

# Stone Arch Bridge, Minneapolis, MN



Broad washes of warm HPS light reveal the bridge's sculptural form at night

ADAM GRIMM

## Architect/Lighting Design:

Meyers, Scherer & Rockcastle, Ltd.

**Engineer:** City of Minneapolis Traffic Engineers

**Photography:** Pete Sieger; Adam Grimm

## Railway Bridge for Pedestrian Use

Overall: 28' wide x 2100' long

Arches: 80' to 98' spans across 10' wide piers, typical for 12 locations over water

Heights: 45' rise from 10' high piers; pedestrian level approximately 65' above water

Lighting: (2) H454-0400-S-06-B-XX0 per arch, with AEDV40D0 45° vertical blade baffles and modified door frame retainer cables

Estimated illuminance: 2.5 fc avg. initial on surface of primary 80' arches

Estimated power density: 0.22 W/sf of arch surface area

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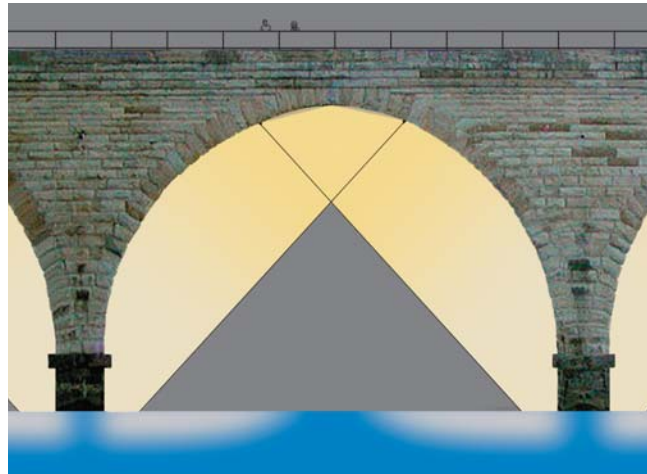
## elliptipar Style H454 Large integral high pressure sodium

Built in 1883 by railroad magnate James J. Hill, the Stone Arch Bridge is a beloved city landmark linking Minneapolis to the glory days of transcontinental rail service when trains with names like the *Empire Builder* passed over the structure. Out of service since 1965, the bridge has become a lively addition to the riverfront revival of the St. Anthony Falls neighborhood along the Mississippi River. In an area of restored flour mills and new residential construction, the bridge now serves as a pedestrian link in the St. Anthony Falls Heritage Trail.



A graceful curved visage by day, until recently the bridge's arches virtually disappeared by night. The decision to illuminate the granite and limestone surfaces presented the lighting designer with several challenges. There was to be no drilling into the stone and no exposed conduit. Also, luminaires could not be located at the bases of the arches because of the potential for flooding.

The design team sought a solution using as few luminaires as possible. They chose to light the arches asymmetrically using two luminaires per arch, each containing a long-life 400W high pressure sodium lamp to minimize maintenance.



The warm glow generated by the high pressure sodium lamps is in keeping with the lighting used to illuminate the historic buildings along the Minneapolis waterfront. The designers also wished to distinguish the lighting on the structure from the white-blue light for the pedestrian paths.

Mounted across from each other, two thirds of the way up the sides of the arches, the luminaires were cross-aimed to create an even wash of light that extends to the water below.

To minimize glare when viewed from the river bank, accessory vertical blade cross-baffles finished matte black were selected.



**Style H454** features all aluminum and stainless steel components, precured silicone gaskets, a tempered glass lens, captive door screws and locking set screws for aiming. The durable electrostatically applied thermoset powder coat exceeds 1000 hour exposure (ASTM B117-90 Salt Spray [Fog] test).

Since the units are over water, they have been modified with stainless steel tethers on the serviceable parts - lensed door and ballast compartment cover. To avoid drilling the stone, existing trench and drain holes were used to run the electrical cables.