



MD 195 (CARROLL AVE.) OVER SLIGO CREEK AND SLIGO CREEK PARKWAY

MRMCA 2018 CONCRETE CONFERENCE

MD 195 (CARROLL
AVE.) OVER SLIGO
CREEK AND SLIGO
CREEK PARKWAY



STATE HIGHWAY
ADMINISTRATION



Kiewit

LOCATION MAP – CITY OF TAKOMA PARK



MD 195 (CARROLL AVE.) BRIDGE HISTORICAL MARKER

CARROLL AVENUE BRIDGE

Three bridges have been built across Sligo Creek at Carroll Avenue. The first bridge, built about 1878, was a simple wooden structure located about 150 feet below the site of the present bridge. When the Seventh-day Adventist Church established a hospital and college nearby in 1904, it became apparent that a larger bridge capable of handling increasing traffic for the growing community was needed.

Walter Douglas, who engineered the Lion Bridge on Connecticut Avenue, designed and supervised construction of the new reinforced concrete structure. The Adventist Church made a substantial contribution toward the \$10,000 costs, and the bridge opened on July 22, 1909, with a speed limit of 8 miles per hour!

The Douglas Bridge served the town until the 1930s, when population growth and ever increasing automobile traffic demanded a larger structure. Governor Albert C. Ritchie and leading state, county, and city officials opened the three-lane steel and concrete bridge on September 14, 1932, in a gala celebration attended by over 10,000 people.



Old Wooden Bridge, 1878-1909

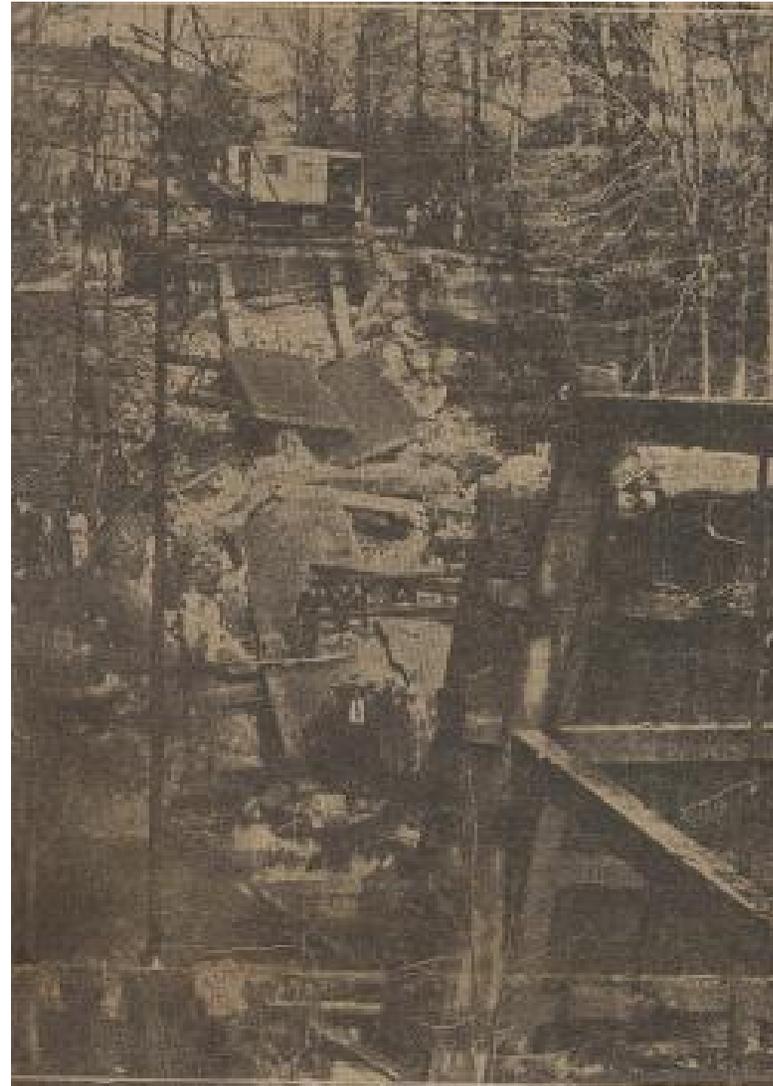


Sligo Bridge, 1909-1932



Carroll Avenue Bridge, opened 1932

EARLIER BRIDGE
COLLAPSED AND KILLED 3
WORKERS DURING
DEMOLITION FOR
CONSTRUCTION OF 1932
ARCH BRIDGE



Excerpt from Local Newspaper

Described by Witness

F.D.B. Austin, 202 Willow Avenue, Takoma Park, was an eyewitness to the crash.

"The gang had been dynamiting the bridge before lunch," he said, "and immediately after lunch they began cutting away reinforcements with an acetylene torch."

"Six men were on the bridge when the span gave way. The columns underneath the outer edge of the concrete slab had been removed and the slab, weakened by the cutting of the reinforcements, tipped over. The three men nearest the standing portion of the bridge ran from the falling section and were able to reach safety before the slab was severed from the rest of the bridge."

Austin explained that about 40 feet of the bridge, at the north end, already had been demolished and that the men were working on the next section.

While attempting to extricate the dead men from the wreckage, Fred Green inhaled a quantity of acetylene gas which had been used to operate the blow torch. His condition was not serious.



INITIAL PHOTOS
Project Start December 2010



BRIDGE CONDITION PHOTOS



BRIDGE CONDITION PHOTOS



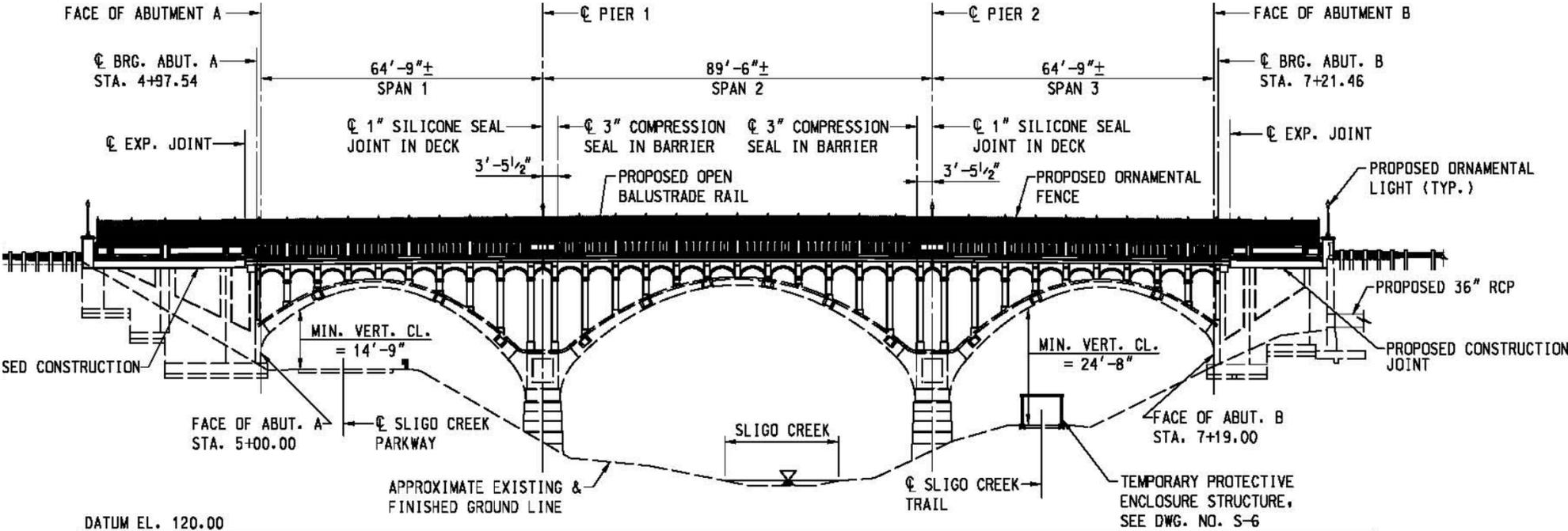
BRIDGE CONDITION PHOTOS



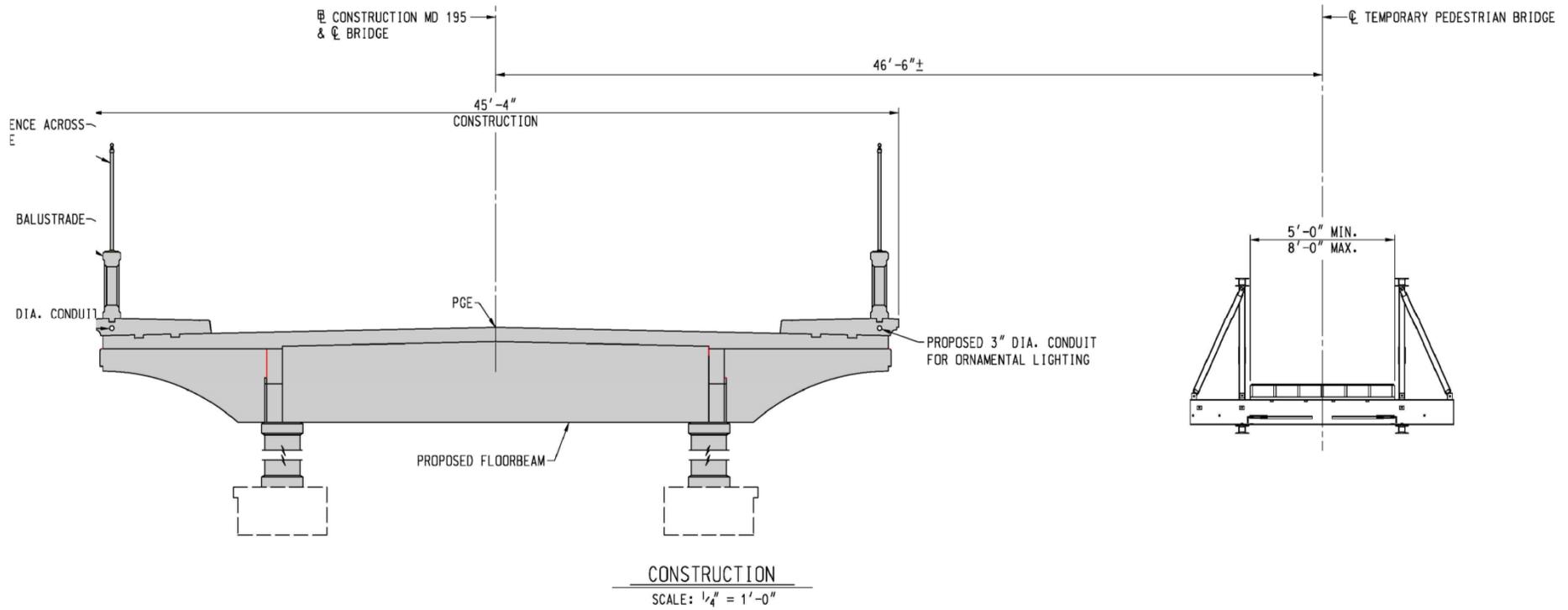
Project Scope
of Work

- Contract BA4675180 (US 40 over Patapsco River) Bid in June 2010 for \$15,825,807
- Scope of Work - Replace Everything Above Main Arches (All Columns, Floor Beams, Deck Slab)

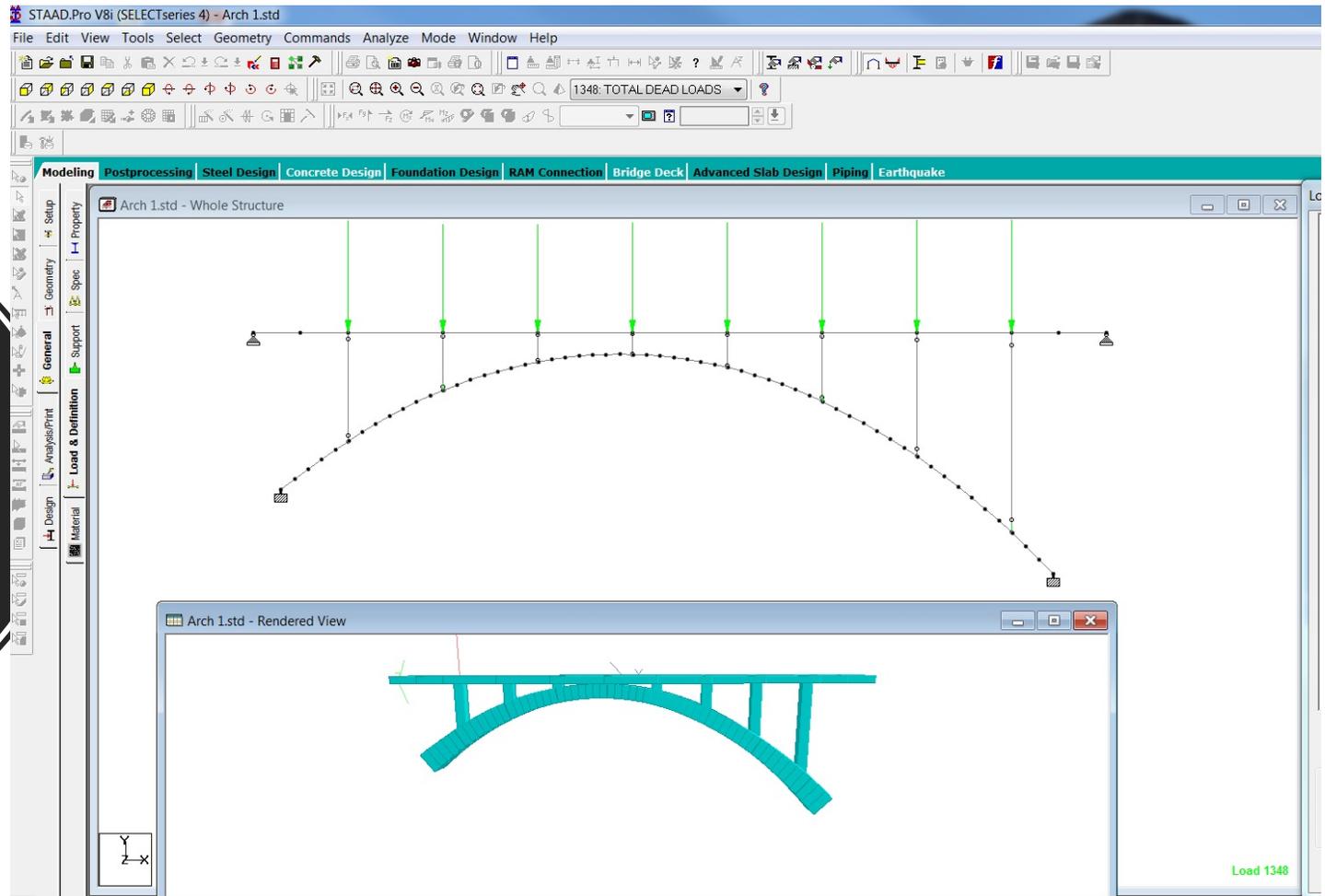
BRIDGE ELEVATION



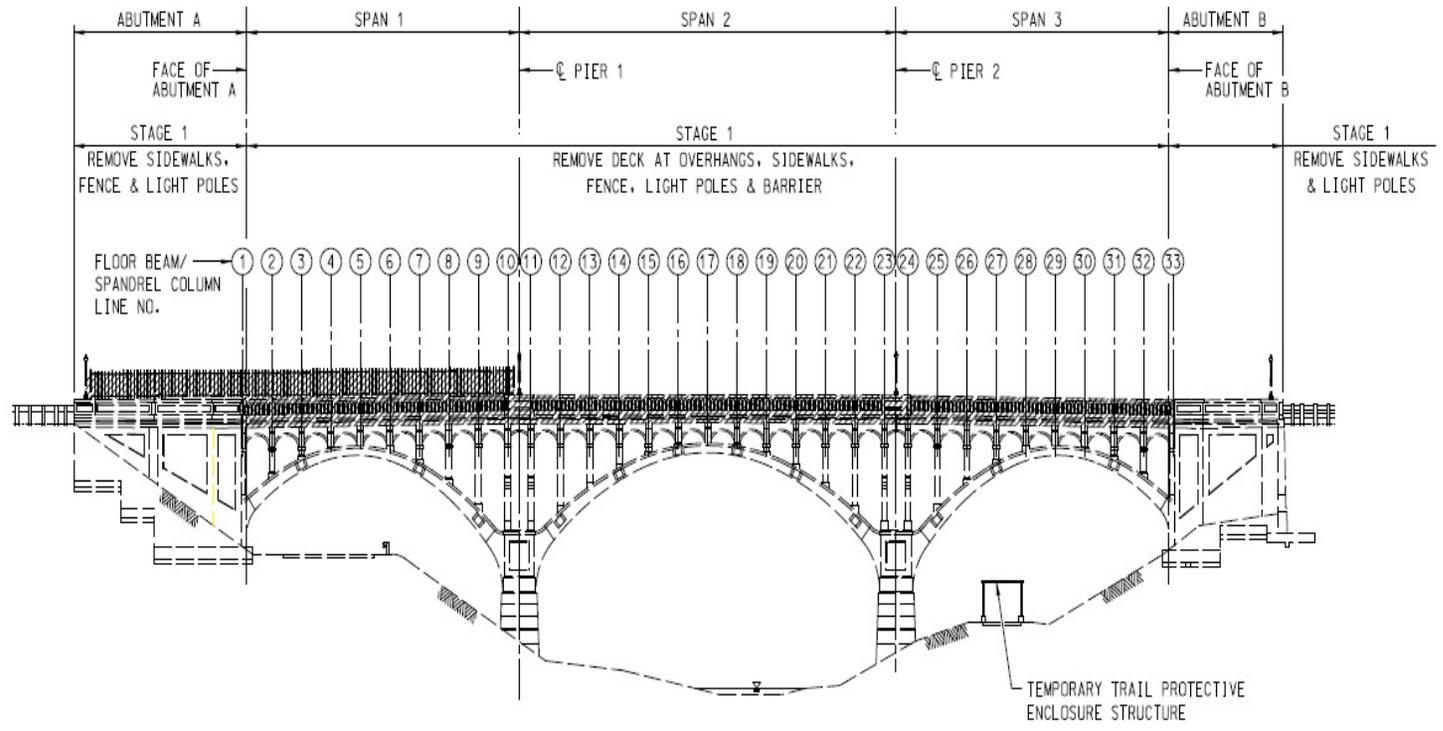
TYPICAL SECTION



ARCH Model



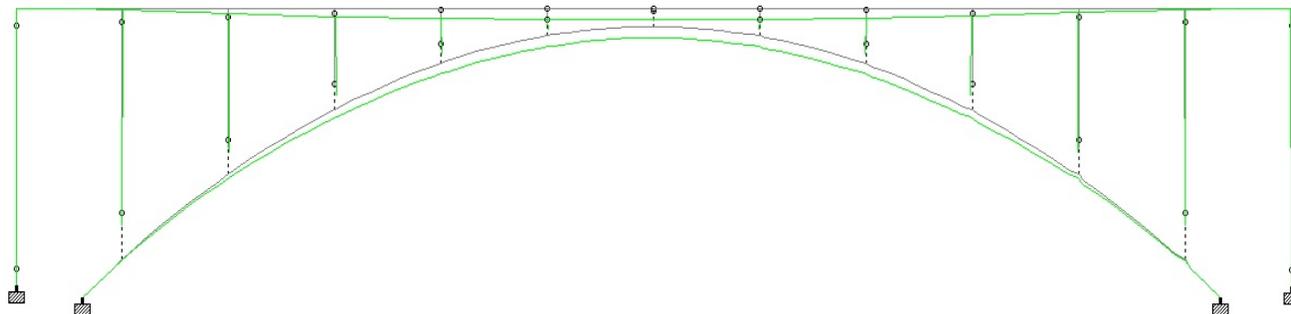
STAGE 1 Demo



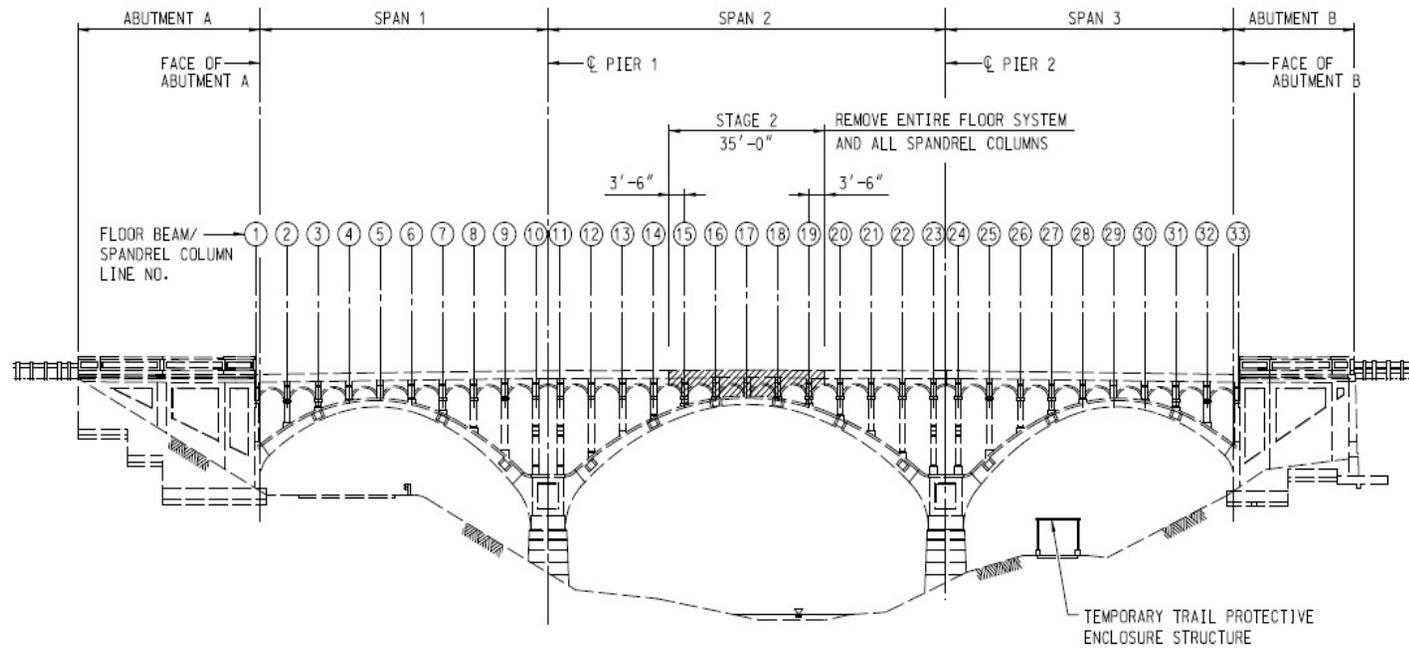
ELEVATION - STAGE 1 REMOVAL

SCALE: 1" = 20'-0"

STAGE 1 Deflection



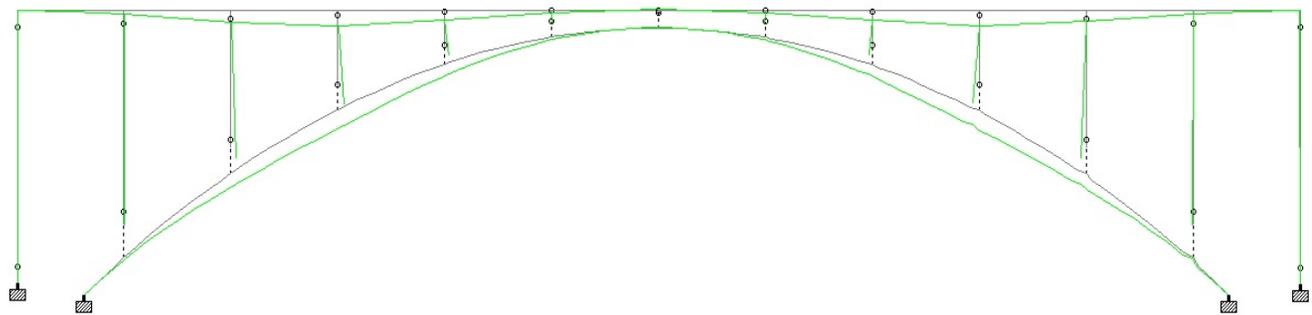
STAGE 2 Demo



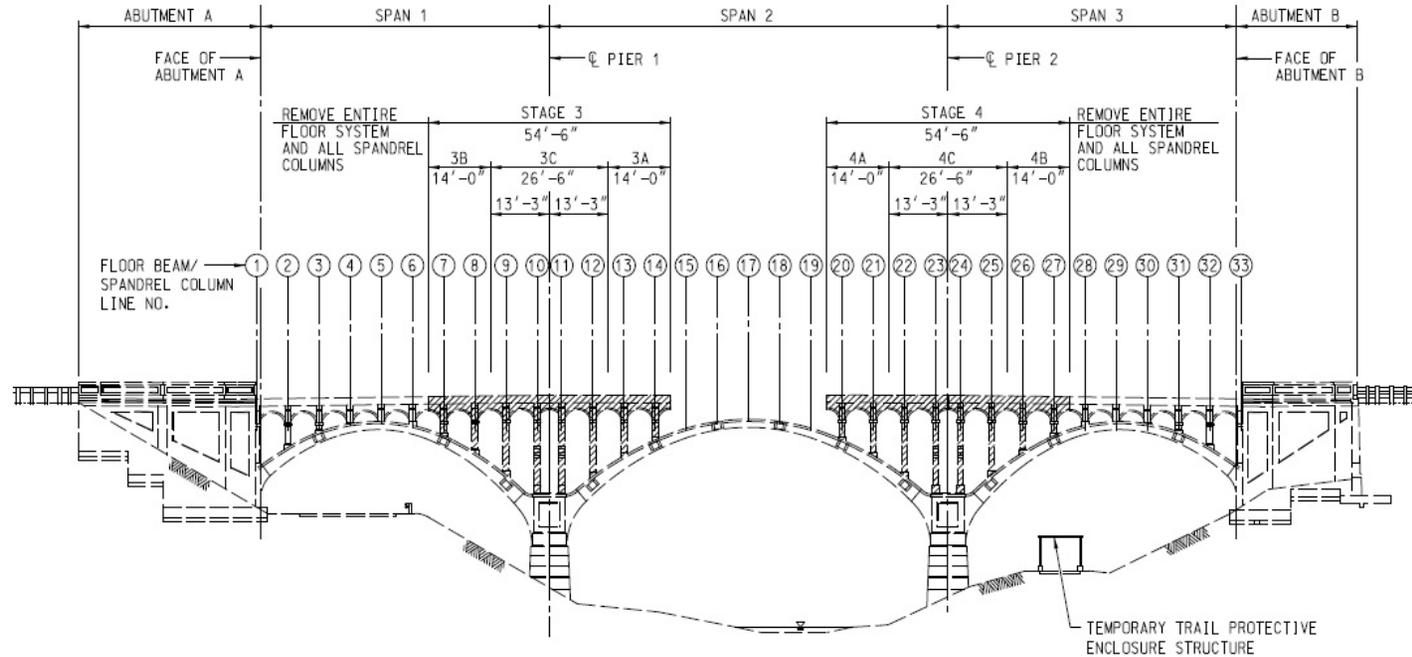
ELEVATION - STAGE 2 REMOVAL

SCALE: 1" = 20'-0"

STAGE 2 Deflection



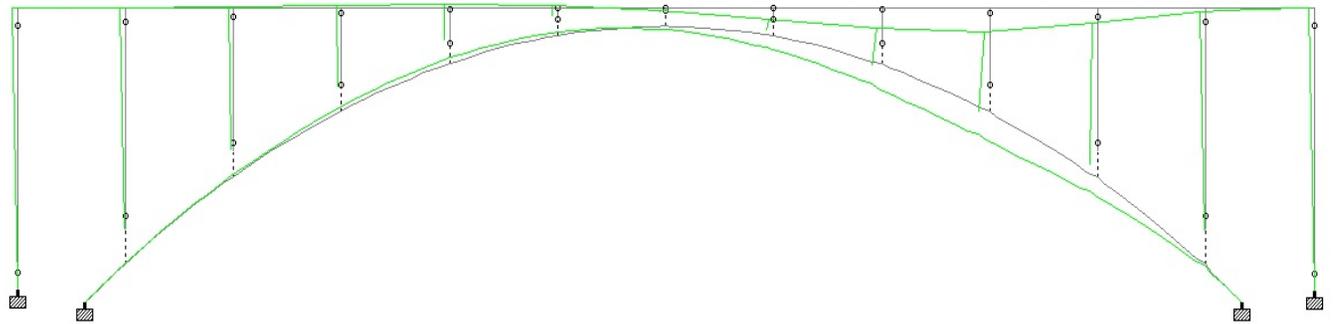
STAGE 3 Demo



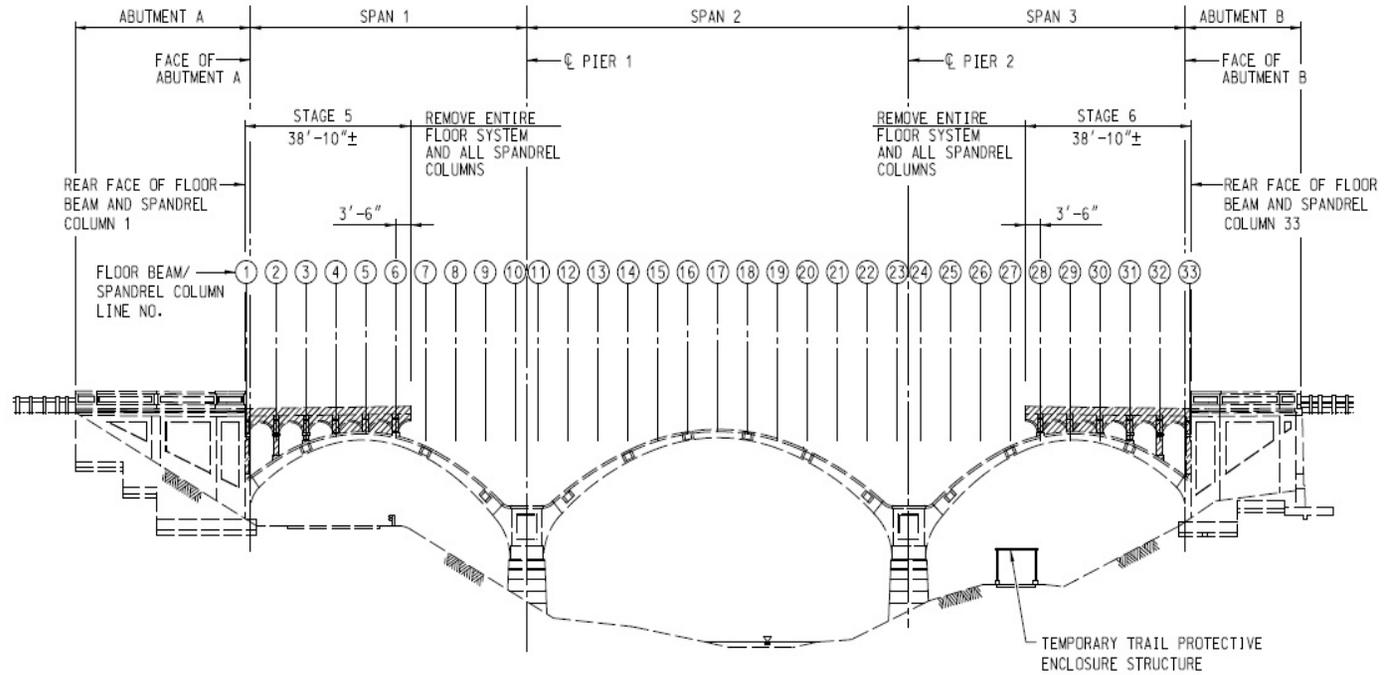
ELEVATION - STAGES 3 & 4 REMOVAL

SCALE: 1" = 20'-0"

STAGE 3 Deflection



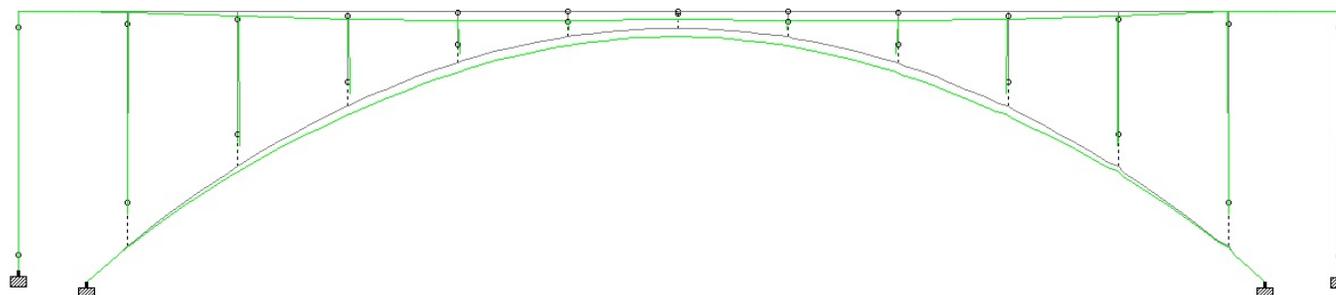
STAGE 5 Demo



ELEVATION - STAGES 5 & 6 REMOVAL

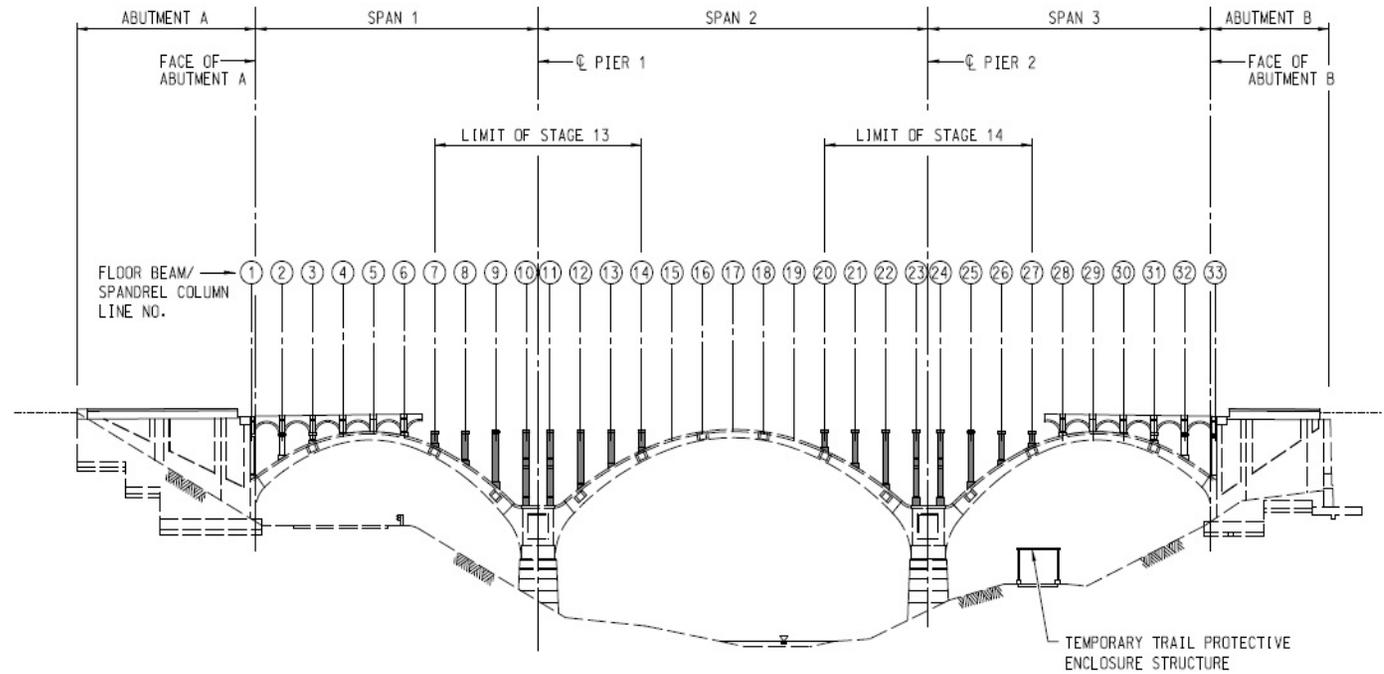
SCALE: 1" = 20'-0"

STAGE 5 Deflection



Load 1640 : Displacement

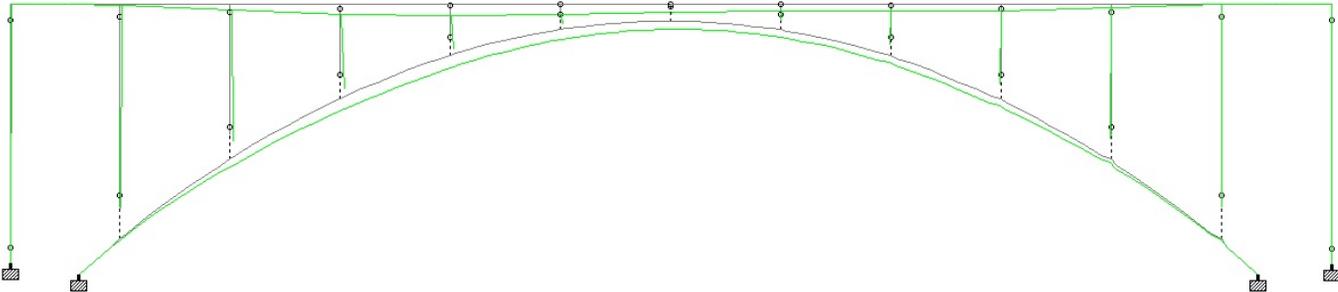
STAGE 13/14
New
Construction



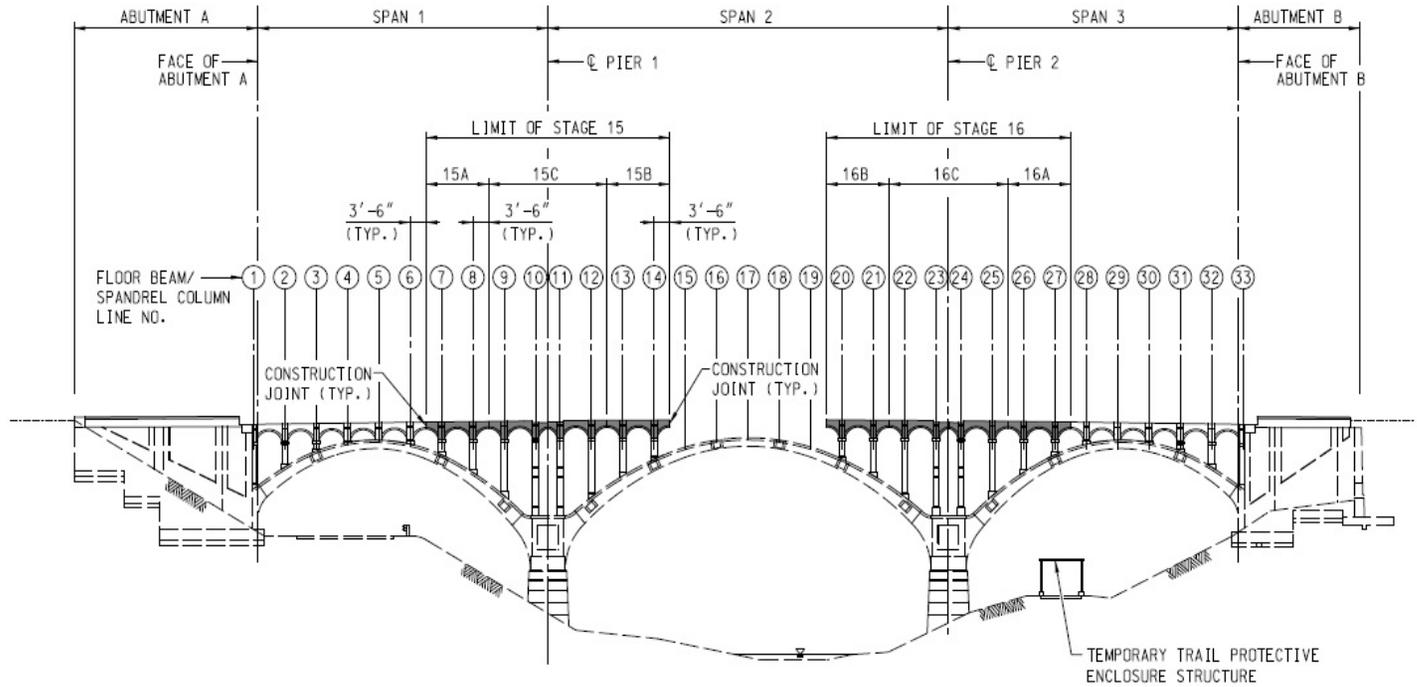
ELEVATION - STAGES 13 & 14 NEW CONSTRUCTION

SCALE: 1" = 20'-0"

STAGE 13/14 Deflection



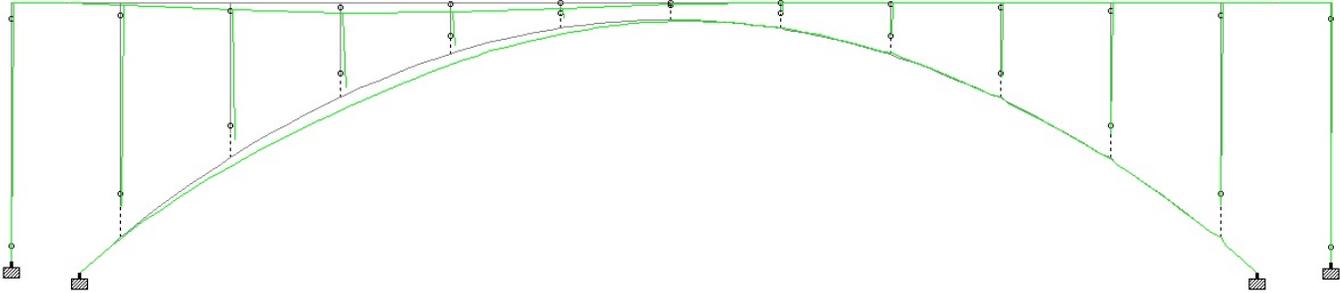
STAGE 15/16 New Construction



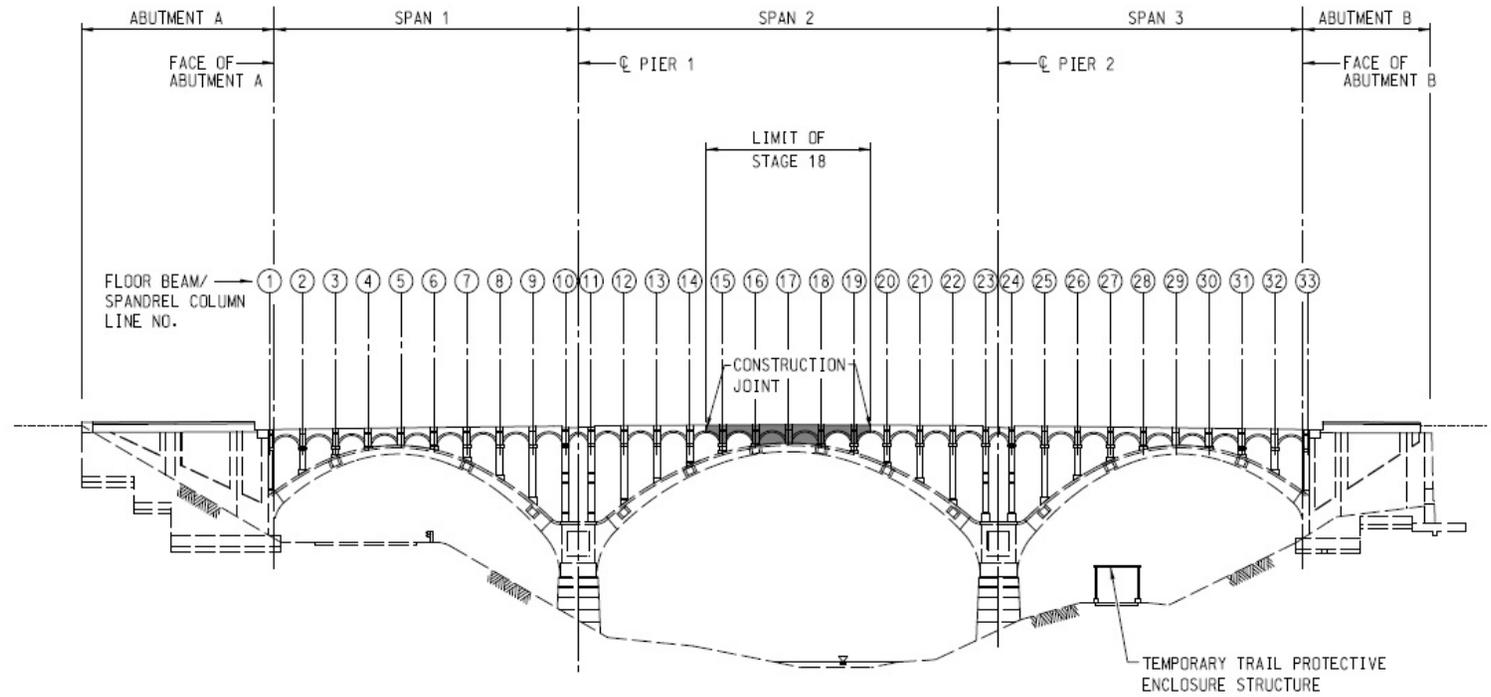
ELEVATION - STAGES 15 & 16 NEW CONSTRUCTION

SCALE: 1" = 20'-0"

STAGE 15/16 Deflection



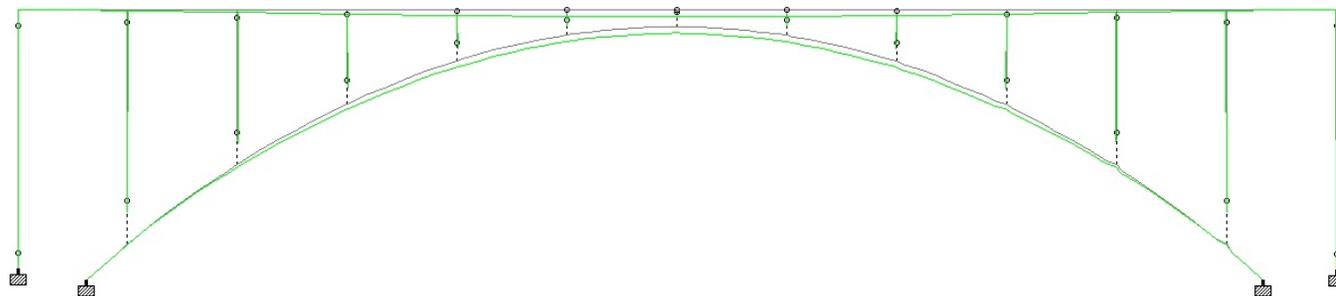
STAGE 18
New
Construction



ELEVATION - STAGE 18 NEW CONSTRUCTION

SCALE: 1" = 20'-0"

STAGE 18 Deflection



MAJOR QUANTITIES

- 64 CY – Mix No. 3 Concrete
- 712 CY – Mix No. 6 Concrete
- 9,418 LBS – Plain Reinforcing Steel
- 194,136 LBS– Epoxy Coated Reinforcing Steel
- 40 CY – Pervious Concrete Sidewalk (Bridge Approach)

BID RESULTS

- KIEWIT = \$9.2 Million
- FT. MYER CONSTR. = \$11.0 Million

 \$613/SF of Bridge Area less Temporary Pedestrian bridge

CONSTRUCTION SCHEDULE

Advertisement – April 2015

NTP Construction – September 2015

MD 195 Closed to Traffic – June 2016

Bridge Complete – February 2017

MD 195 Re-Opened – June 2017

Temporary Pedestrian Bridge



Temporary Pedestrian Bridge



Demolition Shield / Work Platform



Bridge Demolition



Bridge Demolition



Bridge Demolition



Removal of Debris



Column Removal



Stubs of Columns Removed with Hand Tools



New Construction – Columns



New Construction – Floor Beams



New Construction – Floor Beams



New Construction – Floor Beams



New Construction – Deck Slab



New Construction – Deck Slab



New Construction – Texas T411 Railings



New Construction – Texas T 411 Railings



Existing Bridge Railing



New Bridge Railing



Construction Progress - May 2016



Construction Progress - July 2016



Construction Progress - August 2016



August 6, 2016

Construction Progress - October 2016



Construction Progress - December 2016



Construction Progress - January 2017



Construction Progress - June 2017













