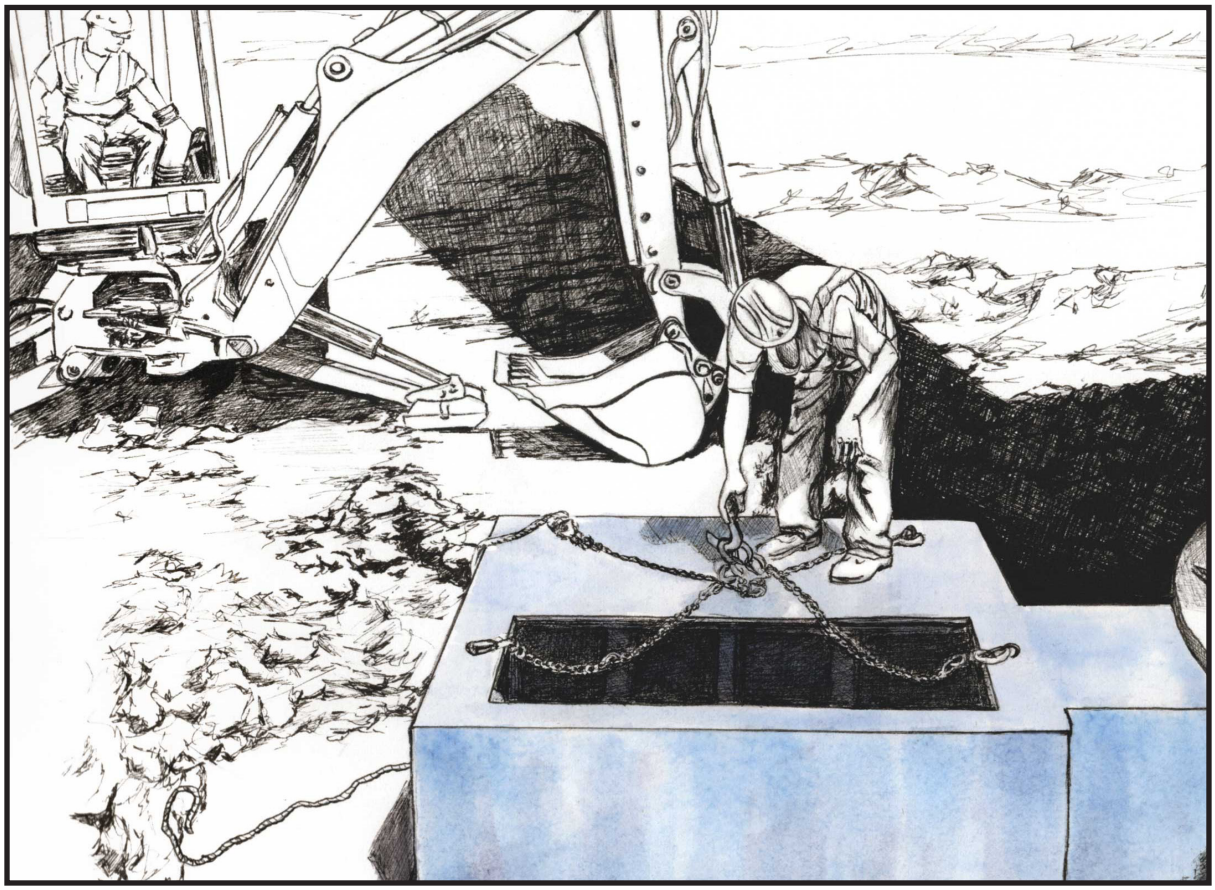
CONCAST

Fibercrete®

PRECISELY ENGINEERED HIGH STRENGTH CONCRETE



BOX PAD INSTALLATION GUIDELINES

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Box Pad Installation Guidelines

The following guideline is provided to assist in the installation of Concast Box Pads. Please read through the guideline in its entirety before beginning the installation.

Concast provides you with a CAD generated box pad PDF drawings of each unit. Review all drawings before beginning installation, as they will aid in the location and depth of excavation.

Excavation Limits and Requirements: Excavation shall be to a depth that permits preparation of a foundation as specified; the installation of the box pad unit at the prescribed line and grade. The width and length of the excavation hole shall be sufficient to permit the entire bottom surface of the box pad flange to be set level, and then the backfill to be placed and compacted as specified.

Excavation shall be extended below the bottom of the structure grade as necessary to accommodate any required granular bedding material. When rock or unsuitable foundation material is encountered at the established grade, additional materials are to be removed as specified or as directed by the soil engineer to ensure an acceptable foundation.

All excavations below grade shall be to a minimum width equal to the outside bottom flange dimensions plus 6 inches. Excavation widths shall include at least three inches of clearance on each side of the box pad bottom flange.

Box Pad Bedding: All bedding materials shall be carefully compacted into place. Bedding requirements shall include mechanical compaction of sand and gravel material when specified. A 6 inch granular base of compacted crushed rock or granular materials; at which 100% passes a 3/8 inch sieve; and a maximum of 5% passes a number 10 sieve shall be placed on compacted sub grade under the proposed box pad unit. The sub grade shall be compacted as directed by the soils engineer.

When the bottom of the excavation is soft, or where the soils engineer feels that unsatisfactory foundation conditions exist, the contractor shall over-excavate to a depth that ensures a proper foundation as directed by the soils engineer. The excavation can then be brought back up to the prescribed box pad grade with a thoroughly compacted granular material.

For a box pad requiring extra stability such as boxes used on wind farms in seismic zones, install the box pad into a lean concrete slab with a minimum thickness of nine inches. Three to six inches of the concrete slab shall be under the flanges of the box pad. The lean concrete shall have a minimum compressive strength of 3,000 PSI prior to the installation of the transformer.

It shall be the contractor's responsibility to notify the owner and soils engineer of changing soil conditions which may be of poor bearing capacity, and also when organic soils are encountered. Where box pad units are placed on unstable soils without notification, the contractor shall be solely responsible for all corrections of the installation without further compensation.

Placing of the Box Pad: Box pads, depending on weight, are either set by hand or with mechanical aid. Lifting inserts are cast into most units. If lifting from threaded inserts, thread the eyebolts or hoist rings (Concast part number 9002) all the way into the threaded inserts before lifting. Use suitable hoisting equipment to maneuver vault into place.

Box Pad Backfilling Operations: All box pad excavations shall be backfilled to restore pre-existing conditions, or to the final grade as specified by the owner. Backfill material shall be a granular type as required by the soils engineer, and shall be reasonably free of foreign materials, rubbish, debris, etc. Frozen clumps, oversized stone, rock, concrete, bituminous chunks, or other unsuitable materials may prevent a thorough compaction or increase the risk of after settlement. Backfill shall be placed to the desired grade height, but shall not cover the top surface of the box pad unit. Unless otherwise indicated on documents provided by Concast, the box pad should be placed with at least 12 inches of backfill on all sides. For installation in seismic zones, high wind zones (design wind speeds over 115 mph per the local building code), or areas with a frost depth over 12 inches; the box pad should be buried to within 6 inches of the top surface of the box pad on all sides.

Backfill should not be bulldozed into the hole or dropped directly on the box pad.

Compaction of the materials within the encasement zones of the box pad unit shall be achieved by hand or through the use of light equipment only. The use of roller type compaction equipment and heavy construction equipment should be avoided. Use of heavy equipment to compact backfill may cause damage to the box pad.

Installation Guidelines

Any damage to the box pad unit as a result of improper compaction methods will be the responsibility of the contractor. Until the final acceptance of the project, the contractor will assume full responsibility and expense for all backfill settlement. The contractor shall refill and restore the work as directed to maintain an acceptable surface condition. All additional materials required shall be furnished without additional cost to the owner.

Placing of the Electrical Equipment: Lift the electrical equipment into place onto the pad and bolt it down. Be sure to set the enclosure gently down upon the pad with even weight distribution. **Do not drop it!** For heavy equipment such as transformers, the back of the equipment (excluding the cooling fins) should be within 6 inches from the rear edge of the box pad (unless the drawings provided by Concast indicate otherwise). Electrical equipment can be attached by the following methods; cast-in threaded inserts (if provided), cast-in unistrut channel system (if provided), toggle nuts, or field-drilling.

Restoration of Surface Improvements and Final Acceptance: Whenever any surface improvements such as pavement, curbing, pedestrian walks, fencing, or turfing have been removed, damaged, or otherwise disturbed by the contractor's operations; they shall be repaired or replaced to the pre-existing condition. The repairs are to meet the owner's satisfaction.

CONCAST

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