

**Installation Notes:**

1. Precast concrete box culvert sections shall be laid with the groove end of each section up-grade, and the sections shall be tightly joined. Concrete ties to be used only to hold box sections together, not for pulling sections tight. Joint openings between sections should be as tight as practicable and limited to a maximum of 1/2 inch openings. A pipe puller or ratchet style load binder shall be used to achieve the required joint opening.
2. The joints shall be sealed with a flexible water tight 1 inch butyl rope gasket as per Materials I.M. 491.09. Butyl rope gasket shall be installed in accordance with the recommendations of the manufacturer and as shown in the "Typical Joint Detail" on sheet PPT G3-20. Butyl rope gasket shall extend around the walls, floor and slab of the precast barrel joints. All joints shall be trimmed clean on the inside after sealing.
3. Homing pressure shall be applied to barrels during installation to compress the butyl rope gasket. Homing pressure shall be held for a sufficient period of time to allow for maximum compression of the joint. Method of applying the homing pressure shall not damage the barrel and shall be approved by the Engineer. Ties shall not be used to apply homing pressure. Ties shall be snug tight prior to release of the homing pressure.
4. During backfilling the compaction adjacent to the bottom corner radii or chamfer shall be accomplished with a mechanical hand compactor.
5. Waterproof membrane shall be applied to the outside face of the transverse construction joints in the slab and walls. Waterproof membrane shall be 1'-6" wide and be centered on the joint. Waterproof membrane shall be installed with a manufacturer's approved adhesive in accordance with the manufacturer's recommendations. The following is a listing of approved waterproof membrane:
  - a. W.R. Meadows Mel-Rol
  - b. Grace Construction Products Bituthene 3000
  - c. Approved equal
6. Precast barrels shall be tied to the cast-in-place barrel end sections with 5/8" dowels and bentonite waterstop in precast keyway. Dowels shall be set around the entire periphery of the barrel at 1'-0" maximum center to center spacing. Dowels shall be centered in the precast barrel slab, wall and floor. Dowels shall be set in drilled holes. Holes shall be 10" deep. Dowels shall be set with a polymer grout system in accordance with Article 2301.03.E. of the Standard Specifications. Set dowels in accordance with grout manufacturer's recommendations.

LATEST REVISION DATE  APPROVED BY BRIDGE ENGINEER 	 Precast Standard Design - Walkways and Trails
	<b>Precast Reinforced Concrete Pedestrian Tunnel</b> August, 2020
Installation Notes	PPT G2-20