

POST-TENSIONED SEGMENTAL BOX SECTIONS

Project: Central Artery-Tunnel Porter Street Combined Sewers

E. Boston, Massachusetts

Owner: Massachusetts Highway Dept. and the
Massachusetts Port Authority

Contractor: J.M.Cashman, Inc.
Quincy, MA
Will Spielvogel, PE Project Manager

Owner's Engineers: Bechtel-Parsons
SEA Consultants

Value-Engineering

Consultant: Consulting Engineers Group
Mt. Prospect, Illinois

Oldcastle's Rotondo Precast division, in conjunction with J.M. Cashman, Inc. value engineered a precast solution to a mile long 12' x 13' 9" I.D. caisson supported box culvert. The culvert is a relocation of an existing storm sewer making way for the new third harbor tunnel to Logan International Airport. The 40 ton segments were cast in the Massachusetts plant and trucked on edge 50 miles to the jobsite.



▲ Above a dapped end turn section is tugged into place under the whaler cross bracing. This joint is designed to slide during an earthquake on teflon pads.

◀ At left an iron worker cuts a strand as they push 19 through each tendon's PVC corrosion protection tube. Note the Dywidag threadbar couplers and bentonite waterstop used in reinforcing and sealing the C.I.P. closure pour.

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▶ *The 40 ton pieces were lowered in-between the cross bracing and slid into place.*



◀ *Each 14' wide piece had to be tripped as it was lifted from the trailer*

▶ *Rotondo designed and built rubber covered rolling frames that formed the shear-keyed segment joints to facilitate field grouting.*



▶ *At right one of the 14 tendons is tensioned in creating a total force of 8,000 kips. VSL's anchor system was used.*