



North Washington Street Bridge Replacement Project

Boston, Massachusetts

MGH Institute of Health Professionals - September 14, 2016

Martin J. Walsh
Mayor



Michael D. Dennehy
Commissioner



Moving Massachusetts Forward.
massDOT

City of Boston: Para Jayasinghe, City Engineer
Benjamin Sun, Chief Structural Engineer



Mass DOT: Michael O'Dowd, Project Manager



Project Team

City of Boston
MassDOT -Highway Division
Federal Highway Administration



Bridge Engineer: Benesch
Bridge Architect: Rosales +





Existing Bridge

CHARLESTOWN

BOSTON HARBOR

NORTH WASHINGTON STREET BRIDGE

NORTH END

WEST END

ZAKIM BRIDGE


Project Goals

Goals
Replace Structurally Deficient Bridge
Provide Multi-Modal Bridge as a Complete City Street over Water
Improve Deficient Bike and Pedestrian Accommodations
Improve Intersections Safety and Functionality
Improve Navigation Channel
Provide Context Sensitive Bridge Design in an Important Waterfront and Historic Bridge Location
Provide Visually Appealing Bridge Design Complementing the Zakim Bridge
Maintain Traffic, Residential and Economical Needs during Construction

Public Outreach

Date	Meeting
Spring 2014	DCR/USCG coordination meeting
Summer 2014	Boston interdepartmental coordination meeting including Boston Landmarks Commission
Fall 2014	Public information meeting – Charlestown Neighborhood Community Meeting
Fall 2014	Public information meeting – North End Neighborhood Community Meeting
Fall 2014	Targeted briefing – Bicycle and Pedestrian Advocacy Groups WalkBoston, Livable Streets Alliance, MassBike
Winter 2015	Targeted briefing – Charlestown Preservation Society
Spring 2015	Targeted briefing – Marriott Hotel, Constitution Marina, Downtown North Association
Spring 2015	Targeted briefing – A Better City Transportation Committee Meeting
Winter 2015	25% Design Public Hearing
Spring 2016	Targeted briefing – Charlestown Neighborhood Council
Spring 2016	Targeted briefing – Transit Matters, Boston Cyclists Union, Livable Streets Alliance, WalkBoston, MBTA, Freedom Trail Foundation – bus lane integration
Summer 2016	Targeted briefing – West End Civic Association
Summer 2016	75% Design public information meeting - <i>tonight</i>

Project Modifications 25% to 75%

25% Design		75% Design
54' Roadway 2 lanes in each direction		57.5' Roadway 2 lanes in each direction 1 dedicated southbound bus lane Reduces congestion through transit/shuttle use
Bicycle connections with mixing zones at intersections		Bicycle connections and markings improved Keany Square – Southbound bike signal added City Square – Separated bike lane extended to Chelsea Street
Traffic control during construction		Advanced VMS as far out as Route 128 Advanced warning signs Alternate routes selected
Fender system design posed potential negative impact to Constitution Marina		Fender system realigned to eliminate potential impacts

Permitting/Filing Update

- FHWA is Lead Agency
- U.S. Coast Guard Bridge Permit - Applied 8/24/15 - Anticipated Spring 2017
- Massachusetts Coastal Zone Management (CZM) - Filed 4/01/16 - Anticipated Spring 2017
 - U.S. Coast Guard Notice to Mariners - Anticipated Winter 2016/2017
 - U.S. Coast Guard Waterways Management - Private Aids To Navigation (PATON) - (Dolphins, Navigation Signals) - To be filed by DCR - Anticipated Spring 2017
 - U.S. Army Corps of Engineers - New England District - Section 404 General Permit - Filed 3/31/16 - Anticipated Fall 2016
 - U.S. Army Corps of Engineers Levee Safety Office - Section 408 - Not Anticipated - If Required Fall 2016
 - MassDEP - Section 401 Water Quality Certification - Filed 3/31/16 - Anticipated Fall 2016
 - DCR Construction Access Permit - Scheduled 9/23/16 - Anticipated Fall 2016

Permitting/Filing Update

- NEPA/FHWA - Categorical Exclusion Determination (CE Checklist) - Filed 4/29/16 - Anticipated Fall 2016
 - DCR 4(f) De Minimis - Scheduled 9/23/16 - Anticipated Fall 2016
 - National Marine Fisheries Service (NMFS) - Section 7 Consultation/Essential Fish Habitat Assessment (EFH) - Filed 7/19/16 and Scheduled 9/23/16 - Anticipated Fall 2016
 - Massachusetts Division of Marine Fisheries - Concurrence Anticipated Fall 2016
 - MHC/FHWA - Section 106 National Historic Preservation Act and MOA - Filed 4/27/16 - Anticipated Fall 2016
 - MWRA - Wastewater 8(m) - Scheduled 9/23/16 - Fall 2016
 - MassDOT - Design Exception - Submitted 8/18/16 - Anticipated Fall 2016

Proposed Bridge

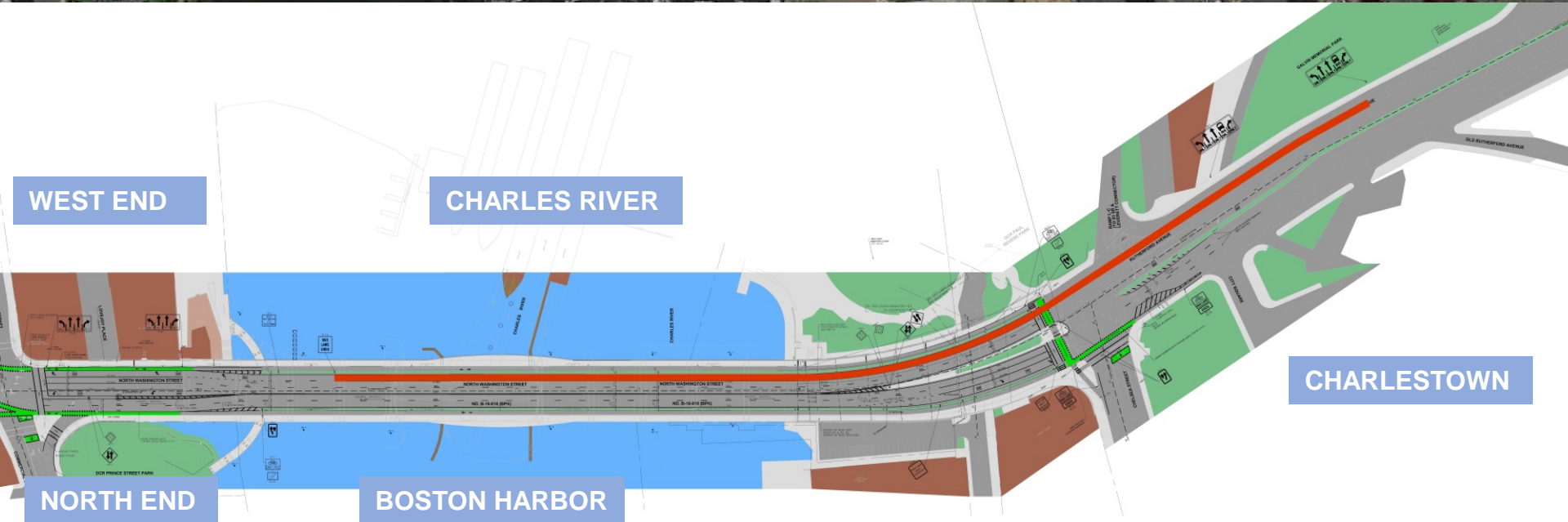


Proposed Bridge



Proposed Bridge

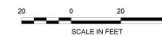




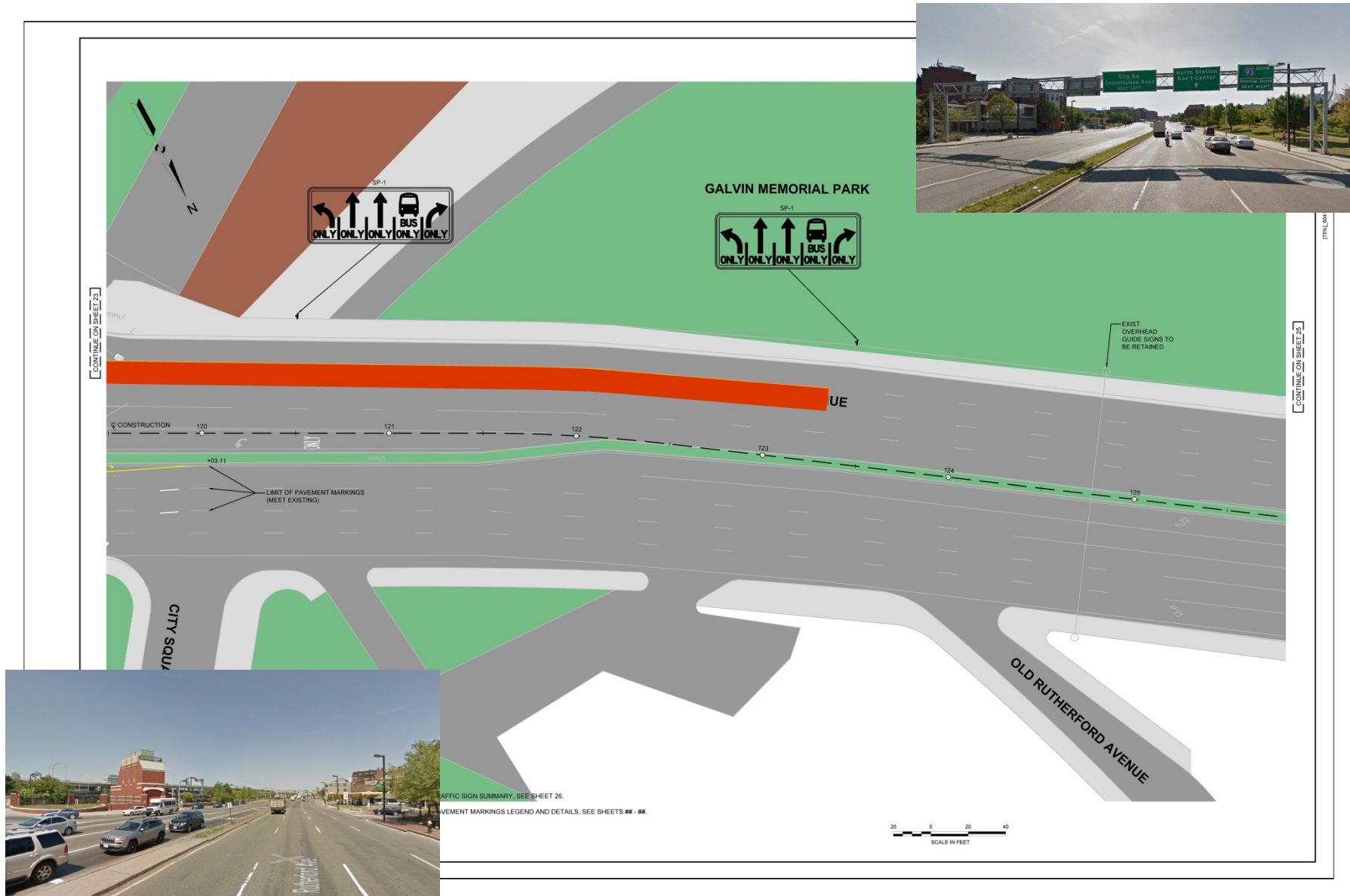
Designated Bus Lane



TRAFFIC SIGN SUMMARY, SEE SHEET 26.
 PAVEMENT MARKINGS LEGEND AND DETAILS, SEE SHEETS ## - ##.



Designated Bus Lane





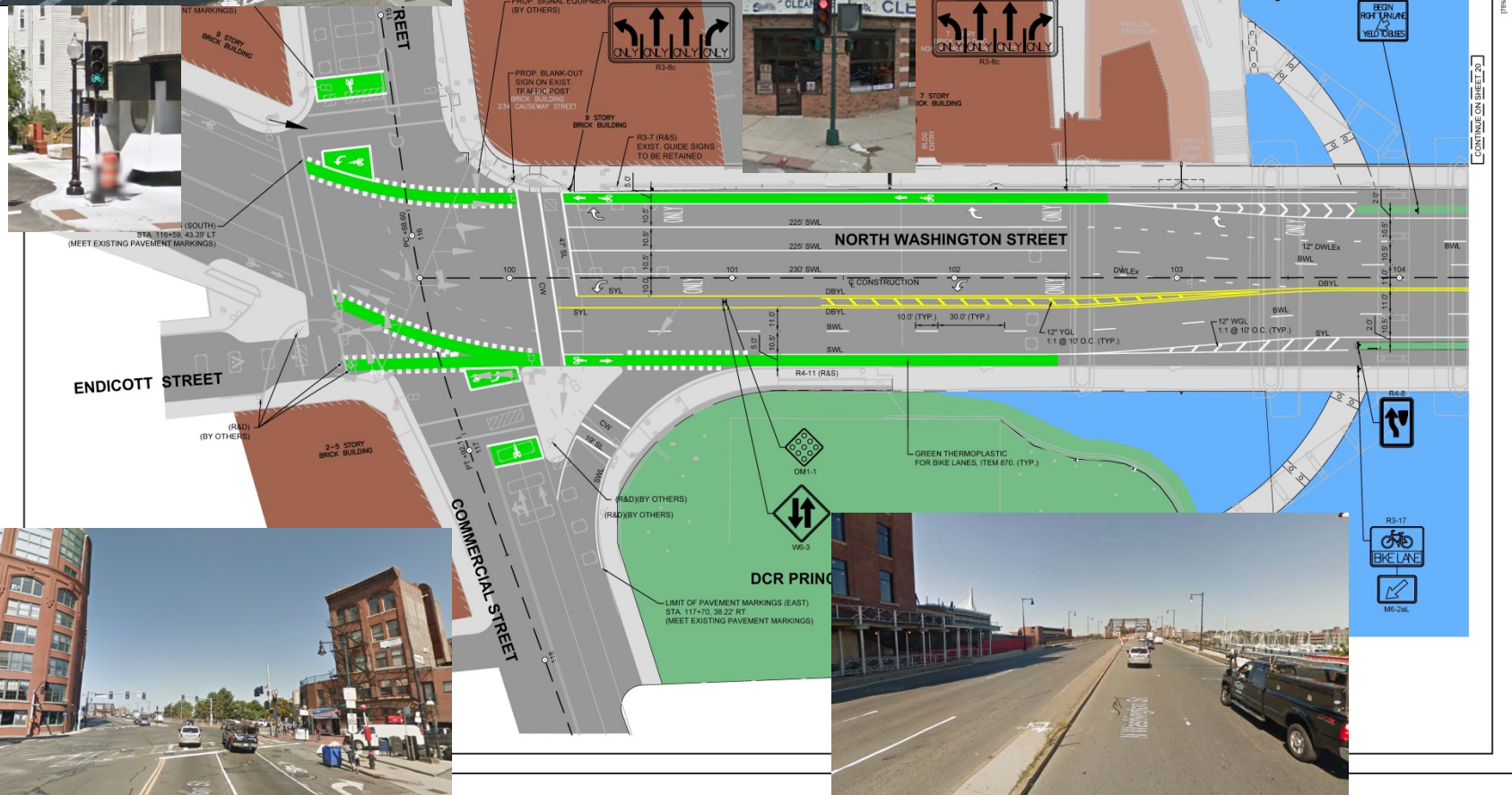
Designated Bus Lane



Designated Bus Lane



Designated Bus Lane



PAUL REVERE
PARK

City Square Intersection Improvements

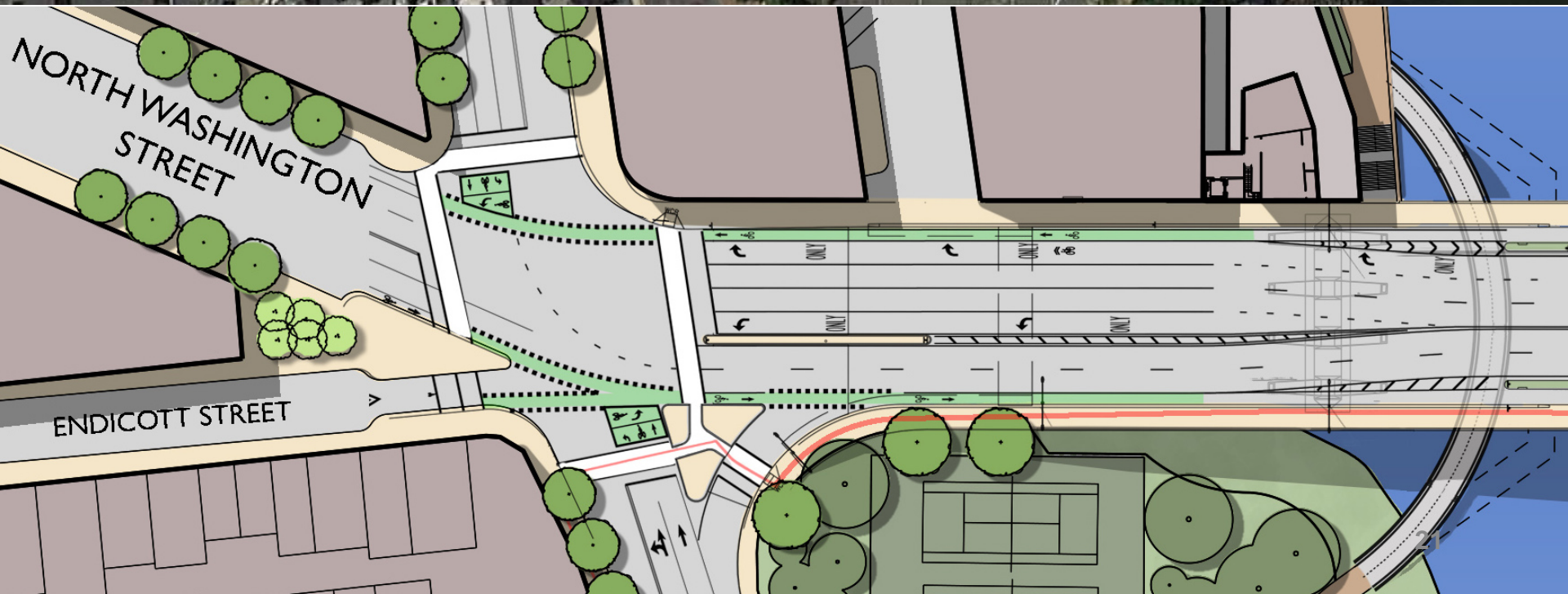
RUTHERFORD AVE

CITY SQUARE
PARK

NORTH WASHINGTON STREET

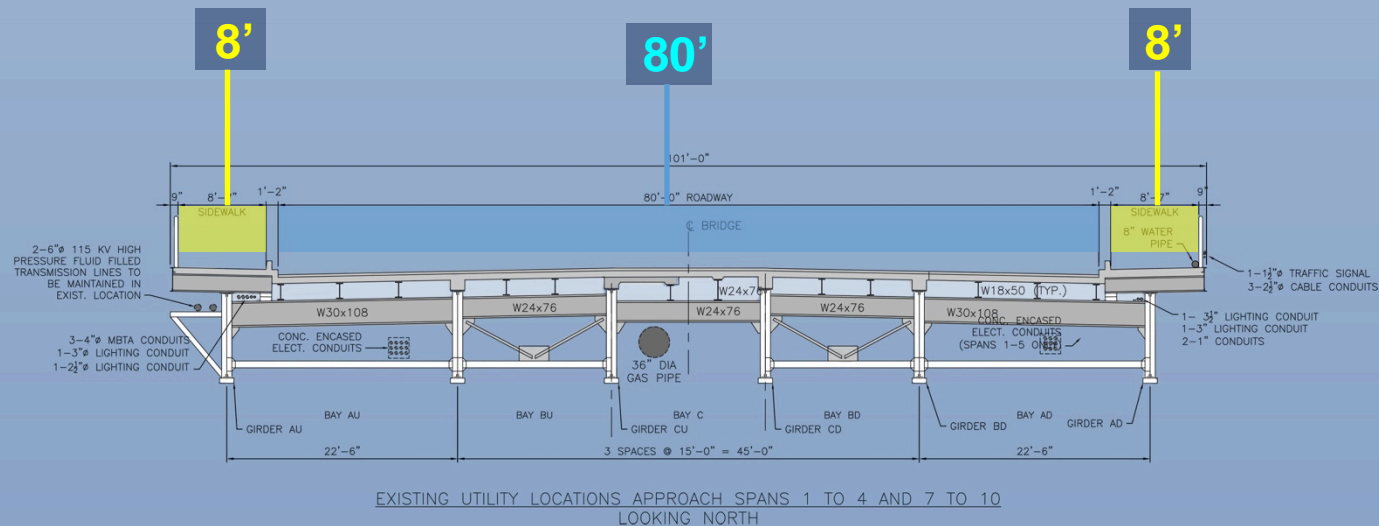
CHELSEA ST.





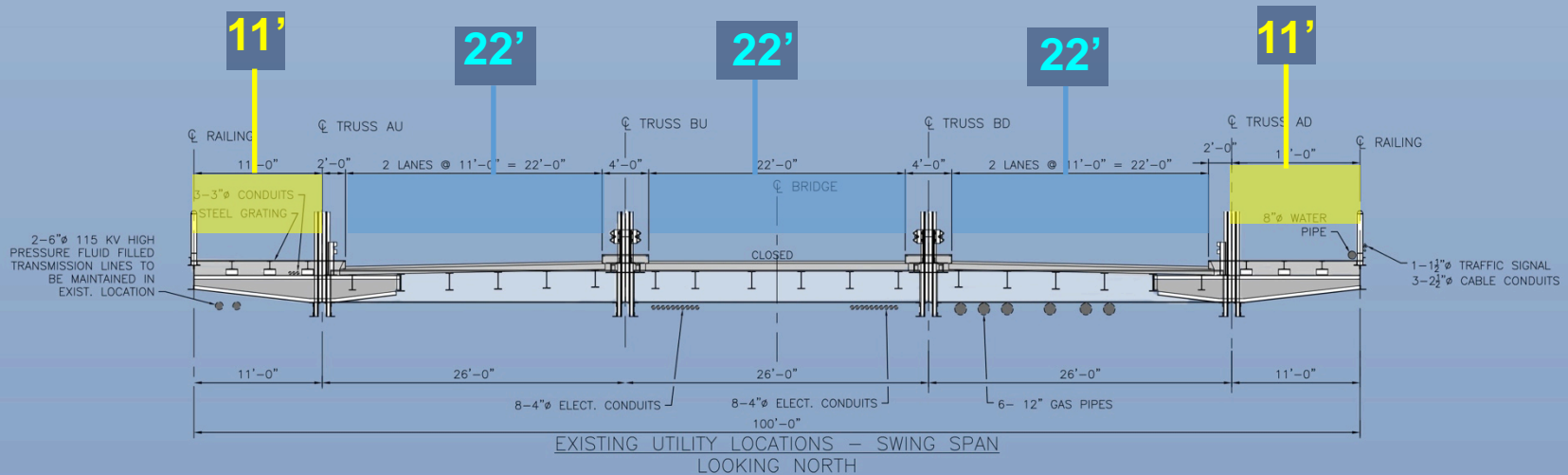
Existing Bridge Cross Section at Approach Spans

- Plate Girder Bridge
- Granite Historic Piers



Existing Bridge Cross Section at Navigation Span

- Swing Movable Span
- Steel Truss

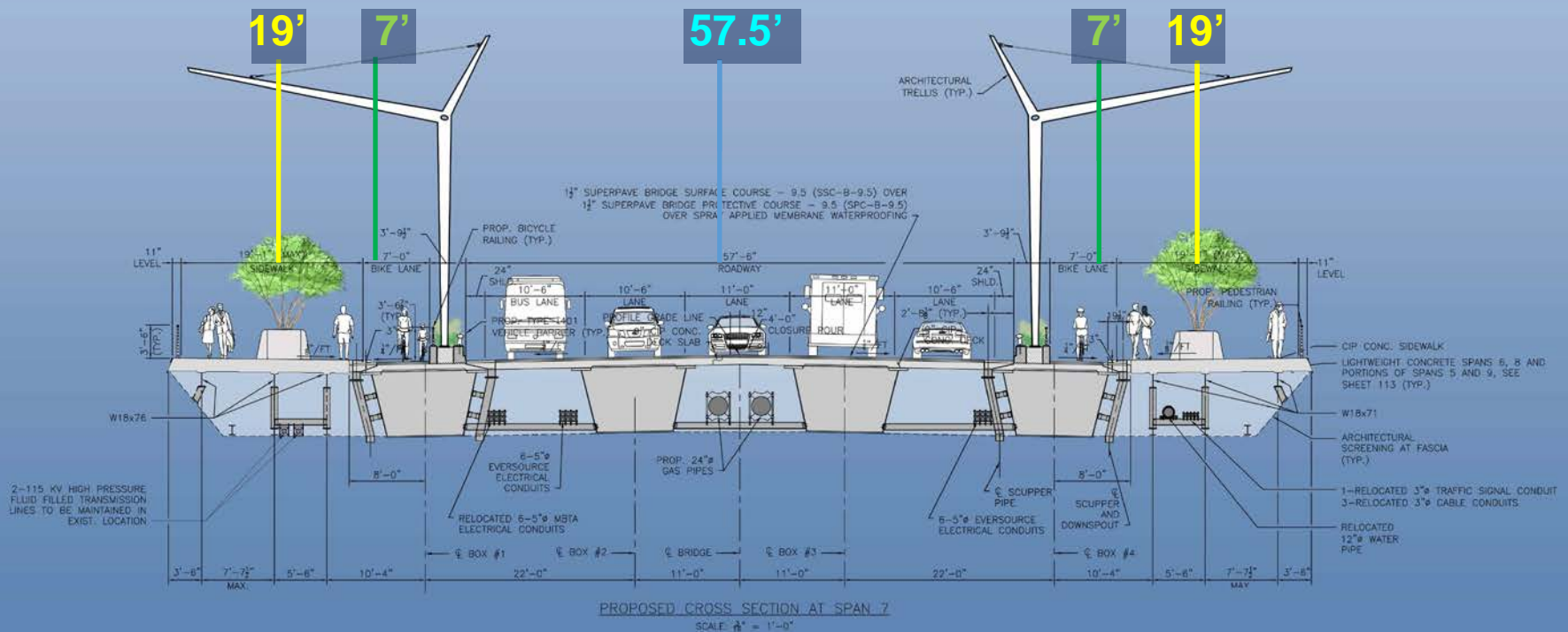


- **Wide Sidewalks**
- **Separated Bike Lanes**
- **Two Vehicular Lanes in Each Direction**
- **Designated Bus Lane in Southbound Direction**



Proposed Bridge Cross Section at Navigation Span

- Pedestrian Overlooks
- Architectural Trellis and Plantings



Public Notifications During Construction

Public Notifications During Construction

City and DOT project websites refocused to support construction activities

Regular email updates regarding construction operations to signed up stakeholders

Public information meetings for major construction events

Specialized outreach – email/press/website update/City and DOT social media for major construction events

PSM-60473_H0005-ALL_ETC(7)DAG Printed on 10-Aug-2016 7:10 PM



1. CHANGABLE MESSAGE BOARD SIGNS SHALL BE FURNISHED AND PLACED FOR MAJOR HIGHWAY APPROACHES TO THE PROJECT AREA AS SHOWN ON THIS PLAN, AS REQUIRED BY THE ENGINEER. MESSAGES FOR DISPLAY SHALL BE IN ACCORDANCE WITH THE STANDARDS AND THEIR USE SHALL BE TO ADVISE THE MOTORISTS OF THE BRIDGE CONSTRUCTION.
2. ALL CMS SHALL BE PLACED ON MAJOR HIGHWAYS AT A SUITABLE LOCATION ABOUT ONE MILE IN ADVANCE OF POTENTIAL DECISION POINTS.
3. PLACEMENT LOCATIONS OF CMS SHALL BE APPROVED IN THE FIELD BY THE ENGINEER.
4. ALL CMS LEGENDS SHALL BE APPROVED IN THE FIELD BY THE ENGINEER. POSSIBLE LEGENDS ARE SHOWN BELOW.
5. FOR ADVANCED STATIC SIGNING, SEE SHEET 109.
6. FOR ALTERNATE ROUTES FOR LOCAL TRAFFIC, SEE SHEETS 120 - 122.
7. FOR CONSTRUCTION STAGING, SEE SHEETS 110 - 119.

TWO MONTHS PRIOR TO CONSTRUCTION

PHASE 1								PHASE 2								
C	H	R	L	S	T	W	N	C	O	N	S	T				
B	R	I	D	G	E			B	E	G	I	N	S			
I	N		B	O	S	T	N	M	M	/	D	D	/	Y	Y	

TWO MONTHS PRIOR TO CONSTRUCTION:

PHASE 1							PHASE 2								
C	H	R	L	S	T	W	N	B	E	G	I	N	S		
B	R	I	D	G	E			M	M	/	D	D	/	Y	Y
C	O	N	S	T											

TWO MONTHS PRIOR TO CONSTRUCTION

PHASE 1							PHASE 2								
C	H	R	L	S	T	W	N								
B	R	I	D	G	E			B	E	G	I	N	S		
C	O	N	S	T				M	M	/	D	D	/	Y	Y

TWO MONTHS PRIOR TO CONSTRUCTION:

PHASE 1							PHASE 2								
C	H	R	L	S	T	W	N	B	E	G	I	N	S		
B	R	I	D	G	E			M	M	/	D	D	/	Y	Y
C	O	N	S	T											

DURING CONSTRUCTION:

PHASE 1										PHASE 2									
C	H	R	L	S	T	W	N			C	O	N	S	T					
B	R	I	D	G	E					S	E	E	K		A	L	T		
I	N		B	O	S	T	N			R	O	U	T	E					

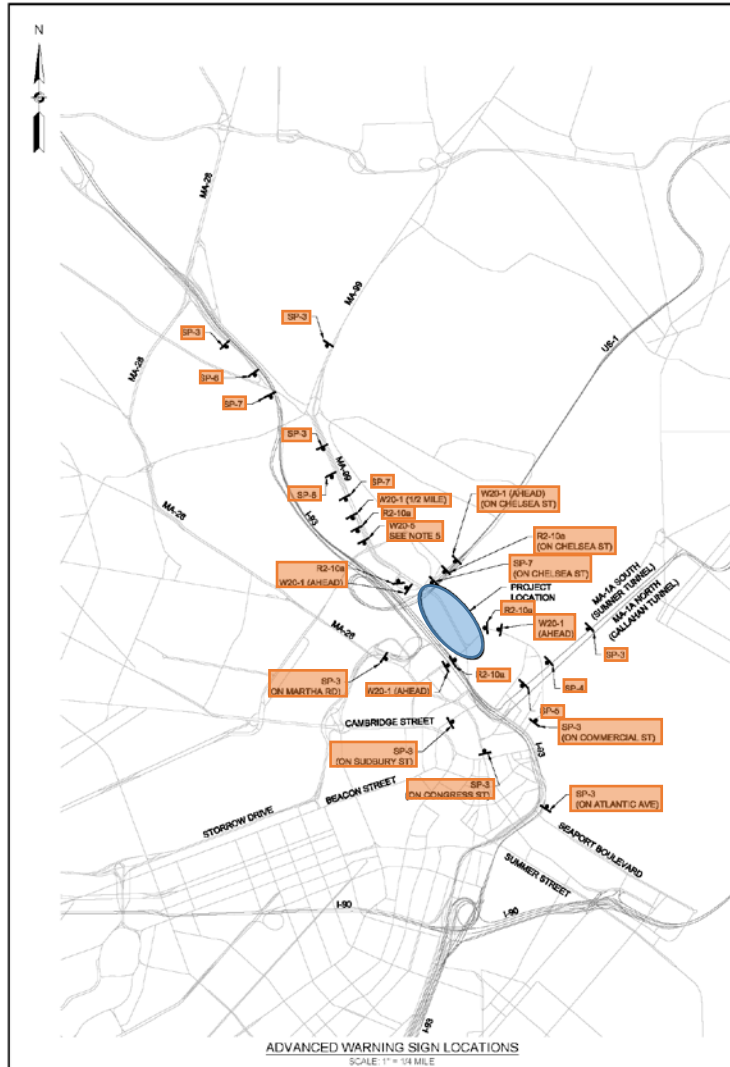
DURING CONSTRUCTION									
PHASE 1					PHASE 2				
C	H	R	L	S	T	W	N		
B	R	I	D	G	E				
C	O	N	S	T					
9	3		N	B					
E	X	P	E	C	T				
D	E	L	A	Y	S				

DURING CONSTRUCTION:

PHASE 1						PHASE 2					
C	H	R	L	S	T	9	3	N	B	&	
B	R	I	D	G	E	9	9	N	B		
C	O	N	S	T		D	E	L	A	Y	S

DURING CONSTRUCTION									
PHASE 1					PHASE 2				
C	H	R	L	S	T	W	N		
B	R	I	D	G	E				
C	O	N	S	T					

Advanced Warning Signs



BOSTON
NORTH WASHINGTON STREET
OVER BOSTON INNER HARBOR

STATE	FED. AID PROJ. NO.	SHEET
MA	109	101A
		102

PROJECT FILE NO. 104173
ADVANCED WARNING SIGN PLAN

ADVANCED WARNING SIGN NOTES

1. ALL SIGNS SHALL BE PLACED AT A SUITABLE LOCATION CONFORMING TO MUTCD STANDARDS, AS SHOWN BELOW.



RECOMMENDED ADVANCED WARNING SIGN MINIMUM SPACING (MUTCD TABLE 6C-1)

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (LOW SPEED)	100 FT	100 FT	100 FT
EXPRESSWAY/FREEWAY	1,000 FT	1,500 FT	2,540 FT

2. PLACEMENT LOCATIONS OF ADVANCED WARNING SIGNS SHALL BE APPROVED IN THE FIELD BY THE ENGINEER.
3. ALL SIGN LEGENDS SHALL BE APPROVED IN THE FIELD BY THE ENGINEER. POSSIBLE LEGENDS ARE SHOWN BELOW.
4. ALL SIGN PANEL AND TEXT SIZES SHALL CONFORM TO THE MUTCD AND MASSDOT STANDARDS.
5. THE CURRENT CONSTRUCTION STAGE SHALL DETERMINE IF THE W20-1 SIGN DISPLAYS A LEFT OR RIGHT LEGEND. THE SIGN LEGEND SHALL BE APPROVED IN THE FIELD BY THE ENGINEER.
6. THE CONTRACTOR SHALL FURNISH AND INSTALL ADVANCED SP-4 "NO WIDE LOADS" SIGNS IN ADVANCE OF THE PROJECT SITE AT KEY LOCATIONS. THE CONTRACTOR IS FULLY RESPONSIBLE TO COORDINATE THE LOCATION AND ERECTION OF THESE SIGNS. THE CONTRACTOR SHALL COORDINATE WITH BOTH MASSDOT DISTRICT 8 OFFICE AND THE MASSDOT COMMERCIAL TRANSPORT PERMIT OFFICE. POSSIBLE SIGN LEGEND IS SHOWN BELOW.
7. FOR ADVANCED CMS SIGNING, SEE SHEET 108.
8. FOR ALTERNATE ROUTE PLANS, SEE SHEETS 120 - 122.
9. FOR CONSTRUCTION STAGING AND ADDITIONAL ADVANCED WARNING SIGNS NOT SHOWN ON THIS PLAN, SEE SHEETS 110 - 119.

SP-3 LEGEND:

CHARLESTOWN
BRIDGE CONST.
EXPECT DELAYS

SP-4 LEGEND:

FOR CHARLESTOWN
USE ALT ROUTE

SP-5 LEGEND:

ALT ROUTE
USE I-93 NORTH

SP-6 LEGEND:

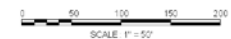
FOR NORTH END
OR TD GARDEN
USE ALT ROUTE

SP-7 LEGEND:

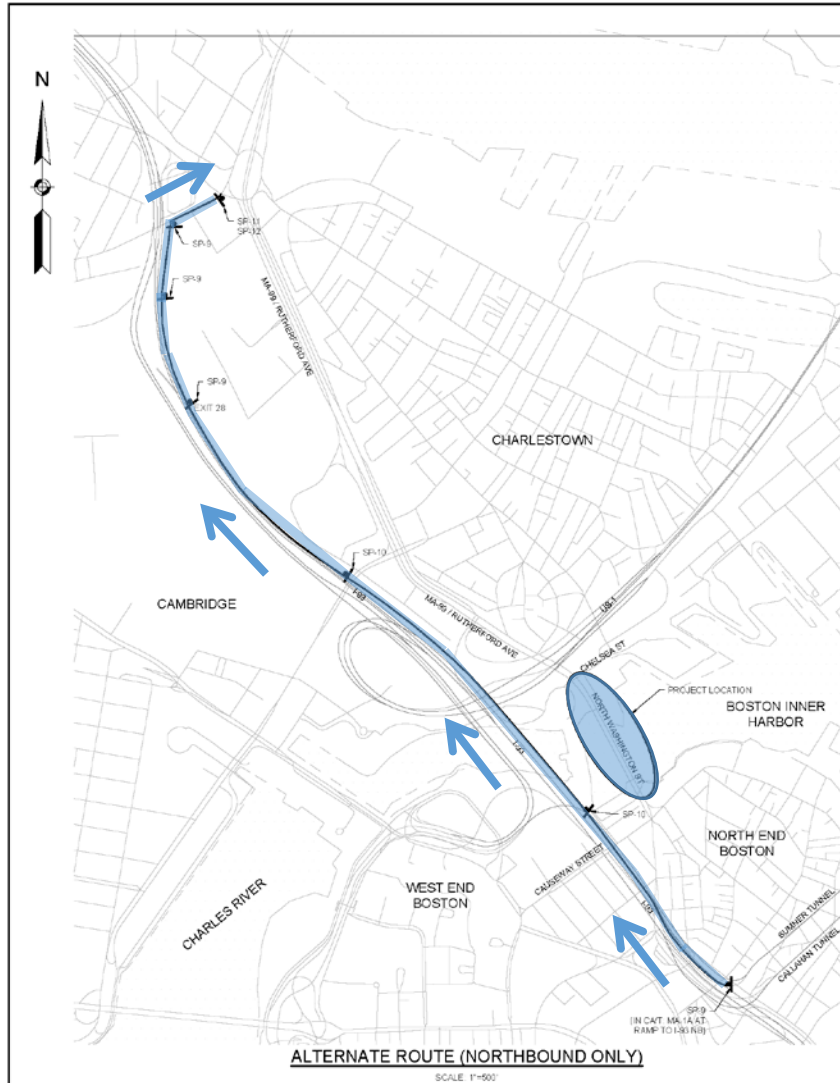
ALT ROUTE
USE LEVERETT
CONNECTOR

SP-8 LEGEND:

NARROW BRIDGE
NO WIDE LOADS
SEEK ALT ROUTE



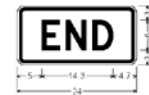
Alternate Route Northbound



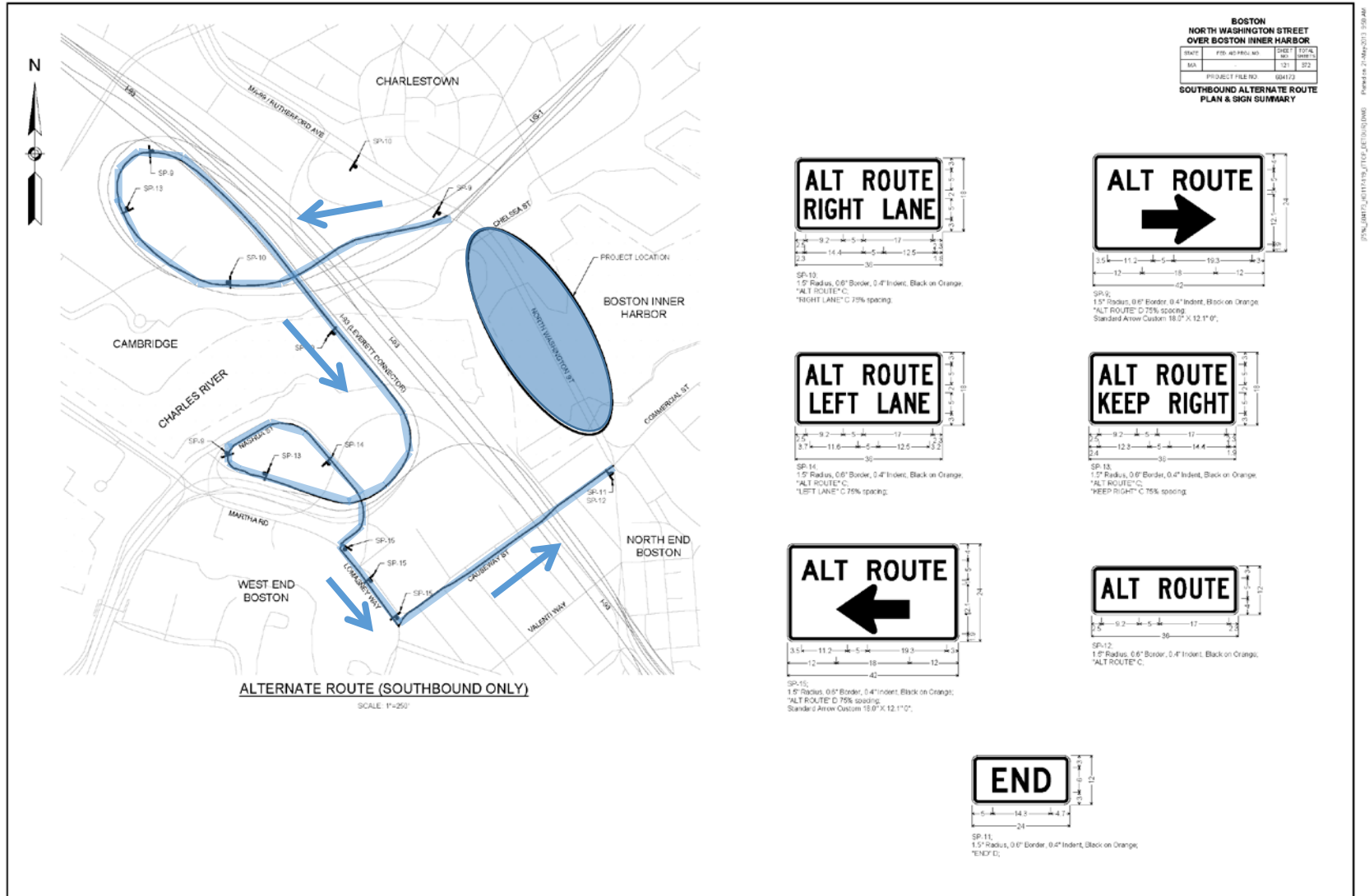
**BOSTON
NORTH WASHINGTON STREET
OVER BOSTON INNER HARBOR**

Sheet	File No.	Sheet
MA	129	130
PROJECT FILE NO. 084123		

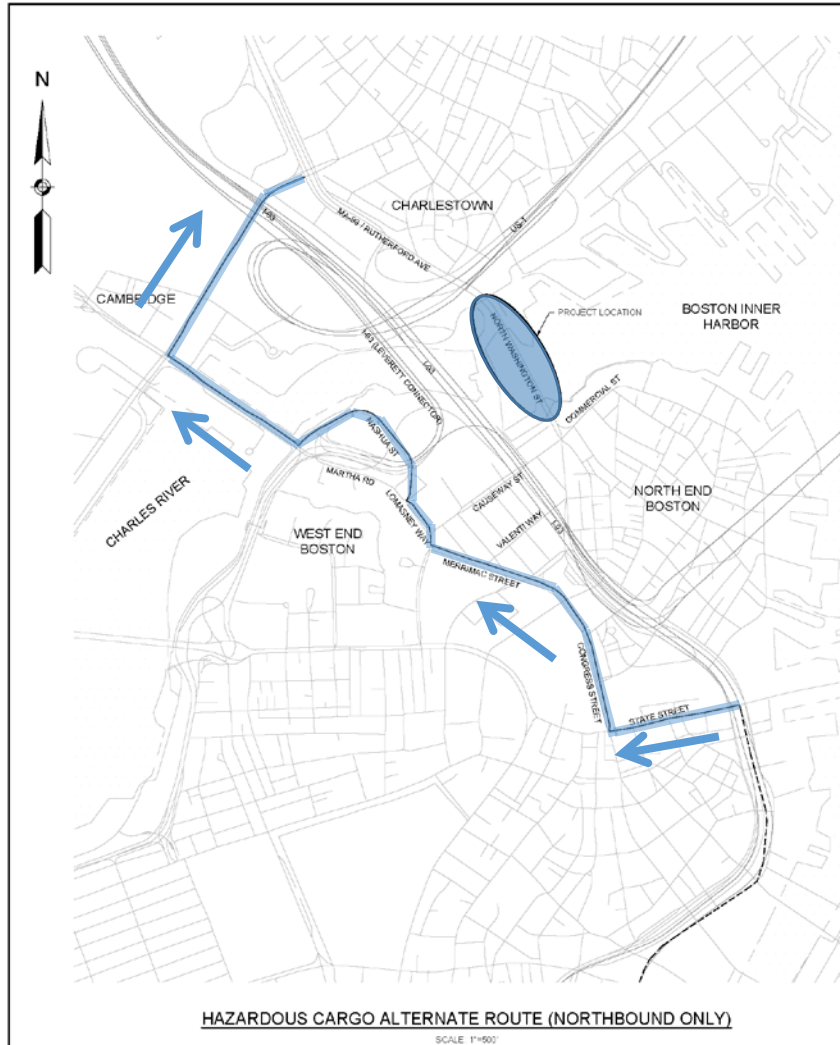
**NORTHBOUND ALTERNATE ROUTE
PLAN & SIGN SUMMARY**



Alternate Route Southbound



Alternate Route Northbound Hazardous Cargo



BOSTON
NORTH WASHINGTON STREET
OVER BOSTON INNER HARBOR

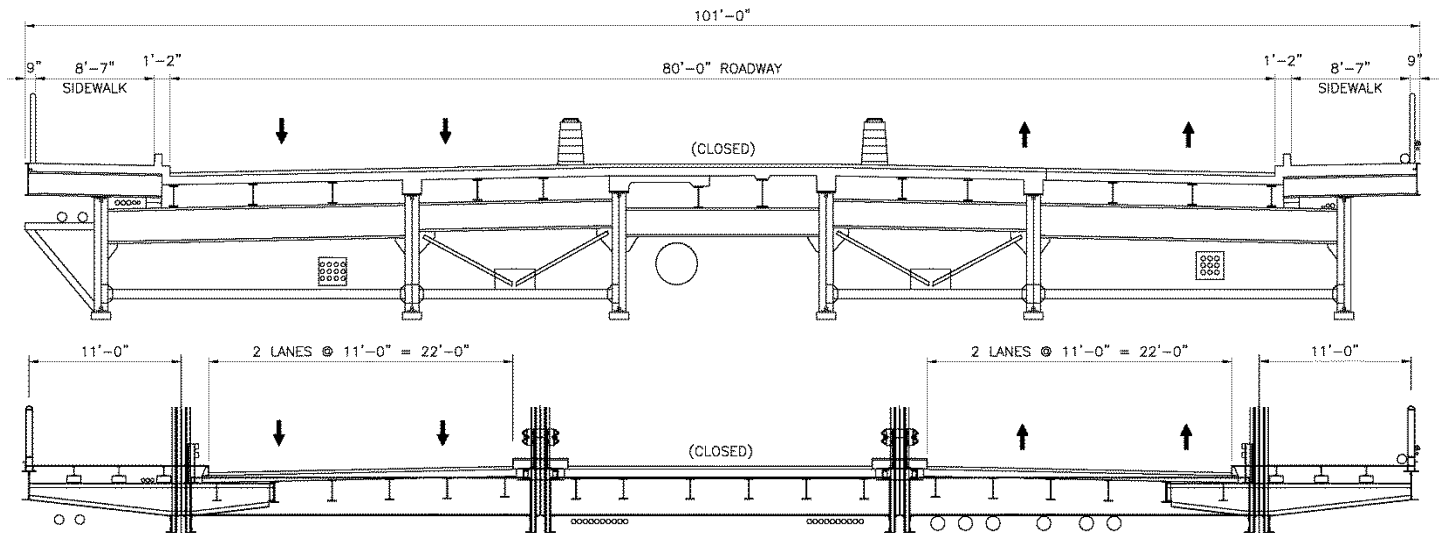
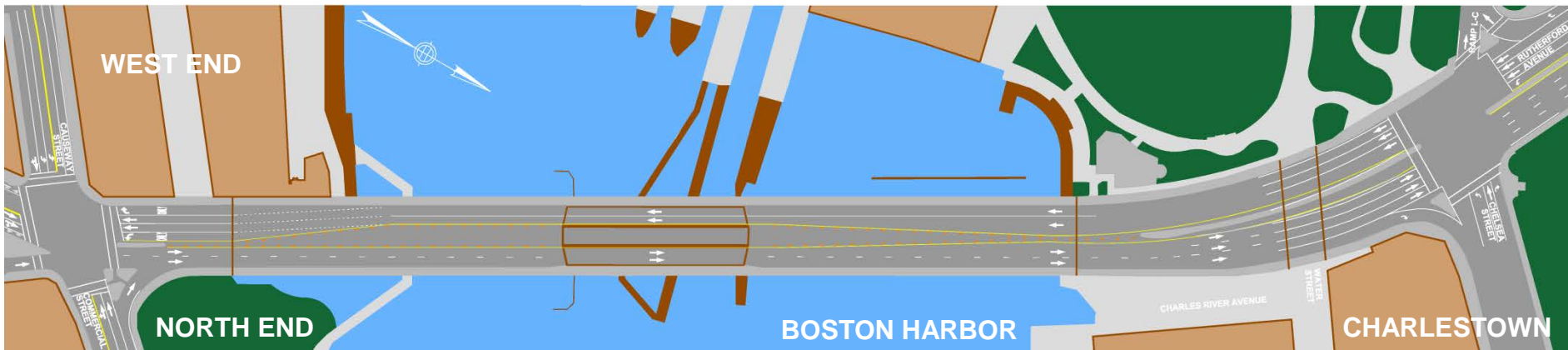
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	122	372
PROJECT FILE NO.		604173	

**HAZARDOUS CARGO ALTERNATE ROUTE
 PLAN & SIGN SUMMARY**

HAZARDOUS CARGO (HC) ALTERNATE ROUTE NOTES

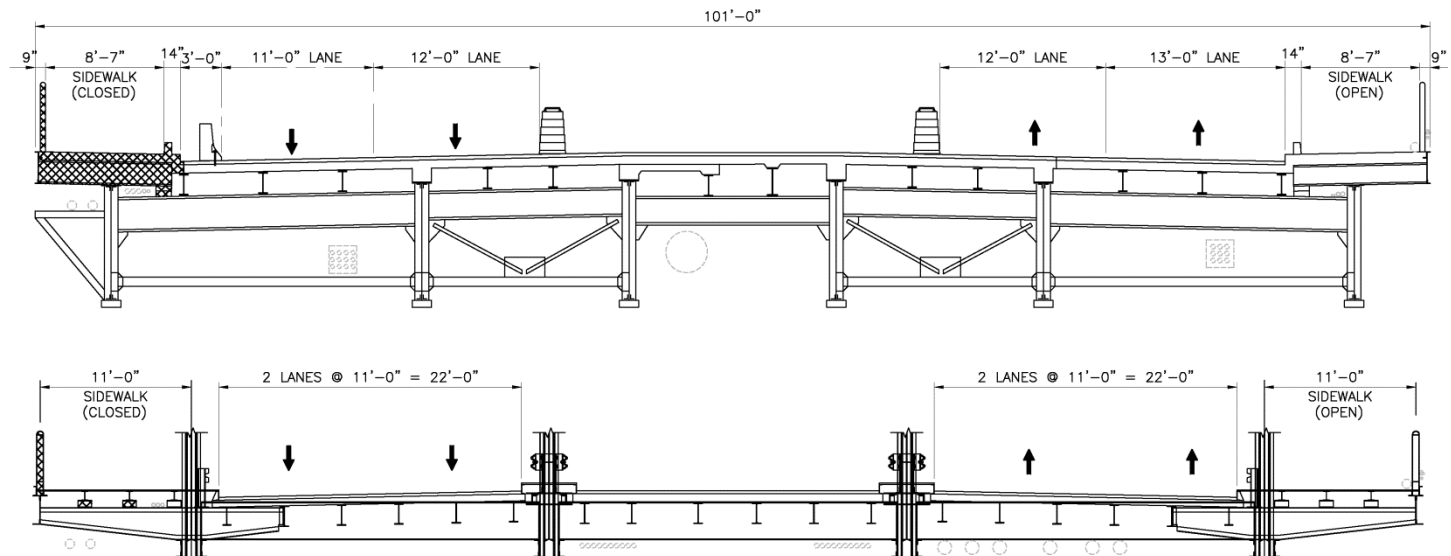
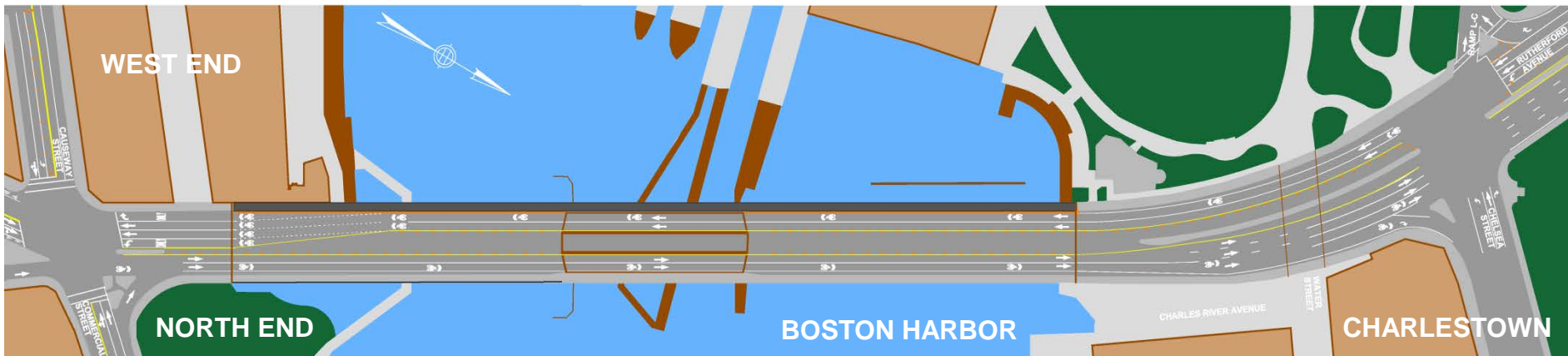
1. ALL HAZARDOUS CARGO VEHICLES ARE PROHIBITED FROM THE CENTRAL ARTERY TUNNEL SYSTEM.
2. ANY HAZARDOUS CARGO VEHICLE MUST COORDINATE WITH MASSDOT TO DETERMINE APPROPRIATE ROUTE. THIS PLAN IS SHOWN AS A POSSIBLE ALTERNATIVE ROUTE AND SUBJECT TO HC RULES AND REGULATIONS.
3. THE SOUTHBOUND HAZARDOUS CARGO ROUTE THAT IS SIGNED AND LISTED ON THE MASSDOT WEBSITE SHALL NOT BE CHANGED. IF THE BRIDGE IS TEMPORARILY CLOSED, SOUTHBOUND HAZARDOUS CARGO SHALL USE THE LEVEYETT CONNECTOR EXIT. THE HAZARDOUS CARGO SIGNS AT THE SULLIVAN SQUARE EXIT SHALL BE COVERED UNTIL THE BRIDGE IS REOPENED.
4. THE HC ALTERNATE ROUTE SHALL BE SUBJECT TO THE SAME HOURS OF OPERATIONS AS NORMALLY REQUIRED BY THE COMMONWEALTH FOR THE NORTH WASHINGTON STREET BRIDGE, UNLESS OTHERWISE APPROVED BY THE COMMONWEALTH.
5. SHOWN ON THIS PLAN IS A MODIFIED NORTHBOUND HAZARDOUS CARGO ROUTE FOR INFORMATIONAL PURPOSES ONLY.

Construction Sequence and Traffic Impacts



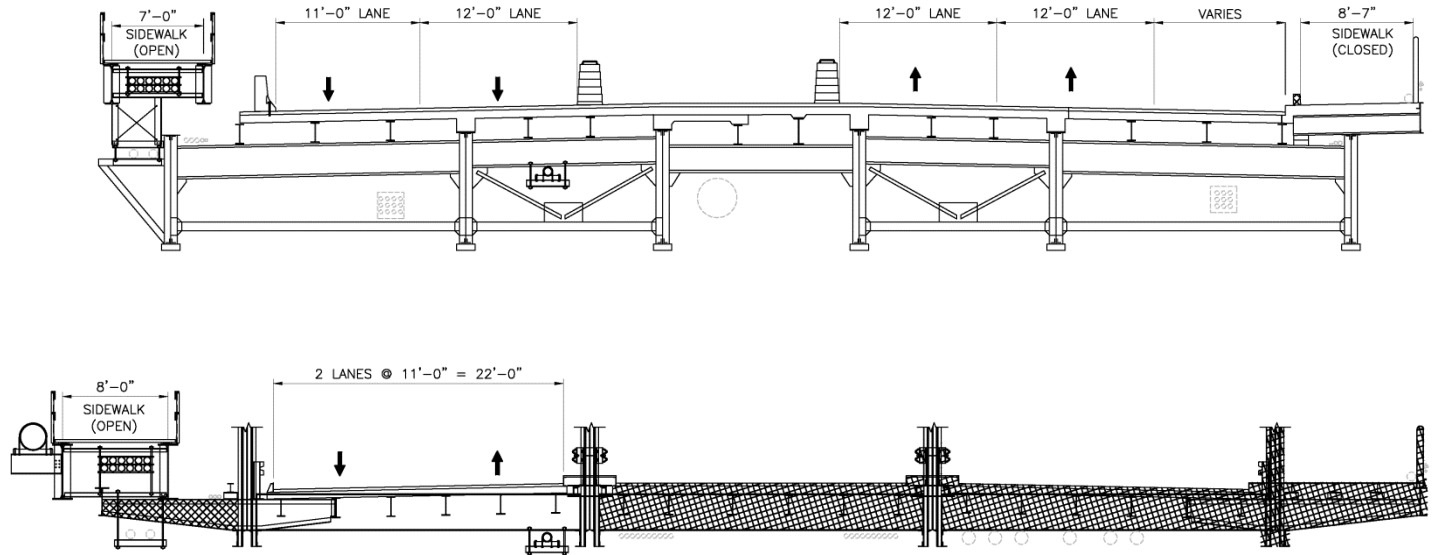
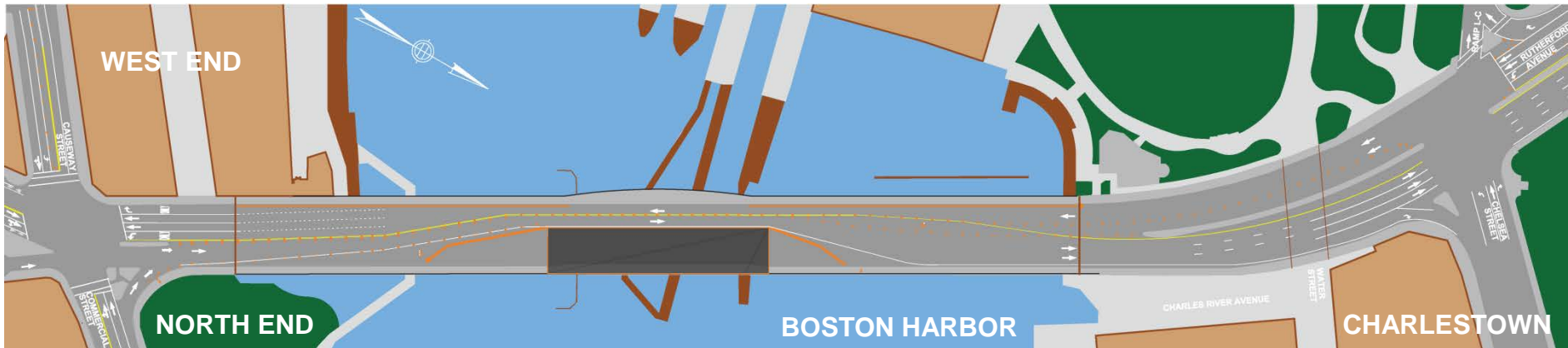
Existing

Construction Sequence and Traffic Impacts



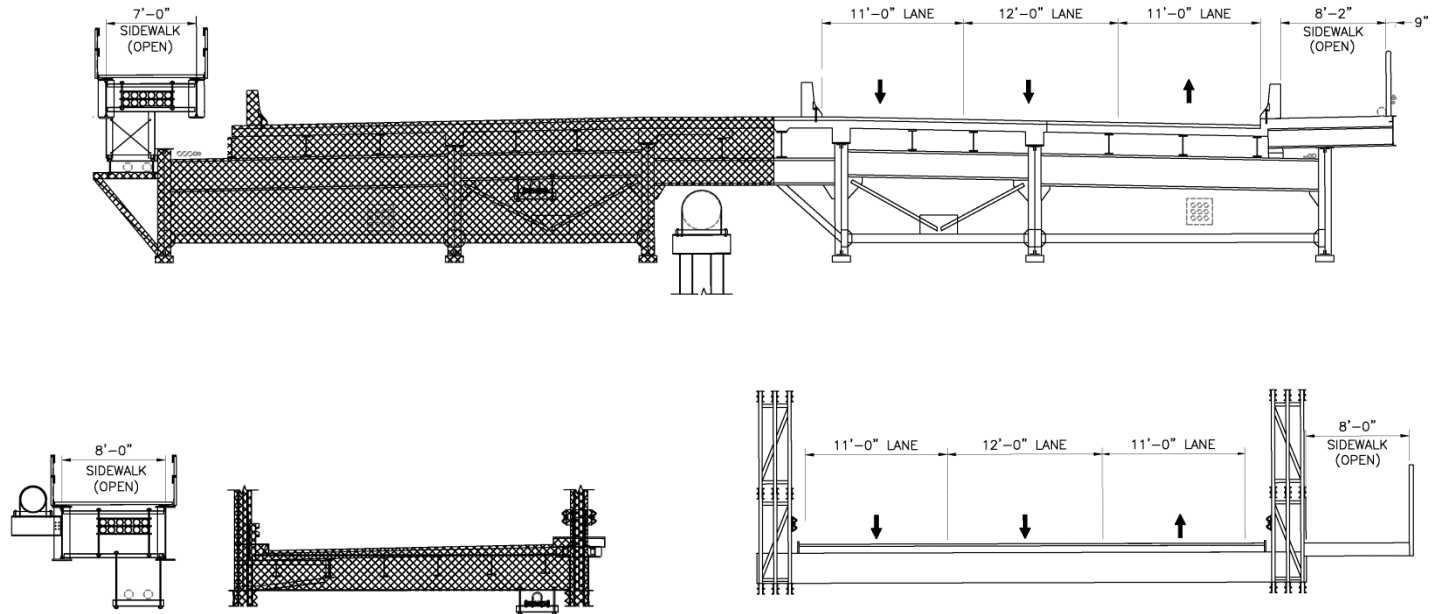
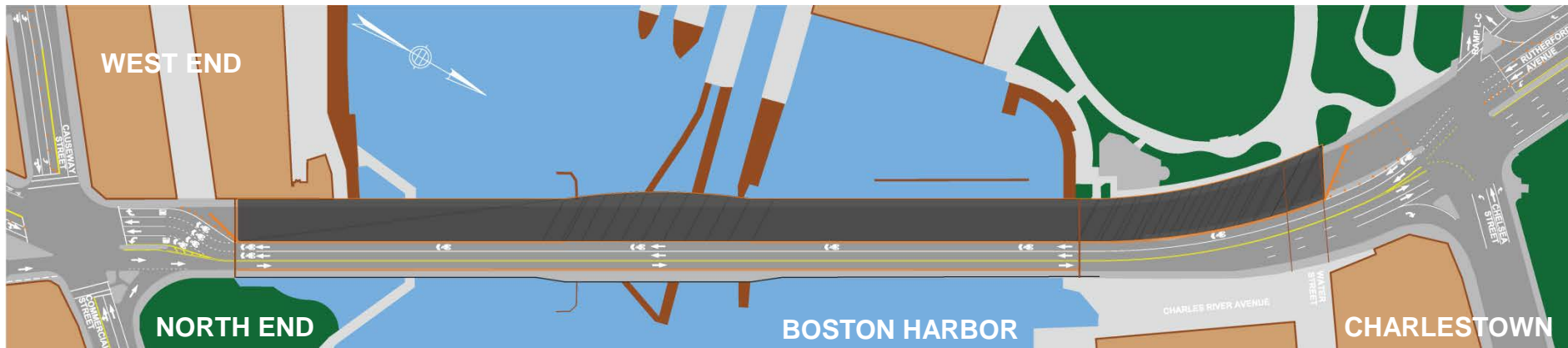
Stage 1A – 3 Months

Construction Sequence and Traffic Impacts



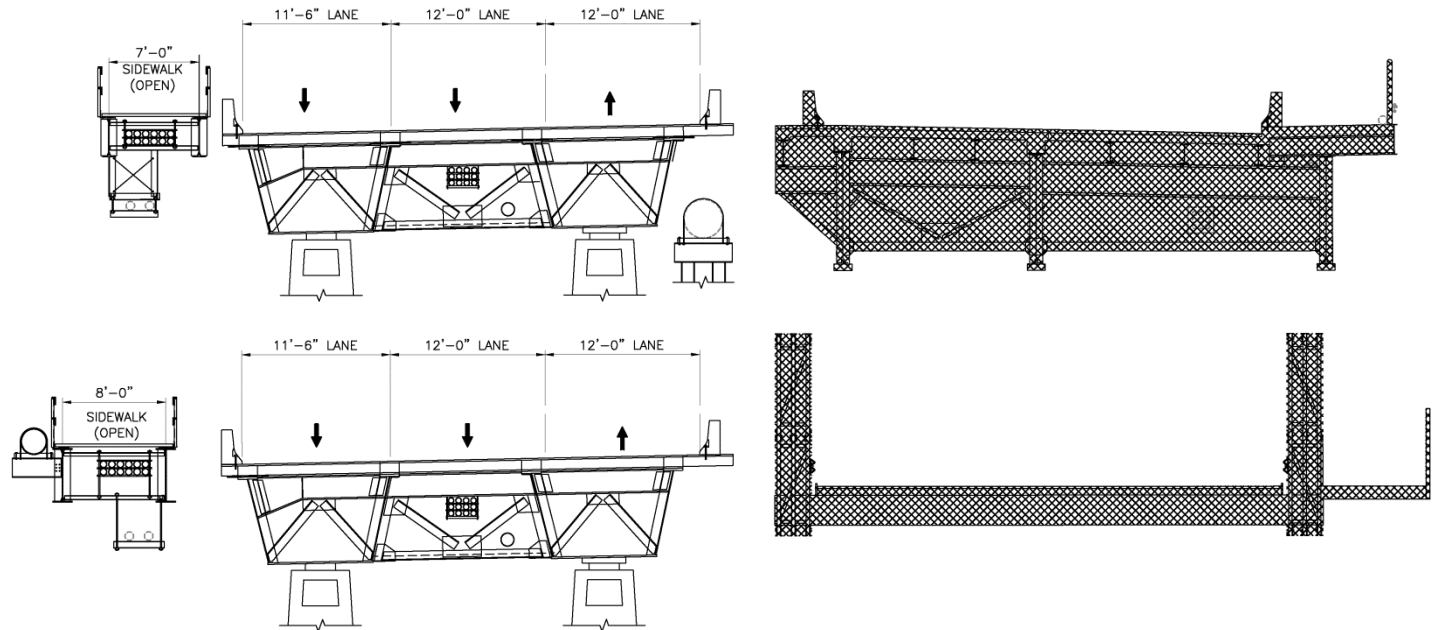
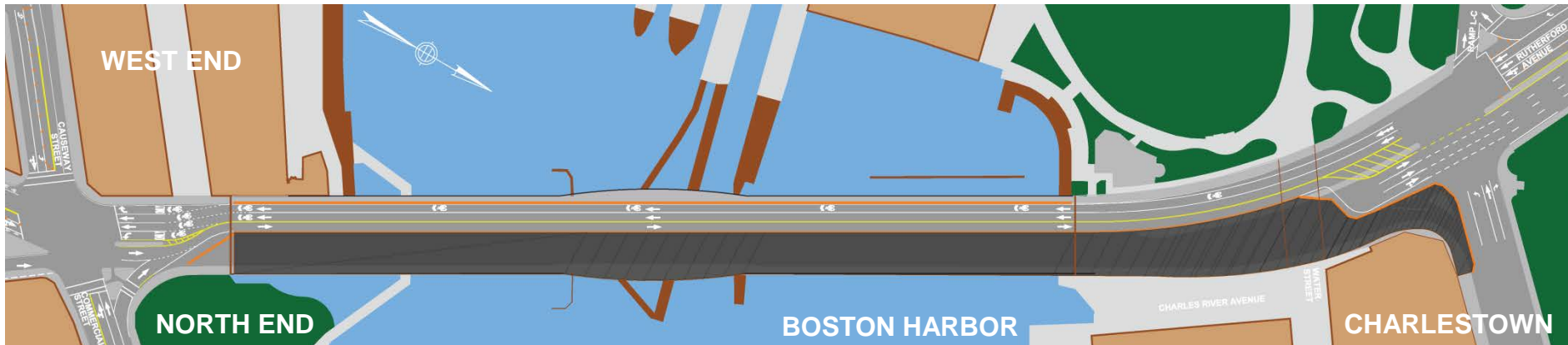
Stage 1B – 3 Weeks

Construction Sequence and Traffic Impacts



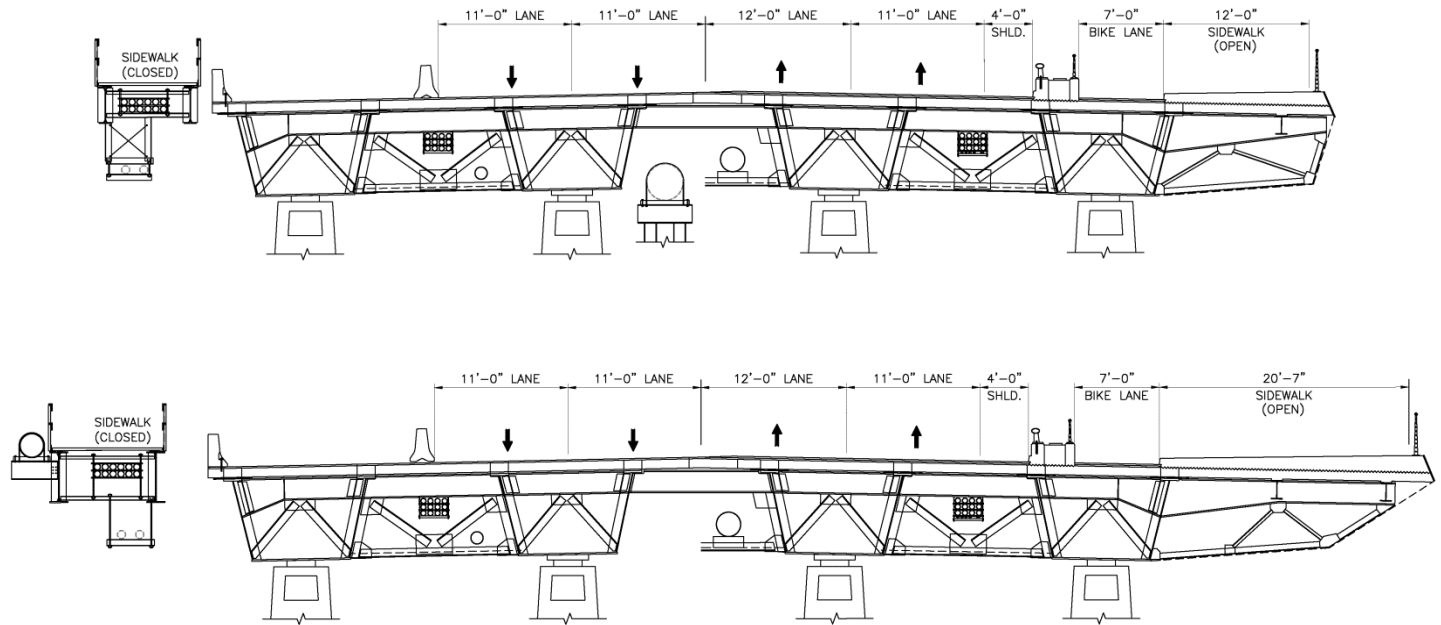
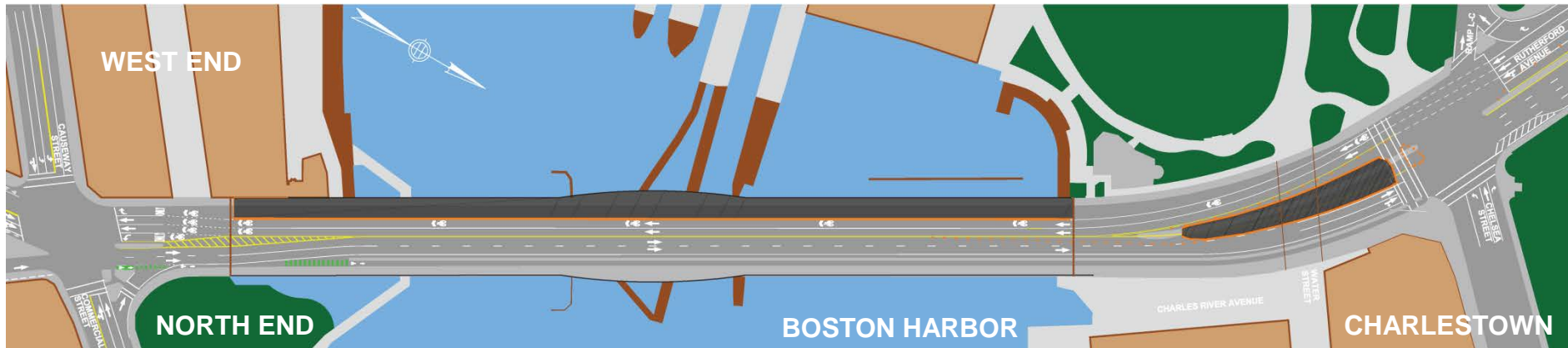
Stage 2 – 15 Months

Construction Sequence and Traffic Impacts



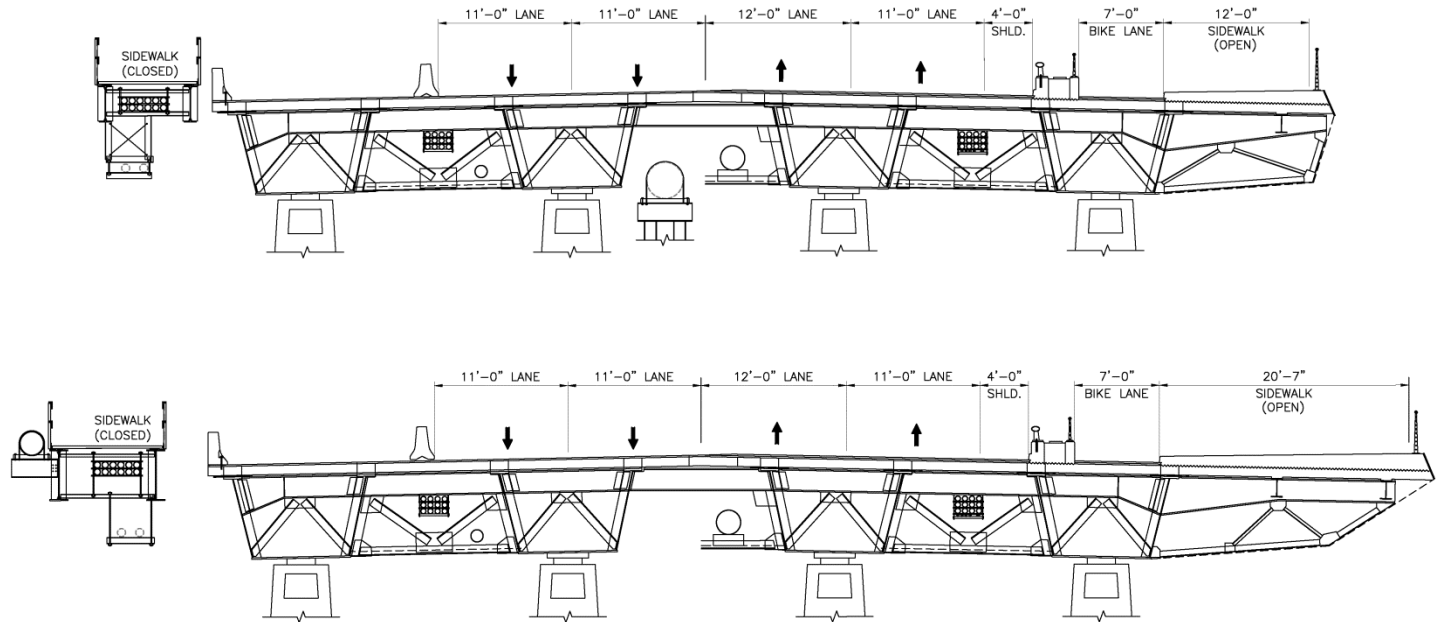
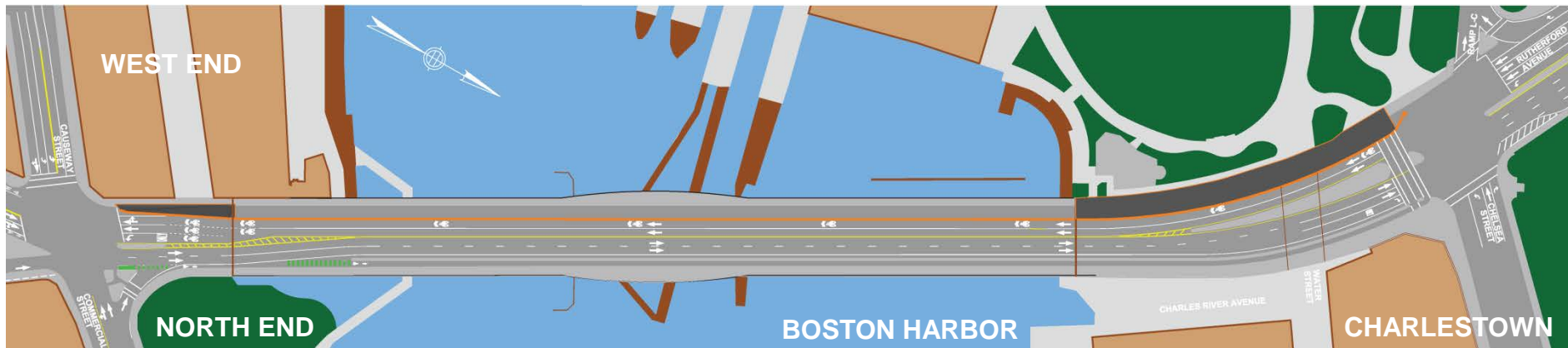
Stage 3 – 15 Months

Construction Sequence and Traffic Impacts



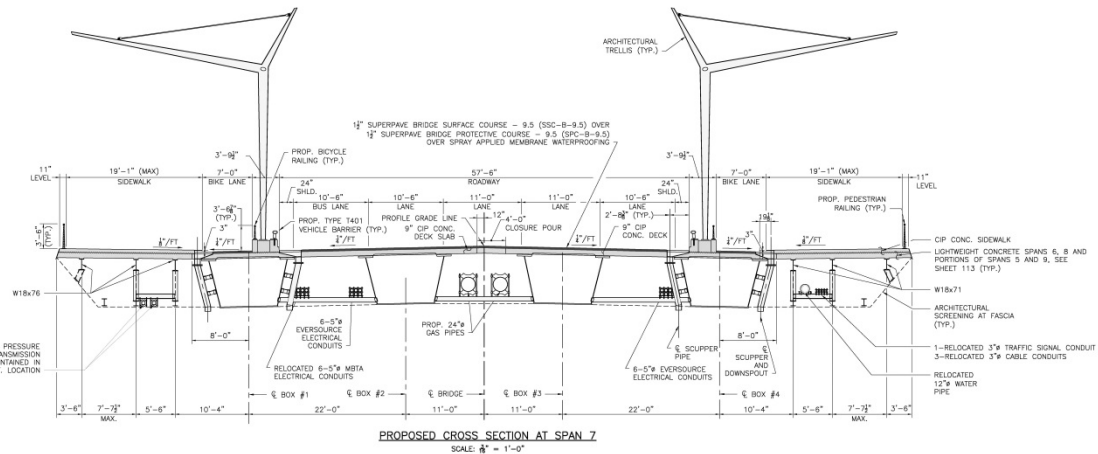
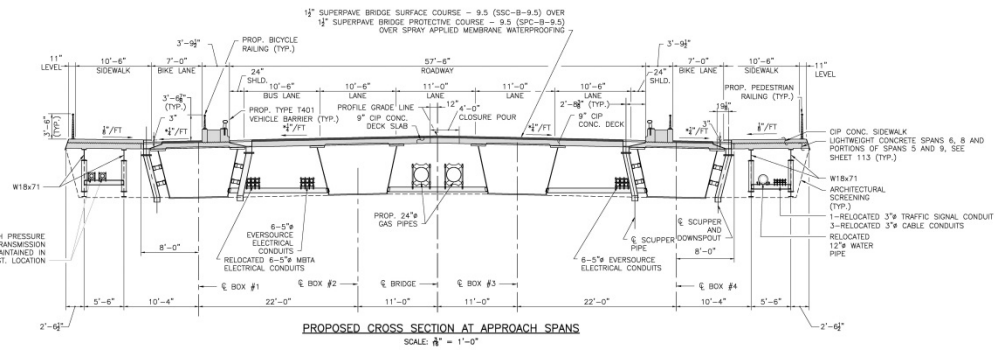
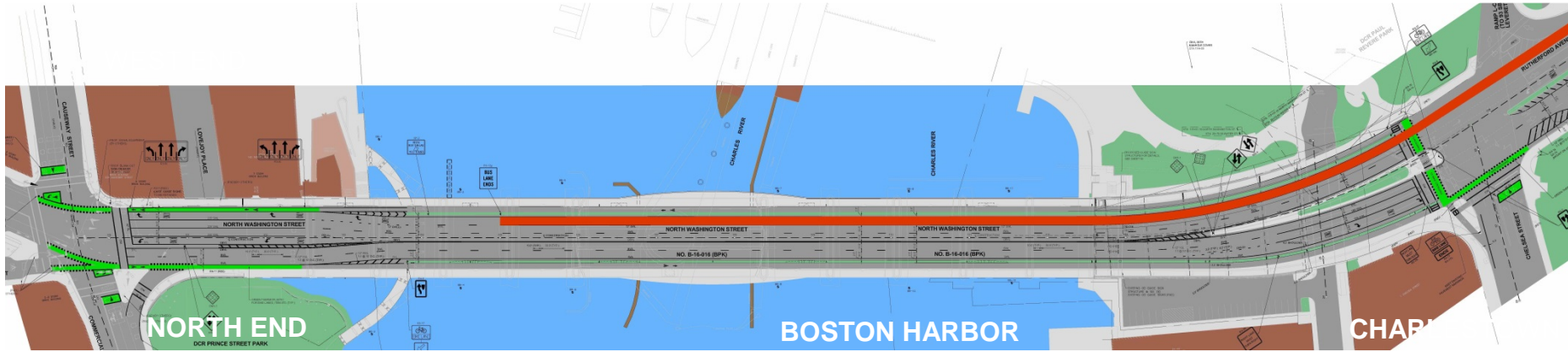
Stage 4A – 3 Months

Construction Sequence and Traffic Impacts



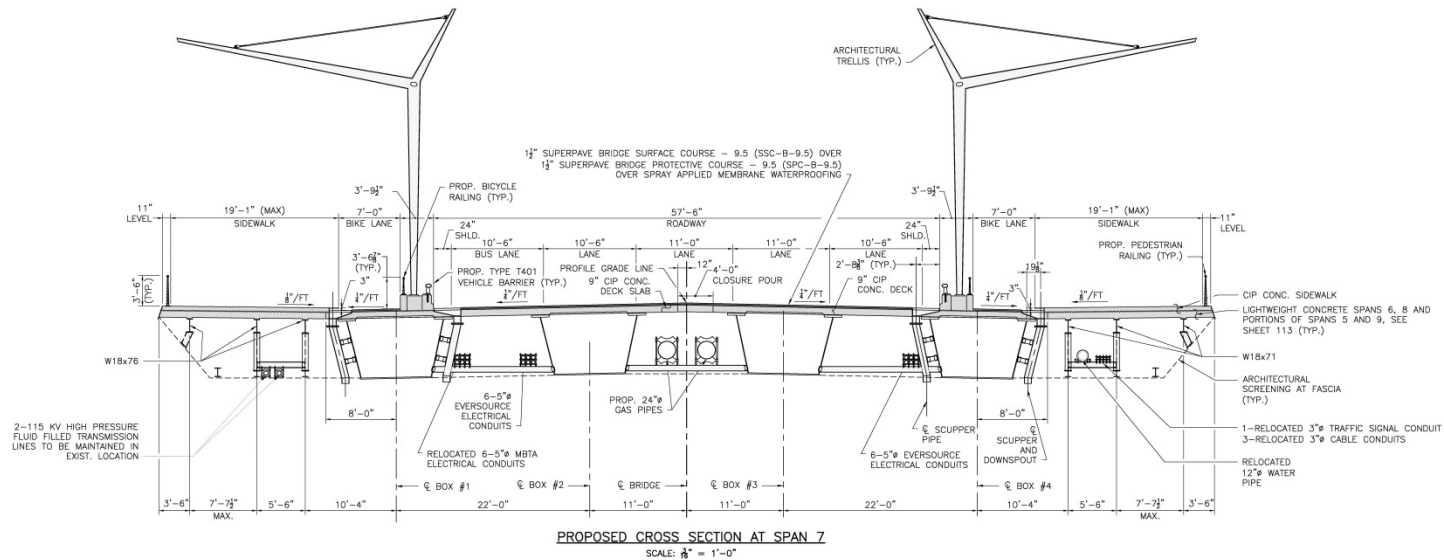
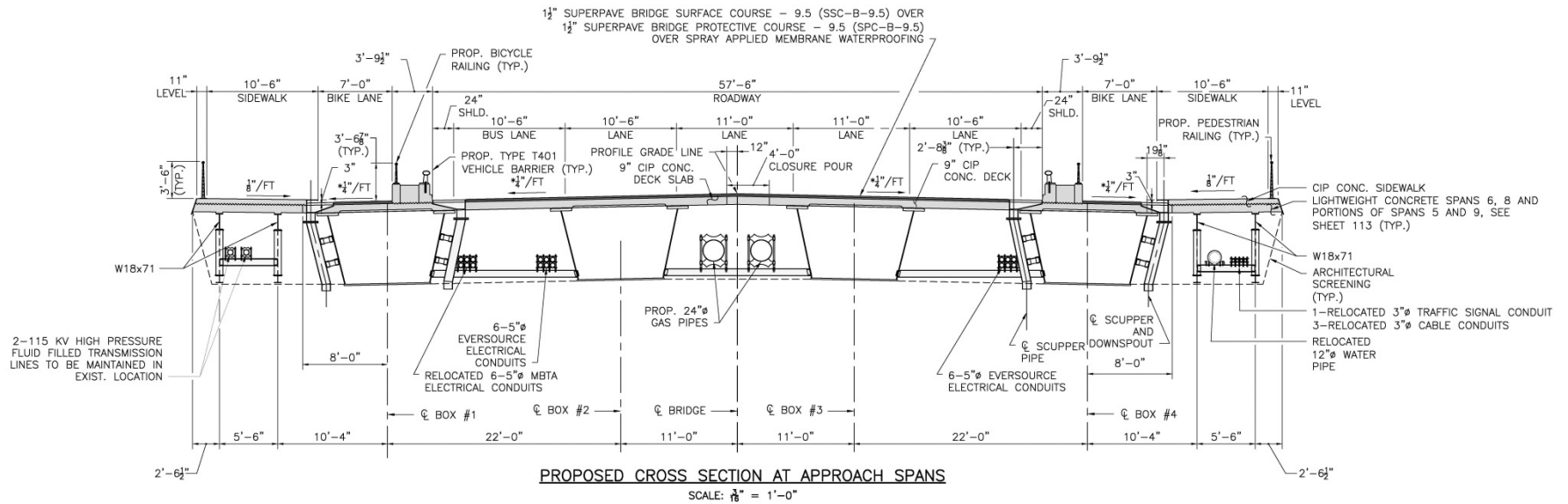
Stage 4B – 1 Month

Construction Sequence and Traffic Impacts

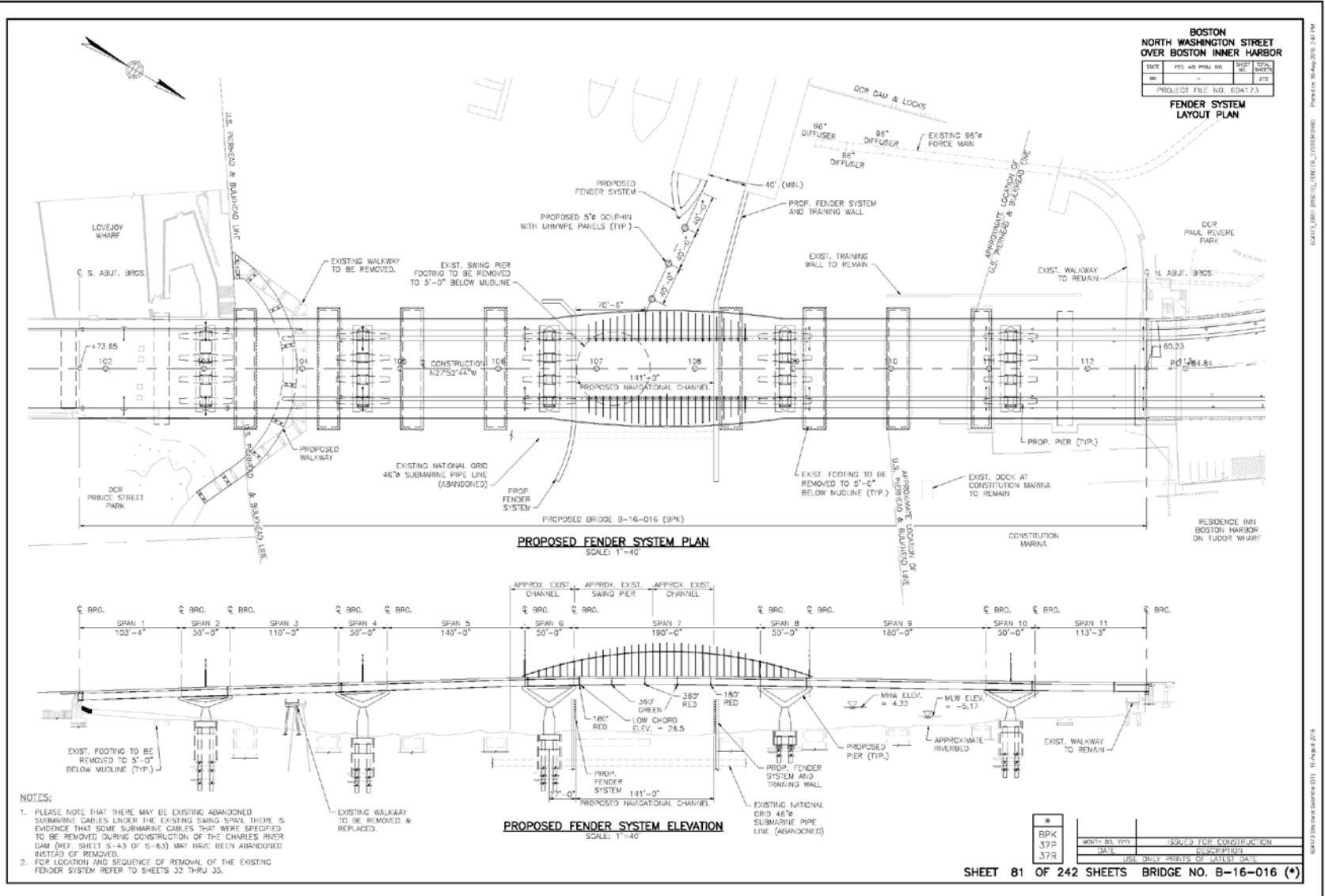


Final

Proposed Bridge Cross Sections



Proposed Bridge Layout



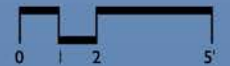
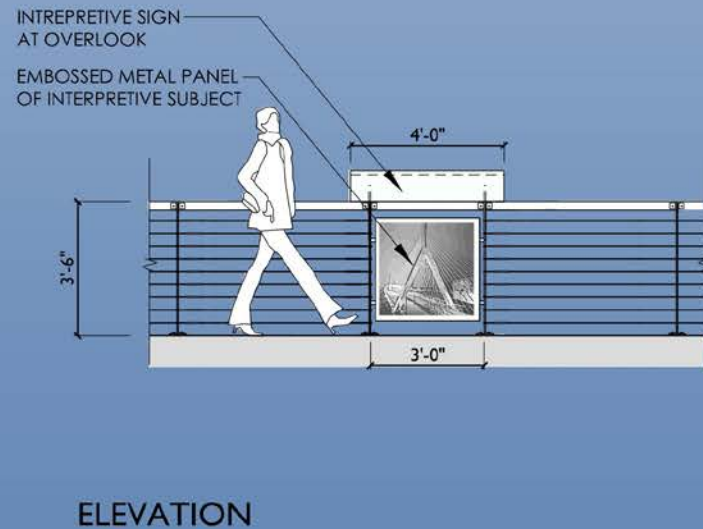
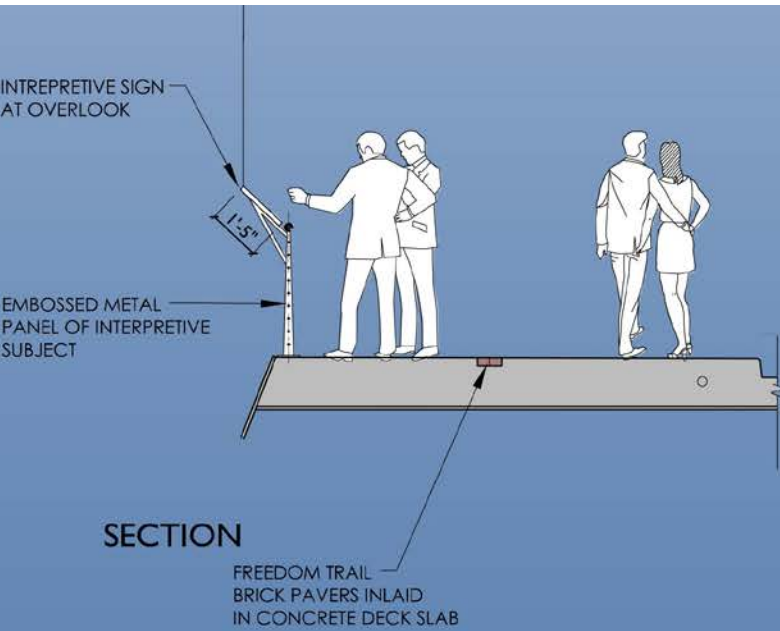
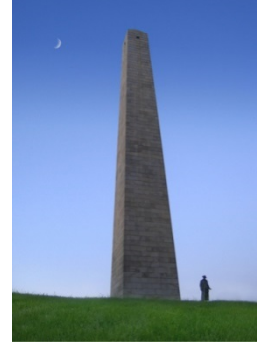
Form - Proposed Bridge Elevation View



Function - Proposed Bridge



Themes for Interpretive Signage



3D Visualizations



Harbor Walk View







Pedestrian View



Pedestrian View



Pedestrian View



Motorist View





Pedestrian View at Overlook



Pedestrian View at Overlook



Pedestrian View at Grade Separated Walkway



Proposed Bridge Underside View



Proposed Bridge Night Elevation View



Chief Engineer:

Patricia A. Leavenworth, P.E.
Project File No. 604173
MassDOT- Highway Division
10 Park Plaza
Boston, MA 02116

Public Outreach:

Nathaniel Cabral-Curtis
Public Involvement Specialist
Howard Stein Hudson
ncabral-curtis@hshassoc.com
617-482-7080

Contact

<https://www.massdot.state.ma.us/highway/HighlightedProjects/NorthWashingtonStreetBridgeReplacement.aspx>

<http://keepbostonmoving.org/portfolio/north-washington-street-bridge/>

<https://public.govdelivery.com/accounts/madot/subscriber/new>



Thank you

Q & A

North Washington Street Bridge Replacement Project
Boston, Massachusetts

