



The newest Chicago “L” station sports its own look thanks to hundreds of curved hollow structural sections.

Ticket to Ride

BY STEVEN C. STEFFENS

THE SKOKIE SWIFT is filling out.

Until recently, the Chicago Transit Authority’s (CTA) Yellow Line (the Skokie Swift’s official name) only had two stations and served to connect suburban Skokie to the rest of the Windy City’s mass transit system (colloquially referred to as the “L”).

But this past spring it gained a third station, the first new CTA station to be built in more than a decade. Located at the intersection of Oakton Street and Skokie Boulevard, it puts the town’s downtown business district on the map—or at least on the train map.

The linear design concept for the new 65-ft-wide by 1,100-ft-long Oakton-Skokie station is, of course, based on its function as a train stop. Passengers enter and exit via station houses located at the north and south end of the site and arrive and depart trains from a centrally located platform, a layout consistent with several of the CTA’s 145 L stations.

Existing high-voltage transmission towers traverse the middle of the site, which requires the width of the passenger plat-

form to narrow to allow it to penetrate the lower bay of one of the tower structures. At this point, the passenger platform transforms into a covered walkway that provides protection for patrons circulating between the north station house and the passenger platform during inclement weather.

Clusters of Steel

While a certain degree of uniformity exists throughout the L system, the Oakton-Skokie station achieves its own look via nearly 600 hollow structural sections (HSS). The station’s structural framing consists of 72 columns, each comprised of eight round 6-in.-diameter round HSS arranged in circular clusters; 134 tons of structural steel were used in all. As the clusters rise toward the station house roofs and platform canopy, the sections curve and interconnect with those of neighboring column clusters and result in a superstructure that is at once Gothic, modern and organic. The pipe-to-pipe connections are made with



Photos by John Merkle



▲ Structural framing for the station is provided by 72 columns, each made up of eight round HSS members.

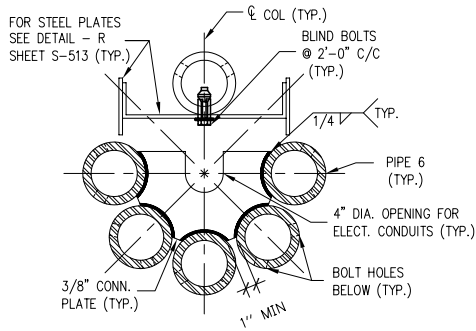
▲ The station, before roof installation and paint application (top) and completed (bottom).

¾-in.-diameter hex-head bolts. Subtractive iterations of the cluster design resolve unique conditions that are created by the aluminum-glazed curtainwalls forming the perimeters of the station houses; by the expansion joints required between the station house roofs and adjacent canopies; and at the longitudinal terminations of all of the facility's canopies.

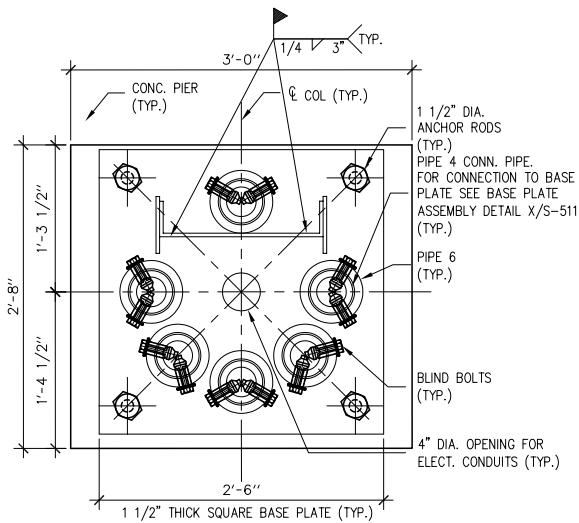
The roofs of the station houses are held back laterally, also by HSS, exposing sun-control louvers comprised of steel channels (C15x33.9) that integrate with the structural frame and enhance the organic quality of the design. The louvers provide shade in the station houses during the summer and filter natural light into the occupied areas throughout the remainder of the year.

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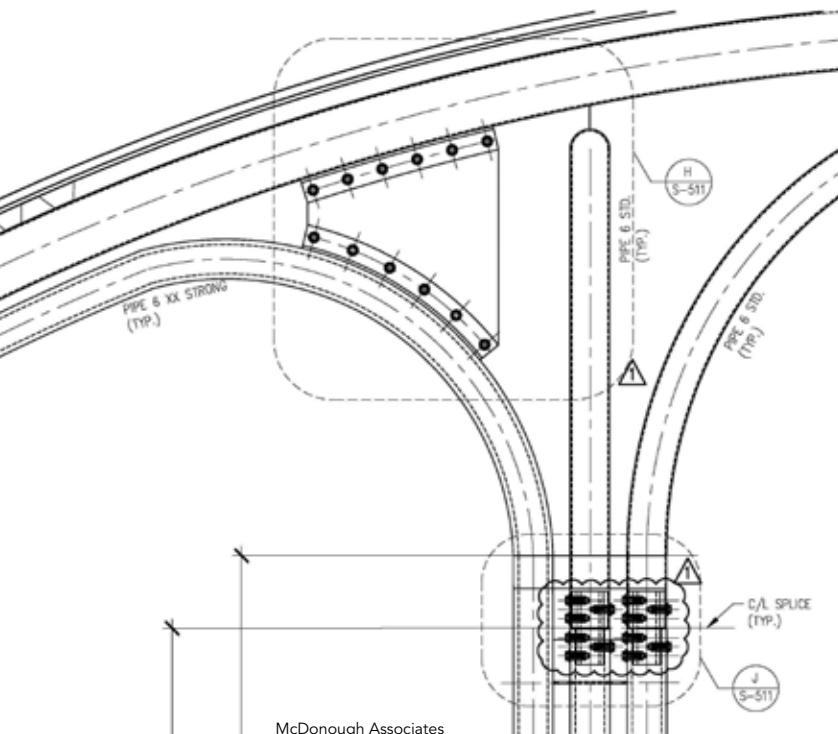




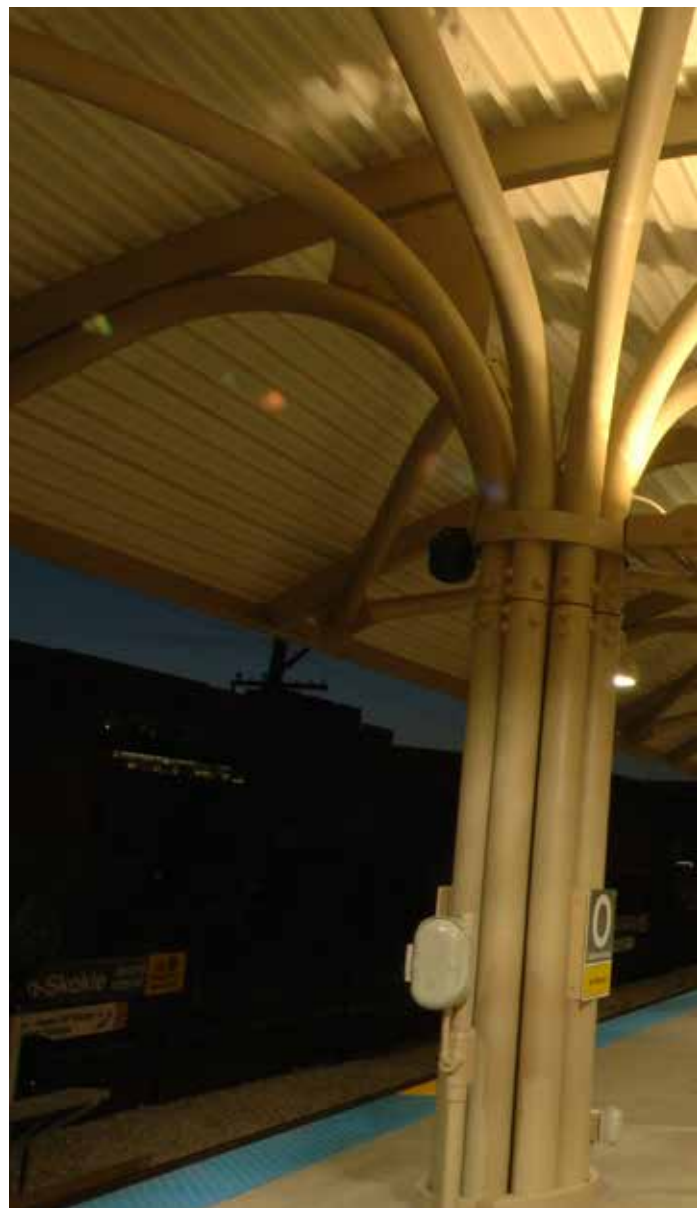
13 SECTION
S-511 SCALE: 1 1/2" = 1'-0"



16 SECTION
McDonough Associates S-511 SCALE: 1 1/2" = 1'-0"



McDonough Associates

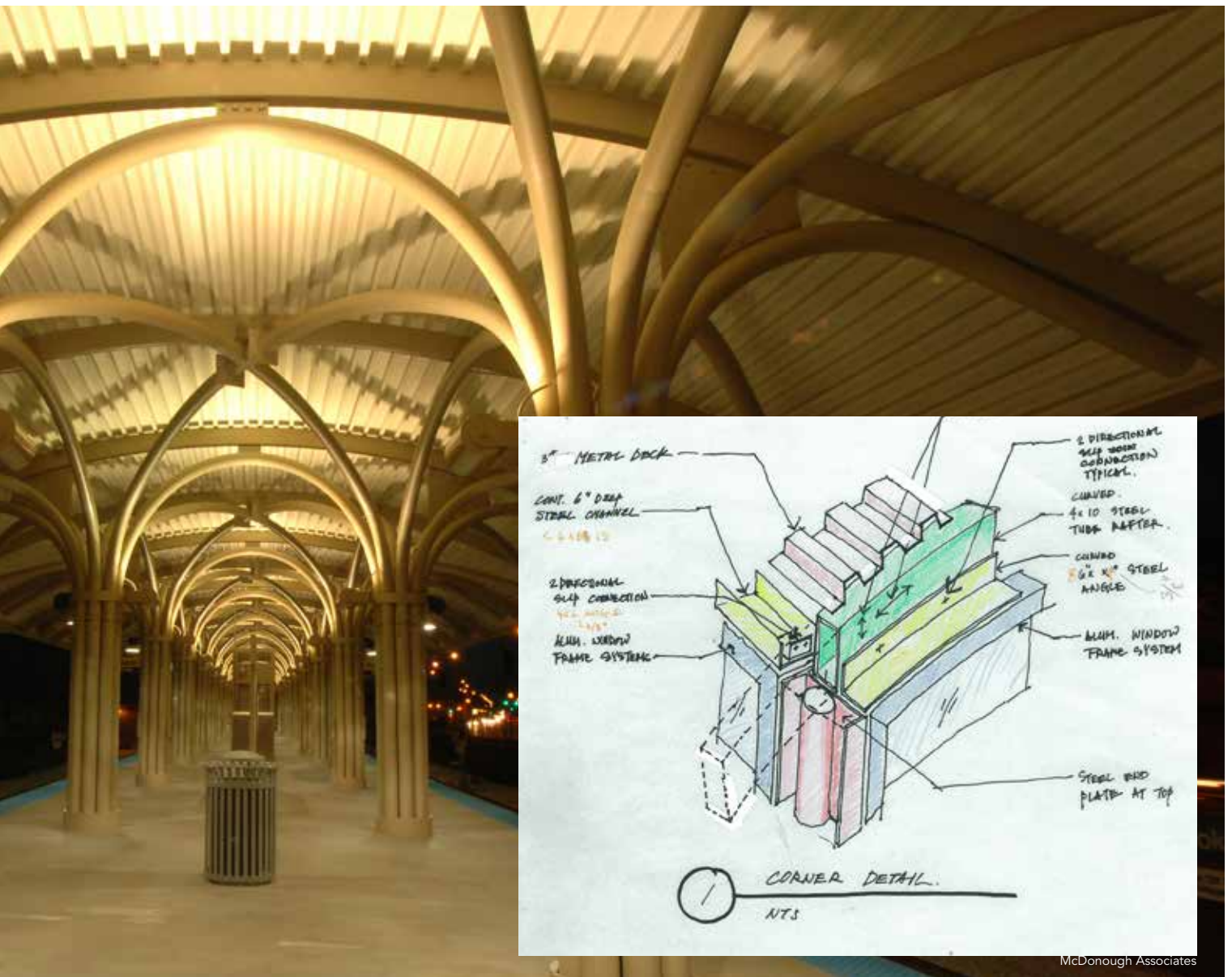


◀ Top and side drawings of the column clusters. The pipe-to-pipe connections are made with 3/4-in.-diameter hex-head bolts.

The structural steel elements were both hot-dip galvanized (per ASTM A123/A153) and painted. The paint system consists of a shop-applied 2-mil. prime coat of polyamide epoxy (Carboline Carboguard 893SG Epoxy) and a topcoat of Carboline Carbothane 133 HB Acrylic Polyurethane.

Future Expansion

The station currently receives two-car trains and the platform, as currently configured, can accommodate four-car trains. As the demographics of the region increase, or if the branch line is extended, the design allows for future expansion to accommodate a maximum of eight-car trains. Piers installed on either side of the covered walkway can accept future column clusters, and the platform and canopy structures can



McDonough Associates

▲ The project uses 134 tons of structural steel.

▲ **Inset:** An early mock-up of a detail of one of the columns.

be extended from the north face of the current platform/canopy terminus to the south face of the north station house. Any future expansion would require relocation of the existing high-voltage transmission towers, removal of the walkway roof and columns and the addition of concrete platform slabs on either side of the existing walkway. The local power company plans to upgrade and relocate the existing transmission towers in the future. Once that occurs, the expansion of the platform and canopy can take place, and the ultimate design will be fulfilled.

In its current and fully complete iterations, the Oakton-Skokie station is more than just an addition to a major mass transit system. It creates a positive impact on the environment, enhances the local economy by providing riders with direct access to Skokie's downtown business district and vastly improves the local community's connection to the greater Chicago metropolitan area. **MSC**

Owner

Chicago Transit Authority

Architect and Structural Engineer

McDonough Associates, Inc. Engineers/Architects, Chicago

General Contractor

Village of Skokie, Ill.

Construction Manager

Riley Construction, Kenosha, Wisc.

Steel Team

Fabricator, Erector and Detailer

K & K Iron Works, LLC, McCook, Ill. (AISC Member/AISC Certified Fabricator)

Bender/Roller

Chicago Rolled Metal Products, Chicago (AISC Member)