



Wisconsin Department of Transportation

April 20, 2017

**Division of Transportation Systems
Development**

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NOTICE TO ALL CONTRACTORS:

**Proposal #37: 9120-09-70, WISC 2017 291
Brule River – Iron Mountain
CTH NN – Michigan State Line
USH 2
Florence County**

Letting of May 9, 2017

This is Addendum No. 01, which provides for the following:

Special Provisions:

Revised Special Provisions	
Article No.	Description
21	Salt Storage Facility Building, Item SPV.0105.01

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

Mike Coleman

Proposal Development Specialist
Proposal Management Section

ADDENDUM NO. 01

9120-09-70

April 20, 2017

Special Provisions

21. Salt Storage Facility Building, Item SPV.0105.01.

Replace entire article language with the following:

A Description

- (1) The work under this item shall consist of furnishing and installing a complete salt shed structure.
- (2) The building shall be weather tight, and suitable for the bulk storage of salt and other materials used for roadway abrasives. The design of the foundations of the building shall be provided as part of the contractor's building design, based on information obtained by means of a subsurface investigation and geotechnical analysis provided by the Department. Contact Dan Erva at 715-365-5776 to receive a copy of the report. The building design shall meet or exceed the performance and dimensional criteria and other requirements of this specification.
- (3) Definitions:
 1. The term "floor" means the exposed portion of the asphalt surface of the building site that lies within the inner building perimeter.
 2. The term "salt" means sodium chloride used to melt snow and ice from roadway surfaces.

B Materials

B.1 Description

- (1) Building Products: Meet the following minimum required standards for the products listed.
 1. Concrete
Concrete shall, if used in the building design, have a minimum compressive strength of 3,000 psi at 28 days. Provide QMP for class III ancillary concrete as specified in standard spec 716.

Note: Concrete shall not be used where it is in direct contact with salt.
 2. Concrete for Pipe Bollards
Furnish grade A, A-FA, A-S, A-T, A-IS, and A-IP concrete conforming to standard spec 501.2 as modified in standard spec 716. Provide QMP for class III ancillary concrete as specified in standard spec 716.
 3. Preservative Treated Wood
 - a. General:
 - Treat lumber as herein specified.
 - Comply with applicable American Wood Preserver's Association (AWPA) requirements.
 - All timbers to be dressed timbers.
 - All lumber to be kiln dried to a maximum moisture content of 19 percent before treatment.
 - b. Treat all above-ground lumber exposed to weather, or directly in contact with salt, with water-borne preservatives for above-ground use, complying with AWPA-LP-2 (CCA .40).
 - c. Treat load-bearing wood members placed in the ground, or encased in concrete, with below-ground water-borne preservatives complying with AWPA-LP-22 (CCA .60).

- d. Any wood components with a nominal thickness of 2-inches or less shall have a moisture content not to exceed 19 percent when installed.
4. Metal Plates and Fasteners
- a. Design metal plates and fasteners used in the building (truss bearing plates, shear plates, truss gusset plates, joist hangers, nails, bolts, nuts, washers, screws, etc.) that are in direct contact with salt, or that are exposed to an atmosphere containing salt, to resist corrosion due to such contact or exposure.
 - b. Items listed below (if used in the building) shall meet the following specific requirements:
 - Truss bearing plates, bolts, and washers: to be stainless steel.
 - Truss gusset plates: to be galvanized steel, epoxy coated.
 - Joist hangers: to be triple-zinc coated.
 - Screws and/or nails applied to CCA or CDX lumber shall be galvanized or stainless steel.

B.2 Quality Assurance

Contractor shall be responsible for the duration of construction for all products, components, accessories, and methods used in constructing the building.

The minimum printed code standard requirements of the following organizations for material quality, fabrication, and installation procedures shall be met or exceeded, for applicable methods employed in the building design:

American Institute of Steel Construction	(AISC)
American Concrete Institute	(ACI)
American Institute of Timber Construction	(AITC)
American Iron and Steel Institute	(AISI)
American Plywood Association	(APA)
American Softwood Lumber Standard: U. S. Department of Commerce PS-20	
International Building Code, current edition	(IBC)
National Design Specifications for Wood Construction	(NDS)
Truss Plate Institute standards	(TPI)
Underwriters Laboratories, Inc.	(UL)
Canadian Standards Association	(CSA)
American Standards for Testing Materials	(ASTM)
Wisconsin Comm SBS-316	

B.3 Submittals

Furnish the following information as proof of conformity to design and performance criteria requirements of this specification. The information (for both submittal phases, below) shall be stamped with the registration seal of an architect or a professional engineer, licensed in the state of Wisconsin and bearing the original stamp and signature of such architect or professional engineer.

- A. Furnish a complete set of properly certified design drawings, indicating in detail all features of the proposed building.
- B. The submittal shall include the following information at a minimum:
 1. Complete design calculations for building and foundation work.
 2. For prefabricated structures: original working drawings, or copies of complete fabrication and erection drawings, material lists, and detailed erection instructions.
 3. Foundation work: detailed drawings for preparation and construction.

B.4 Code Compliance

Build the structure in conformance with all applicable codes. Consult the state of Wisconsin and the municipality's website for information on all adopted codes and other ordinances. The governing

building code is the 2011 Wisconsin Commercial Building Code SPS 360-366, which adopted by reference the 2009 International Building Code and companion codes. The department will submit the project documents for any required review prior to commencement of construction; however, the contractor shall be responsible to execute the construction of the building so as to achieve compliance. Provide properly stamped and signed drawings, calculations, and any required worksheets to the engineer a minimum of 8 weeks prior to the start of Salt Storage Shed construction. The engineer will forward all documents to Rick Schroeder, AIA, Funktion Design Studio, 207 Windtree Drive, Wausau, WI 54401 who will submit the building plans for review by the Wisconsin Department of Safety and Professional Services.

C Construction

C.1 Salt Storage Building Design and Performance Criteria

(1) Storage Method

Pile sides shall be enclosed by the interior barrier wall described in C.1 (2). The remaining uncontained pile sides, above the contained portion, shall be assumed to be sloped at a 32-degree angle of repose.

(2) Interior Barrier Wall

Provide a suitable interior protective barrier wall conforming to the following:

1. Barrier wall and supports to be pressure treated wood, complying with C.1 (1). No concrete to be used above grade. No matter what type barrier wall is used, exterior braces must be provided to support the wall columns and to support the loads on the wall described below.
2. Design the barrier wall to resist the weight (i. e., forces) of salt and sand assuming the following loading conditions:
 - a. Salt and sand will be stored to a contained height of twelve feet (12') against the barrier wall.
 - b. The salt and sand will further slope upwards and away from the wall toward a peak or ridge in the center of the building at a 32 degree angle of repose.
 - c. The resulting horizontal force created against the wall will be 0.719 times the weight of the sand and salt.
3. Design wall to resist salt and sand load of 100 pounds per cubic foot, to resist a horizontal impact load of 250 pounds, and to resist structural damage from abrasion by salt loading equipment.
4. Design and construct the barrier wall to require minimal maintenance. It shall be arranged for easy replacement of components by maintenance personnel without requiring the use of heavy equipment.

(3) Exterior Wall Construction

1. Provide exterior wall system or components of pressure treated wood to provide a durable weather-resistant barrier. Exposed components of wall shall be painted with either a single coat of latex wood primer followed by 2 coats of exterior solid color acrylic latex stain or a single coat of oil based wood primer followed by 2 coats of exterior solid color oil based stain. Color to be reviewed, selected and approved by the engineer from manufacture standard colors.
2. Design and construct solid enclosures around all wall bracing that is visible from outside the building. Enclosures shall be clad with siding to match the building siding and capped to prevent water entry. Provide exterior grade plywood and supplemental timber framing as required for enclosures to withstand specified design wind loads. Paint to match building color.

(4) Doors

1. Provide one unobstructed rectangular entrance opening as indicated on drawing.
 - a. In this opening, provide an upward acting sectional door (overhead) designed for 20 pounds per square foot minimum wind load. Supply and install all wood head and jamb framing and blocking as called for by door manufacturer. Door shall be a heavy duty aluminum unit, 1.75 inches thick with 3-inch heavy gauge galvanized steel tracks. Door shall be painted with a 3-coat oil-based paint system to match color

- selected for the building, color to be reviewed, selected, and approved by the engineer.
- b. Provide and install a chain hoist to provide capability for manual operation of door shall.
 - c. Electric door operator shall be jack shaft, side mounted, model as recommended by door manufacturer for door size and lift condition, with standard hardware operable both from inside and outside of building. Door shall be 240V, single phase.
2. In the wall adjacent to the main entranceway, furnish and install one 3'-0" x 7'-0" exterior grade fiberglass swing-out pass door with jambs and hardware, color to be reviewed, selected and approved by the engineer from the manufacture standard colors. Doors shall be rated for high use and high resistance to impact. Provide heavy duty stainless steel butts, heavy duty stainless steel lever locksets, stainless steel kickplate and weatherstripping.
- (5) Pipe Bollards
Furnish and install four pipe bollards (two interior and two exterior) to be used as door jamb guard posts, consisting of Schedule 80 galvanized steel structural pipe, filled with concrete. Form concrete crown at top of bollard. These shall be embedded in concrete footings, and painted federal safety yellow with a 3-coat epoxy paint system (primer plus two finish coats). Painting shall extend the length of the pipe to the surface of the footing.
- (6) Roofing System (General)
Provide materials and surface finishes conforming to the guarantee specified below, requiring minimum maintenance and conforming to, or exceeding, the Underwriters' Laboratories, Inc. Class C rating requirements (labels are not required). Unprotected aluminum or bare steel surfaces are not acceptable.
1. Type: Prefabricated or site-built, complete with all necessary accessories, fastening devices, trim, and flashings
 2. Drainage: Positive slope; no standing water.
 3. Strength: Comply with structural criteria specified on drawings.
 4. Wind Resistance: 60 pounds per square foot (uplift) for adhesive applied products, UL Standard 997 for shingle type products.
 5. Compatibility: All materials to be physically and chemically compatible with each other and with adjacent building components.
 6. Products:
 - a. Metal roofing shall consist of 29 gauge galvanized coated steel panels, with color matched fasteners, carrying a manufacturer's warranty of 30 years, color to be reviewed, selected, and approved by the engineer from manufacturer standard colors. Acceptable products are GrandRib 3 Plus by Fabral with Enduracote finish, Stormproof by MBCI with Signature 200 paint system, Max Rib by McElroy with siliconized polyester paint system, or equivalent.
 - b. Roofing felt base underlayment shall be 30 pounds, asphalt coated.
 - c. Sheathing shall be APA rated, 5/8-inch thick nominal, CDX plywood roof sheathing. In no case shall metal roofing be applied directly to trusses.
- (7) Ventilation
Provide suitable openings located at or near the highest point of the roof to provide a minimum ratio of 1 square inch of free air area for each 55 square feet of building floor area.
- (8) Translucent Panels
Provide 4'-0" high, minimum, polycarbonate translucent roof panels.

C.2 Installation and Erection

- (1) Provide all required footings, foundations, and/or other required substructures or supports at the required elevations on properly prepared subgrade, as required for the erection of the complete storage building.

(2) Foundations shall be of size and depth required to resist frost action.

D Measurement

The department will measure Salt Storage Facility Building as a single lump sum unit of work, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.01	Salt Storage Facility Building	LS

Payment is full compensation for foundation, walls, roof, excavation, backfill, concrete reinforcing, metals, doors, and accessories.

END OF ADDENDUM