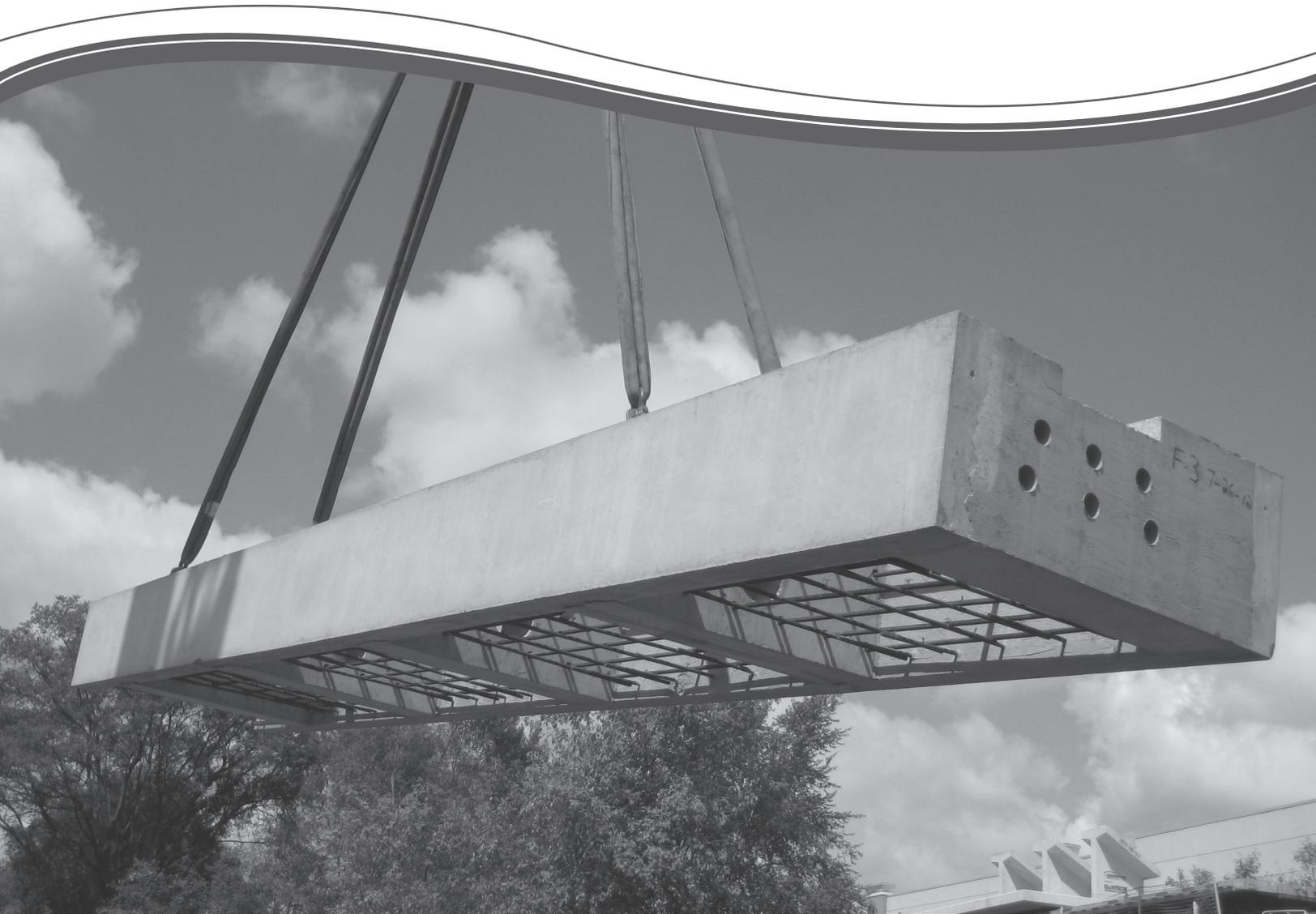


EXPRESS[®] Foundations
Handling and Installation Guide



EXPRESS® Foundations Handling and Installation Guide

This instruction guide is for your crews. Distribute it to help them install Contech® EXPRESS® Foundations correctly. Don't assume experienced workers know all the answers. Review these instructions with your supervisors and crews. It can mean a safer and better job for you and your customer.

We recommend holding a preconstruction meeting with your Contech representative and all interested parties to ensure everyone involved in your project has a high level of understanding on what means and methods will be used to prepare for, install and grout the new structure(s). If you have any questions about these instructions, call your Contech Representative.

WARNING

1. Failure to follow these instructions can result in serious injury or death and/or damage to foundation units and accessories.
2. Only trained and authorized equipment operators are to be permitted to unload the foundation units and accessories.
3. Wear approved safety hat and shoes, gloves and eye protection.
4. Park the truck and trailer on level ground before you start unloading. It is the responsibility of the consignee to direct the driver to level ground for parking the truck.
5. Keep all unauthorized persons clear of the area when the driver releases the binders from the trailer and during unloading.
6. Know the capabilities and rated load capacities of your lifting equipment. Never exceed them.
7. **Do not stand or ride on the load of foundation units and accessories while it is being unloaded. Do not stand beneath or near the foundation units and accessories while they are being unloaded.**
8. If unloading at multiple site locations, make sure the truck driver secures the remaining load before proceeding to the next location.
9. The contractor shall be responsible for the safety of his/her employees and agents. Adequate safety indoctrination is his responsibility and shall be given to all personnel employed by his firm.
10. Safe practices on construction work as outlined in the latest edition of the "Manual of Accident Prevention in Construction," published by The Associated General Contractors, shall be used as a guide and observed.
11. The contractor shall comply with all applicable city, state, and federal safety codes in effect in the area where he is performing the work. This conformance shall include the provisions of the current issue of the "OSHA Safety and Health Standards (29 CFR 1926/1910)" as published by the U.S. Department of Labor.

 Notwithstanding the instructions contained in this guide, it is the responsibility of the consignee or consignee's agent to devise safe unloading and handling procedures.



Falling foundation units and accessories can cause severe personal injury or death. Read and follow all safety instructions before unloading foundation units and accessories.

Tool Checklist

Tools and equipment essential for setting an EXPRESS Foundation unit by the contractor include:

- Excavator or crane with lifting strap (depending on size of units)
- Laser transit
- Mini-compact
- Tape measure
- Stakes
- Mallet
- Braided string line
- Marking paint (if required)
- Shovel
- Hard rake
- 4' or 6' level
- Pliers

Material Checklist

The following materials are supplied by Contech:

- Foundation installation drawings
- Longitudinal steel reinforcing bars
- Tie wires for longitudinal reinforcing bar connections

INSTALLATION PROCESS

I. PREPARE SUBGRADE AND MARK POSITION OF THE FOUNDATION ON LEVELING PAD.

Equipment and tools: Excavator, laser transit, mini-compact, tape measure, stakes, mallet, braided string line, marking paint (if required), shovel and hard rake.



1. Excavate to the specifications in the construction documents. It is best to overexcavate the width a minimum 2' larger than the EXPRESS Foundation unit. In some cases a dense graded granular base material is specified as the leveling pad. Be sure to grade receiving pad +/- 1".



2. Stake the corners and use easily-visible string and marking paint to indicate the precise location to set the foundation according to construction drawings. Subgrade should be free of standing water.

II. LIFTING AND SETTING THE EXPRESS FOUNDATIONS FOR THE ARCH UNIT SEGMENTS

Equipment: Crane with lifting straps, 4' or 6' level, tie wire and pliers (in the case of low weight units an excavator may be used).



1. Attach foundation segment to the crane using preset lifting inserts in the precast foundation at all four locations. Slowly lower in to place taking care to line up correctly with the layout in Step I.



2. Check to make sure the segment is either level or sloped according to the elevation points in the construction drawings. Variations should not exceed 1/4" per ten feet. Place the subsequent adjoining foundation segments in the same fashion.



3. Match up connection at line and grade with the previous set segment making sure to leave 1/2" gap between segments per construction drawings.

II.

LIFTING AND SETTING THE EXPRESS FOUNDATIONS FOR THE ARCH UNIT SEGMENTS, CONT.



- 4. Verify each segment is set at proper elevation points prior to setting the next segment.



- 5. Prior to setting foundation segments for other side of bridge, verify span dimensions and elevations using laser measurements or other accurate method. Repeat as necessary with additional segments.



- 6. Tie in the Contech supplied reinforcing steel at each connecting joint. Be sure to lap reinforcing steel according to construction drawings.

III.

LIFTING AND SETTING WINGWALL FOUNDATION SEGMENTS



- 1. Set wingwall foundation flush with unit foundation using lifting points. Be sure to align threaded holes in the wingwall foundation segment with the openings in the end of the precast foundation segment.



- 2. Use the supplied threaded dowels to connect the wingwall foundation to the unit foundation. Thread dowels into threaded receiver holes in wingwall foundation through open holes in the end of the unit foundation.

IV.

POURING – OPTION A » *If pouring infill concrete prior to setting arch units follow instructions below.*



1. Block out vertical side of keyway using the proper size lumber to retain concrete infill and maintain the dimension of the keyway throughout the length of the foundation.



2. Pour infill concrete to top of foundation unit in each cell. Be sure to vibrate to consolidate mix and remove any voids.



3. Float off concrete level with the top of foundation maintaining a level keyway. If applicable pour wingwall closure joints.



4. Once infill concrete is set, strip keyway forms and sweep clean.

* Option A requires grouting of the keyway after the arch units are set.

EXPRESS Foundations

*speed of precast blended
with the economy of
cast-in-place*

V. POURING – OPTION B » *If pouring infill concrete after setting arch units follow instructions below.*



1. Once EXPRESS Foundations are set the entire structure, complete with arch units, headwalls and wingwall, is to be installed (for the structure installation refer to *Precast Bridge Installation Guide*).



2. Once the entire structure is installed, the foundation concrete infill can be poured, vibrated and floated to the top of foundation segments.

** Option B does not require grouting of the keyway.*

CONSIDERATIONS 

I. THERE ARE IMPORTANT CONSIDERATIONS TO EVALUATE WHEN BUILDING A STRUCTURE WITH EXPRESS FOUNDATIONS. THE RIGHT SIZING EQUIPMENT FOR THE PROJECT CAN SAVE EXPENSE AS WELL AS TIME.

✓ Crane / Excavator - selection to be finalized during the preconstruction meeting.



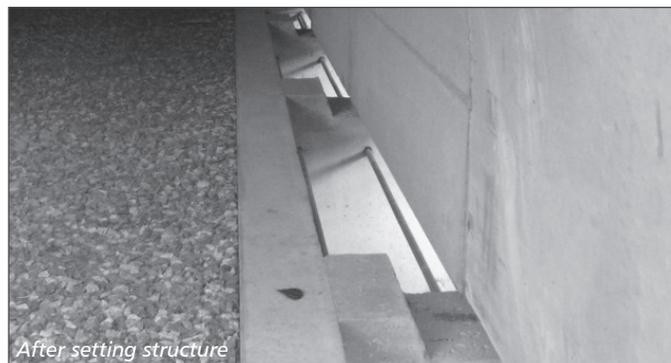
II. THE TIME OF THIS CONCRETE POUR WILL IMPACT WHETHER A GROUTING STEP IS NEEDED. THE CAST-IN-PLACE CONCRETE CAN BE POURED PRIOR TO SETTING THE STRUCTURE OR AFTER SETTING THE STRUCTURE.

✓ Option A / Option B - selection to be finalized during the preconstruction meeting.



Before setting structure

Option A



After setting structure

Option B



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Support

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- Site-specific design support is available from our engineers.

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