

# Watching the Ravenel Bridge Grow

**T.S. Eliot (East Coker from the Four Quartets) put it this way:**

**Old men ought to be explorers  
Here and there does not matter  
We must be still and still moving  
Into another intensity  
For a further union, a deeper communion**

**C. Frank Starmmer**  
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# How this happened

My wife and I have a small kitchen house on Ashley Avenue. From time to time some of our grandchildren would come for a visit. Frequently we took them to the South Carolina Aquarium – a great place for grandkids and grandparents. During August and October 2003 I took photos of the kids standing on the outside terrace.

Later I noticed that the Ravenel Bridge was growing. This started a weekend trip to the pier adjacent to the IMAX theater. I built a web page to share the photos: <http://ravenelbridge.net>. The web page opened many doors. Here is the story of what I saw.

# The Diamond Pylon Foundation

November 2002



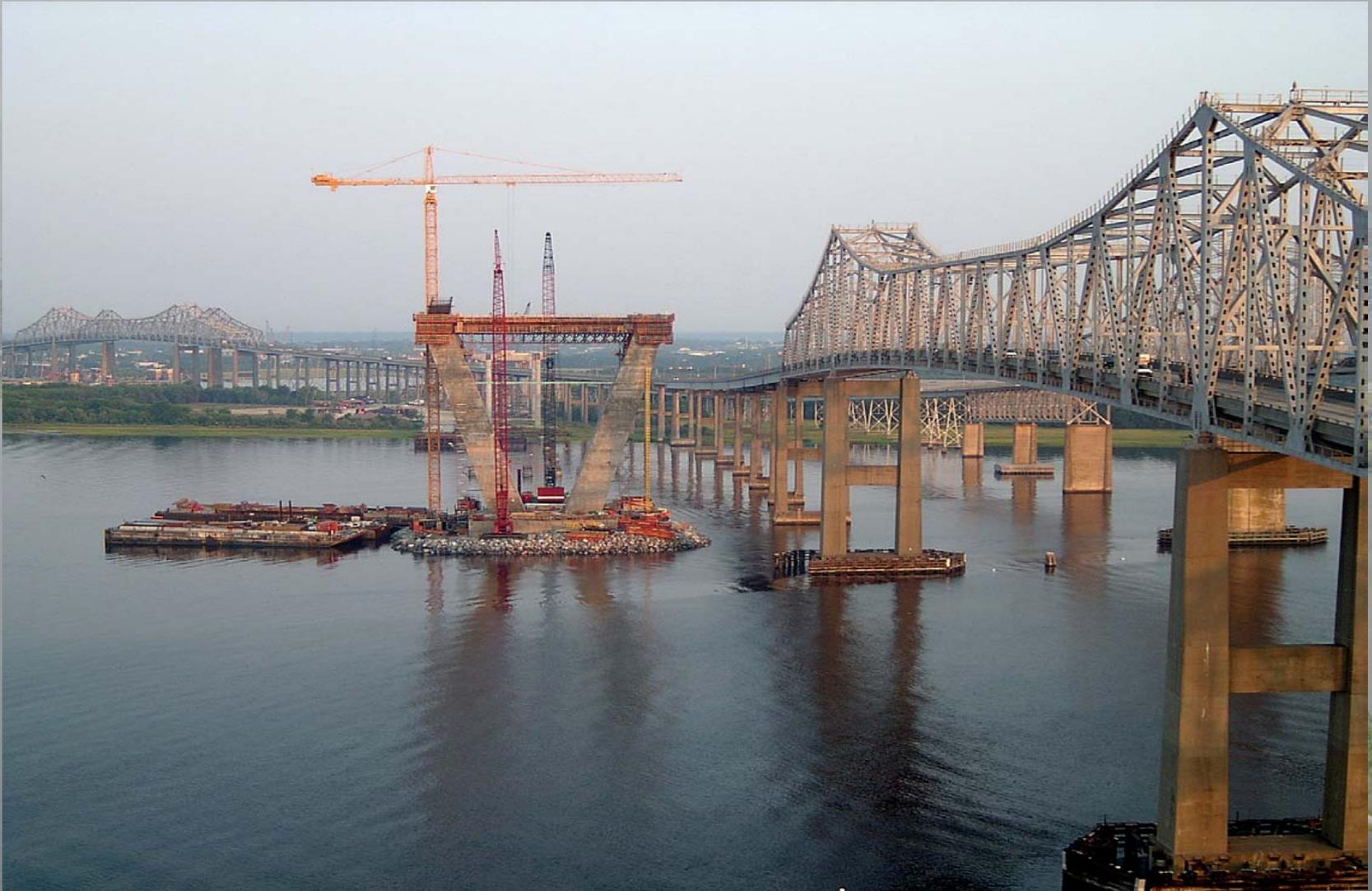
# Base of the Diamond Pylons

Spring 2003



# West Diamond Base

Summer 2003



# As Seen from the SC Aquarium

August 21, 2003



A visit to the SC Aquarium with my grandchildren revealed this.  
This was my first bridge photo.

# Growing Diamonds:

November 2003

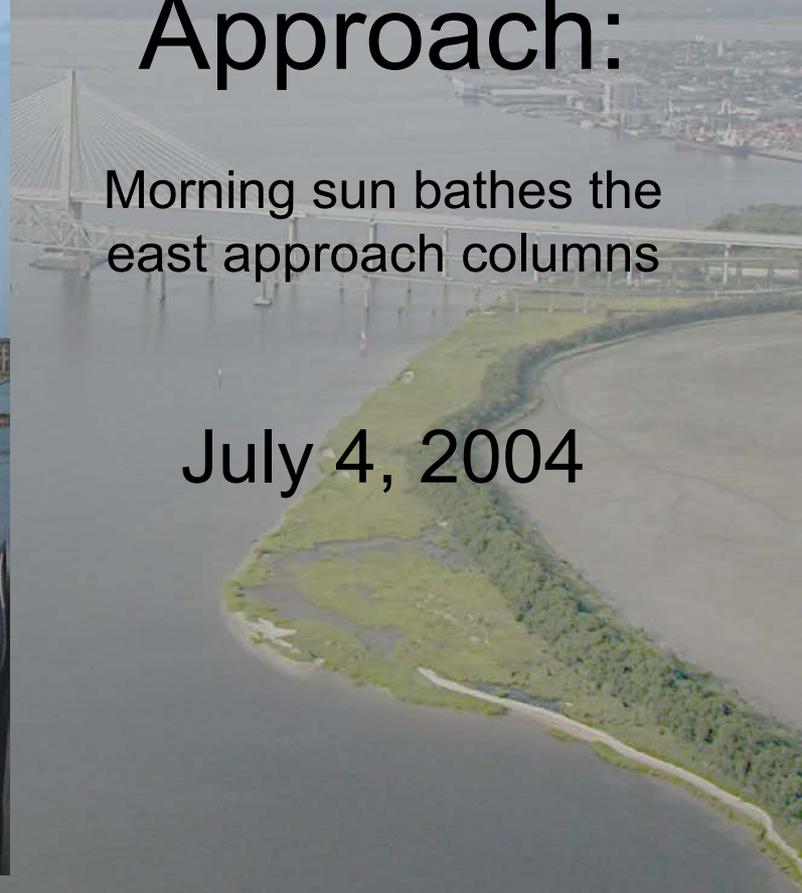




# The Mt. Pleasant Approach:

Morning sun bathes the  
east approach columns

July 4, 2004



# The Charleston Approach

Growing the west  
approach columns

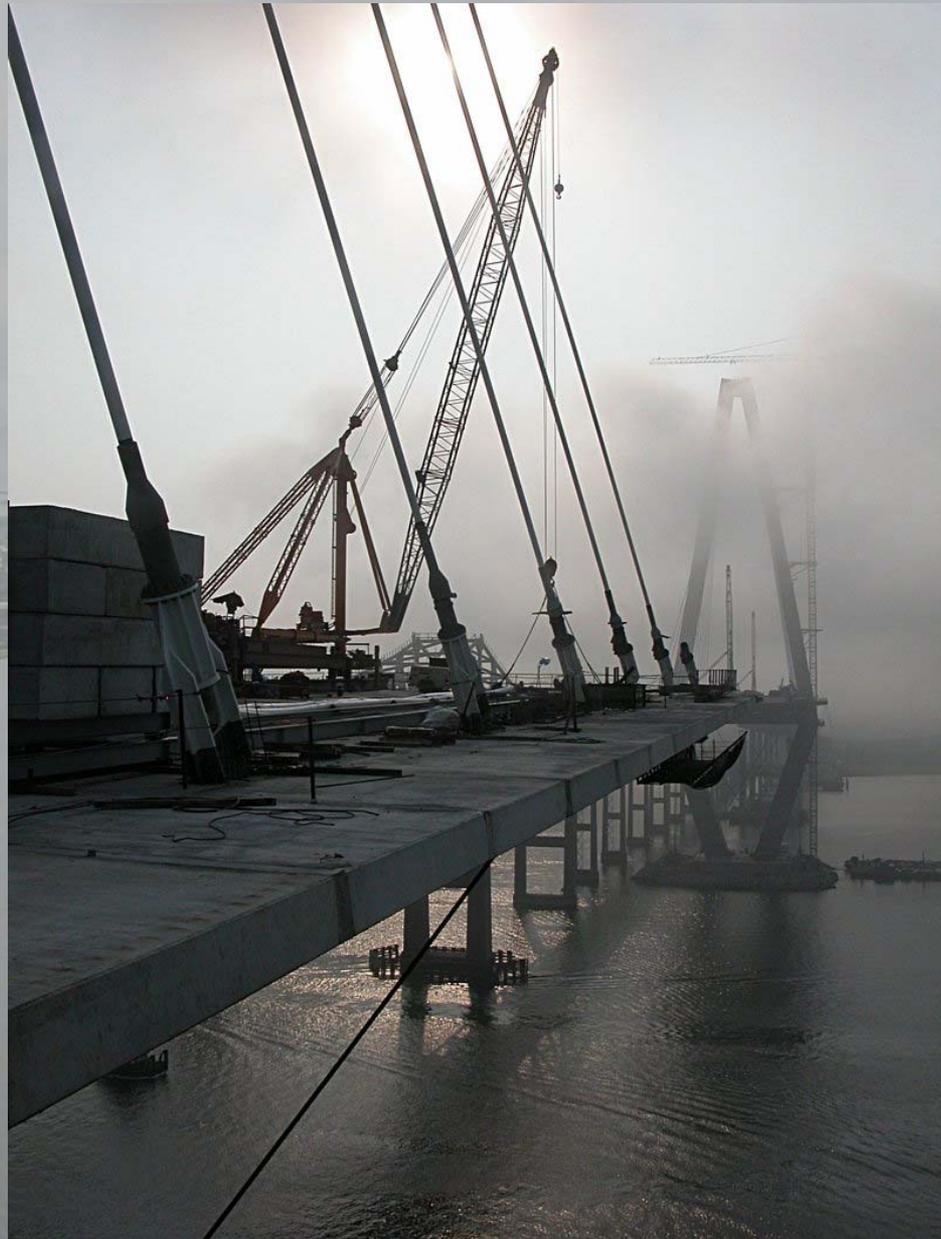
July 4, 2004



# Early Main Span:

May 9, 2004 1 stay cable completed





# Fog Surrounds the Main Span

My first visit to the main span.  
I was struck by the number of  
independent processes:  
building a cable, placing  
concrete road sections,  
balancing the bridge.

July 21, 2004



# Completing the Approach Skeleton

Sunday morning (7am)  
bicycle rides across the  
Pearman Bridge provided  
breath-taking views of the  
construction. This morning,  
the Mt. Pleasant Police were  
running interference for me

October 17, 2004



# The Charleston Approach Skeleton

The symmetry of the structural steel drew my attention to small details – was anything out of place?

May 23, 2004

# A Cable Strand

A stay cable is built one strand at a time. The cable is fed up the stay cable pipe and terminated in the tower and bridge platform. Here the Freyssinet workers feed a strand down to the termination plate.

July 21, 2004



# The Last Stay Cable

February 11, 2005





# Freyssinet: Building the Last Cable

I was fascinated with the process of building a stay cable. Composed of many strands, pairs of cables were fed from spools up the stay pipe. Each strand was terminated at a shark fin anchor and within the diamond towers

February 11, 2005



# The Pride of Charleston and PBC

I met many workers  
during my photo  
adventure. Here is  
Marvin Tallent, displaying  
the workers' collective  
pride

January 28, 2005

# Closing the Main Span Gap

January 23, 2005



# The Last Shark Fin Girder

Jan. 28, 2005



# East and West Coming Together

February 6, 2005



# Closing the Gap

March 5, 2005



# Hydraulic Jacks Orient the Spans

March 8, 2005



# Three Inches To Go

March 8, 2005





# Perfect Alignment: Pinning the Splice Plate to the Girder

Pins are driven through the splice plate and girder. The plate is bolted to the girder and then there is one span.

March 8, 2005

# Adding the last sections of the roadbed

March 10, 2005



# PBC at work

March 10, 2005



# Concrete Roadway + Rebar Gaps

March 12, 2005





# Filling the Gaps:

Concrete is pumped through a pipe where the last gaps are filled

March 12, 2005





# A “Clean” Bridge

July 12, 2005



# Sunset over the Ravenel Bridge

July 16, 2005



July 16, 2005:  
thus ended the First Day



# Thanks

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- Thanks to Brian Muller, a young, but old time Charlestonian and member of my IT Lab at MUSC – for being my technical hands.
- Thanks to my wife, Ellen, for starting and managing this project and attending to the endless details while commuting between Singapore and the US