

WP 07-EU1304

Revision 5

Installing Convergence Reference Points

Technical Procedure

EFFECTIVE DATE: 10/19/09

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APPROVED FOR USE

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INTRODUCTION ¹

This procedure details the processes necessary to layout and install convergence points for instrumenting new drifts or replacing points removed or damaged during operating or trimming activities.

The record produced by the use of this procedure is the GIS Initial Data Sheet (Attachment 1 of WP 07-EU1303). Completed data sheets are maintained in accordance with the Geotechnical Engineering Records Inventory and Disposition Schedule.

REFERENCES

BASELINE DOCUMENTS

- WP 07-1, WIPP Geotechnical Engineering Program Plan
- WP 07-EU1301, Manually Acquired Geomechanical Instrument Data
- Instruction Manual - Tape Extensometer: The Geokon/Ealey Model 1610, Geokon, Inc., Lebanon, New Hampshire
- Instruction Manual - Tape Extensometer: Model 518115E/M, Slope Indicator Company, Seattle, Washington

REFERENCED DOCUMENTS

- WP 07-EU1303, Geomechanical Instrument Data Processing

PREREQUISITE ACTIONS

Personnel shall examine their workplace, tools, and equipment prior to starting work and frequently during work. Any unsafe condition or practice shall be corrected before any further work is performed in that work area.

PERFORMANCE

1.0 LOCATION

- 1.1 Determine if the Radial Convergence (RC) installation is a relocation or new installation.

- 1.2 Anchor Reinstallation
 - 1.2.1 Determine if the destroyed or damaged points to be relocated are back points, floor points, or rib points.
 - 1.2.2 Relocate back points by plumbing up to the back from the existing floor point.
 - 1.2.3 Relocate floor points by plumbing down to the floor from the existing back point.
 - 1.2.4 Relocate rib points by projecting a line from the existing point on the opposite rib, maintaining the same level and plane.
- 1.3 New Installation at Intersection
 - 1.3.1 Locate the drift center line at the desired station.
 - 1.3.2 Mark the location of the back point at the centerline intersection.
 - 1.3.3 Plumb down from the back point to locate the floor point location.
 - 1.3.4 Mark the location.
- 1.4 New Installation at Mid Pillar
 - 1.4.1 Locate the drift centerline and mark the locations of the back and floor points.
 - 1.4.2 Locate the rib points at the drift centerline mid-height and at right angles to the drift centerline.
 - 1.4.3 Paint or mark the point locations.

NOTE

All points in an array should be located in a vertical plane.

- 1.4.4 For additional vertical and/or horizontal chords at the same station, measure from the centerline or mid-height RC locations the distance required by the installation drawing or the cognizant instrument engineer.
- 1.4.5 Paint or mark the point locations.

NOTE

Slight positioning adjustments of \pm two feet from the planned location are permissible.

2.0 INSTALLATION**NOTE**

For floor points, the collars may be deeper to accommodate a cover plate.

- 2.1 At the marked location, drill a 3-inch-diameter minimum hole collar deep enough to protect the installed eyebolt.
- 2.2 In the center of the collar, drill a 1 3/8-inch-diameter hole deep enough to accommodate the anchor bolt.

NOTE

When drilling floor installations, compressed air may be required to remove the cuttings from the hole.

- 2.3 Install an anchor bolt so that the eyebolt is positioned at least 1/8-inch below the surface of the floor or rib.
- 2.4 If the anchor bolt becomes stuck, position a properly sized socket over the anchor and tap gently.

CAUTION

Under no circumstances should the eyebolt be tapped or struck directly. Tapping or striking the eyebolt may cause deformation of the eyebolt. This can cause erroneous readings.

- 2.5 Tighten the anchor so that it is secure.
- 2.6 Verify the anchor is snug, oriented properly after tightening, and there is no possibility of movement between the rock and the anchor.

NOTE

For rib installations, one should be able to look horizontally through the eye; for back and floor installations, one should be able to look through the eye down the length of the drift.

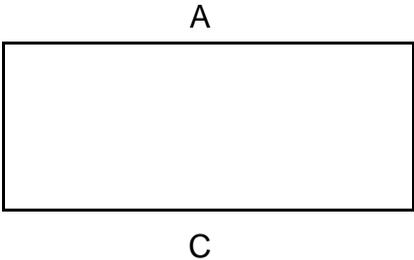
2.7 Install protective covers over the floor point installations.

3.0 INITIAL READINGS

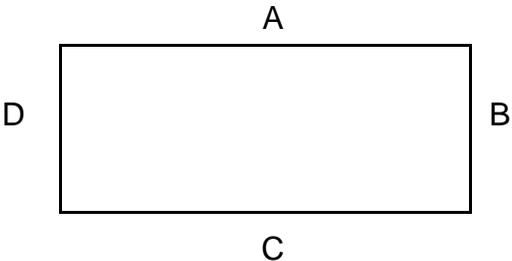
3.1 After installation is complete, take the initial reading in accordance with approved Waste Isolation Pilot Plant (WIPP) procedures or work instructions and record the data and installation information on a GIS Initial Data Sheet.

Attachment 1 - RC Anchor Layout

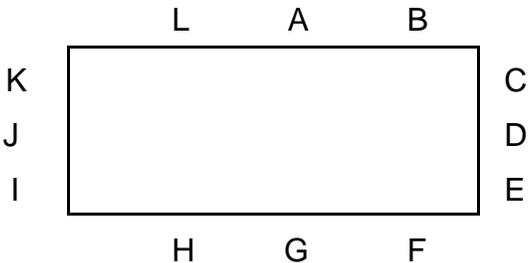
RC ANCHOR LAYOUT



SINGLE CHORD ARRAY



TWO CHORD ARRAY



MULTIPLE CHORD ARRAY

LOOKING NORTH OR WEST