

HIGH Steel News

Information from
High Steel Structures Inc.

Spring 2008

High Steel Involved in Design/Build for Maryland ICC (Intercounty Connector)

In Maryland's Montgomery County and northwestern Prince George's County, work is underway for an 18-mile, \$2.4 billion Intercounty Connector (ICC) that will link existing and proposed development areas between I-270/I-370 and I-95/US1.

Not only is the ICC expected to increase community mobility and safety in this highly trafficked region, but the task is so comprehensive that the project is being

designed to restore the natural environments and protect trees and wildlife—right down to relocating the Eastern Box turtles that inhabit the area.

High Steel Structures is currently working on Contract A of the project. Contract C has been bid and is being finalized. Contract B is still in the process of being bid, while Contract D and E will be bid at a later date.

Contract A involves the design and construction of the first segment of the ICC, extending from I-270/I-370 to approximately 600 feet east of Maryland 97. This covers approximately 7.2 miles of a six-lane highway, with three interchanges at I-370/MD 355, I-370/Shady Grove and Metro Access Roads and I-370/MD 97.

For High Steel, the ICC project is highly representative of the growing trend toward Design/Build.

"We excel at Design/Build projects, which are becoming more and more popular," says High Steel Business Development Manager Tom Wandzilak. "Maryland is a state in our market area that we are very competitive in, affording close proximity to the project site."



In fact, that close proximity means that many employees and customers of High Steel will most likely use this connector when traveling in the Baltimore and Washington, D.C. area. It's a project that they will have the opportunity to experience first-hand, where there will be three lanes in each direction between I-370 and I-95 and two lanes from I-95 to US 1.

The ICC Contract A portion involves 2,500 tons of steel for 11 bridges, all fabricated by High Steel and taking more than 20,000 man hours to produce. High Steel is working with Interlock Steelworkers, Inc., which is erecting the steel.

"High Steel Structures is also producing the shop drawings in house," notes Wandzilak, which is a great advantage in allowing High Steel to manage the design/build process better.

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Bridging the Gap

A Look At
Famous Bridges



Golden Gate Bridge
San Francisco

It may be one of the most iconic bridges in the world, with its striking orange span of sunset hued steel. Some may ask why the Golden Gate Bridge is orange and not gold, assuming the name relates to its color. The Golden Gate Bridge was named after the Golden Gate Strait at the entrance of the San Francisco Bay, first named Chrysopyle ("Golden Gate") after a harbor in Istanbul. When the 4,200 foot long Golden Gate Bridge opened in May 1937, the San Francisco Chronicle referred to it as "a thirty-five million dollar steel harp!" It was constructed with some 83,000 tons of steel and 600,000 rivets in each tower. It was built over four years by 10 primary contractors and dozens of subcontractors. The steel was manufactured by Bethlehem Steel, and shipped via the Panama Canal. As for the color, the orange vermillion or International Orange was chosen to blend with the environment and provide visibility in the hazy fog.



Message from the President Jeffrey L. Sterner, P.E.

The New and Exciting, along with Some Old, Ongoing Challenges

It has been truly fascinating to watch this presidential primary unfold. I cannot remember any other time when the party nominations for president were so competitive. Regardless of one's party affiliation, it is truly a historic moment to witness both an African-American man and a woman competing for a major party presidential nomination. But some of the same old challenges are still with us, including the critical need for action in Washington D.C. to address this country's transportation infrastructure crisis.

There is undoubtedly an increase in the level of awareness of the crisis among political leaders. Departments of Transportation all across this country are struggling with funding crises because their budgets have not kept pace with the rising cost of maintaining their aging roads and bridges. Nationally, the Highway Trust Fund is on the brink of bankruptcy. The tragic collapse of the I-35 bridge in Minneapolis shined a spotlight on the deplorable state of our bridges all across the country. That may have raised the issue in the consciousness of the general public, but I fear that the general public has not yet come to grips with the magnitude of the problem or the difficult choices that need to be made. Many friends and acquaintances have commented to me

that the bridge business must be thriving with all of the talk about bridges. My response is usually to explain to them that our government leaders need to come together and figure out how to fund the massive construction program that it will take to restore our nation's roads and bridges.

The painful irony is that there is a seemingly infinite need for bridge construction and rehabilitation in this country, but there is an extraordinarily limited ability or willingness to pay for that work. Transportation infrastructure projects are funded largely by a federal gas tax which has not changed since 1993 and is not indexed for inflation. The purchasing power of that funding stream has been cut in half as the traffic on our roads continues to increase, and our neglected roads and bridges continue to deteriorate. States have been forced to look at ways to increase their own funding, but state government leaders are no more inclined to rally behind a tax increase than their federal counterparts in Washington. Public-private partnerships that generate their own funding through new tolls may be more palatable, but this approach cannot solve the problem by itself.

In this election season, do you know where your elected officials stand on this issue? Just as importantly, do they know

where you stand? You can visit the web sites of all candidates and learn for yourself where they stand on the issue of our transportation infrastructure. I encourage you to do just

that as you make your final decision and cast your vote. It will take all of us contributing to the dialogue with our state and federal government to prioritize the resolution of this issue and make the difficult decisions leading to the restoration of our transportation infrastructure. I encourage you to speak with or write to your elected officials asking them to support adequate funding to restore this nation's roads and bridges.



Jeffrey L. Sterner, P.E.
President
High Steel Structures, Inc.

Steel Delivery Timing

by **Steve Bussanmas**, Senior Vice President of Sales & Marketing

How important is timing of structural steel deliveries to contractors on a bridge project? In our "Voice of the Customer" survey "Promised Delivery Date" ranked as the second most important factor in the contractor's buying decision, just behind "Price." "Past On-time Delivery Performance" ranked fourth in the survey, solidifying the fact that properly coordinating and efficiently delivering the structural steel when and where it is needed is essential to a contractor's bridge project being successful.

Indeed, late or poorly coordinated deliveries of steel can idle expensive equipment and productive personnel, quickly losing any savings one may have thought they had gotten on bid day.

But what can be done to insure timely

and efficient deliveries? First and foremost, the contractor's Project Manager and the fabricator's Project Manager need to be in sync. There needs to be clear and accurate information flowing between the two, so that as the project evolves, proactive steps are taken to keep the job flowing. It is important that both PMs accept that they have responsibilities to fulfill, avoiding an attitude of indifference to the other's goals.

Toward that end, the following are some key issues that will be addressed when successful deliveries are achieved:

- **Facilitate timely RFI responses and drawing approvals from owners** – In many cases, fabricators must go through contractors with Requests for Information (RFI) and drawing submissions. Thus, if a contractor doesn't expedite these requests, the project

will be slowed.

- **Providing accurate ship dates** – A steel fabricator must go through a lengthy process of preparing bills of material, ordering of the raw steel, preparing detail drawings, setting production timing and scheduling of the transportation. In order to match the contractor's schedule, accurate planned ship dates are a must.
- **Delivery sequence requests** – Providing the fabricator with erection/shipping sequences, including material orientation, as soon as possible in the project allows them to properly feed the deliveries per the contractor's scheme. It also allows the fabricator to



High Steel Provides Steel Girders for Curtiss-Wright Manufacturing Plant

High Steel Structures is actively supporting many segments of the construction industry with a diverse range of products including heavy plate girders, box columns, wide span building frames and crane steel.

While High Steel may be known for bridge fabrication, we are also building a strong reputation in construction and general fabrication. As Rich Truxel, Sales Manager for High Steel, notes, some of the projects that High Steel has been involved in include indoor athletic centers, box girders and frames for airport hangars, complex girders for stadiums and plate girders for high rises.

A recent construction project for High Steel is the 48,000-square-foot Curtiss-Wright Electro-Mechanical Corp.'s \$62 mil-



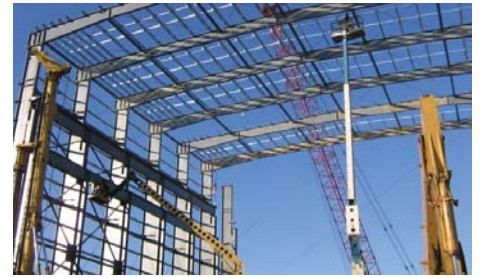
lion manufacturing plant in Cheswick, near Pittsburgh. Curtiss-Wright was formerly a unit of Westinghouse, before its purchase by New Jersey-based Curtiss-Wright Corp., and manufactures reactor coolant pumps for nuclear reactors and other products.

According to Curtiss-Wright Senior Vice-President and General Manager Greg Hempfling, the building is the largest capital project in Curtiss-Wright's history. Curtiss-Wright, which is in a high growth mode, has been awarded the Westinghouse contract for four Generation II reactor coolant pumps and pump seals for the Tennessee Valley Authority.

High Steel worked with general contractor Butler Heavy Structures of Kansas City on the Curtiss-Wright project. The manufacturing plant was designed by Butler Heavy Structures, and had some unique challenges to be met.

The critical requirement of the Curtiss-Wright building was the 300-ton crane capacity. In order to handle this capacity, Butler Heavy Structures designed large stepped columns. The outside flange is a flat plate that runs continuously to the steel rafters. The inside flange is a wide flange section that stops at the crane rail level.

"This was my first project with High Steel, and the quality was excellent. It was one of the best projects I've done," said Terry McCale, Project Manager at Butler Heavy Structures, adding that



another division, Butler Manufacturing of Annville, had worked with High Steel on the Foley Athletic Complex at West Point with great success.

McCale related that the tight schedule, which required precise phasing, was a challenge that High Steel met very well. High Steel was able to expedite the project and remain flexible, "which was amazing from our perspective," said McCale.

Another plus for High Steel Structures was location. Just over three hours from the erection site outside Pittsburgh, the 90-foot stepped columns could be shipped in one piece and delivered promptly. While some other fabricators cannot ship such large components, High Steel is capable of shipping loads up to 160-feet in length, reported High Steel Structures' Building Products Manager Jamie Gartley, who worked with HSSI project manager Chris Lausch.

"High Steel's experience in shipping large steel structures was apparent. It was a big advantage to us," said McCale. "From start to finish, it went very smoothly."

Tech Talk The High Tech Corner

Modern Bridge Coatings Provide Extraordinary Corrosion Protection

by **Ronnie Medlock, P.E.**
 Director of Technical Services

Contributions from: *Tom Calzone, Carboline* • *Luz Marina Calle, Ph.D., NASA Corrosion Technology Laboratory, Kennedy Space Center* • *Eric Kline, KTA Tator*



How long do modern bridge coatings last?

An off-the-cuff answer to this question may be incorrectly skewed by some of the bridges we see over highways. We see rust showing through green paint on some older bridges and recognize the obvious: many older steel bridges

are experiencing coating failures. But such older structures do not reflect the efficacy of modern steel bridge coatings and associated practices. Consider these key differences:

- Older coatings were applied with much less cleaning; in fact, paint was often applied directly to mill scale. By

contrast, modern practice is to blast to near white base metal, thereby removing the possibility of a loose substrate, such as mill scale, while also providing a sufficient anchor pattern for proper adhesion.

- Zinc rich primers offer galvanic (cathodic) protection as well as a barrier

Employee Spotlight: Bill Mankin, Chief Fabrication Planner



As High Steel's Chief Fabrication Planner, Bill Mankin has played a vital role through the years in the success of the company's most challenging projects. He recently celebrated his 40th anniversary with the company, having started his career at High Steel back in 1967 as a welder. Over the years, Bill moved through the ranks to Supervisor, General Foreman and Superintendent, prior to assuming his current position.

As Chief Fabrication Planner, Bill reviews

and develops detailed fabrication plans. As he explains, the plan for a structure requires careful coordination between the Planning, Engineering and Fabrication departments. Bill also is called upon to lend his expertise to the estimating and sales department prior to a complex project's bid date.

Several of the more memorable jobs that Bill has worked on in recent years include the Arthur J. Ravenel Jr. cable stay bridge in Charleston, SC.; the Frederick Douglass – Susan B. Anthony triple-ribbed

arch bridge in Rochester, NY and the Driving Park Avenue deck arch, also in Rochester.

Bill and his wife Doris have been married for 43 years and have two sons and four grandchildren. In his free time, Bill enjoys building and sailing radio controlled sailboats and spending time with his family at the Delaware shore.

Tech Talk: Modern Bridge Coatings Provide Extraordinary Corrosion Protection

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effect. The zinc acts as a sacrificial anode to protect base metal (by corroding itself) and forms product that seal the pores of the coating, thus improving the barrier properties of the coating over time.

Use of zinc rich primers began with experimental applications in the late 1960s and became mainstream technology through the 1970s. Successful performance on these bridges demonstrates that zinc based primer systems will last at least 40 years. This anecdotal evidence suggests that with proper application and maintenance, it is readily feasible that the coating will last the life of the structure.



Kennedy Space Center (KSC) launch facilities in Florida, test panels shown at bottom center.

Studies by NASA support this supposition. At 1000 feet from the ocean, steel structures at the Kennedy Space Center (KSC) launch facilities in Florida must endure the continuous presence of sea salt. Further, due to prevailing winds from the Atlantic, the KSC has the highest corrosivity of any long-term exposure site in the United States. Inorganic zinc test panels first exposed to this environment in 1969 by the KSC Materials Testing Branch still show no corrosion

after almost 40 years.

The Santee River Bridge in South Carolina provides another good example of successful performance in a coastal environment. Inorganic zinc primer applied in 1977 is still performing well and helped lead to the choice of the same primer for yet



The new Cooper River Bridge is primed with inorganic zinc.

another coastal structure, the Cooper River Bridge. Further, finish coats have improved since Santee River Bridge days; epoxy intermediate and urethane top coats have replaced vinyl, offering improved color retention.

So how long do modern coatings last? We do not know the precise answer because coatings from the earliest zinc primer days are still performing after 40 years. But the 40 year life does teach us something: even in coastal environments, zinc primer systems offer extraordinary corrosion protection.

Steel Delivery Timing

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develop load configuration drawings, used to identify appropriate equipment needs and potential stress issues.

- **Routing into the jobsite** – Planning for site maneuvering is one of the most important aspects of our Transportation Group's work. Accurate routing into the jobsite, access issues, site con-

ditions, lane closures, power outages, curfew restrictions, etc. are only a few of the issues that can cause additional delivery time.

- **Timely execution of a contract** – Many times contractors get busy with paperwork necessary for the owner to award their contract. Don't forget to also expedite your agreement with the

fabricator as most will not order the raw material or begin preparation of the drawings until a legal document, limiting their risk, is in place.

Addressing these issues, along with a competent supplier, will insure efficient, safe and timely deliveries of your structural steel.

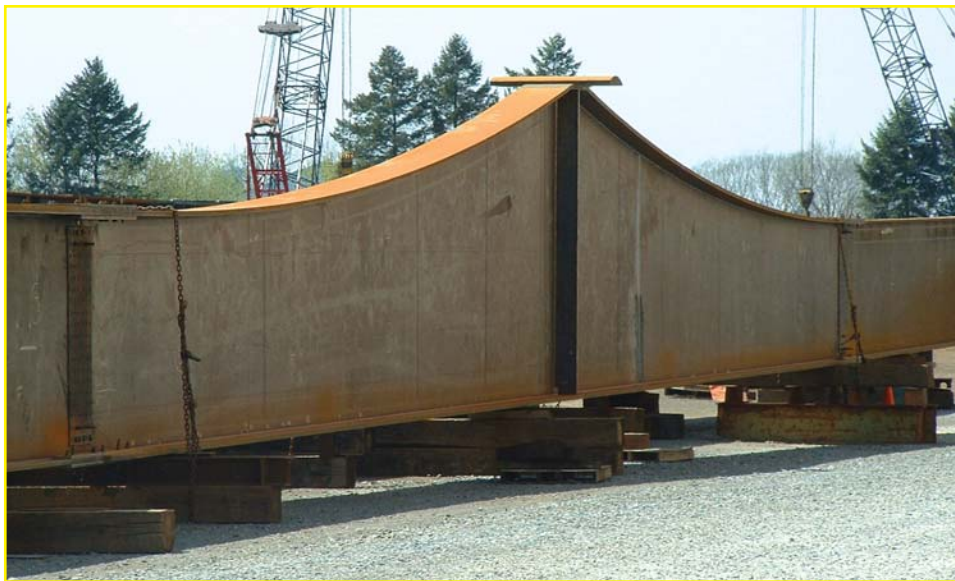
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The ICC Contract A portion is a highly cooperative effort, with Paul Lipinski as the High Steel project manager. The General Contractor is Intercounty Constructors, a Joint Venture which is made up of three different firms, Granite Construction Company, G.A. & F.C. Wagman, Inc. and Corman Construction. These are companies that have worked with High Steel in the past, with great success.

Work on Contract A has already started, with about 10 percent of the fabrication completed. The time frame for opening that segment of the ICC is set for late 2010. The timing of the four remaining contracts is staggered, with all portions expected to be opened in early 2012.

With rising gas costs and an emphasis on building green, the ICC project has been designed to provide improved public transit service to Montgomery and Prince George's Counties. The roadway improvements are expected to spur 4,400 new express bus trips in the ICC's congestion-free managed lanes, providing



Funding for the ICC project comes from the Maryland Transportation Authority at approximately \$1.23 billion, GARVEE bonds at \$750 million, Maryland Transportation Trust Fund at \$180 million, Maryland General Fund at \$265 million and approximately \$19 million in additional special funding.



time and energy savings to an estimated 11,500 people a day. Bicyclists and walkers will be able to take advantage of 11 miles of winding bike and pedestrian trails, linked to 12 existing and 7 planned trails, creating a network of access routes for those providing their own Earth-friendly mobility. Even the building process has an emphasis on building green. As Wandzilak notes, some of the steel plate that High Steel purchases from the steel mills is produced from recycled material.

Despite the ICC's location in one of the busiest, most highly trafficked areas, the region is also abundant in natural wildlife and streams that affect the quality of water throughout the area and beyond. To protect wildlife, which ranges from fish to deer to small mammals, longer bridge lengths and a narrower footprint help to reduce impact to streams, wetlands and forests. State of the art stormwater controls exceed regulatory requirements to dissipate temperatures, remove pollution

and facilitate stream flows. More than 20,000 linear feet of streams will be restored and 44 new bridges and culverts will provide safer passage for animals.

Even the endangered Eastern Box Turtle has been taken into account. Wildlife experts have been gathering the preserved Maryland species through the use of specially trained dogs, that gently locate the turtles. More than 150 of them have been relocated to a safer environment.

JUST THE FACTS:

- Tons of Steel for Contract A only: 2,500 tons.
- Cost of Total Construction ICC Project: Approximately \$2.4 billion.
- Construction Cost/Contract A: \$479 million.
- Owner: Maryland Transportation Authority, administered by the Maryland State Highway Administration.
- Steel Fabrication: High Steel Structures.
- Steel Erection: Interlock Steelworkers, Inc.

Recent Contracts Awarded

PA Turnpike, Mon-Fayette Expressway, SR 0043 Section 51F

Fayette County, PA
New Enterprise Stone & Lime Co., Inc.
4,665 Tons

Route I-78 and Garden State Parkway Interchange 142

Union and Essex Counties, NJ
Union Paving and Construction Co., Inc.
4,367 Tons

I-95/I-895 Interchange

Baltimore, MD
Concrete General, Inc.
3,631 Tons

PA Turnpike, Mon-Fayette Expressway, SR 0043 Section 51E2

Fayette County, PA
Golden Triangle Construction
1,297 Tons

Rehab of Gowanus Expressway (I-278)

Kings County, NY
El Sol Contracting and Construction Corp.
1000 Tons

World Trade Center, Package 2

New York, NY
Cives Steel Company
187 Tons

National Museum of American Jewish History

Philadelphia PA
Berlin Steel Construction Company
250 Tons

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Sanford High 1931

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- Energizing our teamwork with participative management.

- Recognizing and rewarding the accomplishments of our co-workers.
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