FABRICATED PRE-ENGINEERED PRECAST DUMPSTER ENCLOSURE

PRECAST CONCRETE DUGOUT
TRUCAST

SECTION 1 – GENERAL

1.1 WORK INCLUDED

Contractor shall furnish a precast concrete transportable building to be delivered and placed on owner-prepared crushed stone foundation in accordance with manufacturer's recommendations. Precast building to be Trucast Model Dugout Structure. Building shall be provided by manufacturer with all necessary openings as specified by contractor in conformance with manufacturer's structural requirements.

1.2 REFERENCES

A. ACI-318-11: Building Code Requirements for Structural Concrete and Commentary

B. ASCE/SEI 7-10: Minimum Design Loads for Buildings and Other Structures

C. IBC 2012: International Building Code

D. PCI Design Handbook, 7th Edition

E. Concrete Reinforcing Institute, Manual of Standard Practice

1.3 SYSTEM DESCRIPTION

DESIGN REQUIREMENTS

A. Building Dimensions:

Exterior:

Interior:

Design case to be selected to correspond to the design criteria indicated in the aforementioned codes for the geographical location of the project or as specified.

CASE 1: Typical

B. Design Loads:

1. Seismic Design Category 'C', Risk Design Category II
2. Floor Live Load – 250 PSF
3. Wind Loading* – 110 MPH

*Design loads relate to precast components only, not accessories (i.e. doors, windows, vents, etc.)

C. Roof, floor, and wall panels must each be produced as single component monolithic panels. No roof, floor, or vertical wall joints will be allowed, except at corners and along perimeter.

D. Floor panel must have ½" step-down around the entire perimeter to prevent water migration into the building along the bottom of wall panels.

1.4 SUBMITTALS

A. Engineering calculations that are designed and sealed by a professional engineer, licensed to practice in the state where the project is located, shall be submitted for approval.

SECTION 2 – PRODUCTS

2.1 MATERIALS

A. Concrete: Steel-reinforced, 5000 PSI minimum 28-day compressive strength, air-entrained (ASTM C260).

B. Reinforcing Steel: ASTM A615, grade 60 unless otherwise specified.
Welded Wire Fabric: ASTM 185 Grade 65

C. Post-tensioning Strand: 41K Polystrand CP50, ½" 270 KSI Seven-Wire strand, enclosed within a greased plastic sheath (ASTM A416). Precast floor shall be post-tensioned.

D. Sealant: All joints between panels shall be caulked on the exterior and interior surface of the joints. Caulking shall be DOW CORNING 790 silicone sealant or equal. Exterior caulk reveal to be 3/8"x 3/4" deep so that sides of the joint are parallel for proper caulk adhesion. Back of the joint to be taped with bond breaking tape to ensure adhesion of caulk to parallel sides of joint and not the back.

E. Panel Connections: All panels shall be welded together with 3/8" thick steel brackets. Steel is to be of structural quality, hot-rolled carbon complying with ASTM A36. All welded connections to be primed. Connection pockets to be grouted to visually hide all connections.

2.2 ACCESSORIES

A. Doors: All exterior doors to be a steel door and frame. Doors and frames to be primed and painted. Paint color to be specified by owner.

2.3 FINISHES

A. Interior of Building: Smooth trowel finish on all interior panel surfaces.

B. Exterior of Building: Form liner (i.e. brick, CMU block, etc.) to be selected by owner. Exterior finish to be coated with the following water-based acrylic concrete stain Sherwin Williams (H&C Concrete Stain) or equal. Stain to be applied per manufacturer's recommendations.

SECTION 3 – EXECUTION

3.1 SITE PREPARATION (MANUFACTURER'S RECOMMENDATION)

A. Trucast Dugout shall bear fully on a crushed stone base that is at least two feet larger than the length and width of building.

B. Stone shall be a minimum of 4” thick and down to firm subgrade. The vertical soil capacity under stone shall be compacted to have minimum bearing of 1,500 pounds per square foot. Stone shall be 3/8” or smaller and must be screeded level within ¼” in both directions. Stone shall be placed within a perimeter form with flat and level top edge for screeding. Forming material shall remain around stone until after the building is set.

C. The crushed stone base shall be kept within the confines of the soil or perimeter form. Do not allow the base to become unconfined so that it may wash, erode, or otherwise be undermined.

OR

If building is placed on pavement or a concrete slab, substrate below pavement or slab must have a vertical soil capacity of 1,500 pounds per square foot. Ensure bearing surface for building is flat and level. As required, place adequate material (stone or sand) to 1” above highest point of area where building will be placed and at least 1’-0” wide all around the building footprint. Retain stone or sand with a perimeter form to prevent the material from washing out.

D. Provide positive drainage for the fill, pad or slab as required.

3.2 SITE ACCESS

Contractor must provide a level, unobstructed area large enough for a crane and a tractor-trailer to park adjacent to the pad. Crane must be able to place outriggers within 5’-0” of edge of pad; truck and crane must be able to get side by side under their own power. No overhead lines may be within 75’ radius of center of pad. Firm roadbed with turns that allow 65’ lowbed tractor-trailer must be provided directly to site. No building shall be placed closer than 2’-0” to an existing structure unless specifically permitted.