



Mystic Center Parking Garage

The Mystic Center Parking Garage in Medford, Massachusetts is a showcase example of precast concrete's ability to provide an attractive exterior finish to a large, functionally efficient parking structure. The garage provides parking for an adjacent office building as well as park and ride patrons who take a shuttle to an adjacent MBTA terminal.

The garage has 8 levels of parking for 1,350 cars. Precast concrete double tees, beams,

columns, spandrels and wall panels make up the all precast garage.

The most attractive feature of the garage is the exposed aggregate, radiused recess in the spandrel panels. The spandrels also have bullnose at the top and bottom of the spandrel to add to the features of the member. The column-spandrel interface also has additional curves and recesses to accent the vertical look of the columns. Once again the flexi-

bility of precast concrete is taken advantage of as the ornate spandrels also act as structural, load carrying members of the garage.

The Architect for the project was Thompson French & Matsumoto, Inc. the structural engineer was McNamara/Salvia, Inc., the owner was Cabot Cabot & Forbes and the specialty structural engineer was The Consulting Engineers Group, Inc. (San Antonio, TX).



Erection is completed on CEG'S 5th NFL Stadium

Precast is complete on the New Tennessee Titans NFL stadium in Nashville. This 67,000+ seat stadium will be open for the fall 1999 season. CEG performed specialty engineering and complete shop drawing services for both structural precast and architectural precast cladding.

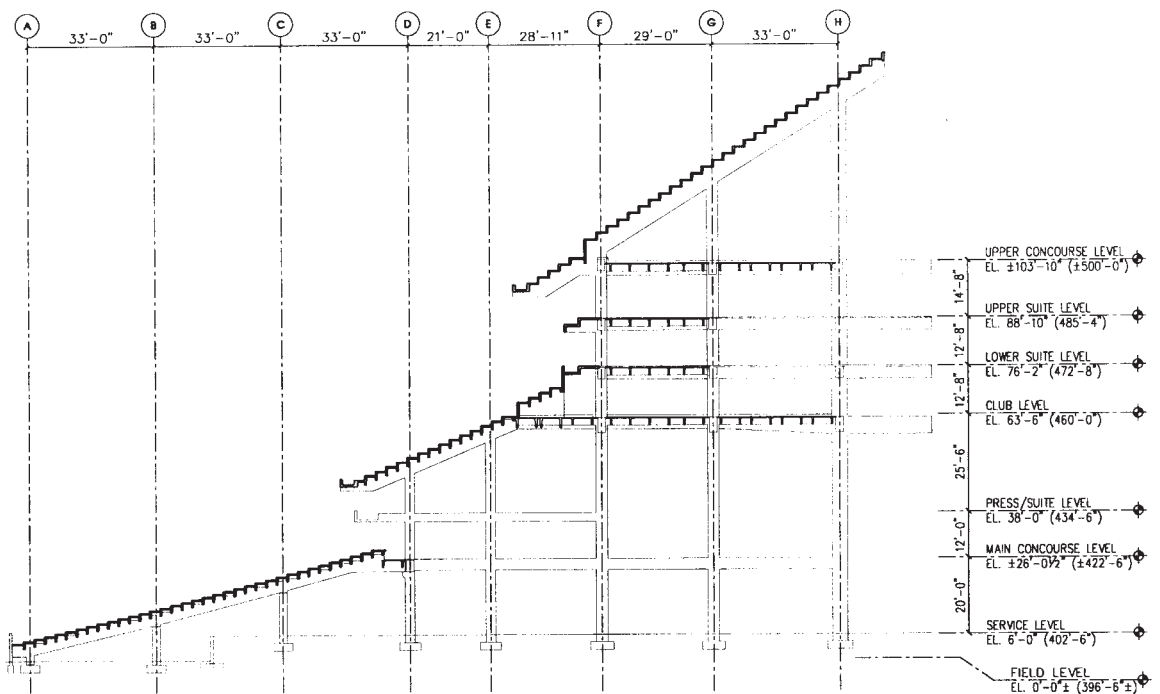
Over 3400 precast elements were cast in three different plants by Metromont Prestress Company. The majority of seating unit risers were triple units with double units used only as dictated by crane reach requirements. This kept the number of pieces to be erected

to a minimum. Lightweight concrete was utilized due to maximum spans of up to 50 ft for seating units. In addition to seating unit risers, structural precast included raker beams and columns at the main level seating bowl, large tub shape units at club level seating to accommodate TV camera box locations and large closure spandrels at the upper level bowls to close off the end-zones. The architectural precast cladding was a combination of grey concrete, charcoal concrete and curved white precast pieces. Much of the architectural cladding was value engineered by Metromont and

CEG to be larger, and therefore fewer pieces which provided a cost savings.

The stadium precast past the test with "flying colors" for wind loading! On 4/16/98 a tornado ripped through downtown Nashville and straight through the construction site. The precast (approximately 60% erected) stood practically unscathed by the tornado which destroyed all cranes on the site and did significant damage to the C.I.P. formwork. The most notable precast damage came to the Erector's trailer and increased his respect for tornadoes.

Halmuth Obata & Kassabaum was the Architect and Thorton Tomasetti, the Engineer. On four of these five completed NFL stadiums, CEG has worked closely and successfully with HOK as the Architect. HOK provided a symmetrical grid for the project allowing precast elements in the concourses and seating bowls to be fairly repetitive and economical. Also, HOK was receptive to suggestions from the construction team and worked with them in a "partnering" fashion.



BUILDING SECTION

California City Correctional Facility

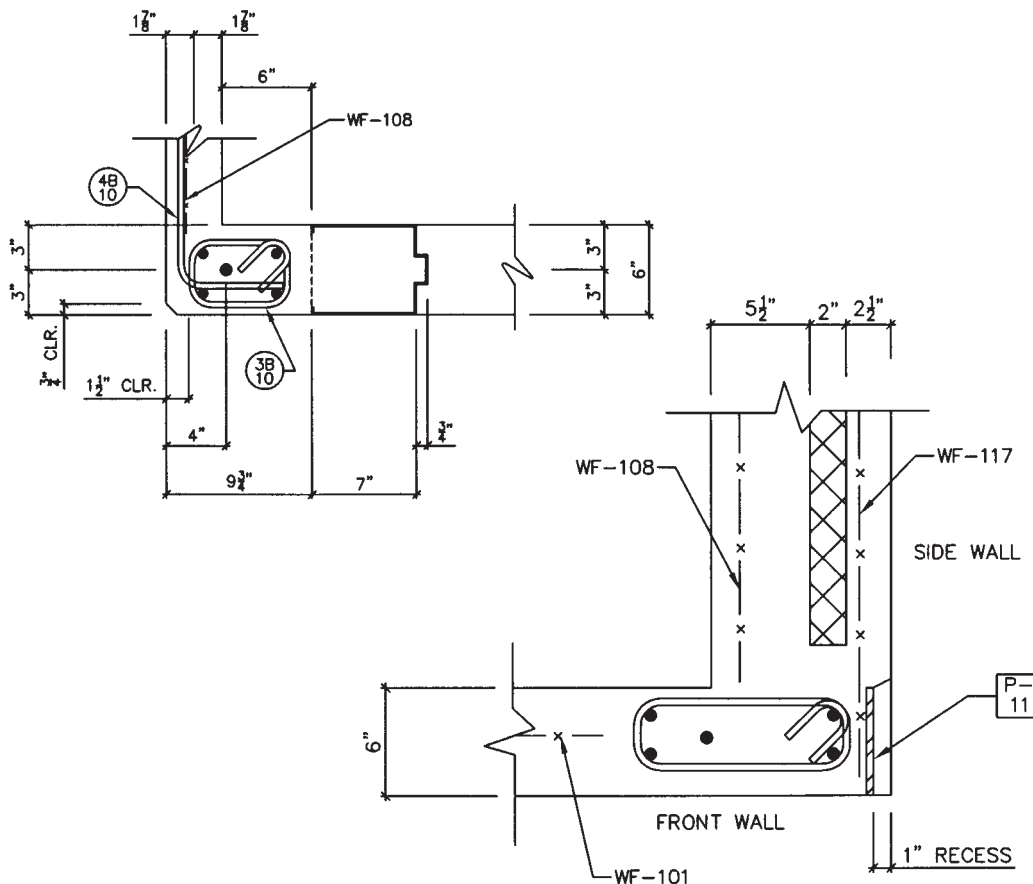
Precast concrete cell modules provided the solution to a demanding Zone 4 seismic correctional facility in California City, CA.

The 2½ story high, 2400 bed facility consisted of 10 housing units, a large administration building, a recreational building along several corridors to link the buildings together and an armory building. Precast concrete's versatility was taken full advantage of as **all** of the buildings were made from precast concrete.

The designers were required to conform to the numerous seismic provisions in the 1994 Uniform Building Code with 1995 State of California Title 24 Revisions. The designers had to comply with the very specific detailing requirements for boundary reinforcement. This was especially challenging in the modular cell members due to the space restrictions in the module's geometry. Chapter 19 of the building code required that these boundary zones be reinforced like a tied column with vertical bars in the corners and closed, 135° hook ties around the vertical bars. The designers used a tension bar inside this boundary reinforcement to provide a continuous load path to the foundation system. A typical double tee flange to flange welded connection was used at the roof/floor of the modular cells to provide a positive mechanical connection between adjacent cells. This connection also helped eliminate any possible "hammering" between modules that may occur during an earthquake.

Double tees and hollow core members with a 2½" thick topping and very detailed diaphragm reinforcement were designed to resist the Zone 4 seismic forces. Over 7500 grouted splice sleeves were required to transfer the seismic forces into the foundation system.

Corrections Corporation of America from Nashville, TN is the owner, Dana Larson Roubal & Assoc. from Omaha, NE was the architect and The Consulting Engineers Group, Inc. of San Antonio, TX was the structural engineer of record for the project.



13 SIM OCCURS AT PLENUM. REINFORCEMENT AND WALL THICKNESS VARIES.



CEG Prepares Specs for Airports RCS

Dick Beebe, Director of Parking and Transportation, Planning, is leading the CEG project team to replace the Airport Parking Revenue Control System at Minneapolis—St. Paul International Airport. Following a year of planning and design analysis of the MSP parking system, including a new 9,000 space garage under construction; the plans and specifications were released for bid in December and the project awarded in March of this year. The project will utilize state-of-the-art devices and magnetic stripe technology in a fully on-line, networked system controlled from a new Parking Management Building. A license plate inventory system will link every overnight transaction to the issued ticket number to facilitate auditing. Credit card and debit card use will be an important part of the overall system along with installation of Pay-on-Foot units in the Terminal exits to parking. A total of 13 entry lanes and 30 exit lanes are included.

Installation has begun and will continue through September of 2000 as new elements of the garage and access ramp system are completed. The total parking system, when completed next year, will comprise 13,000 total spaces in the existing garage and its new addition and 3,000 spaces in a remote lot adjacent to the Herbert H. Humphrey Terminal.

(continued on back page)

News Bites

CEG

The Consulting Engineers Group Inc.

- CEG is pleased to welcome and introduce several new employees including **Todd Diebel, Alvaro Garza, Benjamin Garza, Christopher Kerksmar** and **Brian Messer** in our Texas office and **Eric Van Duyne** in our Illinois office.
- Congratulations to **Dan Stevens, Jeff Hanrahan** and **Ramiro Trujillo** on receiving their 10-year pins which were presented at our annual Christmas party this past December.
- Our Illinois office received a facelift and acquired some much-needed additional space this past December. We have been at our present location for 10 years and were “bursting at the seams.” This will give us some much-needed growth potential.

(continued from Airports RCS)

We are also working jointly with Wilber Smith & Associates to prepare similar RCS documents for the Los Angeles World Airports—LAX, Ontario, and Van Nuys. This system will rely on the most sophisticated technologies including a fully networked control and auditing system and License Plate Inventory system for in/out tracking of every overnight transaction. A central computer network will be able to monitor the total system simultaneously and prepare specialized activity reports in any combination upon command. This total LAWA system, covering the three airports, will involve 33,000 parking spaces and some 75 entry and 79 exit lanes, one of the largest such systems in the U.S.

FTP Supercedes E-Mail For CEG Client Data File Transfers

CEG has recently added an FTP site to our web site as a new tool for transferring data to and from clients. It has proven itself much more reliable than e-mail file attachments for transferring large documents.

FTP stands for File Transfer Protocol. FTP client software allows files to be transferred between your hard drive and a remote server. Like e-mail, FTP transfers are done over the internet. Unlike e-mail, it is fast—saving time, money and the aggravation over waiting for e-mail data files to arrive.

Ever wonder what “http” stands for in all of the Web sites you access with your Web

browser? Hypertext Transfer Protocol is how your browser transfers files from remote servers to graphically display web content on your monitor. Because HTML displays everything in all its multimedia glory, it’s slow. However with FTP, you can just grab a file and download/upload it.

Direct modem transfers are becoming a thing of the past due to long distance phone calls, dedicated hardware, phone lines and staffing requirements.

For those of you finding e-mail attachments inefficient or impractical when dealing with large documents, FTP is the only answer. In today’s Internet world, FTP should be spoken in the same breath as “e-mail” and “browser”. You need all three!

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