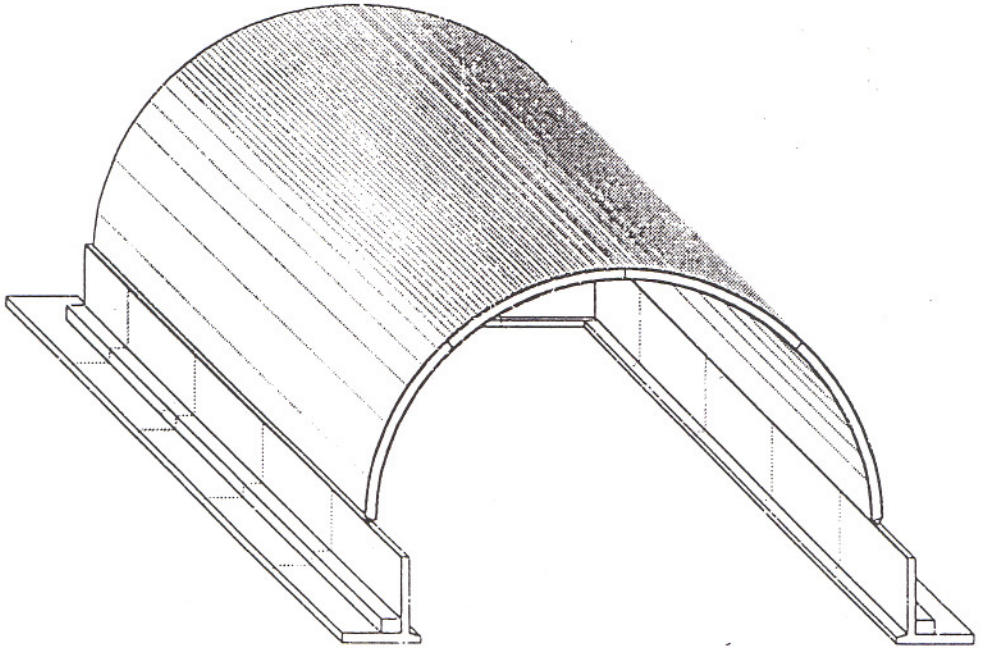


Zeiser Wilbert Vault, Inc. Salt Storage Shed



Zeiser Wilbert Vault, Inc.
750 Howard Street
Elmira, NY 14904
(607) 733-0568
Contact: Bob Warner, Jeremy Sherman
Chuck Kottwitz

Salt Storage Bin Manufacturing & Use Specification

Part 1 – General

1.1 References

- A. ACI 318 – building code requirements for reinforced concrete
- B. ACI Manual of Concrete Practice – parts 1 through 5
- C. Manual of Standard Practice – concrete reinforcing steel institute
- D. PCI Design Handbook – precast & pre-stressed concrete
- E. Hunt Engineers completed all of the design work on this system

1.2 Manufacture's Qualification

- A. Over 50 years of continually serving the surrounding community with quality precast concrete.
- B. National Precast Concrete Association (NPCA) certified precast manufacturing facility. Implementing un-announced annual inspections of our facility to double check quality control procedures and continued effective training of our employees.

Part 2 – Manufactured For The Following Uses

2.1 Commercial/Industrial

- A. Storage Containment Units
 - Road Salt
 - Sand
 - Mix of Salt/Sand

2.2 Other Uses

- A. This system can be used for additional storage units to meet the needs of the customer. Options may be discussed with the producer.

Part 3 – Mix Design & Materials Used

3.1 Materials Used

- A. Cement Lafarge, Great Lakes Region, Type III
- B. Aggregate Dalrymple – 6-21 G
 Test # 88AG 18C
 Test # 87 AF 137
- C. Re-Bar ASTM A615-87 Grade 60

- D. Admixture Master Builders
Glenium 3030 – Water Reducer
MBVR – Air Entraining Agent
Pozzolith 122 HE – High Early
Rheocrete CNI – Rust Inhibitor

3.2 Mix Design / Cubic Yard

- A. Cement 590 Lbs.
- B. Fine Aggregate 1415 Lbs.
- C. Coarse Aggregate 1530 Lbs.
- D. Admixtures Glenium 3030 – 30-40 Oz.
MBVR – 10-12 Oz.
Pozzolith 122 HE – 60 Oz.
Rheocrete CNI – 64 Oz.
- Water 200 Lbs. (max.)

3.3 Water Cement Ratio

- A. Cement = 590
B. Water = 210
C. Ratio = .36

3.4 Yield Per Batch

- A. The above listed batch yields 5000 psi @ 28 days.

Part 4 – System Design and Erection

- 4.1 Zeiser Wilbert Vault's precast salt storage bins come in four sizes:
- 32' across the entrance face
 - 42' across the entrance face
 - 55' across the entrance face
 - 72' across the entrance face
- 4.2 ZWV supplies the crane and crew required to install the panel wall system. The crew has been trained for the installation requirements.
- 4.3 After installation is complete our men post tension the walls in the directions required by the design. The joints can be sealed if required.

Part 5 – The Precast Advantage

5.1 Ease of installation

- ZWV's panel system does not require a poured foundation and anchor bolt system. It is a self-supporting system as designed by Hunt Engineers.
- There is minimal field preparation. A level surface must be picked out for placement of this system. The contractor should then prepare a "U" shaped sand pad before the delivery date. This can be accomplished by boxing in the area where the structure will set, to the dimensions given on the drawings, using simple wood framing. This gives ZWV a guide line to follow for setting the wall sections in place and offers a level surface for the structure to set on. Once the prep work is finished it takes approximately 1-2 days for placement depending on the structure size.
- ZWV will be holding wall system panels in our yard. This offers the contractor a very fast turn around on getting the storage bin up and running once the bid has been awarded.

Part 6 – Storage Volume Calculation

6.1 See Attached Excel Worksheet

Part 7 – Salt Storage Bin Dimensions

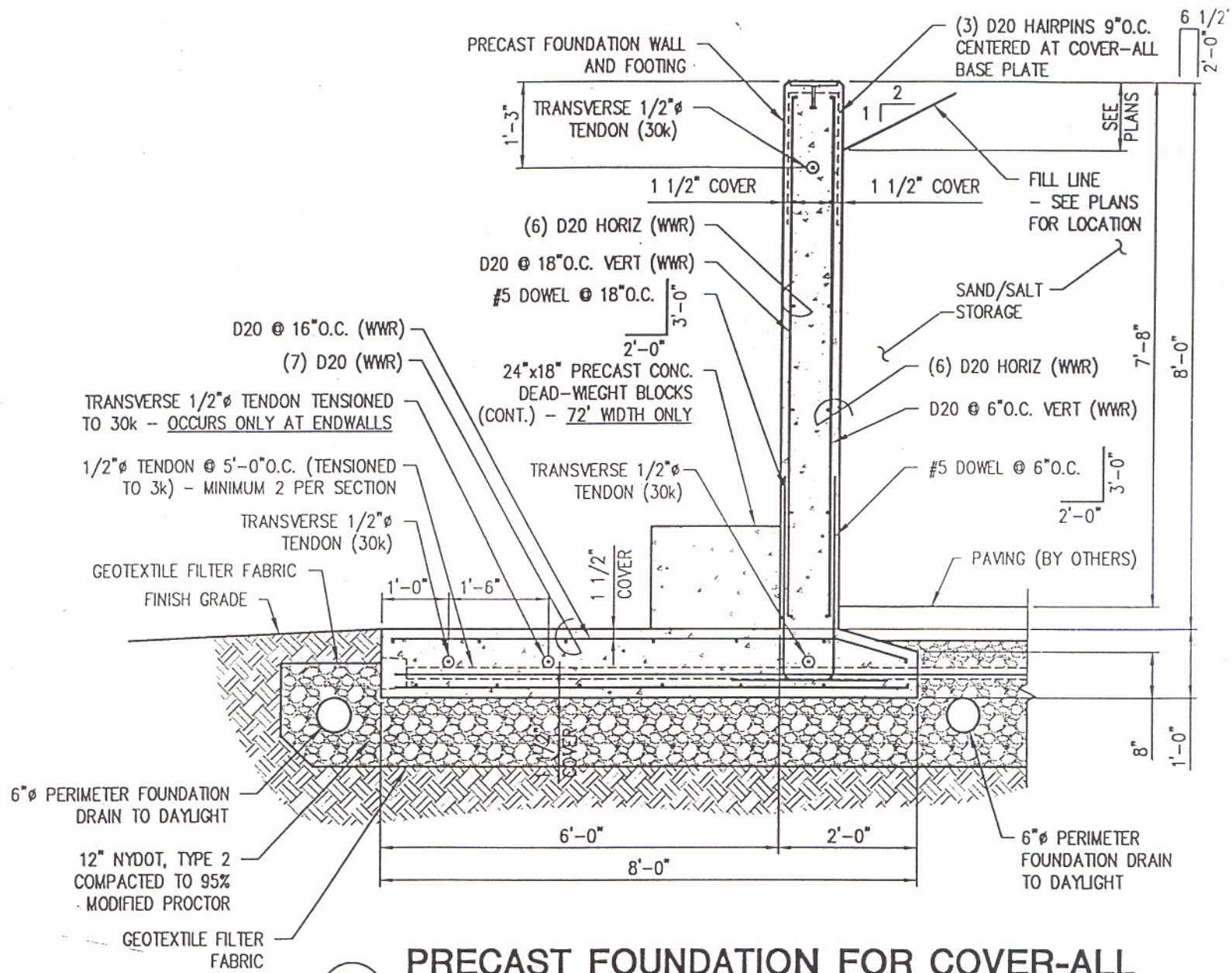
7.1 One section of the storage bin is 8'-0"

- 8'-0" wide x 9'-0" tall x 10'-0" long

7.2 See Attached Detail Sheet

Existing Salt Storage Bin Locations

- Town of Elmira
- Town of Caton



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3

PRECAST FOUNDATION FOR COVER-ALL

FOR INFORMATION ONLY

Storage Volume Calculation

32' Storage Bin

Width	32'	32'	32'	32'
Length	50'	60'	70'	80'
Depth (Fill Height)	7'	7'	7'	7'
Total	644.7 tons	803 tons	961 tons	1,119 tons

42' Storage Bin

Width	42'	42'	42'	42'
Length	50'	60'	70'	80'
Depth (Fill Height)	7'	7'	7'	7'
Total	848 tons	1,083 tons	1,319 tons	1,555 tons

55' Storage Bin

Width	55'	55'	55'	55'
Length	60'	70'	80'	90'
Depth (Fill Height)	7'	7'	7'	7'
Total	1,396.3 tons	1,754 tons	2,110 tons	2,467 tons

72' Storage Bin

Width	72'	72'	72'	72'
Length	70'	80'	90'	100'
Depth (Fill Height)	7'	7'	7'	7'
Total	2,175.3 tons	2,724 tons	3,273 tons	3,822 tons









