# HAPGOOD POND RECREATION AREA
# WATER TANK REHABILITATION

# TECHNICAL SPECIFICATIONS

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# SECTION 01100
# SUMMARY OF WORK

## PART 1 - GENERAL

### 1.01 PROJECT IDENTIFICATION

Project Name and Location: Hapgood Pond Recreation Area Water Tank Rehabilitation. Located on Hapgood Pond Road, Town of Peru, Bennington County, VT.

### 1.02 SUMMARY OF WORK

A. Project Summary Description: The project includes, but is not limited to, the following major items of Work:

1. Water storage tank – Remove all sediment and pressure wash inside and out, seal holes and cracks, coat entire interior and exposed exterior of tank with cementitious coating, sanitize tank. Water tank interior dimensions are approximately 15’-4” diameter and 8’-9” deep.

### 1.03 SCHEDULE OF GOVERNMENT-FURNISHED PROPERTY

A. Government furnished property to be installed by the Contractor:
   1. None

### 1.04 MISCELLANEOUS PROVISIONS

A. The Contractor shall comply with the requirements of all permits obtained by the Government. The Contractor is responsible to pay for all inspection fees related to permits or requirements of other governing agencies, utilities, etc.

END OF SECTION

# SECTION 01200
# MEASUREMENT AND PAYMENT

## PART 1 - GENERAL

### 1.01 SUMMARY

A. This Section includes:
   1. Measurement and payment criteria applicable to the work performed under a Lump Sum payment method.
   2. Defect assessment and non-payment for rejected work.

### 1.02 AUTHORITY

A. The Contracting Officer's Representative (COR) will take all measurements and compute quantities accordingly.

### 1.03 MEASUREMENT OF QUANTITIES

A. Lump Sum Quantities (LSQ): These quantities denote one complete unit of work as required by or described in the Contract, including all necessary materials, equipment, and labor to complete the job. They will not be measured.

### 1.04 PAYMENT

A. Payment Includes: Full compensation for all required labor, products, tools, equipment, plant, transportation, services, and incidentals; erection, application, or installation of an item of the Work; overhead and profit.
   1. "Incidentals" are to be considered as an additional obligation to the other work required for the item(s). Incidental work is not payable directly, but is to be considered included in the contract price for the item(s) of work specified.
   2. All work not specifically identified as a separate bid item in Subsection 1.05 below is "Incidental".

B. The accepted quantities will be paid for at the contract unit price for each item as shown in the Schedule of Items.

C. Payment will not be made for any of the following:
   1. Products or construction placed beyond the lines and levels of the required work.
   2. Products or construction determined as unacceptable before or after placement.
   3. Products wasted or disposed of in a manner that is not acceptable.
   4. Products remaining on hand after completion of the Work.
   5. Loading, hauling, and disposing of rejected products.

### 1.05 DESCRIPTION OF ITEMS

The following information describes what specific items of work are included in each individual bid item.

01 – WATER TANK REHABILITATION

A. Description of Work: Includes sediment removal, pressure washing and inspection of tank, patching of holes and cracks, installation of interior and exterior tank coating, sanitizing tank, and incidentals. The allowance for crack and hole patching, to be included in the payment for this item, is 10 linear feet of cracks up to ¼" wide and 2 square feet x ½" deep of patching for holes, spalls, honeycombed areas, or similar areas. Contact the Contracting Office for cracks and holes in excess of these amounts.
   1. Measurement: Lump Sum (LSQ)

END OF SECTION

# SECTION 01350
# PROJECT MANAGEMENT AND COORDINATION

## 1.01 AREA USE AND OPERATIONS

A. Work Hours - Work shall be scheduled Monday through Friday, between the hours of 7:00 AM and 6:00 PM. No work is permitted on weekends or on Federal Holidays without written authorization of the COR. All work shall be completed 2 weeks before the Friday before Memorial Day or 1 week after the Monday of Colombus Day, while the campground is closed to the public.

B. Take precautions to protect Government employees and the public during the construction period. Keep gates closed and locked when workers are not present.

## 1.02 SITE UTILITIES

A. Electrical service is available at the site. The Contractor may efficiently use this electrical service for work related to this contract at no charge. Contractor shall provide electric generators or other temporary means where electric service is not readily available.

## 1.03 CONTRACTOR USE OF PREMISES

A. The Government will conduct a pre-construction survey with the Contractor to review and document the existing project conditions prior to construction.

B. Staging area – Portions of the site may be used as staging areas for contractor equipment, material storage and temporary offices. The staging areas shall be cleaned and restored to original condition upon the completion of the project. Coordinate staging area locations with the Forest Service.

C. The Contractor shall limit use of the premises to the work in areas indicated.
   1. Confine operations at the site to areas indicated. Do not disturb portions of the site beyond the areas in which Work is indicated.
   2. Repair damage caused by construction operations.
   3. Existing materials and equipment that are removed as part of the construction operations, and that are not reused or salvaged as Government property, shall become the property of the Contractor and shall be promptly removed from the site.

END OF SECTION

# SECTION 22120 - WATER STORAGE TANK REHABILITATION

## PART 1 - GENERAL

### 1.1 SCOPE OF WORK

A. Furnish all labor, materials, and incidentals required rehabilitate the existing 10,000 gallon concrete tank; including power washing, remove sediment and debris, patch holes or cracks and seal both the interior and exposed portion of the exterior concrete, and disinfect tank, as specified herein.

B. The allowance for crack and hole patching is 10 linear feet of cracks up to ¼" wide and 2 square feet x ½" deep of patching for holes, spalls, honeycombed areas, or similar areas.

C. All products and materials shall be NSF International approved for use with potable water, where applicable.

### 1.2 SUBMITTALS

A. Submit shop drawings and product data, showing materials of construction and details of installation for:

1. Product Data: Manufacturer's information, specifications, NSF certifications, and installation instructions for tank repairs and modifications. Product information to be provided shall include the following:
    1. Concrete sealing and coating materials.

### 1.3 SAFETY

A. Work will be required within the water storage tank. Contractor shall follow appropriate safety procedures, including OSHA confined space procedures. Personnel shall be properly trained in confined space entry.

## PART 2 – PRODUCTS

### 2.1 GENERAL

A. Materials shall be new, and shall conform to the specifications and requirements of AWWA, NSF, and Vermont Department of Environmental Conservation – Drinking Water and Groundwater Protection Division.

### 2.2 TANK SURFACE HOLE AND CRACK PATCHING

A. Cement based repair mortar: "Waterplug" hydraulic cement or "MasterSeal 590", NSF 61 certified for use as patching material up to 10% if the surface area in tanks 50 gallons or greater. #1006479, BASF Construction chemicals/Master Builders, Cleveland OH

### 2.3 TANK SURFACE SEALER/COATING

A. NSF approved cementitious waterproof coating for concrete: "Thoroseal" or "Masterseal 581" waterproof cement based coating, white color. Mix with Acryl 60 or MasterEmaco A 660 acrylic based polymer diluted with clean water. Apply 2 coats for a total thickness of 3 lbs/sq yd., per manufacturer's instructions and recommendations. By BASF Construction

Chemicals / Master Builders.

1. Thoroseal or Masterseal is manufactured at more than one facility. Provide white Thoroseal produced by the Newark, CA plant, as it is listed by NSF for potable water contact in tank sizes as small as 1500 gallons.

2.4 APPURTENANCES

A. Vent: The concrete storage tank has an existing vent installed. The existing vent shall be thoroughly cleaned and repainted with rust-inhibiting enamel. The vent shall have any existing screening removed and be fitted with new stainless steel screening.

B. Overflows: The concrete storage tank has an existing overflow installed. Piping shall be thoroughly cleaned and repainted with rust-inhibiting enamel. The vent shall have any existing screening removed and be fitted with new stainless steel screening.

PART 3 – EXECUTION

3.1 PREPARATION AND CLEANING

A. Contractor shall follow all confined space procedures and personnel shall be properly trained in confined space entry.

B. All necessary surface preparation, power washing, and other preparatory work as needed to rehabilitate and modify the concrete storage tank shall be completed by the Contractor at the recommendation of the product manufacturers, such that all product warranties are maintained and valid.

C. Remove all sediment and debris from the tank before concrete repair and coating.

3.2 INSTALLATION

A. Concrete repair

1. All concrete repair materials shall be ANSI/NSF approved for use in contact with drinking water.
2. All concrete repair materials shall be used in strict compliance with the manufacturer's recommendations.
3. Repair any cracks over 1/8" wide or showing white efflorescence by grinding out and installing cement mortar patching material in accordance with manufacturer's instructions.
4. Repair any holes or spalls in concrete surfaces with cement mortar patching material in accordance with manufacturer's instructions.
5. Coat entire tank interior – floor, walls, and ceiling - with cementitious surface coating material in accordance with manufacturer's instructions. Provide proper curing conditions and allow to fully cure before refilling with water.

B. Coat the exposed tank exterior surfaces, walls, top, and access lid riser, after power washing, with cementitious surface coating material in accordance with manufacturer's instructions. Provide proper curing conditions until fully cured.

3.3 TANK PATCHING

A. Patch loose, crumbling concrete areas, cracks, breaks, and voids. Sound the tank surface

with a hammer and remove and re-patch any hollow delaminated areas or loose old patches.

B. Chip back unsound, loose, spalling concrete to sound material. Prepare any cracks over 1/8" wide or showing white efflorescence by grinding out. Prevent feather edges when patching by grinding or saw cutting perimeter of areas to be patched to ¼ inch depth.

C. Prepare surface, mix patching material, prime surface, apply patching material, and cure in accordance with Manufacturer's instructions and recommendations.

3.4 TANK SEALING/COATING

A. Coat the entire tank interior, floor, walls, and ceiling. Coat only the exposed portions of the tank exterior.

B. Clean, prepare, mix, and apply per Manufacturer's instructions and recommendations.

C. Patch loose, crumbling concrete areas, cracks, breaks, and voids per section 3.3. Allow to cure before sealing

D. High-pressure water blast (min 4000 psi) all surfaces to be coated. Remove all foreign matter, dust, dirt, paint, oils, grease, laitance, or other surface contaminants.

E. Mix coating in accordance with manufacturer's written instructions.

F. Apply 2 coats by brush or spray per manufacturer's instructions. Apply coatings to achieve material thickness as recommended in writing by manufacturer. Do not apply to frozen or frost filled surfaces or when the temperature is below 40F or expected to fall below 40F within 24 hours.

3.5 DISINFECTION

A. The tank shall be disinfected in accordance with AWWA C652-11, Chlorination Method 2 and as specified herein.

B. The Contractor shall provide all labor, material, and facilities required to chlorinate the tank.

C. The chlorine solution shall be applied directly to all surfaces of the tank including the underside of the roof by spray equipment.

END OF SECTION 221219

END OF SPECIFICATIONS

Picture of Existing Water Storage Tank