

# ***Public Information Meeting***

## *Veterans Memorial Bridge*

*East Orange Avenue/ Silver Beach Avenue  
over the Halifax River*



# Technical Design Team

## Volusia County

Jim White, P.E.- Project Manager

## Parsons Brinckerhoff, Inc.

Tad Molas, P.E. - Design Project Manager

Adrian Moon - Bridge Aesthetics & Memorial Park Design

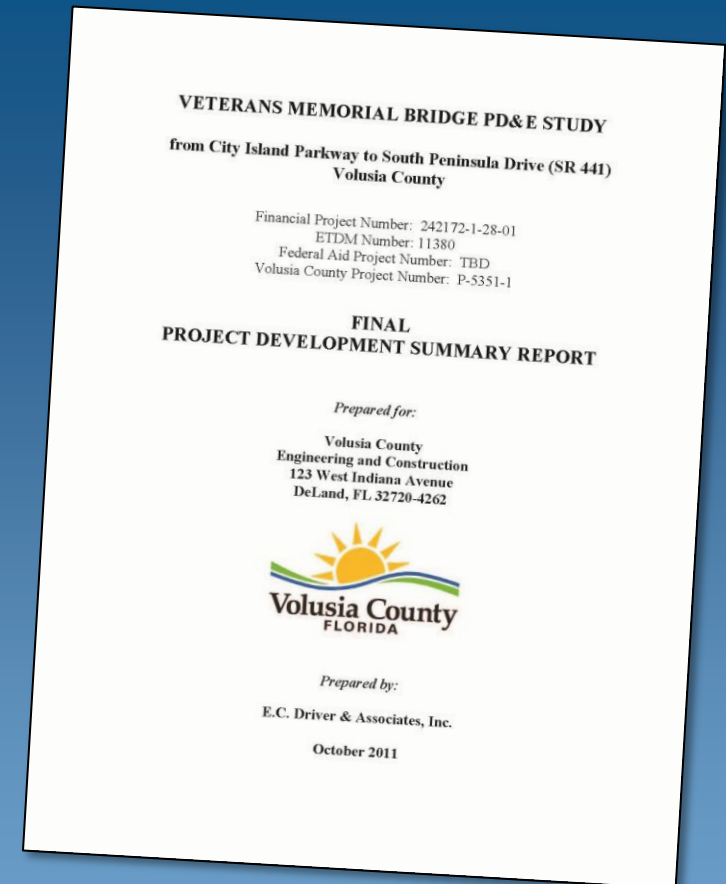
## Ghyabi & Associates, Inc.

Alan King, P.E. - Roadway Lead

Katie Widdison - Public Involvement Coordinator

# Project History

- Maintenance (Expensive)
  - \$300k-\$400k annually
- Safety (Poor Structure Condition)
- Bridge deterioration
- Functionally Obsolete
- Minimum lane/shoulder widths
- Channel Clearance
  - USCG standards not met



# Project History

Alternatives Public Workshop	April 2010
County Council Selected High Level Bridge	January 2011
Public Hearing	June 2011
Final Project Development Summary Report	October 2011
<b>Final Design Begins</b>	<b>February 2013</b>
PAC Meetings # 1-3 & Subcommittee Meeting # 1	Spring 2013
County Council Concurs with Recommended Bridge Type	Summer 2013
PAC Meetings # 4-6 & Subcommittee Meetings # 2-3	Summer 2013
PAC Meetings # 5-9 & Subcommittee Meetings # 4-9	Fall/Winter 2013
<b>Public Meeting #1</b>	<b>March 2014</b>
Final PAC Meetings # 10 - 12	Fall 2014
<b>Public Meeting #2</b>	<b>January 2015</b>



# Project Advisory Committee

- Established by County Council
- Comprised of local residents, community and civic stakeholders
- Met monthly to discuss bridge aesthetic features
- Meetings are open to the public
- Meeting summaries and materials posted on the website

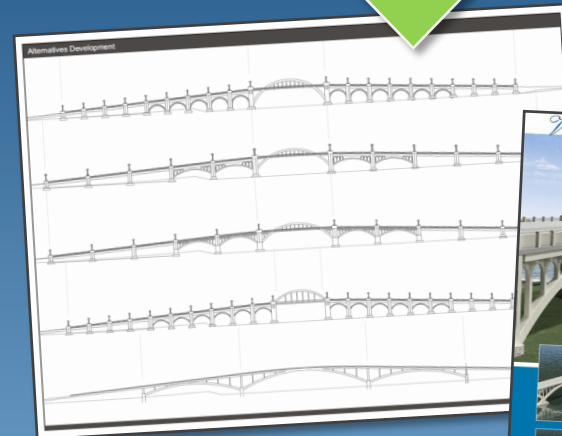


# Parallel Tracks

## Project Advisory Committee

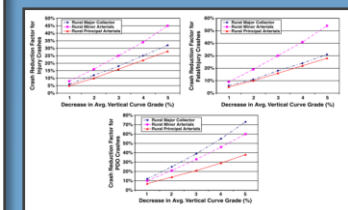
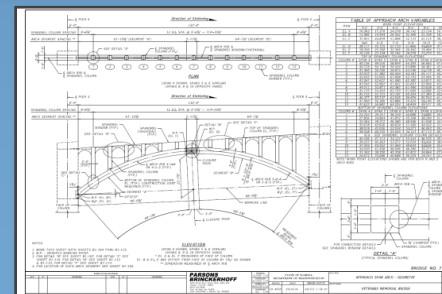


## Design Process



Total Cost (for entire superstructure)	
Option	Estimated Cost
Alt. A – Structural Arch	\$11,579,812
Alt. A2 – Faux Arch	\$10,893,566
Δ Cost between alternatives →	\$686,246
Relative Difference (%) in total project cost →	Total Project Cost ~\$42.1M; 1.6% increase

Evaluation Matrix				
Alternatives/Metric	Weight	Alt. A - Open Spans	Alt. B - Concrete Wm	Alt. C - Closed Spans
Cost	20%	1	1	2
Maintenance	20%	1	2	3
Aesthetics	20%	2	1	3
Constructability	15%	1	3	2
Construction Schedule	10%	1	3	2
Hydraulics	10%	2	3	1
View shed	10%	2	1	3
Environmental Impact	10%	1	2	3
Aggregate Score	100%	1.3 ✓	2.25	2.45



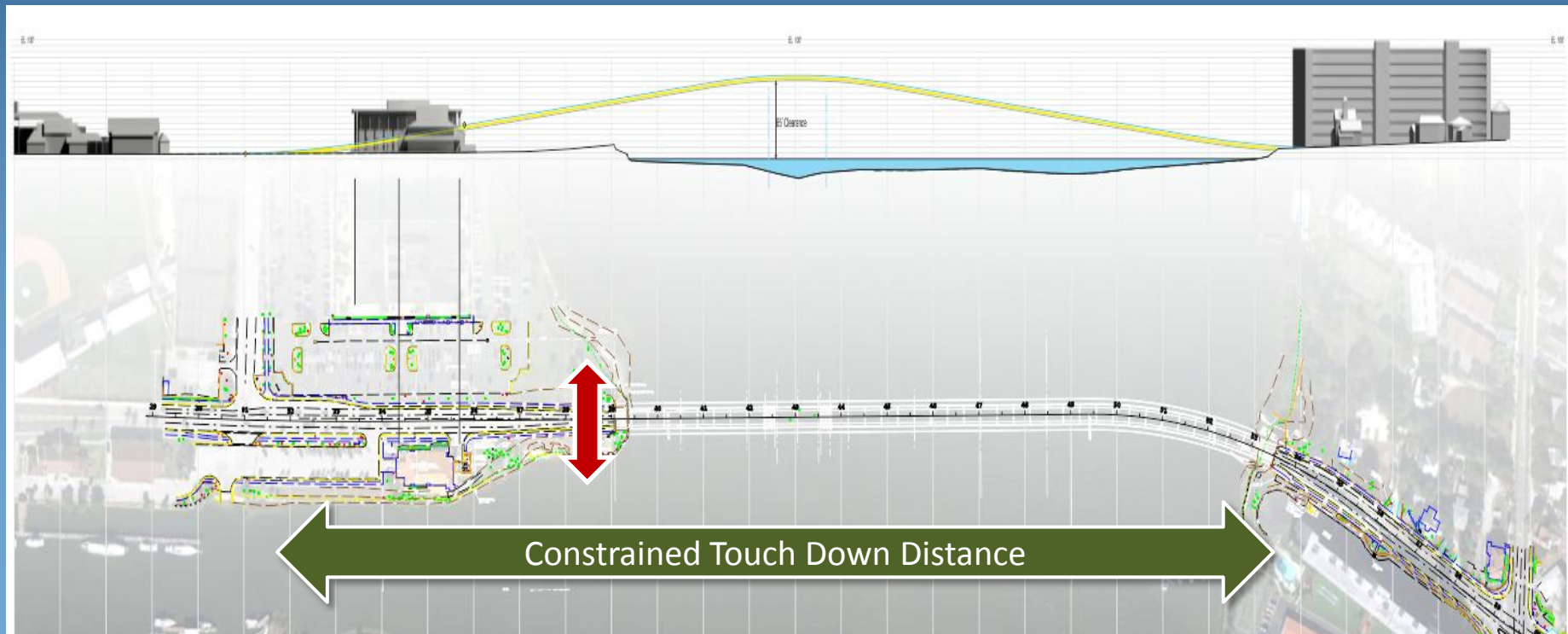


# A Challenging Location



# Profile & Alignment

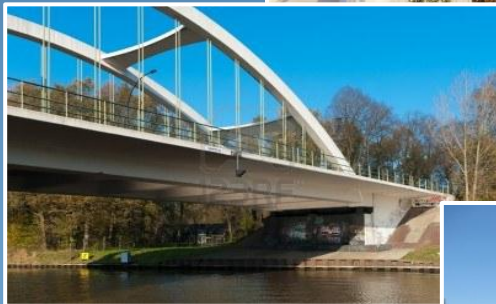
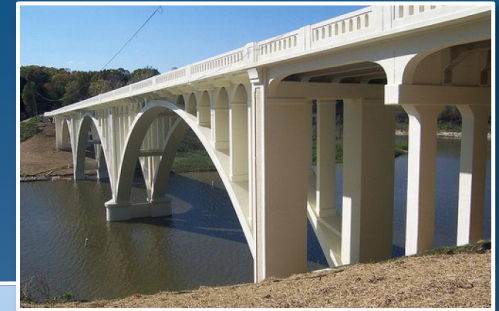
- Limited Length = Increased Profile ➡ **ACCESS/SAFETY**
- Limited ROW = In-line Replacement ➡ **TIME**





# PAC - First Priority

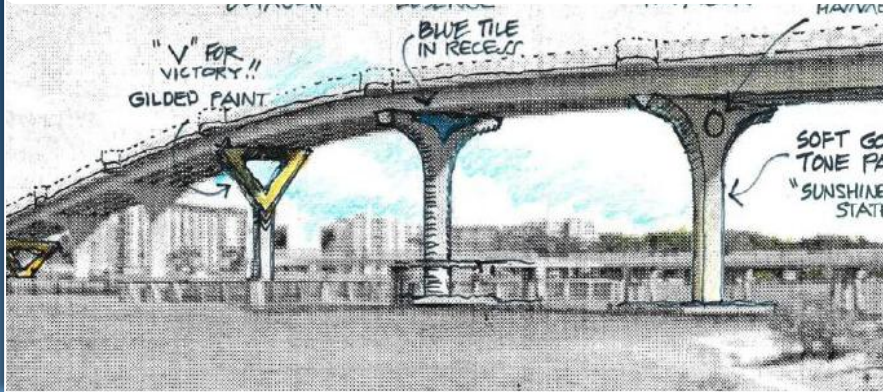
- Bridge Type Selection



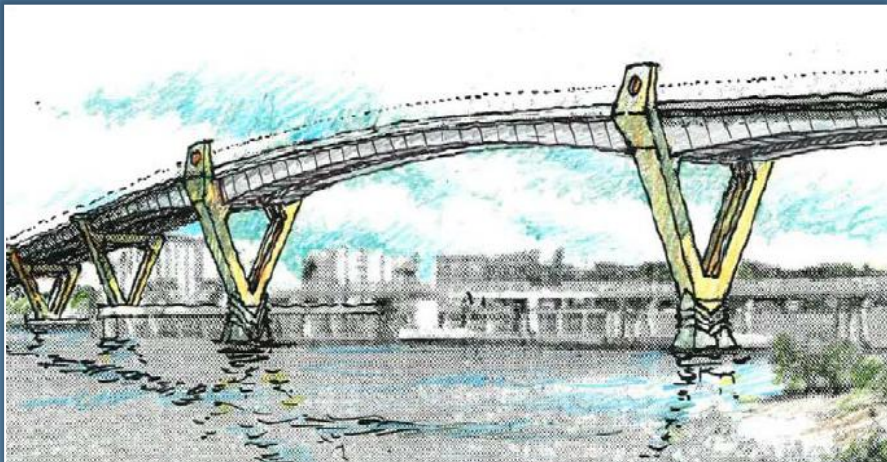
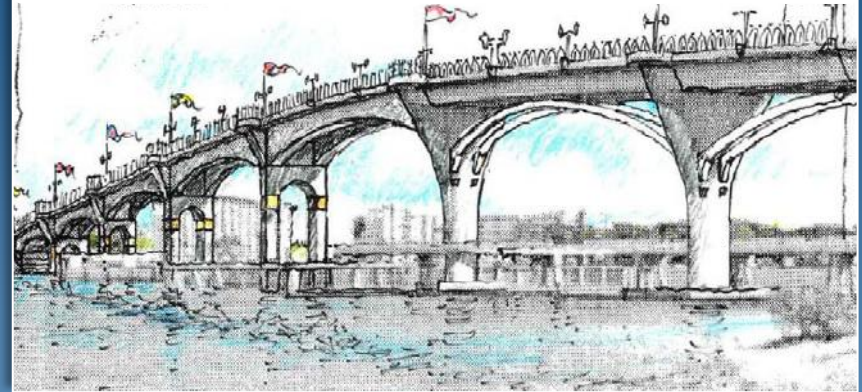


# PAC #1: Bridge Type Selection

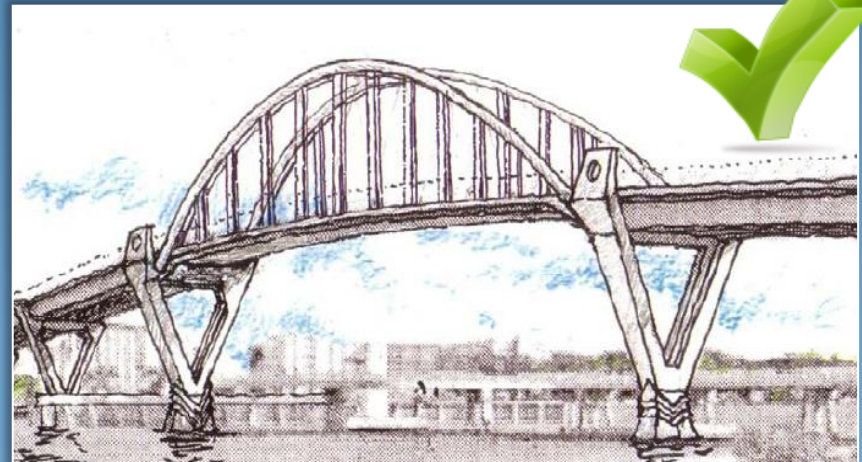
Option 1: Conventional Concrete Beams



Option 2: Enhanced Concrete Beam



Option 3: Segmental Concrete



Option 4: Concrete Arch

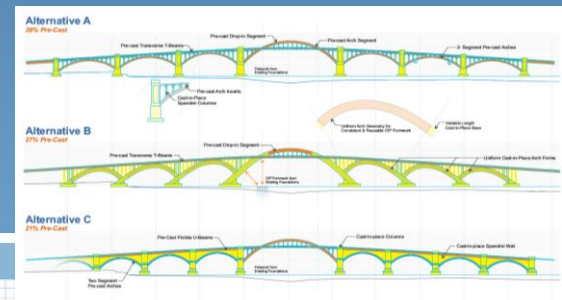
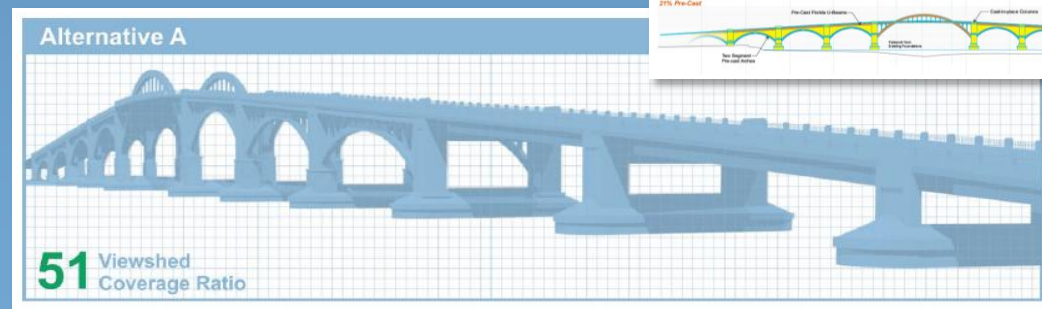
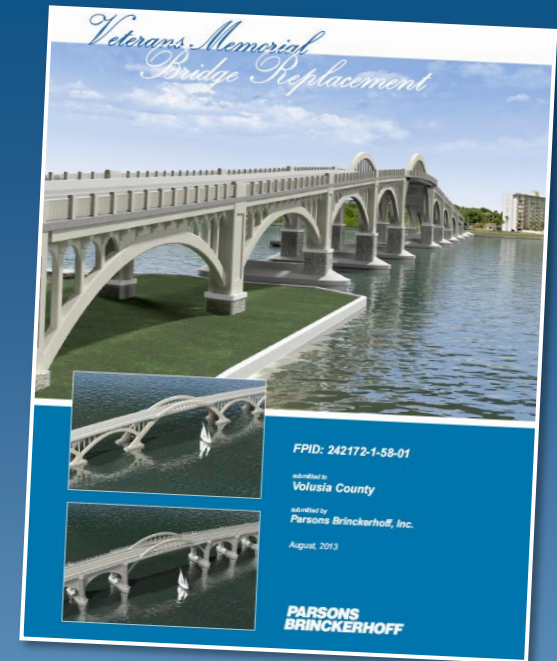


# Selected Arch Types For BDR Analysis



# Bridge Development Report

- Costs (Construction & Maintenance)
- Aesthetics & Memorial Features
- Operations & Safety
- ADA Compliance & Accessibility
- Constructability & Schedule
- Hydraulics & Environmental





# BDR Evaluation & Ranking

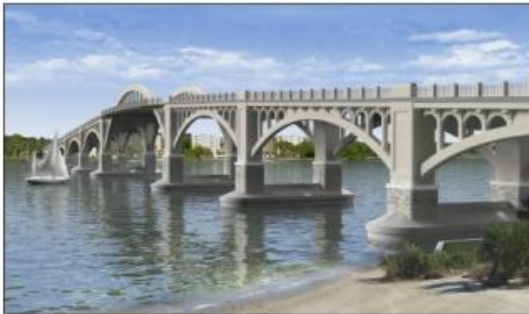
## Evaluation Matrix

Alternative/Metric	Weight	Alt. A - Open Spandrel	Alt. B – Concentric Wave	Alt. C – Closed Spandrel
Cost	20%	1	3	2
Maintenance	20%	1	2	3
Aesthetics	20%	2	1	3
Constructability	15%	1	3	2
Construction Schedule	10%	1	3	2
Hydraulics	5%	2	3	1
View shed	5%	2	1	3
Environmental Impacts	5%	1	2	3
<b>Aggregate Score</b>	<b>100%</b>	<b>1.3 ✓</b>	<b>2.25</b>	<b>2.45</b>

# BDR & PAC Recommended Alternative



Historic Open Spandrel



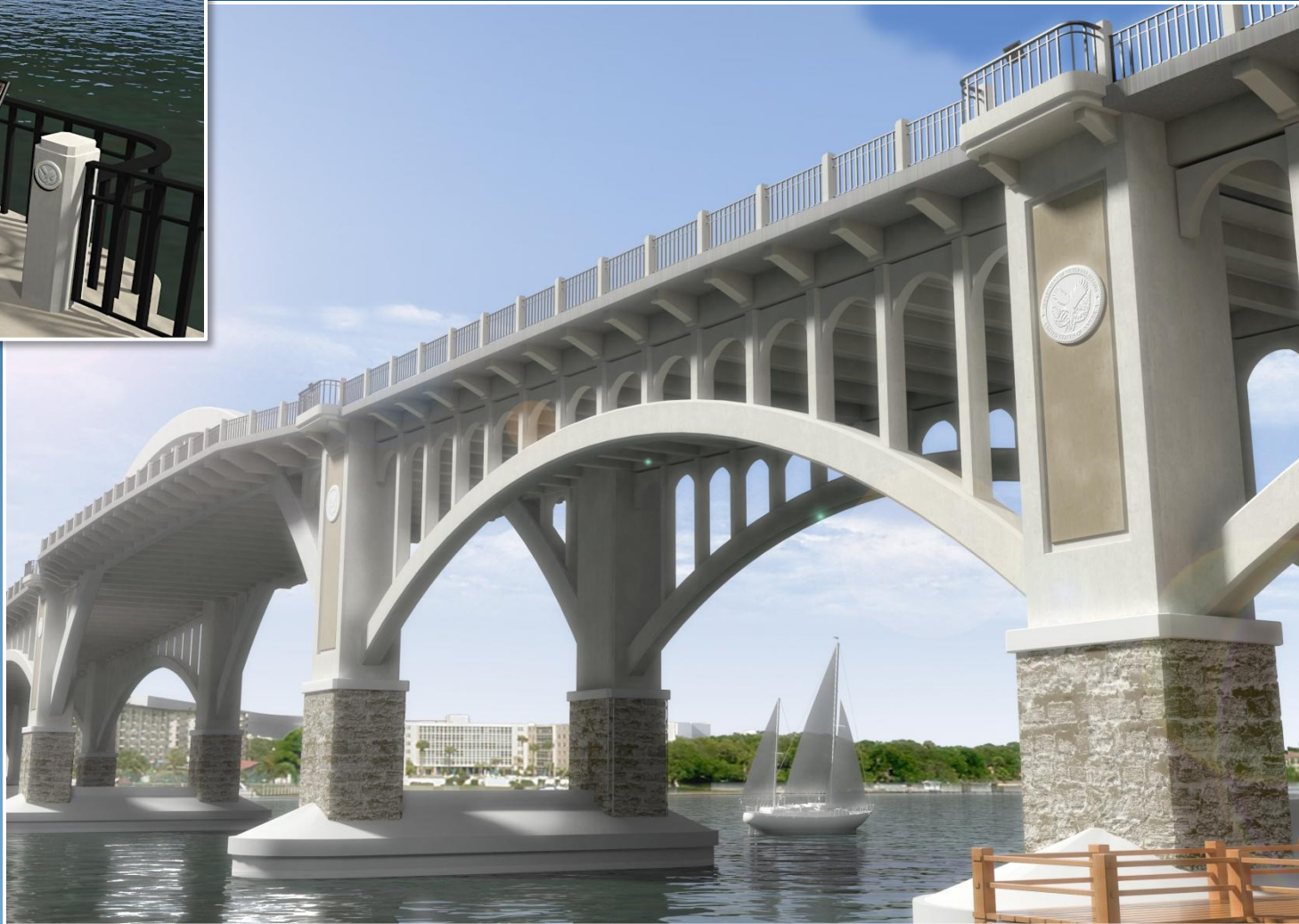


# PAC #6: Selected Lighting



***Historic, Environmental, Lower Cost***

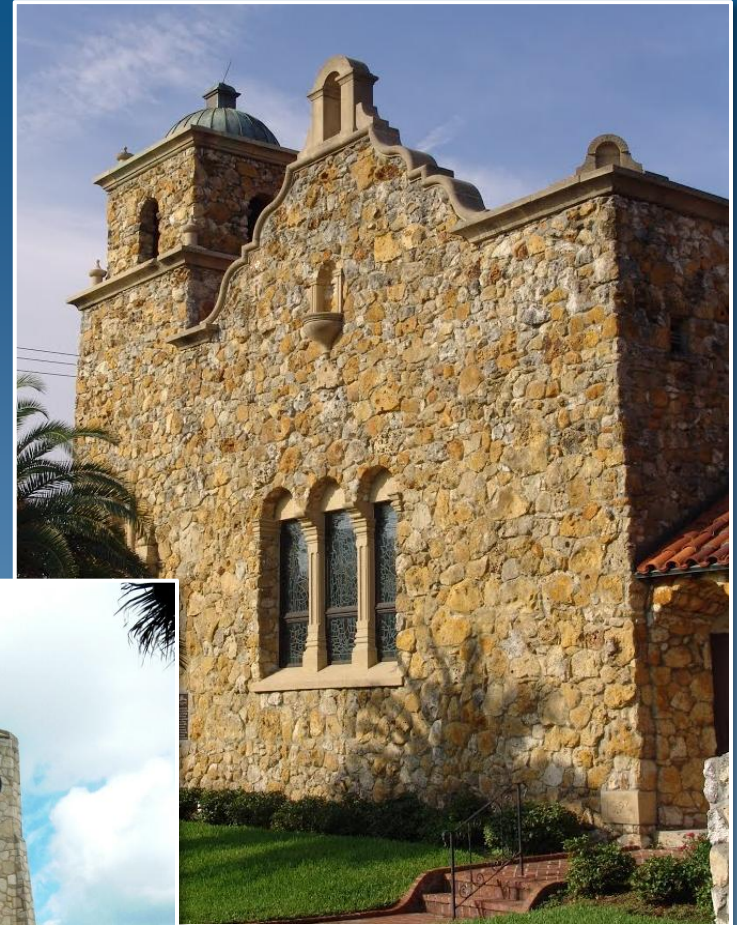
# PAC #7: Selected Pier & Overlook Style





# Coquina Texture

## Local Examples



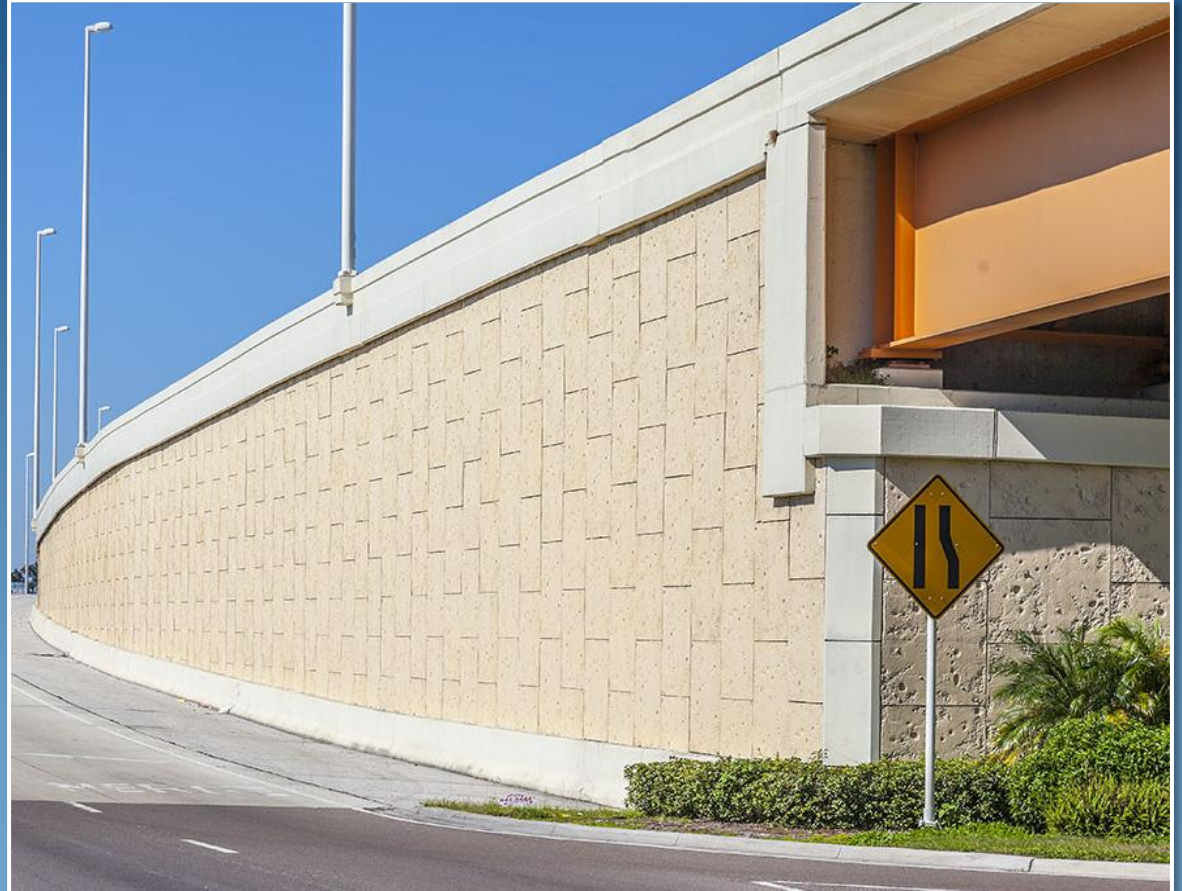
# Coquina Texture Selection

## Rough Stacked Pattern





# Typical Wall Systems



# Alternative Block Wall System



***Improved Aesthetics, Lower Cost***





# PAC #8: Veterans Memorial Plaza



Option A: Amphitheater

*\*Construction Not Funded*

*Options A & B - Split Decision*  
*Option C - Not Preferred*



Option B: Trench/Spine



# Option D - Committee Selection

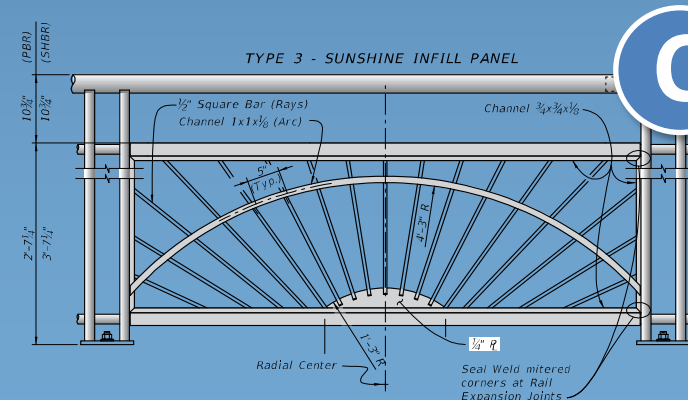
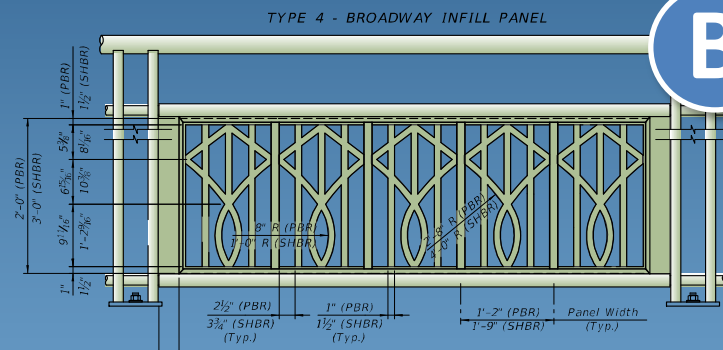
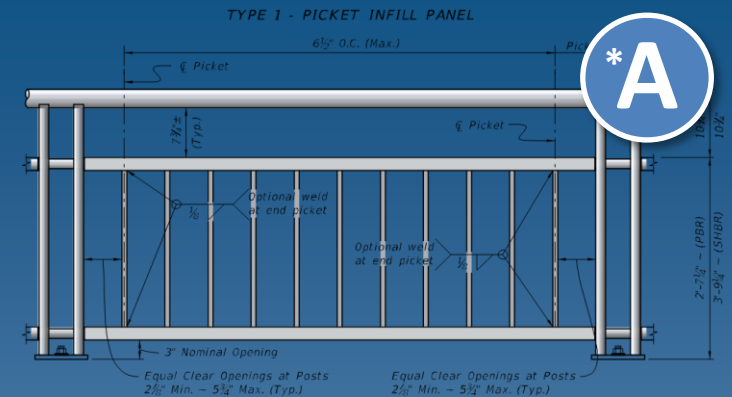




# PAC #10: Decorative Railing Options

## Considerations:

- Cost
- Maintenance
- Aesthetics



# PAC Selected Rail Design & Finish

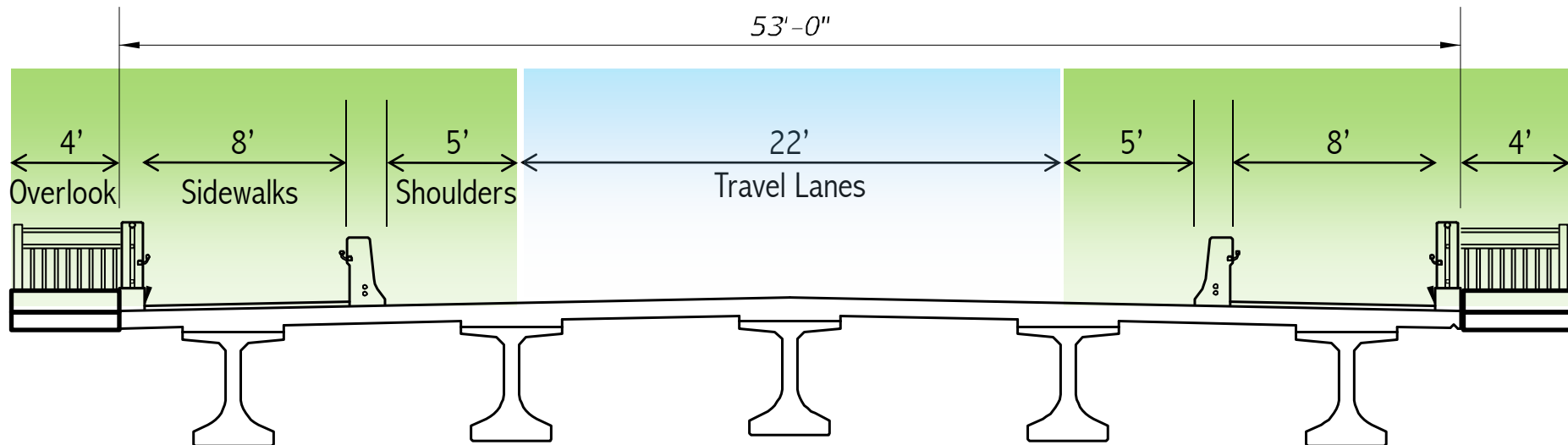
A





# A Shared Facility

- Bicycles/Pedestrians
- Vehicles
- Marine Users

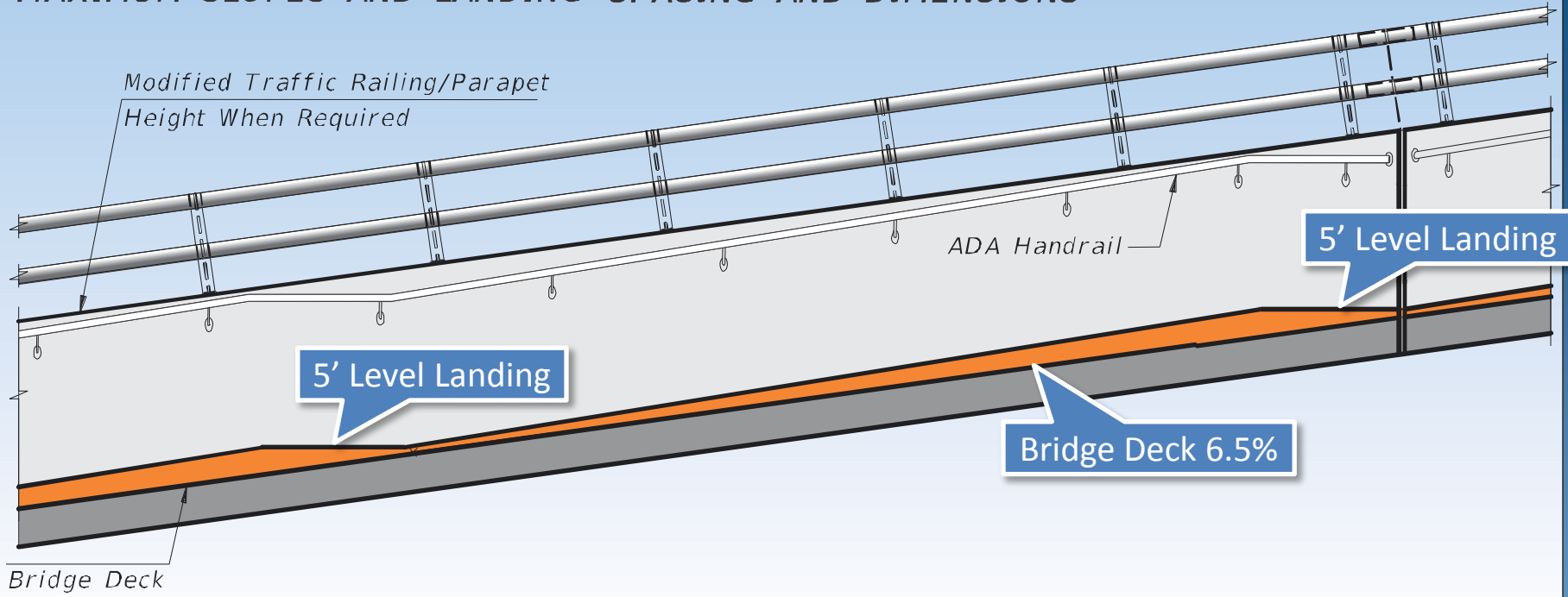


# ADA Compliance & Accommodations

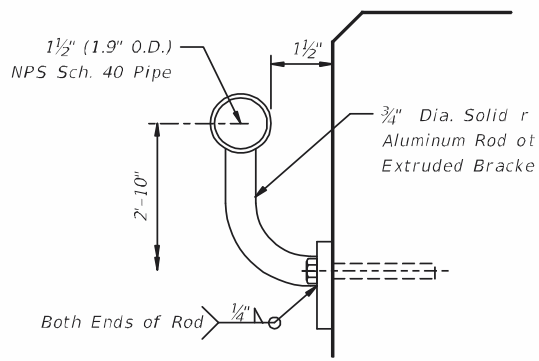
- Flattened Landings every 23-27 feet
- Railings at 34" on both sides of walkway
- Flattened Pedestrian Overlooks
- Charging Outlets Across the Bridge
- Wheelchair Accessible Fishing Areas
- Overlook Plaques Utilizing Braille
- Expanded Sidewalks from 5' to 8'



# MAXIMUM SLOPES AND LANDING SPACING AND DIMENSIONS



## ADA HANDRAIL



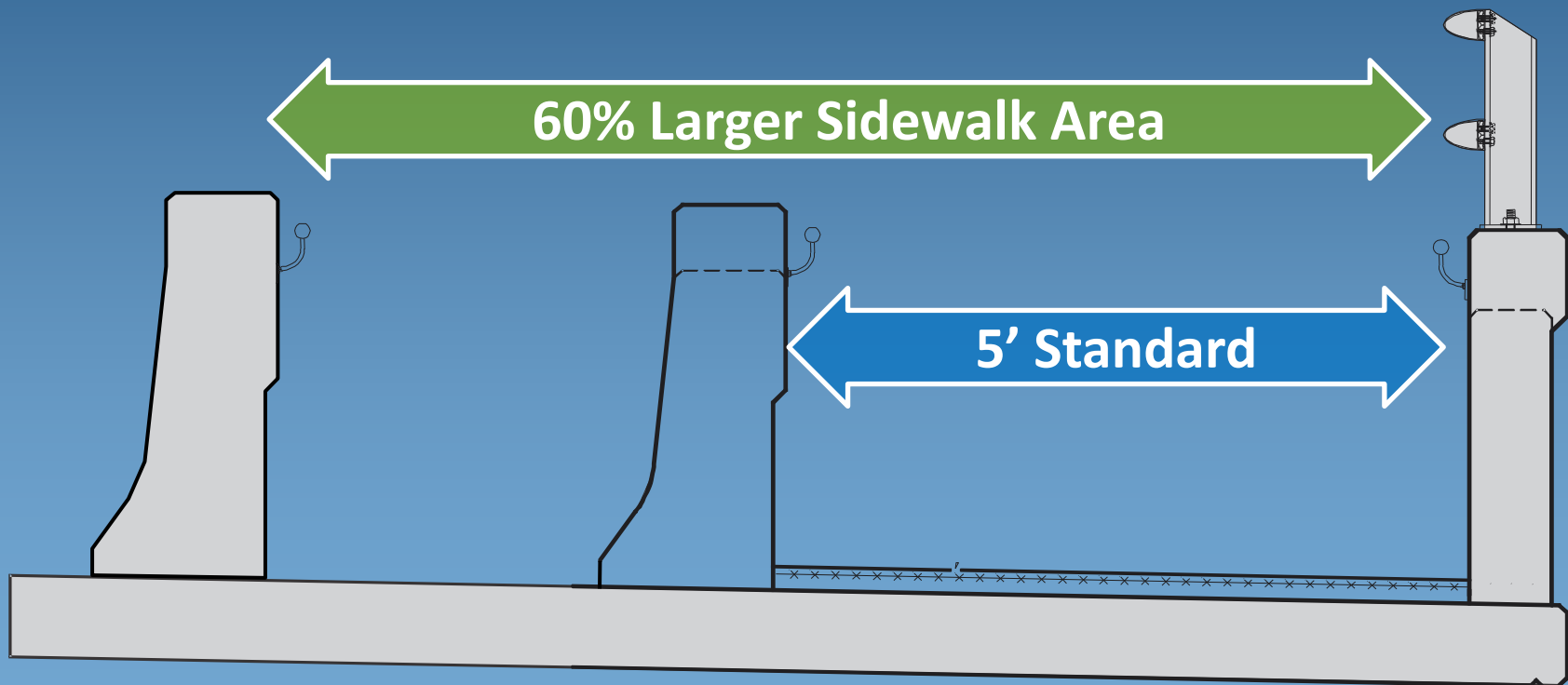
## RAMPS

ADA ramps, landings and ADA handrails shall be provided within the sidewalk limits where bridge and bridge approaches have grades greater than 5%.

ADA handrails are required on both sides of the sidewalk in areas where ramps are required. The ADA handrails shall be placed a constant distance from the landing/ramp surface. It is aesthetically desirable to maintain a constant height pedestrian/roadway barrier for the full bridge length. The height of the pedestrian/roadway barrier should be sufficient to hide the ADA handrail.

A minimum clear distance of 5'-0" between ADA handrails shall be provided.

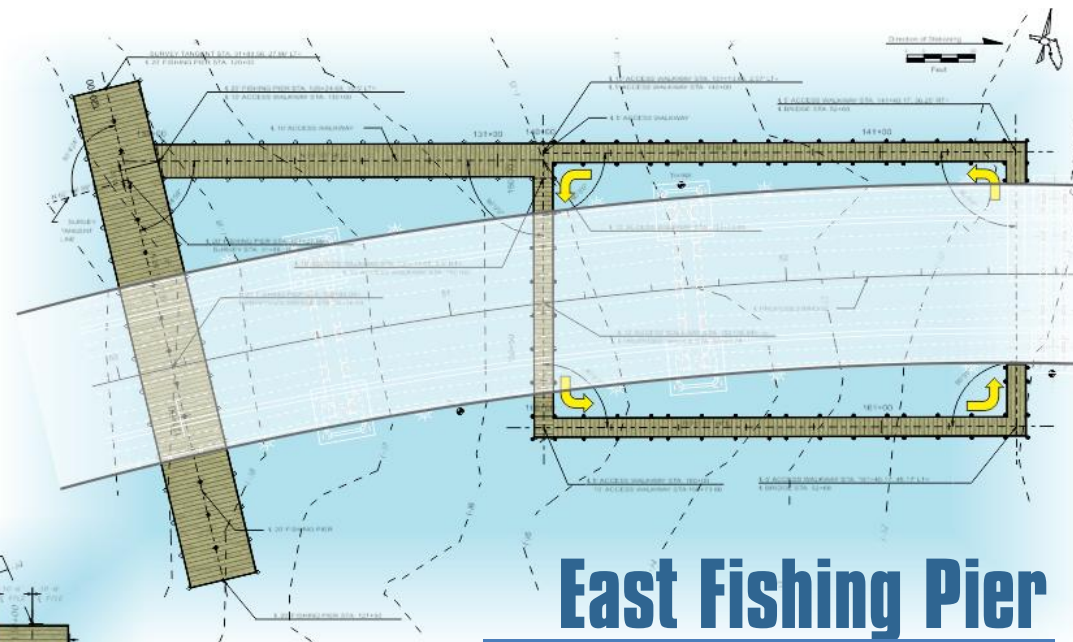
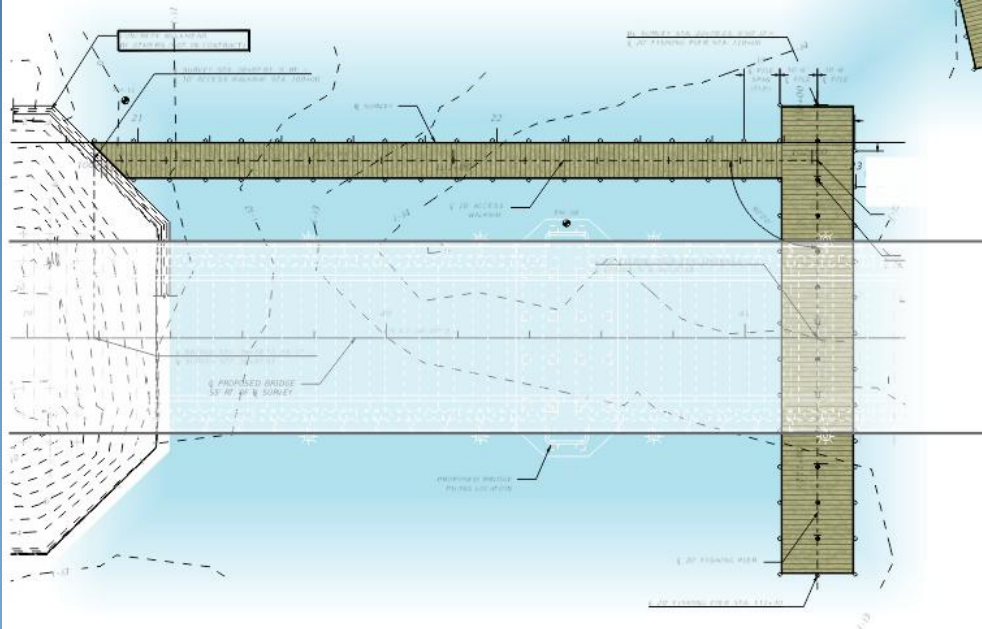
# 8' Sidewalk Area Enhances Safety





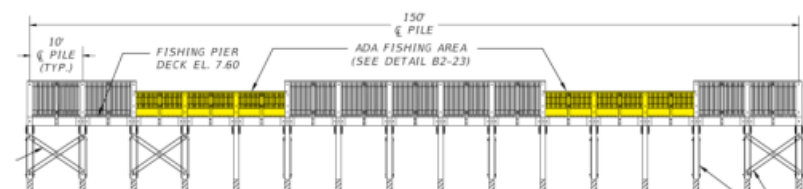
# Fishing Piers

## West Fishing Pier



## East Fishing Pier

## Dedicated ADA Fishing Areas



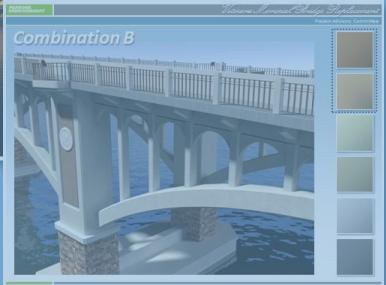
# Summary of PAC Recommendations

Bridge Type	Concrete Arch
Bridge Style	Historic Open Spandrel
Fishing Pier Material	Wood
Fishing Pier Layout	T- Shape (East Bank), L- Shape (West Bank)
Bridge & Plaza Light Poles	Metroscape
Bridge Lighting Color & Temperature	Amber
Bridge Lighting Enhancements	Columns with Defined Face Arch
Bridge Pier Panel Shape	Flat
Bridge Pier Coquina Texture Location	Bottom Only
Overlook Shape	Rectangular
Memorial Plaza Layout	Amphitheater with Spine
Veteran Memorial Features (Bridge)	Eastern Underpass and Western Underpass for Circuitous Memorial Route 12"x18" Plaques at Every Overlook Location Pier Insignias on All Piers, and Main Channel Piers have Inscription
Veteran Memorial Features (Plaza) <i>*Not funded for Construction</i>	7 Flag Poles at the Back of Center Circle 5 Angled Plaques at Back of Center Circle Field Stones (Arlington Stones) Brick Pavers Located Around Center Circle Front Soldiers Return Monuments

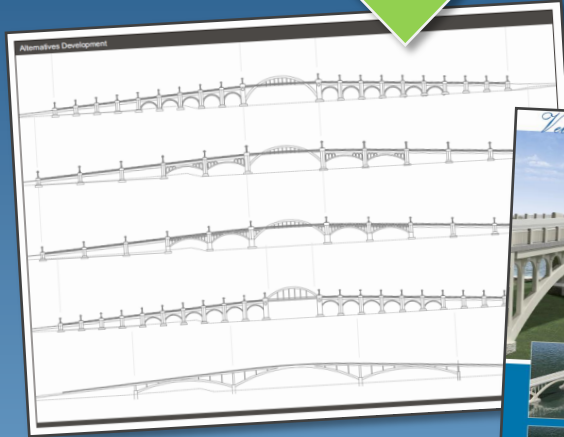


# Parallel Tracks

Project Advisory Committee

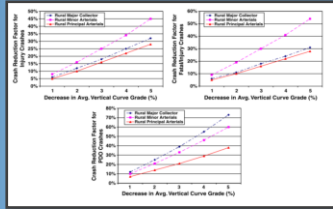
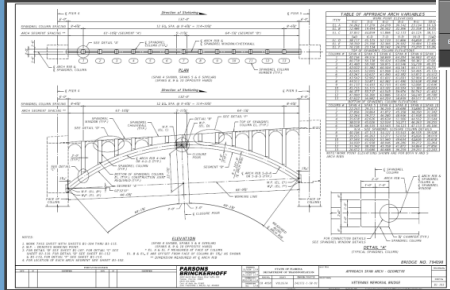


Design Process



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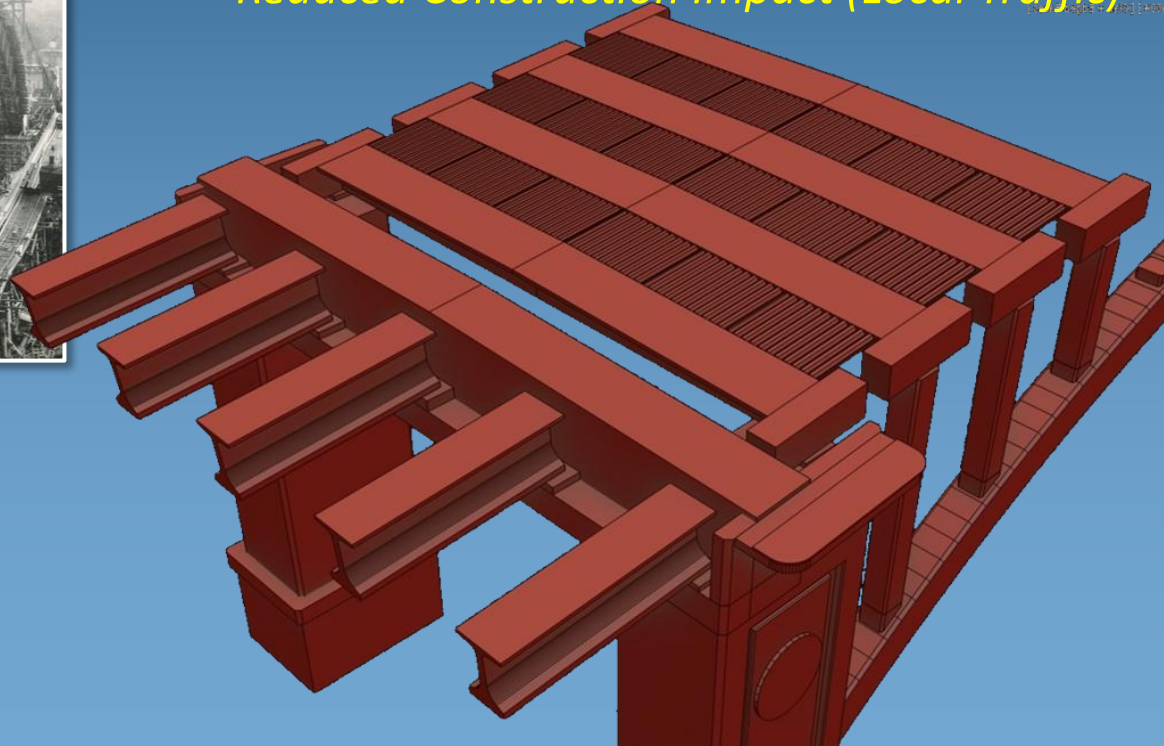


# Open Spandrel Bridge Construction

- Traditional Cast-in-Place:  
*Expensive & Slow*



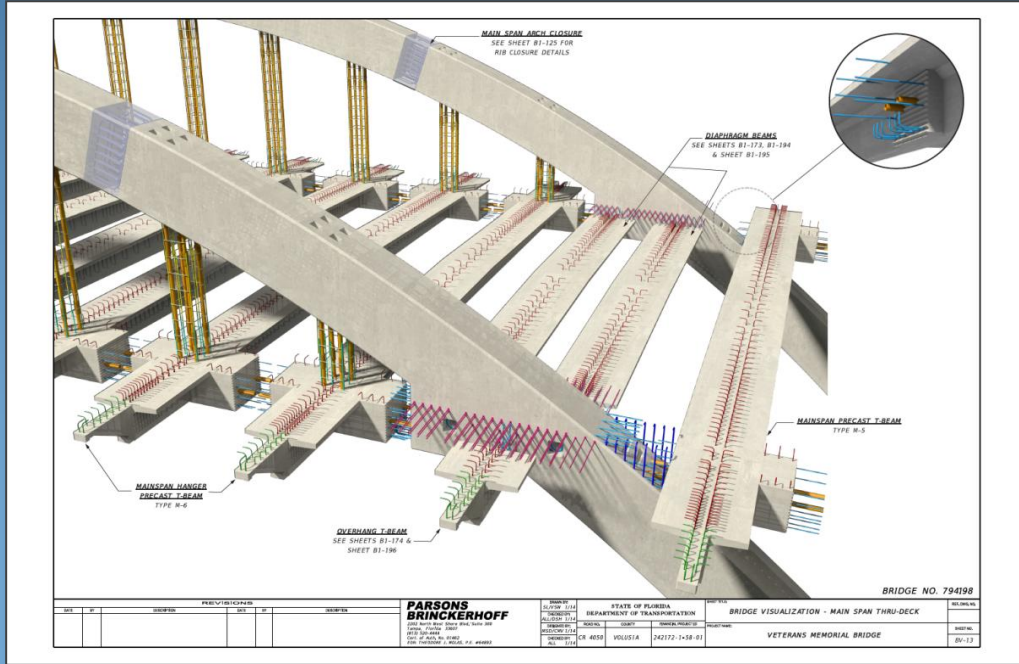
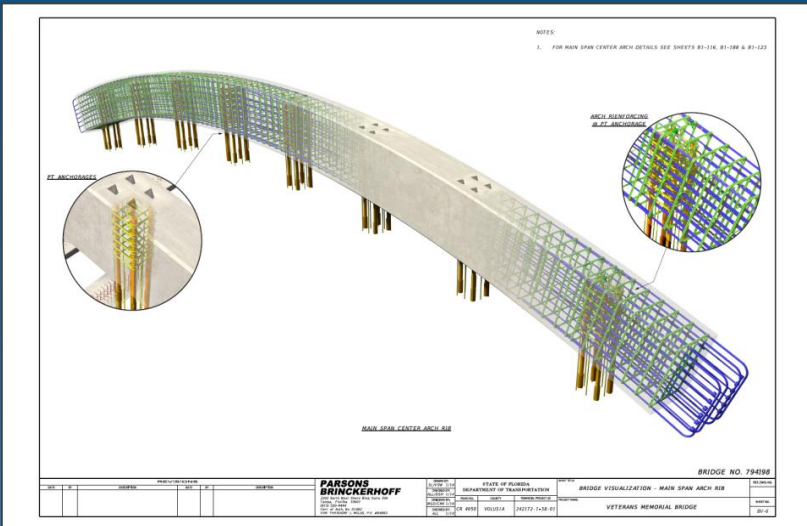
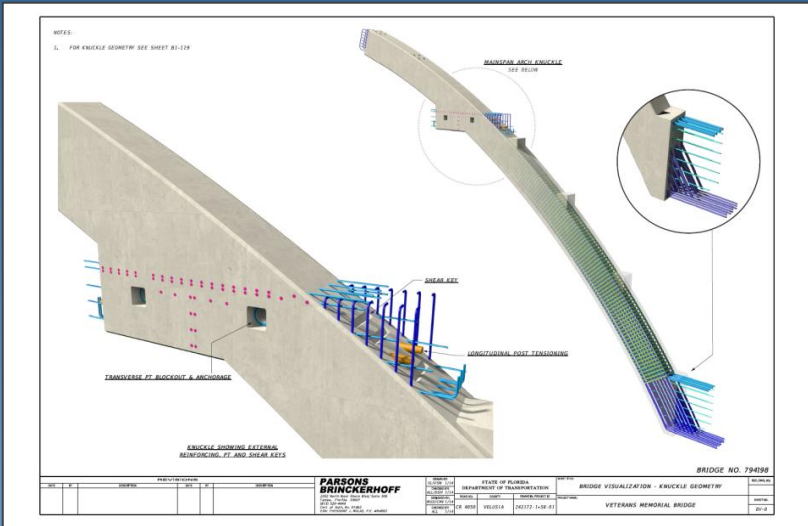
- Proposed Pre-cast System:
  - *Saves Time & Cost*
  - *Less Environmental Impact*
  - *Reduced Construction Impact (Local Traffic)*



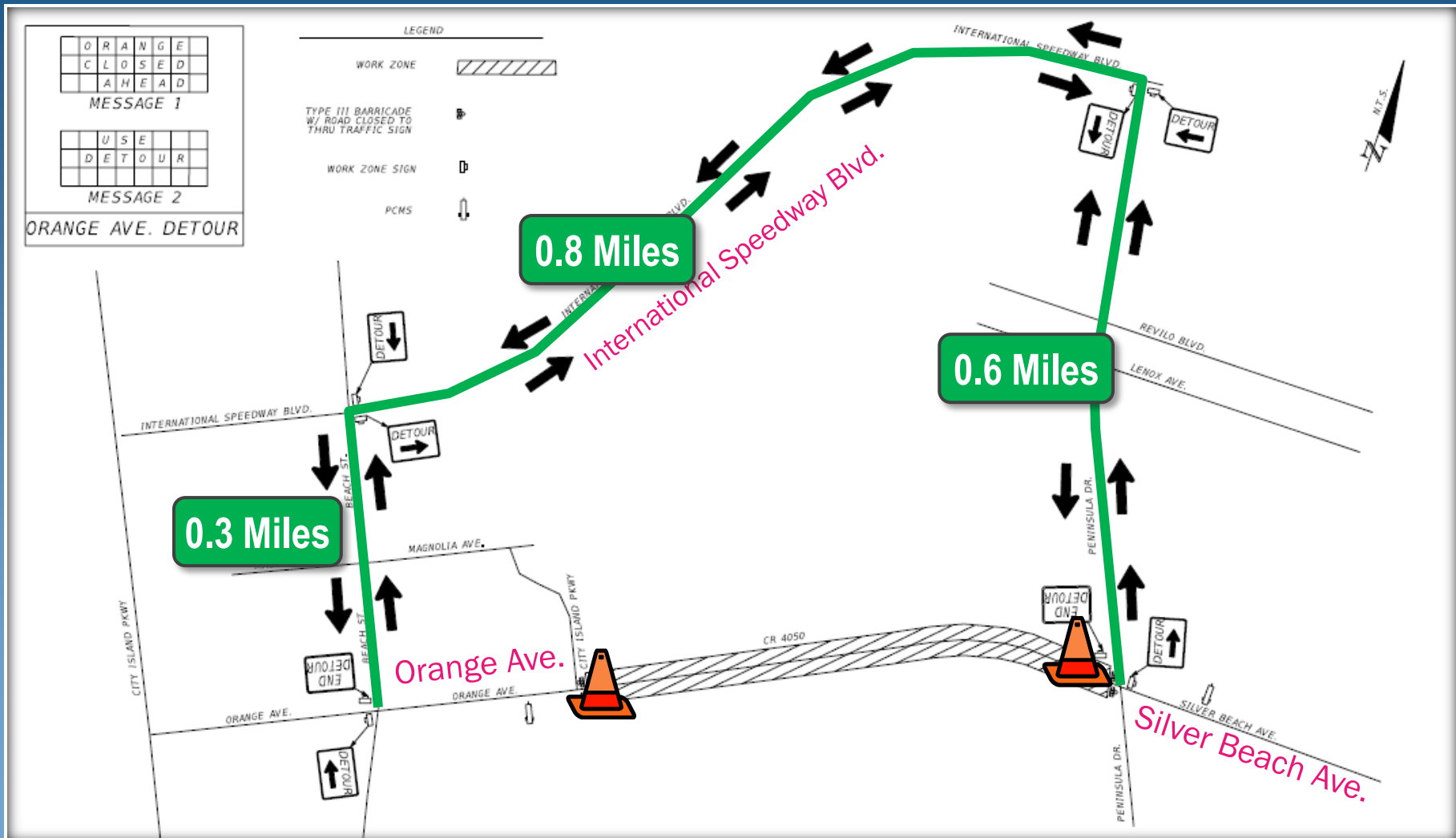


# Pre-Cast Arch Components

## Ask for More Information



# Construction Detour






# A Veterans Memorial...

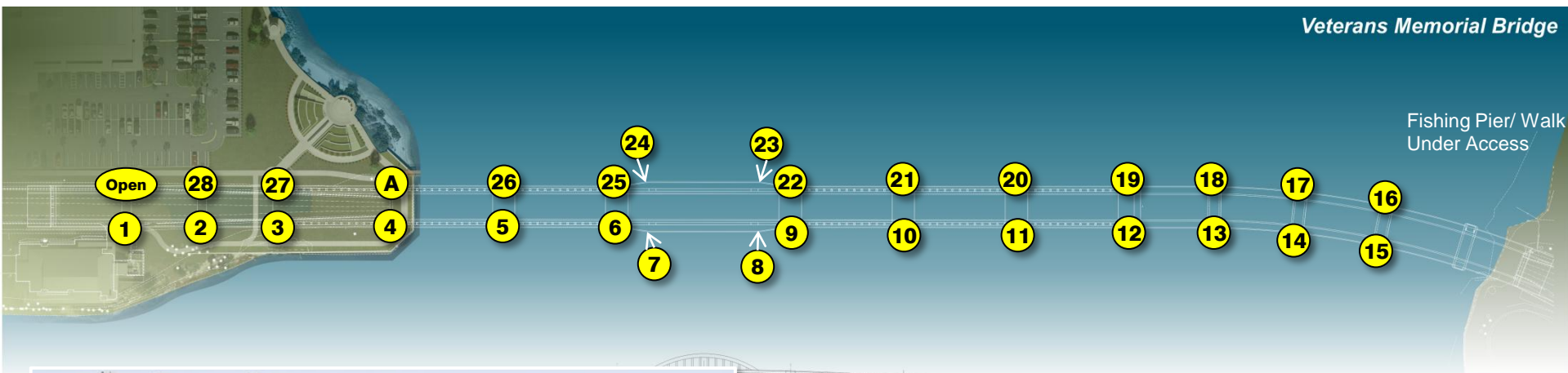


# Veterans Memorial Overlook Plaques

- 
- 28 Overlooks
  - Laser Etched Granite Plaques
  - Each Plaque Details a US conflict
  - All Plaques would include:
    - Etched Image
    - Description of Conflict, and Outcome
    - Number of KIA, WIA, MIA, Volusia Soldiers
    - QR Code that links to additional data
    - Braille Plate with Conflict Description



# Overlook Locations



# Overlook Plaques

## American Revolutionary War

1775 - 1783



The Thirteen Colonies fought for secession from the British Empire and freedom from European rule. On July 4th, 1776 the Declaration of Independence established a new nation, The United States of America.

Total Active Serving	217,000
Killed in Action	4,435
Wounded in Action	6,188

THE THIRTEEN COLONIES FIGHTED FOR  
SECESSION FROM THE BRITISH EMPIRE AND  
FREEDOM FROM EUROPEAN RULE. ON JULY 4TH,  
1776 THE DECLARATION OF INDEPENDENCE  
ESTABLISHED A NEW NATION, THE UNITED STATES  
OF AMERICA.



# Overlook Plaques

## World War II

1941 - 1946



## European Theatre

Beginning with Germany's invasion of Poland, by June of 1940, Germany had taken control of a large portion of Western Europe, and was moving to invade the United Kingdom. Allied forces, led by the U.S. and British forces, fought back with an extensive air and ground campaign, including the massive D-day invasion at Normandy Beach on June 6th 1944.

(Continued at next overlook)

World War II was a global conflict that lasted from 1939 to 1945. It was the deadliest conflict in human history, resulting in an estimated 70-85 million deaths. The war was fought between the Axis powers (Germany, Italy, and Japan) and the Allied powers (the United States, the United Kingdom, and the Soviet Union, among others). The war ended with the defeat of the Axis powers and the establishment of the United Nations.



# Overlook Plaques

## Vietnam War 1964 - 1975



Following a series of aggressions by North Vietnam, including attacks on U.S. forces in the Gulf of Tonkin, the US Congress authorized the deployment of U.S. forces for warfare against North Vietnam. Beginning in 1964, U.S. forces gradually grew to a peak of over 500,000 in the spring of 1968.  
(Continued at next overlook)

Total Active U.S. Military	3,403,000
Killed in Action	47,434
Volusia County KIA	45
Wounded in Action	153,503
Missing in Action	1,652
Volusia County MIA	1

U.S. ARMY  
VETERANS  
OF AMERICA  
CHAPTER 100  
MEMBER

# Overlook Plaques

## Operation New Dawn 2010-Present



On February 17, 2010, U.S. Secretary of Defense announced that "Operation Iraqi Freedom" would transition to "Operation New Dawn", coinciding with the reduction of American troops to 50,000. In December of 2011, the U.S. completed its withdrawal of all military personnel from Iraq, transitioning military operations to the new Iraqi government.

Total Serving	50,000
Killed in Action	38
Volusia County KIA	1
Wounded in Action	295

U.S. Secretary of Defense  
Announced the Transition  
of Operation Iraqi Freedom  
to Operation New Dawn  
on February 17, 2010  
Coinciding with the  
Reduction of American Troops  
to 50,000



# Veterans Memorial Plaza



*\*Construction  
Not Funded*



# Memorial Plaza Features

- Flags & Memorial Stones
- Branches of Service
- Supporting Organizations
- Central Spine
- Dedication Pavers
- Field Stones
- Soldiers Return



# Project Schedule

Design Begins	February 2013
Phase I Submittal – 30% Civil Plans	August 2013
Phase II Submittal – 60% Civil Plans & 30% Bridge Plans	February 2014
Aesthetic Elements Submittal – 30% Plans	April 2014
Phase II Submittal – 90% All Disciplines	June 2014
Phase IV Submittal – 100% All Disciplines	August 2014
Final Plans & Specifications	December 2014
Permitting Finalized	May 2015
Bid Advertisement & Award	Sept 2015
Construction Begins	Fall 2015

***Thank You For Attending!***



[www.VeteransMemorialBridge.com](http://www.VeteransMemorialBridge.com)