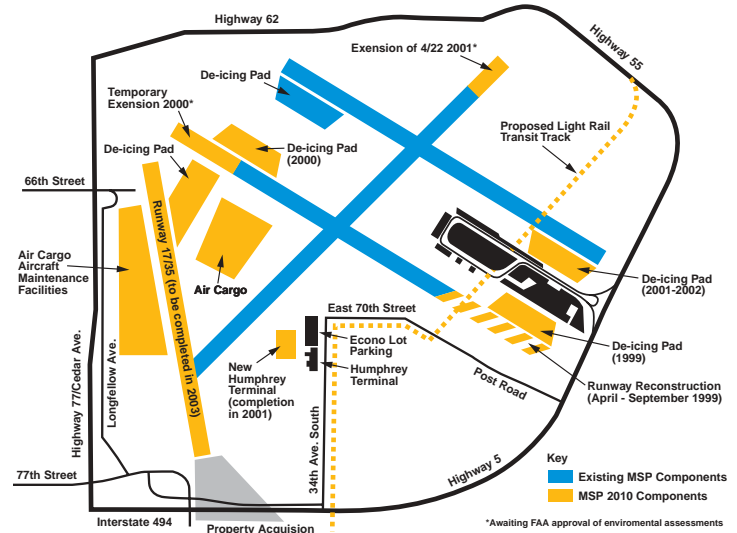


# DRY-CAST CONCRETE BOX

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Hanson Pipe & Product's Apple Valley, Minnesota plant successfully expanded its product line in 2000 when it was awarded a \$1.5 million contract to supply dry-cast concrete box sections for the expansion and renovation of the storm drainage system at the Minneapolis - St. Paul International Airport (MSP). The massive storm sewer network is part of the construction contracts included in the first of six bid packages that is scheduled for completion in 2004. Experience has shown over the last 30 years that dry-cast box sections are an excellent product where conditions call for freeze-thaw durability.

The airport expansion and renovation falls under the jurisdiction of the Metropolitan Airports Commission. The first phase alone of the precast concrete box sewer was the larg-



est dry-cast box project in state history, and could have an impact on the way the state DOT regards the dry-cast method for producing product for box culverts and sewers.

The contract, awarded to Ames Construction, Inc., of Burnsville, Minn., included 225,000 cubic yards of earthwork, 6,800 linear feet of storm drainage pipe, and other drainage structures. Hanson staff began working with Ames in August 2000 to supply the box units within a fast-paced delivery schedule. The plant was able to produce 13 pieces per day ensuring that the contractor never ran out of product before completion of the installation in December.

The total box culvert line in Phase I was comprised of 781 pieces, some straight and some beveled, with lengths ranging up to 6.5 feet. Three different steel designs were used to handle aircraft, truck, and varying soil loads. The 4,777-foot long (10-foot x 9-foot) box storm sewer serves as a portion of the trunk storm sewer for the new North-South runway,



781 dry-cast concrete box sections were provided for the 4,777-foot long storm sewer in Phase I of the airport drainage system expansion.

# SECTIONS *SOAR* AT MSP

which is expected to increase airport air traffic capacity by 25%. The new runway is scheduled for commissioning in 2003.

After award of the contract in 2000, a great deal of effort was spent locating and retooling manufacturing equipment, converting the plant to facilitate the manufacture of dry-cast boxes, and locating mobile equipment to handle the product. The dry-cast form equipment was borrowed from Hanson's Houston plant, a crane large enough to strip the finished product was borrowed from Hanson Spancrete Midwest, and a forklift capable of moving the product in the yard was brought in from Hanson's Cincinnati, Ohio plant.

Since completion of the contract, Hanson has supplied a total of 8,600 feet of (10-foot x 9-foot) precast boxes for Phase I and Phase II MSP airport projects.

The Minneapolis – St. Paul International Airport, located just south of the Twin Cities, is situated on 3,400 acres with two terminal buildings, 76 jet-loading gates, three runways, and over 17,000 parking spaces. The airport serves more than 35 million passengers each year and is ranked seventh busiest airport in the country based on number of passengers, and twentieth busiest airport globally. The air-

*Precast concrete box sections were delivered directly to the job site on a fast-paced schedule so the contractor never ran out of product for installation.*



port is in the midst of a \$2.8 billion expansion including improvements to the airport terminals, airfield, parking and multi-modal transportation facilities, and roads.

The installation of precast concrete boxes on the airport expansion and renovation project is in many ways ground breaking for Hanson's Apple Valley plant, and may have statewide implications. Owners, specifiers, regulators and contractors can now point to the successful installation at MSP when future opportunities arise for the application of precast concrete boxes for major drainage systems. Production of boxes by the dry-cast method may be poised for take-off on other projects in the state. ☺

<b>Project:</b>	Minneapolis – St. Paul International Airport Expansion Precast Concrete Box Storm Sewer – Phase I and Phase II
<b>Owner:</b>	Metropolitan Airports Commission Minneapolis – St. Paul
<b>Designer:</b>	URS/BRW Minneapolis – St. Paul
<b>Contractor:</b>	Ames Construction, Inc. Burnsville, Minnesota
<b>Quantities:</b>	8,600 feet (10-foot x 9-foot) precast concrete box sections
<b>Producer:</b>	Hanson Pipe & Products Apple Valley, Minnesota

Hanson Pipe & Products is the largest producer of concrete pipe and precast in North America with over 90 plants and 3800 employees. The company is a sophisticated, diversified manufacturer of concrete pipe and a variety of supporting products including manholes, drainage structures, box culverts, bridge components, retaining walls and concrete block. Its plant locations throughout North America enable the company to serve the most rapidly growing parts of the U.S. and Canada. Hanson's Apple Valley plant is within its North Central Region service area. See [www.hansonconcreteproducts.com](http://www.hansonconcreteproducts.com) for details.