

# Minneapolis East Interceptor Tunnel, Phase A & B

## Minneapolis and St. Paul, Minnesota

The Minneapolis East Interceptor is a 21,500-foot long sanitary sewer constructed under urban areas in the Twin Cities. The cast-in-place tunnel lining is 10 feet inside diameter for most of the alignment. Numerous structures such as access shafts, drop shafts, connection structures, meter chambers, deaeration chambers, junction structures, diversion structures and overflow structures were constructed in conjunction with the project.

By utilizing the concrete liner in conjunction with surrounding rock, the tunnel was designed to withstand 52-psi internal surge pressures, created during peak periods. The tunnel for the most part lies in easily excavated St. Peter sandstone and partly in a three foot layer of Glenwood shale. Up to 30-foot of Platteville limestone lies within a few feet of the tunnel crown for most of the alignment.

The mainline sandstone tunnel was excavated at 12.5-foot diameter tunnel using a boring machine. Shaft and structure excavations in the limestone were done by blasting. Structures and smaller connection tunnels in the sandstone were excavated by roadheader or backhoe. Rockbolts and mine mats supported sandstone and shale roof throughout most of the tunnel. Where the limestone was more than a few feet from the crown, initial support was provided by ringbeams and lagging. Sodium silicate spraygrout, a procedure developed by CNA in the 1970's, protected against deterioration of sandstone walls in the tunnel and structures.



12.5-diameter tunnel with mine mats and rockbolts

CNA provided the following services to the Project:

- Geotechnical Engineering
- Geotechnical Report
- Structural Engineering for tunnels & structures
- Plan and Specification Preparation
- Construction Submittal Review
- Construction Monitoring

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**Owner — Metropolitan Council Environmental Services**

**Completion Date — 1988**

**Construction Cost — \$27 million**

**CNA**  
**Consulting**  
**Engineers**

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