

Meeting the Challenge of a Difficult Job – Specialty Contractor

Contractor: Drake Williams Steel

Project Name: Veteran’s Administration Hospital

Overview

The urgency and critical need to provide care for our veteran population parallels the complexity of construction and need to build the new Veteran’s Administration Hospital in Aurora, Colorado. The sheer magnitude of the project is impressive, six structural steel framed buildings and five mixed concrete & steel buildings connected by a 1,100 foot long concourse. With over 1,000,000 square feet of space, immense construction management issues were presented during construction of this facility. The joint venture general contractor team of Kiewit/Turner faced the additional challenge of orchestrating a building project with incomplete design drawings and uncertain funding.

Drake Williams Steel was able to provide critical path structural steel to keep the job moving forward. Despite complex field logistical challenges and building sequence changes, the steel team of Drake Williams Steel, LPR Construction and veteran owned Acropolis Steel successfully delivered and erected 8,350 Tons of structural steel. To put that in perspective, imagine waiting for train, 2 miles long, loaded with 139 cars of structural steel.

Solutions of Special Problems

While statistics summarizing a project are interesting, this is a story about the people and processes that made this project a success for Drake Williams Steel (DWS), our Kiewit/Turner (K/T) customer and ultimately the owner.

From a baseline schedule utilized during procurement of the project, the practical realities of the construction schedule presented the biggest challenge throughout the project. The steel contract was awarded prior to the concrete foundation package and there were delays in completing the underground mechanical design including the electrical vaults. These issues caused a complete restructuring of the sequence of building construction. A seven month schedule adjustment was made after award of the steel contract and prior to the first steel delivery.

The connecting concourse was scheduled to begin first, however, did not in fact start until seven months later, after two five story Inpatient “IB” buildings were substantially complete. The delay in the concourse excavation and foundation construction had a ripple effect through the entire job. An innovative plan was required to successfully handle the scheduling complexity and logistical requirements of this project.

DWS utilized an aggressive approach to project management by utilizing 4 different project managers. A team of two project managers concentrated on detailing sequences and scheduling shop production while another team of two focused on managing the construction schedule and

steel erector coordination. This internal organizational structure made it possible to navigate the considerable federal contracting guidelines and document control compliance requirements. Unlike a traditional commercial building 2 week shop drawing approval turnaround, there was an 8 week cycle of shop procedures, shop drawing standards and shop drawing approval time. Federal contracting and procurement guidelines are substantially different from commercial building practices, thus requiring more pre-planning.

DWS project management made regular site visits to actually walk the job to observe progress and potential bottlenecks. Getting out of the office and understanding the site conditions provided a realistic view of the challenges and coordination required. Many potential crane access and work area conflicts were prevented through this practice saving man hours and inefficiency in the field. Senior management at the highest level, represented by Colorado Regional Director Bob Spencer, was also actively engaged with regular visits to the job site.

Excellence in Project Execution and Management / Team Approach

Pro-active management and creating a communication plan with other specialty contractors resulted in a huge benefit to the project. In addition to attending regularly scheduled job site meetings, the DWS team asked the concrete specialty contractor, Sundt/Haselden, and K/T teams to an end of the week meeting. This meeting occurred every Friday morning for over a year so that we could anticipate significant problems in the weeks ahead. The Friday meeting helped each of us allocate resources efficiently. These meetings were sometimes heated, but allowed us to see the big picture and facilitate cooperation in order to keep the project moving forward.

DWS internal planning and weekly production meetings throughout the project were utilized to adjust and stay ahead of the continuously changing schedule. Project managers were actively involved in fabrication production meetings as well as continuously coordinating with our steel erector LPR regarding changing sequences. DWS was able to achieve our goal of continuously feeding the job and not causing a delay. Peter Radice, Senior Project Manager with LPR Construction, stated “not only did Drake Williams Steel not hold us up on deliveries; they jumped through hoops to accommodate the change in sequences and keep us working”.

Construction Innovations

Steel fabrication took place in both Denver and Omaha fabrication facilities. Production flexibility and sufficient capacity were created by utilizing day and night shifts in two different fabrication plants. This strategy of multiple facilities was a key component of our original proposal, supported by an initial resource loaded man-power projection. Although the schedule and sequence of building deliveries changed radically, we were able to adjust to keep pace with deliveries to the job site.

Another strategy that aided tremendously was to fabricate material well before it was required and store it on trailers, ready to deploy to the job. Between 12-30 trailer loads at any given time were prepared for shipment as necessary. DWS utilized a full time shipping coordinator to

schedule and monitor all deliveries. Approximately 600 truckloads containing 1,218 columns and 38,188 beams were shipped. The use of highly efficient Computer Numerically Controlled (CNC) shop fabrication equipment and electronic programming makes it possible to accurately track production pieces (including some useless information such as 145,700 holes punched).

Safety / Environmental

Safety goes hand in hand with efficient production on a successful job. There were zero lost time accidents in the fabrication shop during production of this project, representing more than 100,000 man-hours safely performed through September 2014. More significant and difficult to achieve is zero lost time accidents in the field during steel erection, 123,000 man-hours through September 2014. Selecting LPR and Acropolis Steel with their strong commitment to safety as our steel erector partners early in the job was critical to our joint success. Upon final completion of miscellaneous steel, there will have been 250,000 man hours expended, the equivalent of 122 man years.

Excellence in Client Service

Despite difficult circumstances and heat of the battle negotiations, DWS demonstrated a commitment to the K/T, VA Hospital team and adapted to unexpected circumstances. Surviving the contractual, financial and job site challenges was a daily and weekly effort. It was gratifying to stand side by side with K/T during meetings with the VA to discuss changes in scope and negotiate specific issue resolutions.

An important indication of positive feedback comes directly from the owner client. 99% of change orders presented to the VA Hospital on behalf of the steel team have been acknowledged as legitimate changes in scope and recognized as resulting in cost impact above the original contract.

Vice President and General Manager Christian Jahrling from Turner Construction commented on the character of the Drake Williams Steel team, “possess a strong ethical foundation, are creative problem solvers and will work as business partners.” We could ask for no greater recognition at the conclusion of a difficult project than the mutual respect of a business partner.

Conclusion

Raising the ceremonial “topping-off beam” on June 24th, 2014 represented placement of the last major steel member and completion of the structural phase of the project. The signatures from fabrication and steel erection team members involved in the project adorned the beam, representing the commitment and dedication of those involved in completing a challenging job.

It is appropriate then that the veterans who have sacrificed so much for our country will be served by this facility. The Veteran’s Administration Hospital, with a strong structural steel backbone, will stand for generations to come, providing state of the art healthcare for our deserving veterans.









