

**SPECIFICATIONS
FOR SCHWEITZER
BUILDING**

1.0 SCOPE

This specification covers the construction and placing of the Schweitzer style building as produced by CXT Incorporated, or approved equal.

2.0 SPECIFICATIONS

ASTM C33	Concrete Aggregates
ASTM C39	Method of Test for Compressive Strength of Cylindrical Concrete Specimens
ASTM C94	Standard Specification for Ready-Mixed Concrete
ASTM C143	Method of Test for Slump of Concrete
ASTM C150	Standard Specification for Portland Cement
ASTM A185	Standard Specification for Steel Welded Wire Reinforcement, Plain, or Concrete
ASTM C192	Method of Making and Curing Test Specimens in the Laboratory
ASTM C231	Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C309	Standard Specifications for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C494	Standard Specification for Chemical Admixtures for Concrete
ASTM A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM C979	Standard Specification for Pigments for Integrally Colored Concrete
ACI 211.1	Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
ACI 306	Cold Weather Concreting
ACI 318	Building Code Requirements Structural Concrete and Commentary (includes Errata)
PCI MNL 116	Quality Control for Plants and Production of Precast Prestressed Concrete Products

3.0 MANUFACTURER CRITERIA

The manufacturer supplying the requested precast concrete utility facility must meet the following:

- A. Manufacturer must be ISO 9001 certified at the time of bid.
- B. Manufacturer must not have defaulted on any contract within the last five years.
- C. Manufacturer must provide stamped, engineered drawings prior to acceptance.
- D. Manufacturer must be pre-approved prior to bidding.
- E. Manufacturer must show four examples of precast concrete flush facilities produced, installed, and in use as an example of their ability to perform on this contract.
- F. Manufacture shall provide a 20 year warranty.

Manufacturers meeting these criteria are:

CXT, Incorporated
Spokane Industrial Park
3808 North Sullivan Road, Building 7
Spokane, WA 99216
Phone: 800-696-5766

4.0 DESIGN CRITERIA

The Schweitzer has been designed to meet the following criteria. Calculations and Engineer's stamped drawings are available, for standard buildings, upon request by the customer and are for their sole and specific use only. The design criteria are to ensure that the Schweitzer not only will withstand the forces of nature listed below but will provide protection from vandalism and other unforeseen hazards. Design criteria include provisions of the 2006 IBC Code.

- A. **Roof Snow Load**
 - 1. The Schweitzer designed to withstand a 350 pounds per square foot snow load
- B. **Floor Load**
 - 1. The Schweitzer is designed to withstand 400 pounds per square foot floor load
- C. **Wind Load**
 - 1. The Schweitzer will withstand the effects of 150 mile per hour (3-second gust) wind exposure C

D. Earthquake

1. The Schweitzer will withstand the effects of a seismic group 1 seismic design category E earthquake.

E. Additional Design Standards

1. The Fontana is an all concrete. Design with a minimum 3/12 roof pitch
2. The Fontana shall have a minimum 4 inch wall, 4 ½ inch roof, and 5 inch floor thickness.

5.0 MATERIALS

A. Concrete - General

The concrete mix design will be designed to ACI 211.1 to produce concrete of good workability.

1. Concrete will contain a minimum of 505 pounds of cementitious material per yard cubic yard. Cement will be a low alkali type III conforming to ASTM C-150.
2. Coarse aggregates used in the concrete mix design will conform to ASTM C33 with the designated size of coarse aggregate #67.
3. Minimum water/cement ratio will not exceed .45. Slump will not exceed 5”.
4. Air-entraining admixtures will conform to ASTM C260. Water reducing admixtures will conform to ASTM C494, Type A. Other admixtures will not be used without customer approval.

B. Colored Concrete

1. Color additives will conform to ASTM C979. A 12”x12”x1” color sample will be available for customer approval.
2. The following will contain colored concrete:
 - a. Building walls
 - b. The same brand and type of color additive will be used throughout the manufacturing process.
 - c. All ingredients will be weighed and the mixing operation will be adequate to ensure uniform dispersion of the color.

C. Cold Weather Concrete

1. Cold weather concrete placement will be in accordance with ACI 306.
2. Concrete will not be placed if ambient temperature is

expected to be below 35 degrees F. during the curing period unless heat is readily available to maintain the surface temperature of the concrete at least 45 degrees F.

3. Materials containing frost or lumps of frozen materials will not be used.

D. Hot Weather Concrete

The temperature of the concrete will not exceed 95 degrees F. at the time of placement and when the ambient reaches 90 degrees F. the concrete will be protected with moist covering.

E. Concrete Reinforcement

1. All reinforcing steel will conform to ASTM A615. All welded wire fabric will conform to ASTM A185.
2. All reinforcement will be new, free of dirt, oil, paint, grease, loose mill scale and loose or thick rust when placed.
3. Details not shown of drawings or specified will be to ACI 318.
4. Steel reinforcement will be centered in the cross-sectional area of the walls and will have at least 1" of cover on the under surface of the floor and roof.
5. The maximum allowable variation for center-center spacing of reinforcing steel will be 1/2".
6. Full lengths of reinforcing steel will be used when possible. When splices are necessary on long runs; splices will be alternated from opposite sides of the components for adjacent steel bars. Lap bars #4 or smaller a minimum of 12". Lap bars larger than #4 a minimum of 24 bar diameters.
7. Reinforcing bars will be bent cold. No bars partially embedded in concrete will be field bent unless approved by the customer.

F. Sealers and Curing Compounds

1. Curing compounds, if used, will be colorless, complying with ASTM C309, type I or 1-D.
2. Weatherproofing sealer for exterior of building will be clear, pure acrylic water repellent penetrating sealer.

G. Caulking, Grout, Adhesive and Sealer

1. All caulking will remain flexible and non-sag at temperatures from -50 to +194 degrees Fahrenheit.
2. Interior joints will be caulked with a paintable silicone based caulk.
3. Exterior joints will be caulked with a tripolymer sealant caulk.

- which compliments the exterior color.
4. Grout will be a non-shrink type and will be painted to match the color of surrounding concrete as nearly as possible.
 5. Epoxy concrete adhesive will be two component, rigid, non-sag gel adhesive for bonding to dry or damp surfaces, moisture insensitive.
 6. Portland cement mortar will consist of one part Portland cement, three parts sand and enough water to make workable mixture.

H. Paint

1. All paints and materials will conform to all Federal specifications or be similar “top-of-the-line-components”. Paints will not contain more than .06 percent by weight of lead.
2. Type of paints for buildings.
 - a. Inside concrete surfaces
 - I Interior floors will be a 1-part water based epoxy with a silica sand suspension to provide uniform texture. The color will be gray.
 - II Interior walls and ceilings will be a modified acrylic penetrating pigment. The color will be white.
 - b. Metal surfaces both inside and out
 - I DTM enamel
 - c. Exterior concrete surfaces
 - I Exterior walls and roof will be a pure acrylic water repellent penetrating stain in the same color as the walls or roof followed by a clear acrylic anti-graffiti sealer.

I. Steel Doors

1. Doors will be flush panel type 1-3/4” thick, minimum 16 gauge prime coated steel panels with minimum 12 gauge internal bracing channels with polystyrene core. Door size to be 3068 single door.
2. Door frames will be knockdown or welded type, single rabbet, minimum 16-gauge prime coated steel, width to suit wall thickness. Three (3) rubber door silencers will be provided on latch side of frame.

J. Door Hinges

Door hinges will be 3 per door with dull chrome plating 4-1/2”x4-1/2”, adjustable tension, automatic-closing for each door.

K. Lockset

1. Lockset will be a deadbolt with US 26D chrome finish. Lockset will be Schlage D70PD PLY 626 or equivalent.
2. Upper surface bolt will be a Stanley 1088 with bright zinc finish and 6 ½” bolt strike, pad lockable.¹
3. Lower surface bolt will be a Stanley 1088 with bright zinc finish and 6 ½” bolt strike, pad lockable.¹
4. Dead bolt will be a Lori Lock standard model with a double cylinder 2 ¾” backset, and US26D finish. The cylinder will be a standard 1 1/8” – 1 ¾” Schlage Mortise cylinder with compression ring and 626 finish.

L. Threshold

An extruded aluminum threshold, Pemco #170 or equal.

M. Door Sweep/Seal

Door sweep/seal will be Pemco #420ASL.

N. Wall Vents

Wall vent will be crank operated allowing the unit to be opened or closed. Crank will be removable. Vent cover will be 14 gauge 304 stainless steel painted with DTM and anchored into the concrete wall with high strength anti-rust tap con fasteners. Vent to come with insect screen. Cover to be recessed a minimum ¾” on exterior walls with a 45 degree bevel. Interior to be flush mounted. Wall vent will not protrude from the wall.

O. Optional Windows

1. Window frames will be constructed from steel.
2. Window glazing will be 3/16” thick translucent pebble finished mar-resistant Lexan.
3. Windows to have ¾” recess with 45 degree bevel.
4. Window frames to have vandal resistant fasteners.

6.0 MANUFACTURE

A. Mixing and Delivery of Concrete

Mixing and delivery of concrete will be in accordance with ASTM C94, section 10.6 through 10.9 with the following additions.

1. Aggregate and water will be adjusted to compensate for differences in the saturated surface-dry condition.
2. Concrete will be discharged as soon as possible after mixing is complete. This time will not exceed 30 minutes.

B. Placing and Consolidating Concrete

Concrete will be consolidated by the use of mechanical vibrators. Vibration will be sufficient to accomplish compaction but not to the point that segregation occurs.

C. Finishing Concrete

1. Interior floor and exterior slabs will be floated and troweled until all marks are removed. A light broom finish will be applied to the exterior slabs.
2. All exterior building walls and exterior screen walls will be any one of available textures
3. All exterior surfaces of the roof panels will be any one of available textures. The underside of the overhang will have a smooth finish.

D. Cracks and Patching

1. Cracks in concrete components which are judged to affect the structural integrity of the building will be rejected.
2. Small holes, depressions and air voids will be patched with a suitable material. The patch will match the color, finish and texture or the surrounding surface.
3. Patching will not be allowed on defective areas if the structural integrity of the building is affected.

E. Curing and Hardening Concrete

1. Concrete surfaces will not be allowed to dry out from exposure to hot, dry weather during initial curing period.

7.0 FINISHING AND FABRICATION

A. Structural Joints

1. Wall components will be joined together with two welded plate pairs at each joint. Each weld plate will be 6" long and located one pair in the top quarter and one pair in the bottom quarter of the seam. Weld plates will be anchored into the concrete panel and welded together with a continuous weld. The inside seams will be

- a paintable caulk. The outside seams will use a caulk in a coordinating building color or clear.
2. Walls and roof will be joined with weld plates, 3"x6", at each building corner.
 3. The joint between the floor slab and walls will be joined with a grout mixture on the inside, a matched colored caulk on the outside and two weld plates 6" long per wall.

B. Painting/Staining

1. An appropriate curing time will be allowed before paint is applied to concrete.
2. Some applications may require acid etching. A 30% solution of hydrochloric acid will be used, flushed with water and allowed to thoroughly air dry.
3. Painting will not be done outside in cold, frosty or damp weather.
4. Painting will not be done outside in winter unless the temperature is 50 degrees F. or higher.
5. Painting will not be done in dusty areas.
6. Schedule of finishes
 - a. Inside concrete surfaces
 - I Inside floors will be 1 coat of 1-part water based epoxy with a silica sand suspension to provide uniform texture.
 - II Interior walls and ceilings will be 2 coats of a modified acrylic penetrating pigment, followed by 1 coat of clear sealer.
 - b. Metal surfaces both inside and out
 - I 2 coats of DTM enamel
 - c. Exterior concrete surfaces
 - I Exterior walls will be 2 coats of pure acrylic water repellent penetrating stain in the same color as the walls or roof followed by 1 coat of clear acrylic anti-graffiti sealer.

8.0 TESTING

A. The following tests will be performed on concrete used in the manufacture of buildings. All testing will be performed in the CXT (PCI certified) laboratories. Testing will only be performed by qualified individuals who have been certified ACI Technician Grade 1. Sampling will be in accordance with ASTM C172.

1. The air content of the concrete will be checked per ASTM C231 on the first batch of concrete. The air content will be in the range of 4.5% +/- 1.75%.
2. The compressive strength of the cylinders will be tested to ASTM

C39. We will make one (1) cylinder for release, one (1) for 7 days and one (1) for 28 days. The release must be a minimum strength of 2500 psi, the 7-day must be a minimum of 4000 psi and the 28-day must be a minimum of 5000 psi.

3. A copy of all test reports will be available to the customer as soon as 28-day test results are available.

9.0 INSTALLATION

A. Scope of Work

Work specified under this Section includes excavation, backfill and placement of precast concrete vault toilet.

B. Placement

The floor of the building should be the high spot in the site chosen. The floor should be above the surrounding ground level with the pathway sloped up to meet the entryway. This will help prevent water drainage in the building.

C. Excavation

The hole dug to accommodate the fill for the base must be large enough to be workable and allow the floor of the building to fit on the fill for the base when placed.

D. Compacting

The bottom of the area must be compacted after it has been dug out. After the base has been placed, it must be compacted as well. The bearing of the soil and base should be a minimum of 1,500 pounds per square foot.

E. Base

After compacting the bottom of the area, a minimum of 6" of a compacted, ¾" minus material base of gravel (i.e. road base) should be placed for support, leveling and drainage purposes. The base also limits frost action. The base must be confined so as to prevent washout, erosion or any other undermining.

F. Access to Site

Delivery to site made on normal highway trucks and trailers. If at the time of delivery conditions of access are hazardous or unsuitable for truck and equipment due to weather, physical constraints, roadway width or grade, CXT may require an alternate site with better access provided to ensure a

safe and quality installation. In any such case, additional costs for cranes, trucking, etc. will be charged to the account of the customer.

10.0 WARRANTY—PRECAST DIVISION

CXT provides a warranty against defects in material or workmanship for a period of twenty (20) years on all concrete components. The warranty is valid only when concrete is used within the specified loadings. Furthermore, said warranty includes only the related material necessary for the construction and fabrication of said concrete components. All other non-concrete components will carry a one (1) year warranty. CXT warrants that all goods sold pursuant hereto will, when delivered, conform to specifications set forth above. Goods shall be deemed accepted and meeting specifications unless notice identifying the nature of any non-conformity is provided to CXT in writing within the specified warranty. CXT, at its option, will repair or replace the goods or issue credit for the customer provided CXT is first given the opportunity to inspect such goods. It is specifically understood that CXT's obligation hereunder is for credit, repair or replacement only, F.O.B. CXT's manufacturing plants, and does not include shipping, handling, installation or other incidental or consequential costs unless otherwise agreed to in writing by CXT.

This warranty shall not apply to:

1. Any goods which have been repaired or altered without CXT's express written consent, in such a way as in the reasonable judgment of CXT, to adversely affect the stability or reliability thereof;
2. To any goods which have been subject to misuse, negligence, acts of God or accidents or
3. To any goods which have not been installed to manufacturer's specifications and guidelines, improperly maintained, or used outside of the specifications for which such goods were designed.

11.0 DISCLAIMER OF OTHER WARRANTIES

The warranty set forth above is in lieu of all other warranties, express or implied. All other warranties are hereby disclaimed. CXT makes no other warranty, express or implied, including, without limitation, no warranty of merchantability of fitness for a particular purpose or use.

12.0 LIMITATION OF REMEDIES

In the event of any breach of any obligation hereunder, breach of any warranty regarding the goods or any negligent act or omission or any party, the parties shall otherwise have all rights and remedies available at law; however, **IN NO EVENT SHALL CXT BE SUBJECT TO OR LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.**