone accurately spaced with uniform joints.

B. Set replacement materials with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter vertical joints for full width before setting, and set units in full bed of mortar unless otherwise indicated.

1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing stonework.
2. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.

C. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

D. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint joints.

3.4 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed stone surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray.

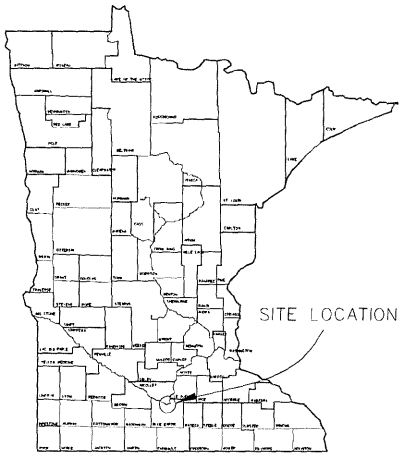
1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

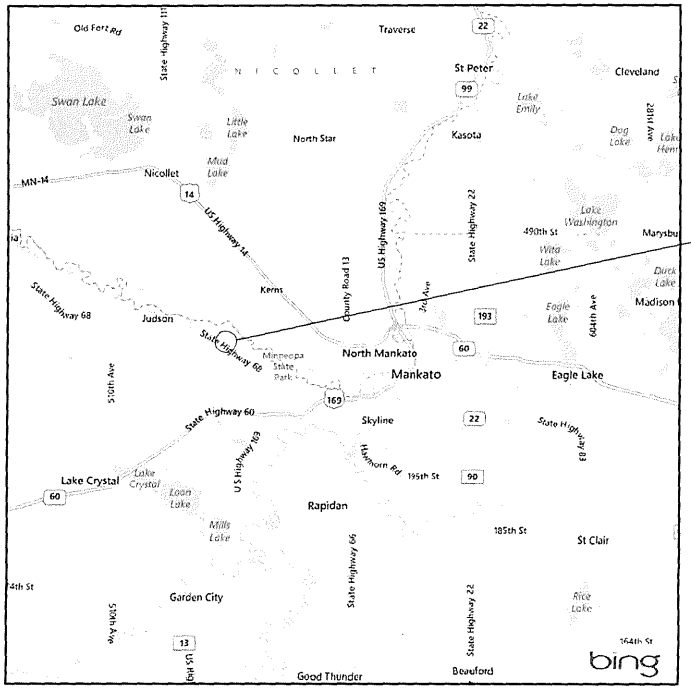
END OF SECTION 041000

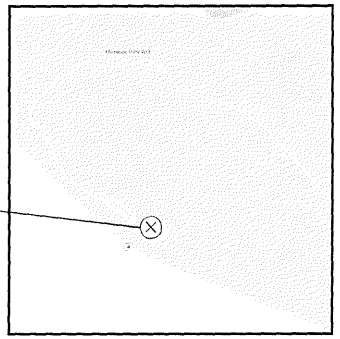
MINNESOTA DEPARTMENT OF NATURAL RESOURCES - DIVISION OF PARKS AND TRAILS

MINNEOPA STATE PARK
SEPPMANN MILL

SHEET INDEX







CALL BEFORE YOU DIG
GOPHER STATE ONE CALL
811

Olson & Nesvold Engineers, P.S.C.
7825 Washington Ave. S., Suite 100
Bloomington, MN 55439-2431

VERIFY ALL DIMENSIONS AND LOCATIONS ON THE JOB. REPORT ALL DISCREPANCIES TO MANAGEMENT RESOURCES

DO NOT SCALE DRAWINGS

Approval

Division of Parks and Trails Date

Operations Services Division Date

Minnesota DEPARTMENT OF NATURAL RESOURCES

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

Name: Steven A. Olson Reg. Number: 21838

STEVEN A. OLSON

Date: 6.1.2016

Operations Services
Safety
Facilities
Materials
Equipment
Field Operations
Information Management

DNR Division of Parks and Trails
Seppmann Mill Wall Repair
Minneopa State Park
Blue Earth County
Section: 20 Township: 108 N Range: 27 W
Near Mankato

Revisions

Date	By

Title: TITLE SHEET

Survey:
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Checked:
Horz datum: Assumed

Designed: SAO 03/16
Drawn: DPC 03/16
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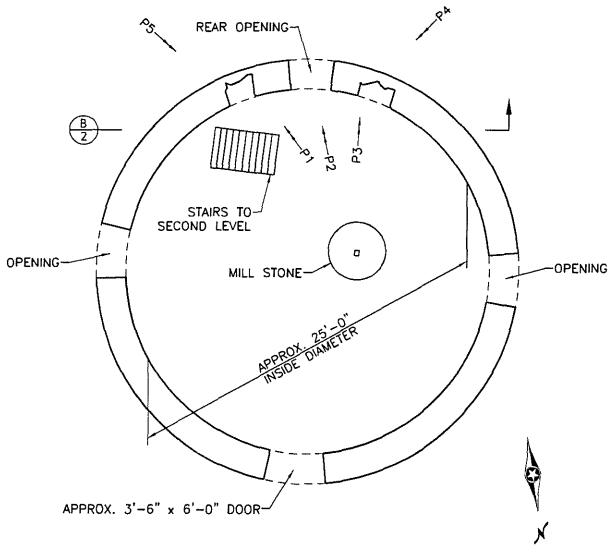
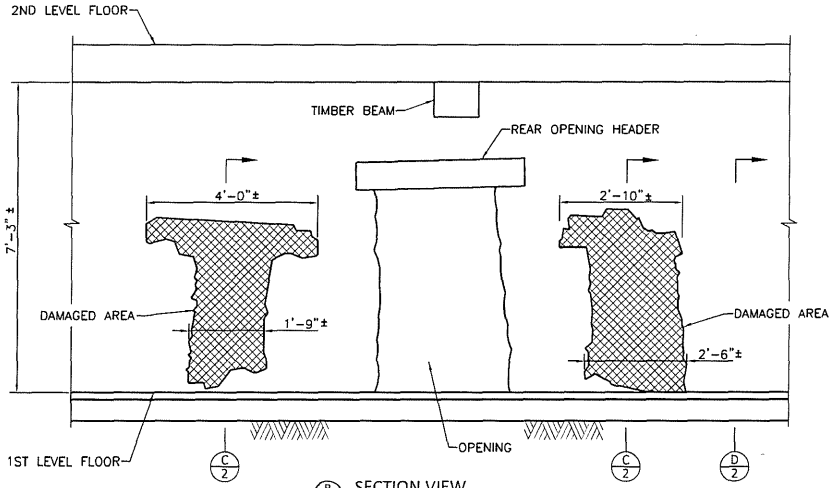


A/2 PLAN VIEW AT LOWER LEVEL



B/2 SECTION VIEW

NOTES:

SEE SPECIAL PROVISIONS FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

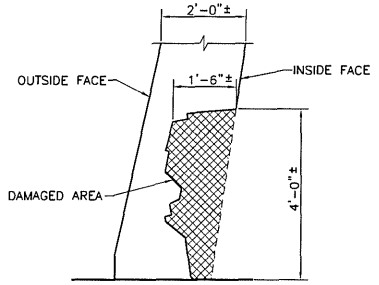
THE SEPPMANN MILL IS ON THE NATIONAL REGISTER OF HISTORIC PLACES. REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH THE SECRETARY OF THE INTERIOR STANDARDS.

THE INSIDE OF THE MILL HAS CONTAINED BATS. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

WOOD COMPONENTS INSIDE THE MILL ARE IN VARIOUS CONDITIONS. STRUCTURAL SUPPORT FOR THE UPPER FLOORS IS COMPROMISED. STRUCTURAL SUPPORT FOR THE WOOD FLOOR AT THE EDGES OF THE GROUND FLOOR IS ALSO COMPROMISED. THE CONTRACTOR MAY NEED TO TEMPORARILY SHORE ELEMENTS TO PERFORM THE WALL REPAIRS.

THE OLSON & NESVOLD ENGINEERS STRUCTURAL EVALUATION REPORT DATED AUG. 22, 2014 IS AVAILABLE FROM THE STATE OF MINNESOTA, DEPARTMENT OF NATURAL RESOURCES.

SEE SHEET 3 FOR PICTURES P1 THROUGH P5.



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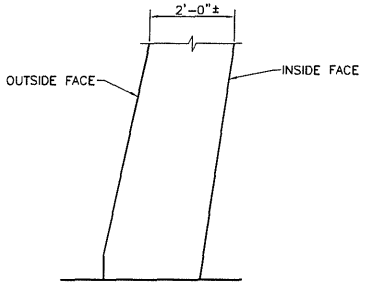

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DNR Division of Parks and Trails
Seppmann Mill Wall Repair
Minneopa State Park
Blue Earth County Near Mankato
Section: 20 Township: 108 N Range: 27 W

Revisions
Date By

Title: WALL REPAIR DETAILS
Survey:
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Horz datum: ASSUMED
Designed: SAO 04/16
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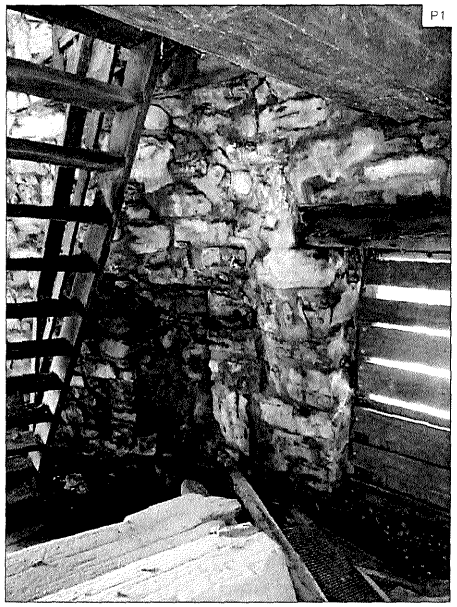
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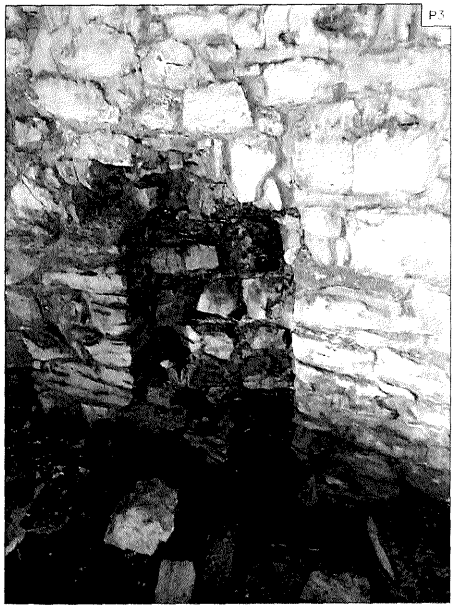
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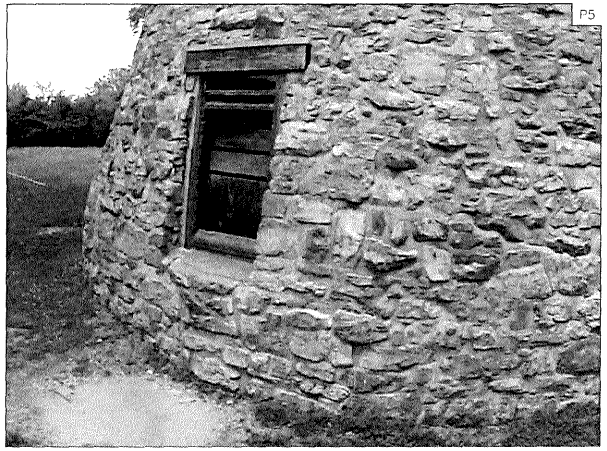
P5

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