



CarouselUSA

Standard Turntable Best Practice Check-List



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1. Introduction

This "Best Practice Check List for Turntable Installations" addresses common questions and concerns that come with turntable installations. The notes here may not all pertain to your specific installation but the information should prove helpful in understanding the requirements and installation of the equipment.

2. Preparing the concrete pit:

A. General Info

- CUSA turntables are supported by inverted casters which are adjusted to a precise height during the installation, using a 360 degree laser. As a result, the concrete pit need not be perfectly flat but it is important that the concrete be kept within (+-1/4) of the specified pit depth.
- The casters and center pivot bearing will be anchored to the concrete floor using 3.5" x 3/8" wedge anchors. Whenever possible, it's best to route conduits, plumbing etc. at depths of 3.5" below the support slab, or in locations in which anchors are not to be used.
- The final look of the installation is highly (if not completely!) dependent on the consistency of the gap and elevation between the turntable and the adjacent non-rotating floor. From our experience, we have found that forming a perfect circle to a precise diameter and then pouring concrete that is perfectly flat

around that circle is quite difficult and very few concrete sub-contractors succeed in doing so on a consistent basis.

- CUSA must be made aware slope, prior to shipment of the equipment. Installation on a slope requires specialized leveling equipment that we do not normally travel with due to its size and weight.
- CUSA turntables can be installed on a slope (up to 7 degrees) matching the grade of the surrounding concrete/surface. If you wish to install your turntable on a grade, special conditions and arrangements are required:
- The pit floor must match the grade of the surrounding driveway concrete. The edge must rest on a plane as the flat turntable will not follow any contours.

B. The "Perfect Pit Edge"

We have developed the following technique which we believe to be the easiest and most consistent way of producing a perfect pit edge. Request further documentation for details, but the general step-by-step is described below.

1. Form the pit in either of the following 2 ways:
 - a. Pour a curb wall, 3.5" shorter than the finished floor.
 - b. At the pit edge, leave a void 3.5" deep and 10" wide.
2. We **install** the turntable.
3. CUSA can provide a metal angle trim ring (optional item) to be installed by your concrete crew, around the turntable using threaded studs, epoxied into the pit curb. Please note that we ship the rings LARGER than needed. This is done so that you can trim the last piece so that it fits PERFECTLY to your desired size and application. PLEASE trim the needed amount.
4. At this point the ring can be adjusted easily to maintain a 3/8" gap and perfect elevation using the turntable as a reference.
5. Hand pack mortar in the void beneath the trim ring (as/if needed).
6. Proceed to pour the concrete floor, or fill the void, creating a perfect gap and elevation.

3. Electrical Requirements:

- ¾" ID conduit is recommend to be run from the motor location in the pit to the planned location of the supplied control panel. If motion controls are to be installed, 2 conduits will be required.
- 99% of motor failures are caused by water entering the motor through the conduit. Please ensure that the conduit is dry and watertight.

- The control panel requires a 200-240V single phase input. Our drive motors are 3 phase however. Inside the control box is a Variable Frequency Drive (VFD), and part of its purpose is to convert the single phase power supply input into 3 phase power to supply the drive motor.
- Our control panel is designed to be sited such that the electrical connections/wires are 50' in length or less. Longer runs are possible, but not recommended without the use of VFD power cable (shielded) or other compensating factors.
- If the control panel is not within eyesight of the turntable, an external antenna will be required between the control box and the turntable room. The antenna can be installed behind a drop ceiling, on the wall or in a soffit. If an external antenna is required please contact CUSA for available antenna options to best fit your needs. The antenna can then be provided in advance or on the day of installation.

4. Shipping:

- Equipment will be delivered by commercial carriers, unless installation is located in Southern California.
- Prior to shipment, you will receive tracking information from the carrier, as well as the expected delivery day. Please use the carrier's web site to confirm all information and to stay abreast of any changes in schedules.
- On delivery day, you will need to have access to a forklift, with a minimum rating of 5,000 lbs, as well as extended forks (7' is ideal). The equipment is in large and heavy containers.
- Place equipment adjacent to the turntable pit(s), ensuring that if subject to water/rain that the cases are covered with plastic and in a secure location.

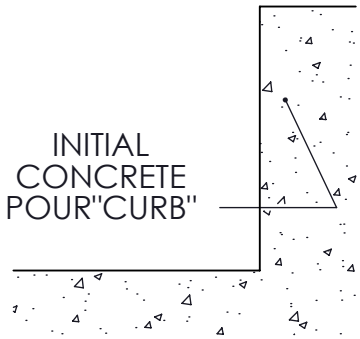
5. Site review:

1. We strongly recommend submitting photos of your pit prior to the arrival of our installation crew. If there are any critical issues that will affect your installation, we can often point them out prior to our arrival.
2. We also recommend taking this time to verify that the pit is completely flat and poured to the correct depth. It's much less expensive to do this before we come!

6. On Installation day:

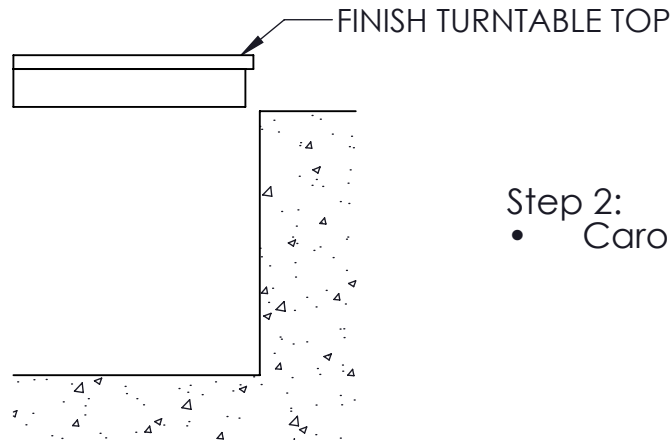
1. Installation of the turntable is completed in one day. To ensure a smooth installation and to be ready for our installers on installation day:
 - a. Please be sure that the pit is clean and free of debris.
 - b. The turntable cases be located as close to the pit as possible
 - c. Ensure the exact turntable installation location and installation elevations are determined prior to our arrival.
 - d. If the table is to be installed flush with a flooring treatment such as wood or tile which is not yet installed, please be prepared with that information.
2. On installation day, please have your electrician on site to mount the control panel and make the final connections to the motor and control panel, as early as possible (8-9 AM). Motor does not need to be anchored for connections to be made. This allows for testing and adjustments to take place earlier in the day, assuring that all issues can be sorted out ASAP.
3. 99.9% of motor failures are caused by water entering the motor through (inside!) the conduit. Liquid tight flexible conduit is required (about 3-4'), with a $\frac{3}{4}$ " male NPT fitting for connection to the drive motor. To ensure that your drive motor is not ruined as a result of water traveling through the conduit and into the motor cavity, we recommend that your electricians inject silicon inside of the conduit, just prior to the connection at the motor mounted junction box.
4. Permanent Power is required for operation of the turntable. Temporary power from generators will not work due to the presence of a VFD in the control panel.
5. Upon completion the CUSA installers will ask for sign off and approval of our work by authorized personnel. Please coordinate the availability of the authorized person with the projected completion time. At that time he will also demonstrate proper operation and maintenance of the equipment and answer any questions.

D



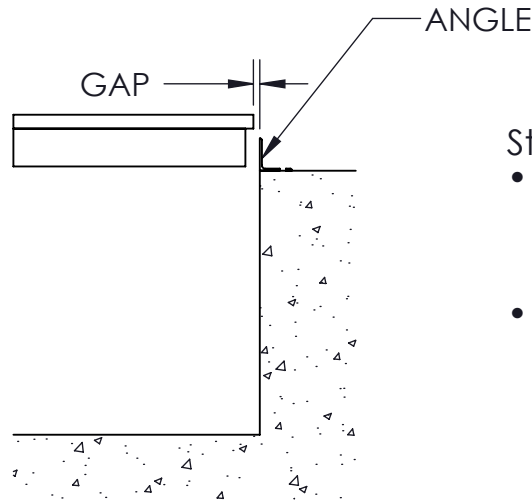
- Step 1:
- Route Electrical and Plumbing
 - Pour Initial "Curb"

C



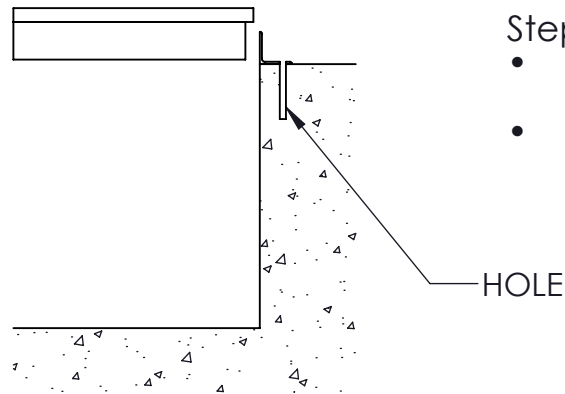
- Step 2:
- Carousel USA Installs Turntable

B

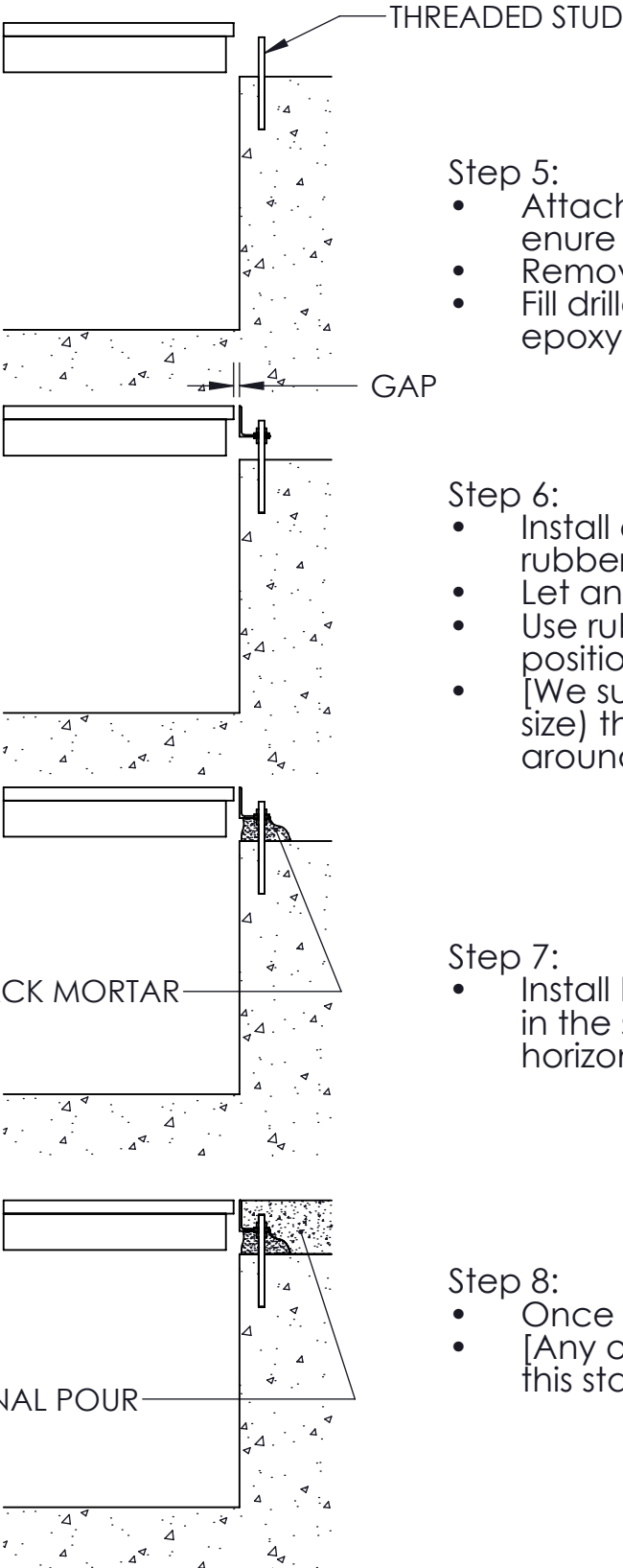


- Step 3:
- Layout Ring on top of CURB, maintaining desired GAP between turntable's edge and outside ring.
 - Mark anchor locations on concrete CURB using holes in angle as reference

A



- Step 4:
- Using concrete drill, drill holes in CURB
 - Use vacuum or compressed air, clean/remove drilling debris



- Step 5:
- Attach studs/threaded rods loosely to outer ring to ensure proper fit prior to attachment
 - Remove outer ring sections from top of CURB
 - Fill drilled holes with anchor epoxy. (Depending on epoxy cure time, this step may be done in sections)

- Step 6:
- Install outer ring sections to CURB, using a heavy rubber mallet to achieve proper positioning
 - Let anchor epoxy harden/cure
 - Use rubber mallet (or steel mallet if necessary) to position outer ring to precise final position.
 - [We suggest using temporary spacers of (desired GAP size) thickness at consistent and uniform spacing around turntable edge]

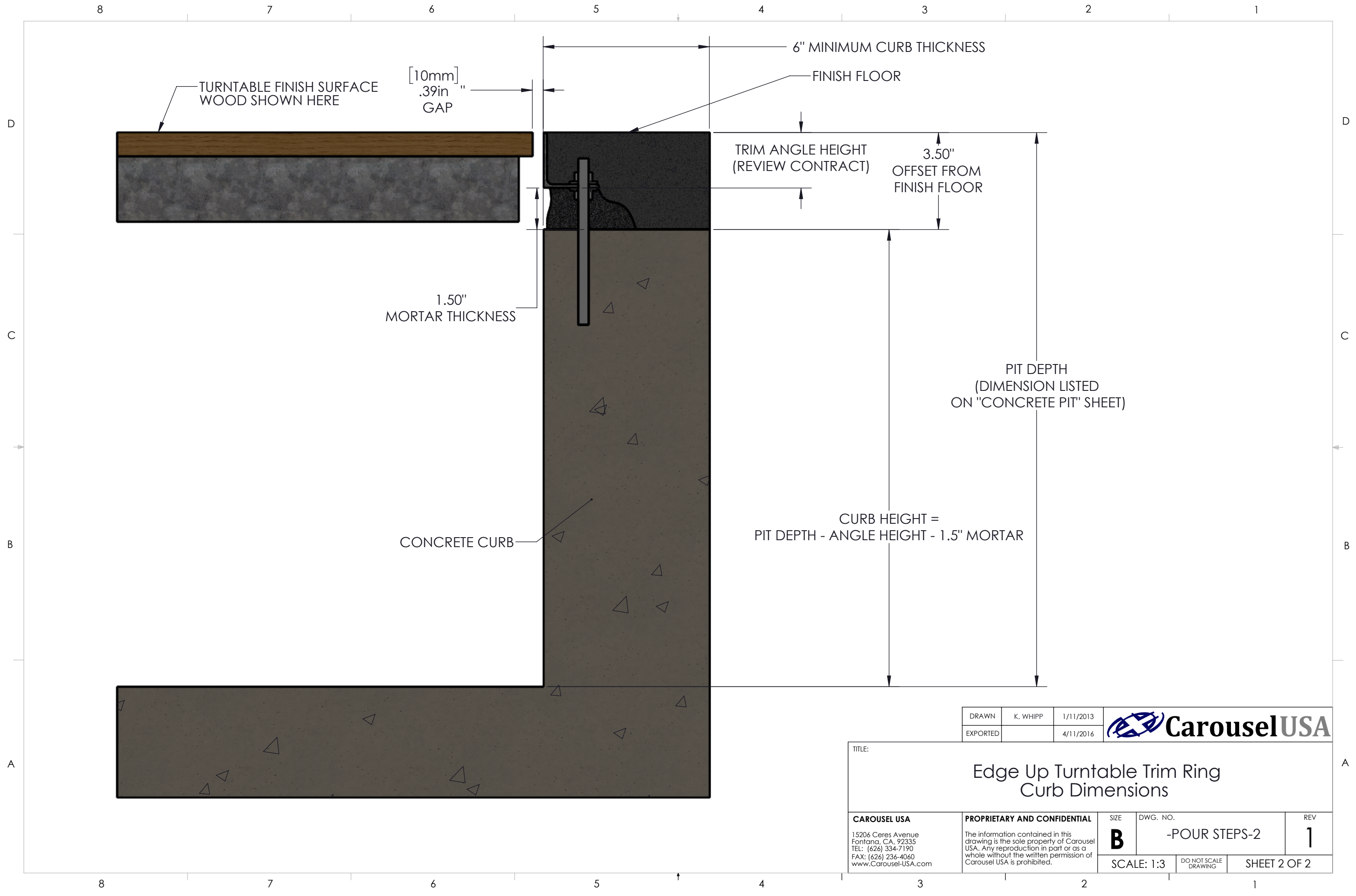
- Step 7:
- Install DRY-PACK mortar (a stiff sand-cement mortar) in the space that remains between the bottom of the horizontal leg of the outer ring and the CURB

- Step 8:
- Once dry pack hardens, pour up to final desired level.
 - [Any other finishes, tile, pavers, etc would be added at this stage]

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| DRAWN | K. WHIPP | 1/11/2013 | |
| EXPORTED | | 4/11/2016 | |

TITLE: Edge Up Turntable Trim Ring Concrete Pour Steps

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|---|---|--------------|---------------|----------------------|--------------|
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| | | B | -POUR STEPS-1 | | 1 |
| | | SCALE: 1:100 | | DO NOT SCALE DRAWING | SHEET 1 OF 2 |



| | | | |
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| EXPORTED | | 4/11/2016 | |

| | | | | |
|---|---|------------------|---------------------------|-----------------|
| TITLE: Edge Up Turntable Trim Ring Curb Dimensions | | | | |
| CAROUSEL USA 15206 Ceres Avenue Fontana, CA, 92335 TEL: (626) 334-7190 FAX: (626) 236-4060 www.Carousel-USA.com | PROPRIETARY AND CONFIDENTIAL The information contained in this drawing is the sole property of Carousel USA. Any reproduction in part or as a whole without the written permission of Carousel USA is prohibited. | SIZE B | DWG. NO. -POUR STEPS-2 | REV 1 |
| | | SCALE: 1:3 | DO NOT SCALE DRAWING | SHEET 2 OF 2 |