RFP Requirements and Scoring

- 2 Component, Best-Value Scoring Method:
  - Technical Proposal
  - Price Proposal
  - BV = Price / Technical Score

- Technical Proposal:
  - Base Score of 85%
  - 3 Points for Aesthetics and Public Process
  - 6.75 Points for Design Concept
  - 3 Points for PM and QM
  - 2.25 Points for MOT

- 100 Year Design Life, 4 Lanes, Shared Use Path
- If Steel, Must be Galvanized or Thermal Spray
- No Horizontal Flanges > 2.5” – Avoid Roosting
Alignment Drivers

- 2 Traffic Operational Efficiency
- M.O.T. During Construction
- Impacts to RR and Utilities
- Bicycle / Pedestrian Considerations
- Mercy Hospital Access
Veterans Memorial Bridge

Pre-Build
Pre-Build

Veterans Memorial Bridge
Pre-Build
Alignment Design - Proposed
Alignment Design - Proposed
Traffic Operational Analyses

- **SYNCRO and SimTraffic Analysis**
  - Alternative alignment will operate better than the existing or preliminary RFP intersection configurations
  - Both for initial traffic and future traffic
    - Alternative alignment vs. the RFP layout
    - Future LOS for both AM and PM is improved
2009 AM Peak Hour (No-Build)
2009 PM Peak Hour (No-Build)

Veterans Memorial Bridge

[Map showing traffic flow at a junction with labels for Valley, Danforth St., St. John St., Parkway, and Veterans Bridge.]
Veterans Memorial Bridge

Future AM Peak Hour Volumes
Veterans Memorial Bridge

Future PM Peak Hour Volumes
Positive Impacts

- Simplified M.O.T.
- Fewer RR crossings
- Shorter Bridge
  - Reduced construction costs
  - Reduced maintenance costs
- Shorter overall project length
- FRP intersection provides traffic calming
Positive Impacts

- Improved access to Mercy Hospital
- Improved intersection configuration / operations
- Improved bicycle / pedestrian path connections
- Expect reduced crash rates
Aesthetic Elements - Segmental
Aesthetic Elements - Overlooks
Veterans Memorial Bridge

River Bridge Structure Type
River Bridge Structure Features

- 1610 ft Total Length, 7 Continuous Spans
- Boxes Vary in Depth from Approx 8.1 ft to 11.1 ft
- Overall Width Varies from 82.5 ft to 94.5 ft to Allow for Left Turn Lane
- Balanced Cantilever Construction Method
100 Year Bridge Design Elements

- 7,000 PSI
- 20% Fly Ash
- 5.5 gal/cy DCI Corrosion Inhibitor
- < 1000 Coulombs @ 120 days
- Black 60 ksi Rebar in Precast
- MMFX-2 (75 ksi) Rebar in CIP Locations
- Polyethylene PT Ducts
- Membrane Overlay & Asphalt
- Zero Longitudinal Tension
Precast Segmental Casting

Unistress Corporations Precast Yard, Pittsfield, MA

VETERANS MEMORIAL BRIDGE

Unistress Corporations Precast Yard, Pittsfield, MA
Precast Plant Set-up

- D/B allowed Unistress to re-use existing forms from their Rte. 36 project in Seabright, NJ
- Purchased 1 additional form to cast piers and end segments to meet erection schedule
- Segments were all steam cured. Steam system was in place at the existing forms, added a small steam system for added pier form
Segment Form Designs

- Form 11A cast all 144 variable depth segments (existing)
- Form 11B cast all 189 constant depth segments (existing)
- Form 1A cast all 28 pier and end segments (new)
- All forms designed and fabricated by EFCO
Segment Rebar Jigs
Segment Casting Production

- Pre-Fabricated Rebar Cage Dropped into form
- Form crew secures all loose embeds and added rebars
- Surveyors set up matchcast segment per geometry control data
- QA/QC Inspects and signs off prior to concrete placement
- Concrete placed via a 3 yard bucket and Mi-Jack lift
- Concrete finished, covered and steam cured
Pre-Fabricated Rebar Cage
Dedicated Batch Plant
Segment Concrete Placement
Segment Concrete Finishing
Segment Storage Yard

- Segment clean up takes place
- Strand for transverse tendons are installed
- Transverse post tensioning takes place
- Grouting is completed
- Transverse PT pockets are patched
- Matchcast faces are sandblasted
- Final inspections take place
Storage Yard

Veterans Memorial Bridge
Segment Transport & Storage
Veterans Memorial Bridge

Transverse Post Tensioning
Grout Mixed Using a Colloidal Mixer
Grout Testing in the Yard
Grout Pumping Operations
Sandblast Matchcast Faces
Veterans Memorial Bridge

**Segment Delivery**

- Delivered 4 segments per delivery day
- Traveled 240 miles from Pittsfield, MA to Portland, ME
- Escorts and State Police required for travel through Massachusetts
- Must travel during darkness in MA and then daylight in NH and ME
- Plan to store 12 segments on site
Route: Pittsfield, MA to Portland, ME
Veterans Memorial Bridge

Segments Loaded for Delivery

2011/04/20

TY-LIN INTERNATIONAL
On Site Segment Handling
Segments to be loaded on Barge
Veterans Memorial Bridge

Cantilever Construction
Veterans Memorial Bridge

Pier Segment Erection
Segment Delivery by Barge
Access Platform at E2-3U

Veterans Memorial Bridge
Work Platform

Veterans Memorial Bridge
Long. Closure Placement
Veterans Memorial Bridge

Long. Closure Placement

2011/10/03
Long. Closure Placement
Pier 1 East

Veterans Memorial Bridge
Overlooks at Piers 2, 3, 4
Spans 4 thru 7 Looking North
Veterans Memorial Bridge

- Proposed Alignment Utilized a Recently Constructed Bridge along Fore River Parkway (2005)

- Fore River Parkway was Constructed under D/B Contract
  - Connects I-295 to Existing VMB Intersection

- 4 Span Steel Plate Girder Bridge
  - Unequal, Unbalanced Spans
  - Variable Width
  - Variable Cross Slope

- RFP Survey Not Sufficient
  - Raise Bridge for RR Clearance?
Veterans Memorial Bridge

Alignment/Bridge Widening
Straddle Bent
Veterans Memorial Bridge Team

- Owner: Maine Department of Transportation
- Contractor: Reed and Reed
- Designer: TY Lin International
- Construction Engineer: McNary-Bergeron
- Precaster: Unistress Corp.
- Forms: EFCO
- PT Supplier: DSI America
- Grout Suppliers: Sika & Five Star
Thank you for your time!

QUESTIONS?