REPLACEMENT OF CENTRAL AVENUE BRIDGE OVER BLIND BROOK

City of Rye
Westchester County

City Council Public Meeting Presentation
October 7, 2009

Project Overview

Project Objectives:

1. Replace the Central Avenue Bridge
    - Aesthetically similar to the original bridge
    - Incorporate current design standards
    - Provide larger cross-sectional area for flood waters
2. Restore vehicular and pedestrian traffic along the entire length of Central Avenue

Project Funding:

This is a federally funded project (80% Federal, 20% City of Rye).

Project Evolution

- The bridge was classified as deficient in a 2005 NYS biennial inspection report.
- An in-depth inspection was completed in May, 2006.
- Based on the results of the inspection, replacement of the bridge was planned and funded by the City.
- Design of the replacement bridge began in November, 2006.
- In April 2007, the west abutment of the bridge was severely damaged by flood waters. The bridge was closed to all traffic.

Project Evolution

- After the flood, the bridge replacement was to receive Federal Funding through FEMA.
- In March 2008, the City removed the superstructure to avoid collapse.
- Further investigation revealed that Central Avenue is a State Road and is ineligible for direct FEMA funding. It was reassigned to the New York State DOT Emergency Relief Program in March, 2009.
- This reassignment of responsibility changed the design protocol and required the City and the Consultant to comply with additional FHWA and DOT local project standards.

Existing Conditions

Conditions Prior to April 2007 Flood

Conditions After April 2007 Flood

Alternative Analysis

Alternative 1:

No-build Alternative

Alternative 2:

Steel Stringer with Composite Concrete Deck Superstructure.

Alternative 3:

Prestressed Concrete Superstructure

Alternative Analysis

Alternative 2:

Steel Stringer with Composite Concrete Deck Superstructure:

- Doesn't match the original structure (aesthetics, structural type).
- Higher superstructure depth. Reduced channel cross sectional area.
- Higher construction cost.
- Longer construction duration.
- Increased maintenance effort (steel corrosion).

Does not meet project objectives and therefore dismissed

Alternative Analysis

Alternative 3:

Prestressed Concrete Slab Superstructure:

- Resemble the original bridge (aesthetics, structural type).
- Shallower bridge superstructure. Larger river channel cross sectional area .
- Lower construction cost.
- Shorter construction duration.
- Less long term maintenance.

Meets the project objectives and is being progressed as the preferred alternative!

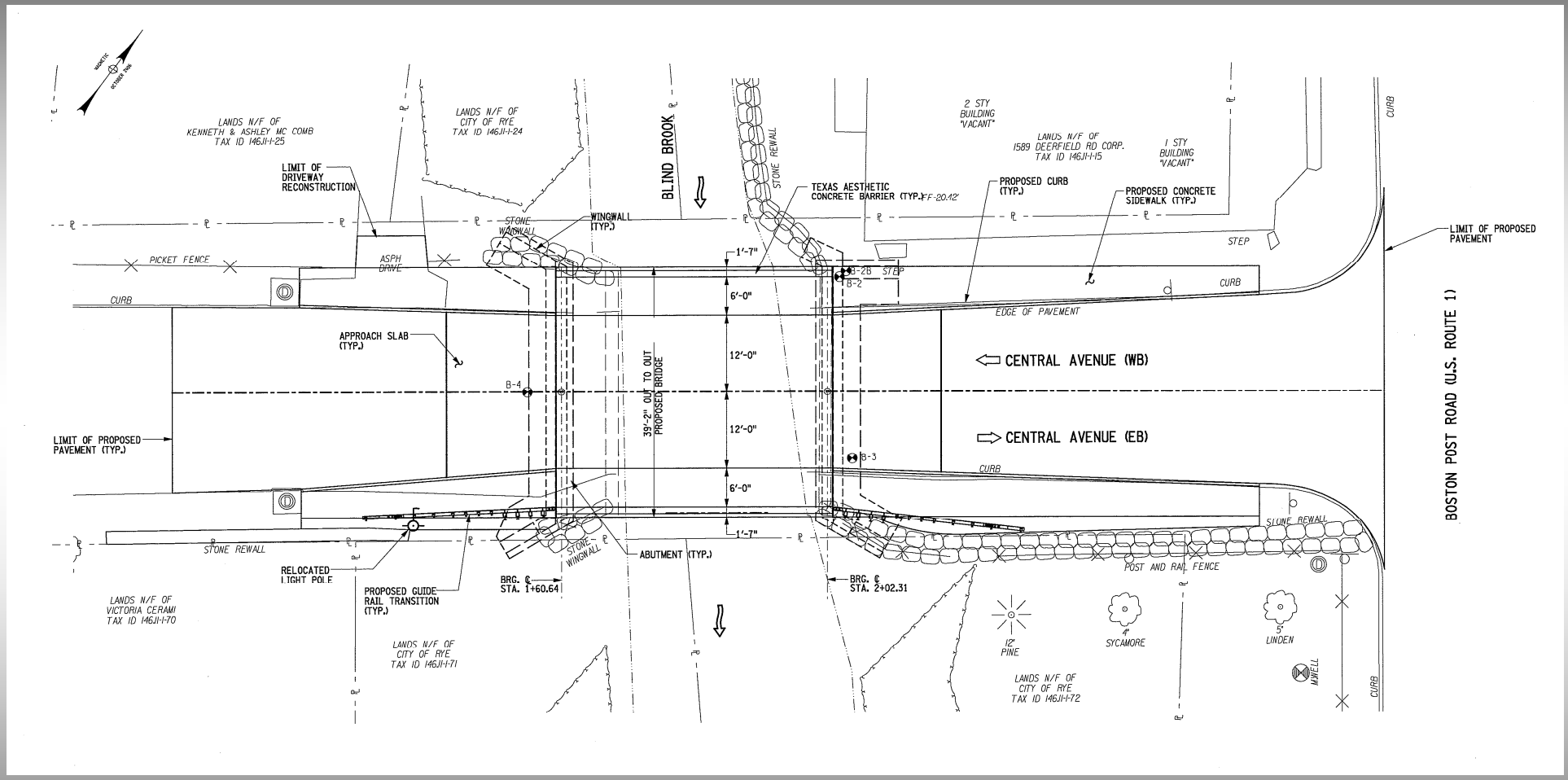
Preferred Alternative

- Highway: New bridge deck, approach slab and roadway pavement. 2 – 12’ travel lanes and 2 – 6’ sidewalks.
- The concrete superstructure will be designed to resemble the original bridge.
- Superstructure: Prestressed concrete slab units. Less cost. Less maintenance. Shorter construction duration.
- Wing wall aesthetics to be similar to existing stone wing walls.

Preferred Alternative

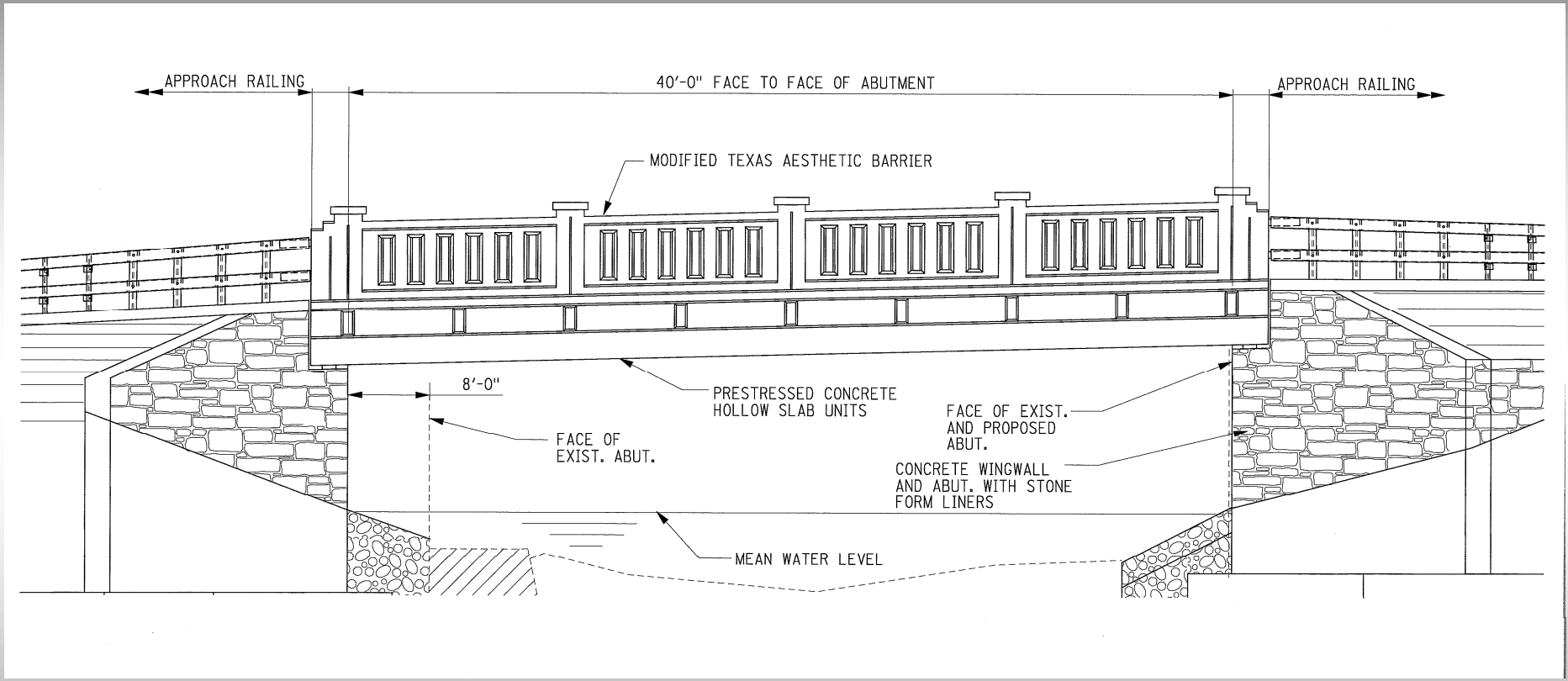
- Safety: Install current design standard bridge barrier and approach railing.
- Hydraulics: West abutment would be shifted 8’ westward to eliminate an encroachment into the channel and provide a continuous 40’ channel bottom. Increase clearance over river by approximately 1.5’.
- The estimated construction cost is $1.5M.
- Estimated construction duration is 6 to 8 months.

Preferred Alternative



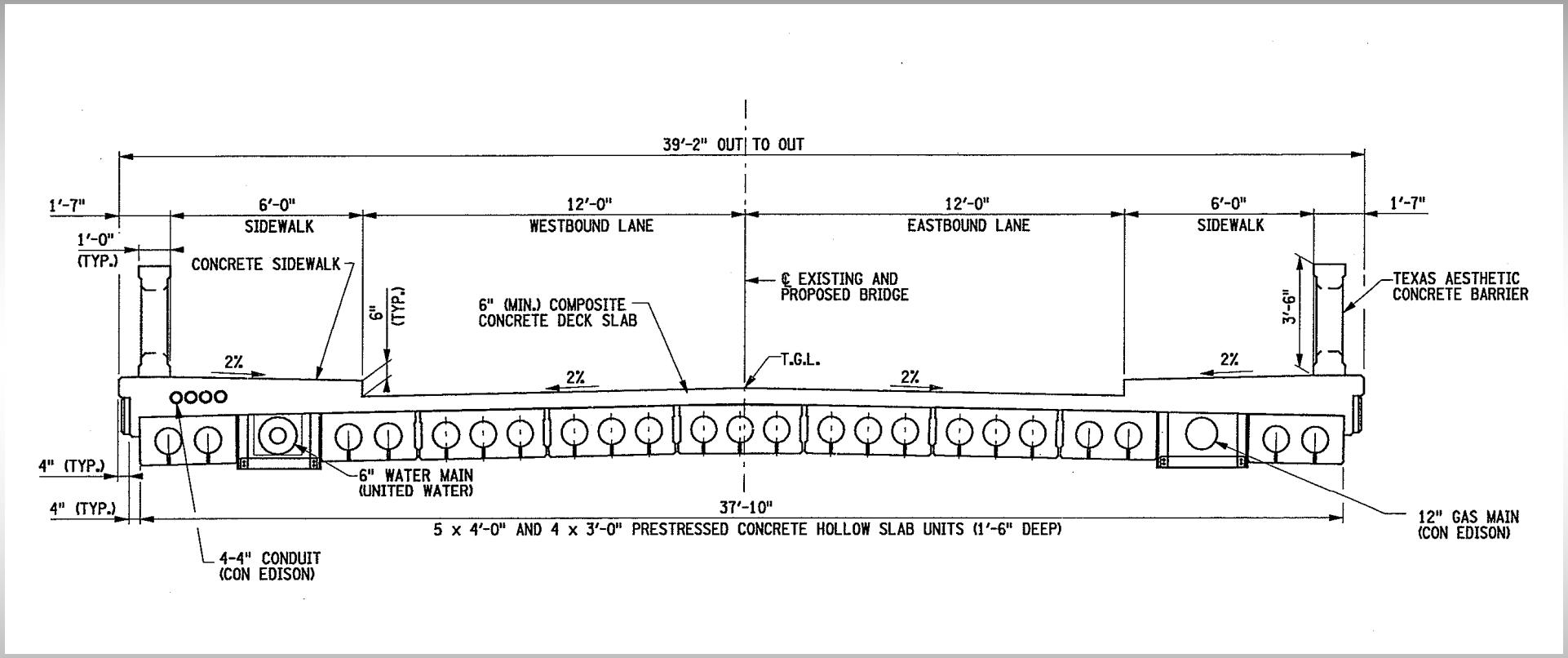
Plan

Preferred Alternative



Elevation

Preferred Alternative



Typical Section

Next Steps

- Submit Draft Design Report to the New York State Department of Transportation Region 8.
- Obtain required permits.
- Complete final design approximately 2 months after design approval.
- Advertise and award the contract approximately 2 months after final design.
- Construction is anticipated to start in the spring of 2010.

Questions and Answers