



Fitchburg

Commuter Rail

Line Improvement Project

Presented to:

Acton Parking Committee

Presented by:

The MBTA/HNTB Team

MARCH 2009





Project Goals

**Improve
Performance**



**Increase Transit Reliability
Decrease Travel Time**

– Key Project Elements

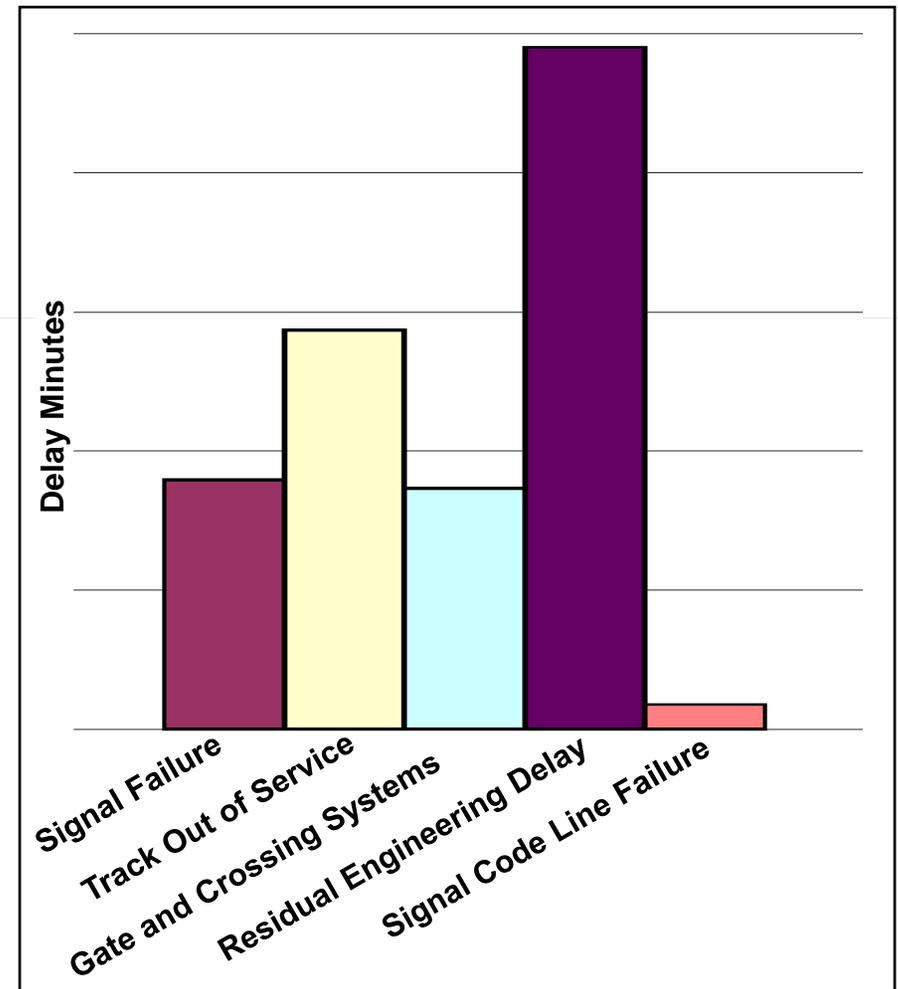
- Engineering Work Program
 - » \$150M Budget
 - » Construction Spring 2009
- Support FTA Funding Strategy
 - » Maintain FTA Medium Rating
- Environmental Permitting Strategy



Prioritize

Existing Fitchburg Constraints

- Reliability
 - Signal System
- Civil
 - Limited Track Crossovers/Interlockings
 - Restrictive Curves
- Operational
 - Freight Conflicts
 - 17 Station Stops
 - 60 MAS





Prioritize

Conceptual Systemwide Engineering 0-15%

- Evaluate Corridor and Locally Preferred Alternative
- Refine Proposed Packages
 - Construction Estimates and Schedules



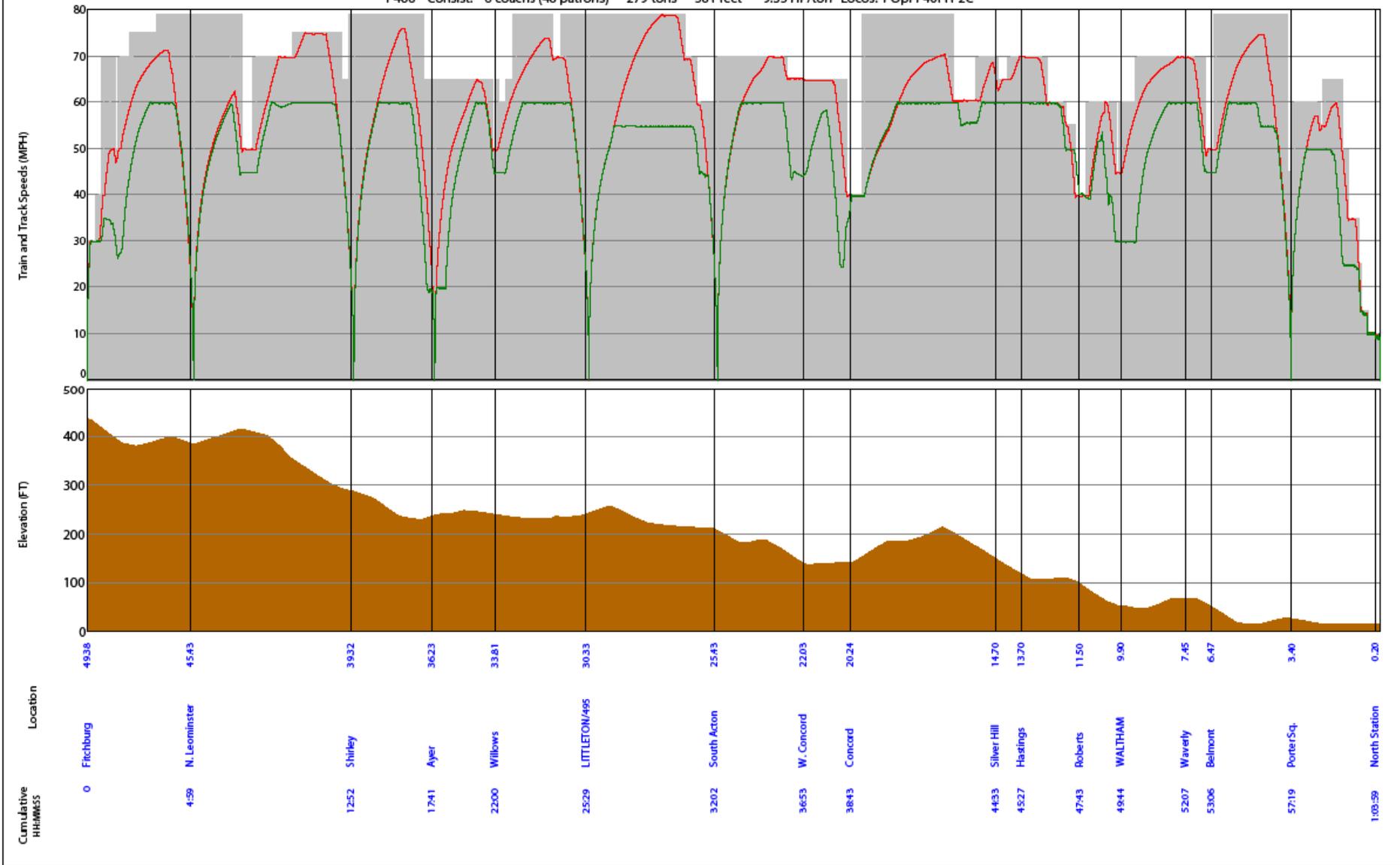
Prioritize

Operational Analysis

- RTC Software
- Built Model of Line
- Analyze:
 - “What If” Operational Scenarios
 - Curve Modifications
 - Track Infrastructure Modifications
 - Schedule Enhancement
- Optimize System Configuration

FITCHBURG MAINLINE - CR30, Fitch-3.LOCO

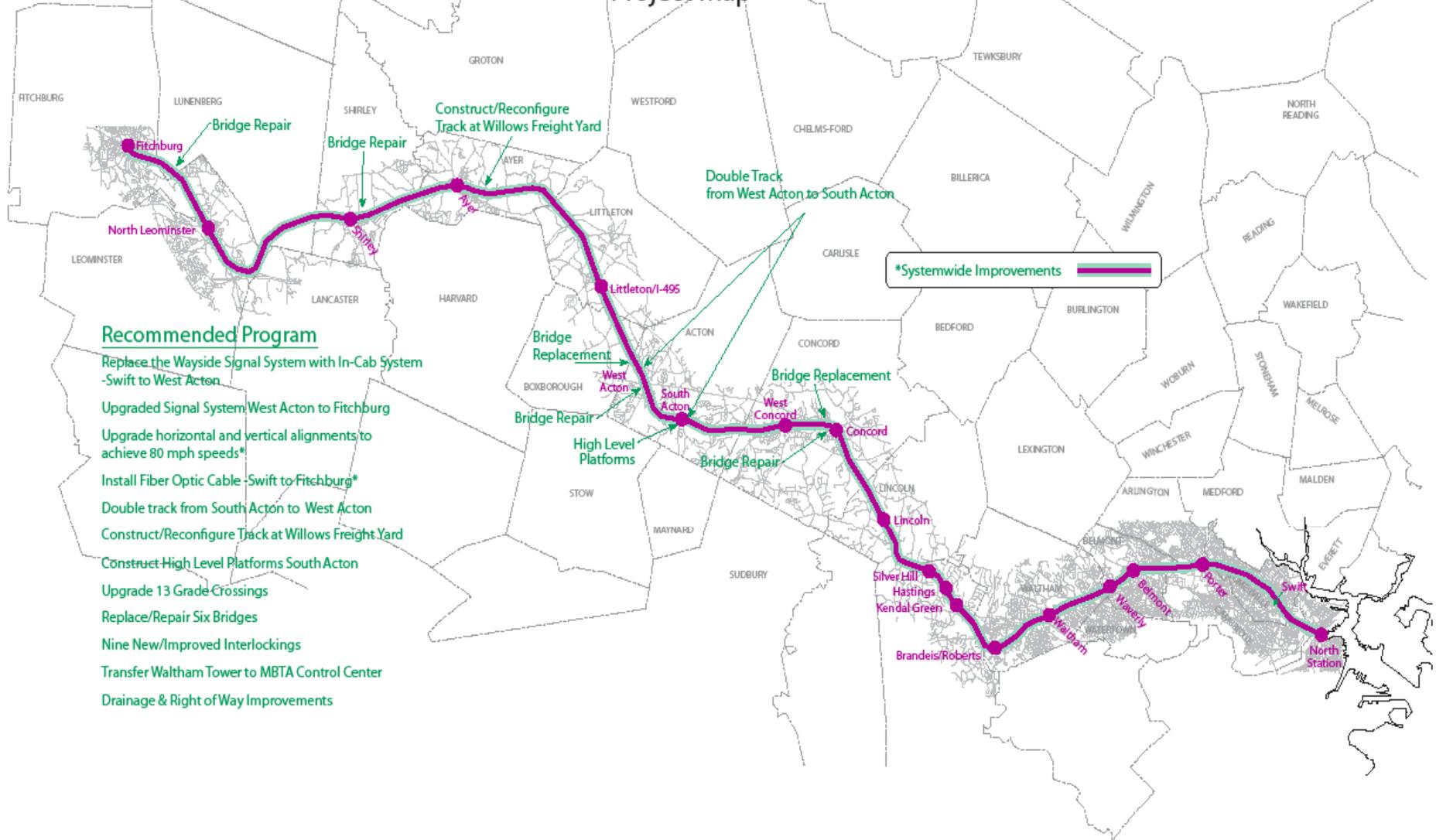
P408 Consist: 6 coaches (48 patrons) 279 tons 581 feet 9.35 HP/ton Locos: 1 Opr F40PH-2C



Case : C:\RTC\FITCHBURG\R003-IN\CR30 RTC run : 14 November 2008 13:56:06 User : David House of HNTB



Fitchburg Commuter Rail Line Improvement Project Project Map



Recommended Program

- Replace the Wayside Signal System with In-Cab System - Swift to West Acton
- Upgraded Signal System West Acton to Fitchburg
- Upgrade horizontal and vertical alignments to achieve 80 mph speeds*
- Install Fiber Optic Cable - Swift to Fitchburg*
- Double track from South Acton to West Acton
- Construct/Reconfigure Track at Willows Freight Yard
- Construct High Level Platforms South Acton
- Upgrade 13 Grade Crossings
- Replace/Repair Six Bridges
- Nine New/Improved Interlockings
- Transfer Waltham Tower to MBTA Control Center
- Drainage & Right of Way Improvements

*Systemwide Improvements



Prioritize

RESULTS

- Express Train Fitchburg to Porter **60 Minutes**
- Avg. Time Saved to Boston **9+ Minutes**
- Significant Reliability Improvements

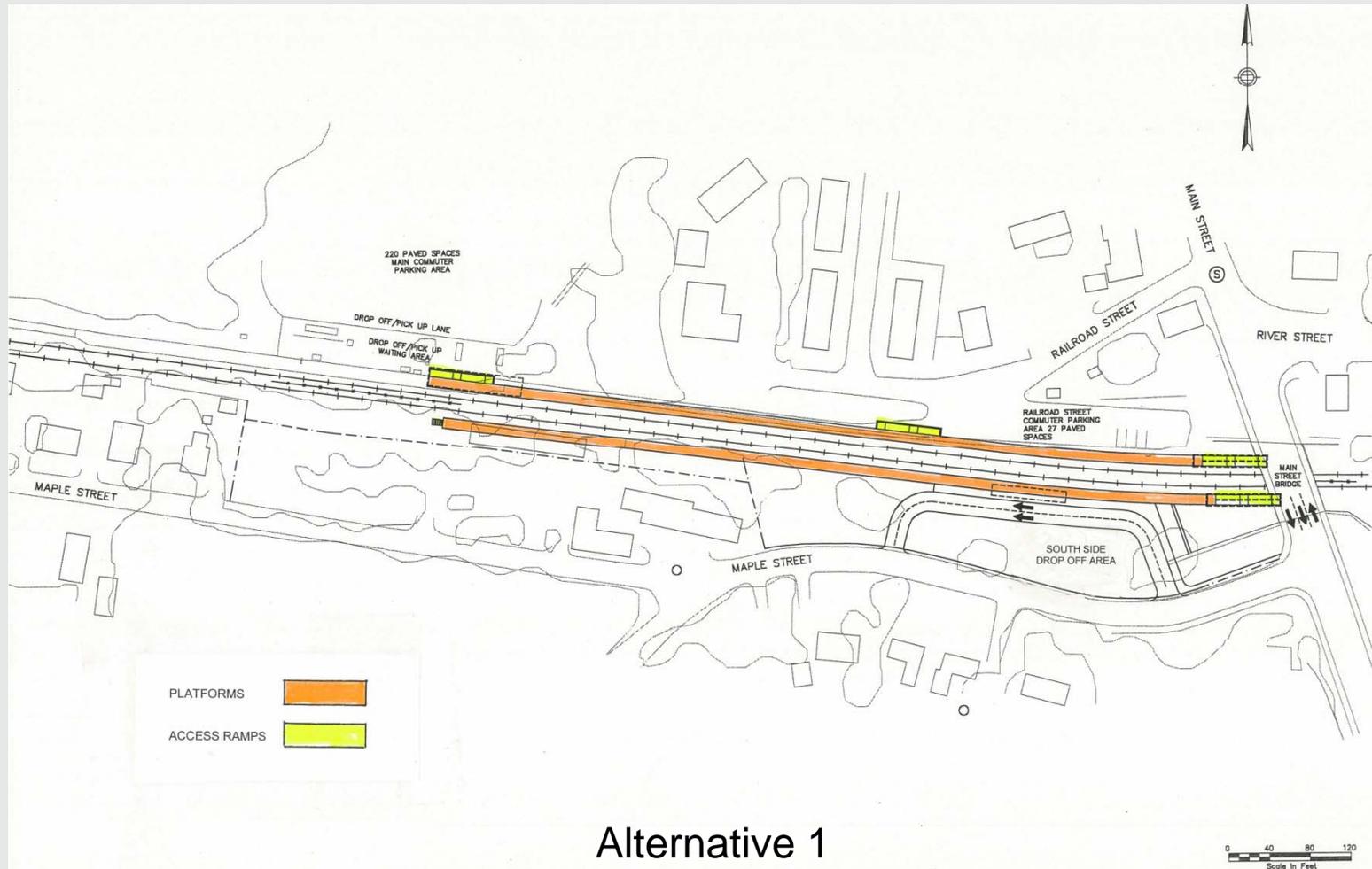


Perform: Schedule

Activity ID	Activity Description	Early Start	Early Finish	Year								
				2007	2008	2009	2010	2011	2012	2013		
Fitchburg Commuter Rail Line Improvement Project												
0000000000	Early Survey And Design Notice To Proceed	11APR08	16MAY08	11APR08	16MAY08							
0000100000	Phase I - Conceptual SystemWide Engineering Plan	19MAY08	29SEP08	19MAY08	29SEP08							
0000200000	Phase II - Preliminary Design [15 - 30%]	08SEP08*	15DEC08	08SEP08*	15DEC08							
0000210000	FTA Categorical Exclusion Approval	19FEB09*		19FEB09*								
0000220000	FTA Letter Of No Prejudice	20FEB09*		20FEB09*								
0000230000	Start Procuring Long Lead Items-EarlyWorkPackage	20FEB09*		20FEB09*								
0000240000	Commence Land Acquisition - Early Work Package	20FEB09*		20FEB09*								
0000250000	CPF-41 New InterLocking - Early Work Package NTP	16MAR09*		16MAR09*								
0000300000	Phase III - Design [30 - 60%]	16DEC08	24APR09	16DEC08	24APR09							
0000310000	FTA Approval Of PCGA	02OCT09*		02OCT09*								
0000400000	Phase IV - Final Design [60 - 90% And 90 - 100%]	27APR09	18NOV09	27APR09	18NOV09							
0000500000	Bid Process And Construction NTP	19NOV09	31MAR10	19NOV09	31MAR10							
0000700000	MBCR Force Account/ Capital Construction Work	16MAR09	14DEC12	16MAR09	14DEC12							
0000800000	Contractor's Construction Duration	31MAR10	14DEC12	31MAR10	14DEC12							
				Three Construction Seasons								
Start Date	11APR08	FCRX	HNTB Corporation						Early Bar			
Finish Date	14DEC12		Fitchburg Commuter Rail Line Improvement Project						Progress Bar			
Data Date	11APR08		Project Timeline Summary									
Run Date	22SEP08 10:47											
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South Acton Station





Alternative 1

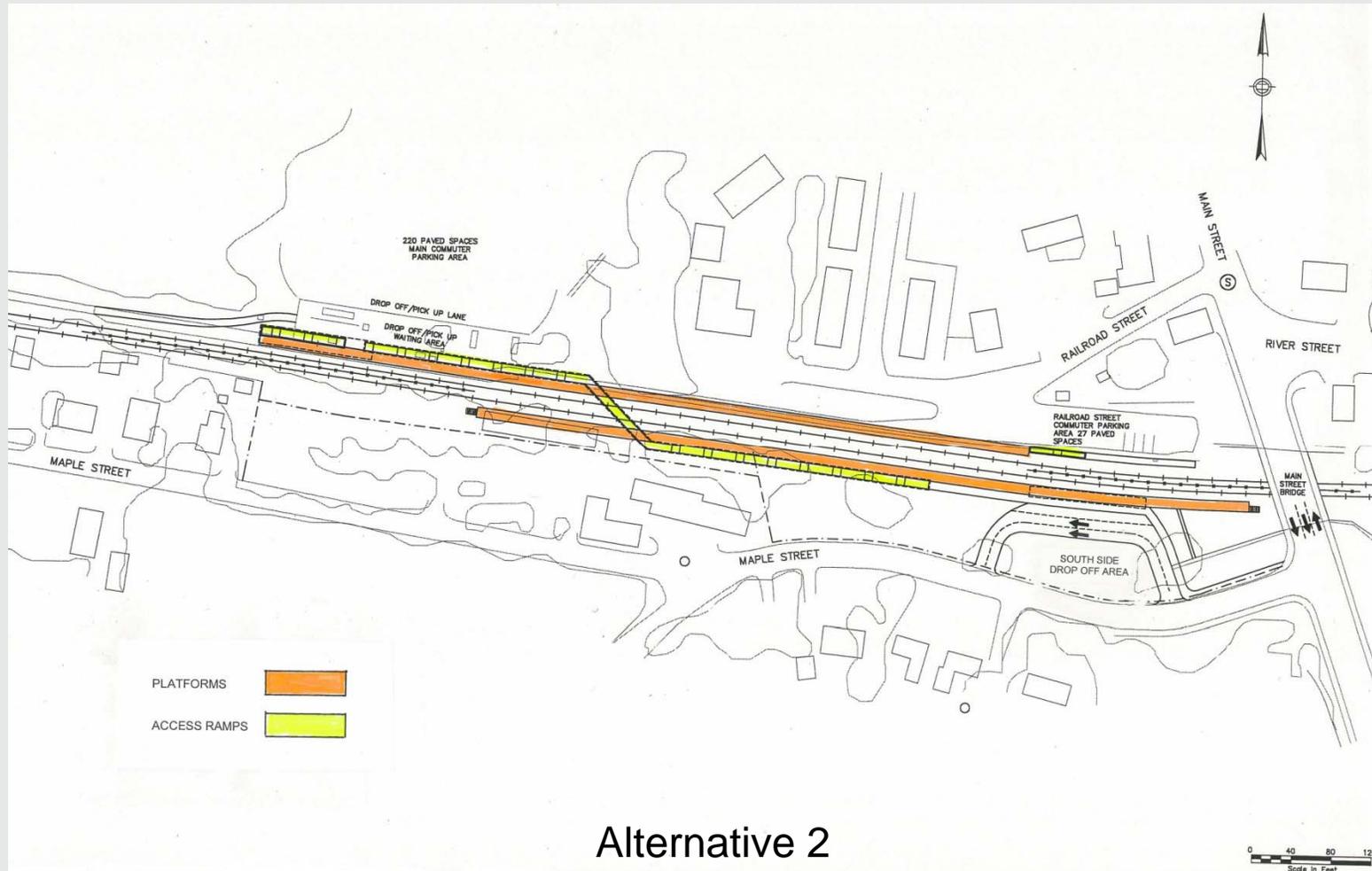
Side Platforms with a Pedestrian Overpass at the Main Street Bridge

Advantages	Disadvantages
<ul style="list-style-type: none">• Uses the existing bridge as a crossover for station users.• Provides for highly visible pedestrian activity at Main Street.• Allows provision of a south side drop off area with access from Maple Street.	<ul style="list-style-type: none">• Requires a long walk by station users from the drop off area to the inbound platform.• Encourages stopping and dropping off activity along Main Street.• Increased traffic on Maple Street.• Property Acquisition requirements.• Uses a structure for the crossover that is not part of the commuter rail system.• Provides only end loading which limits station user distribution along the inbound platform.

Conclusion: The long walk from the drop off area to the inbound platform is not acceptable if a superior alternative is available.



South Acton Station





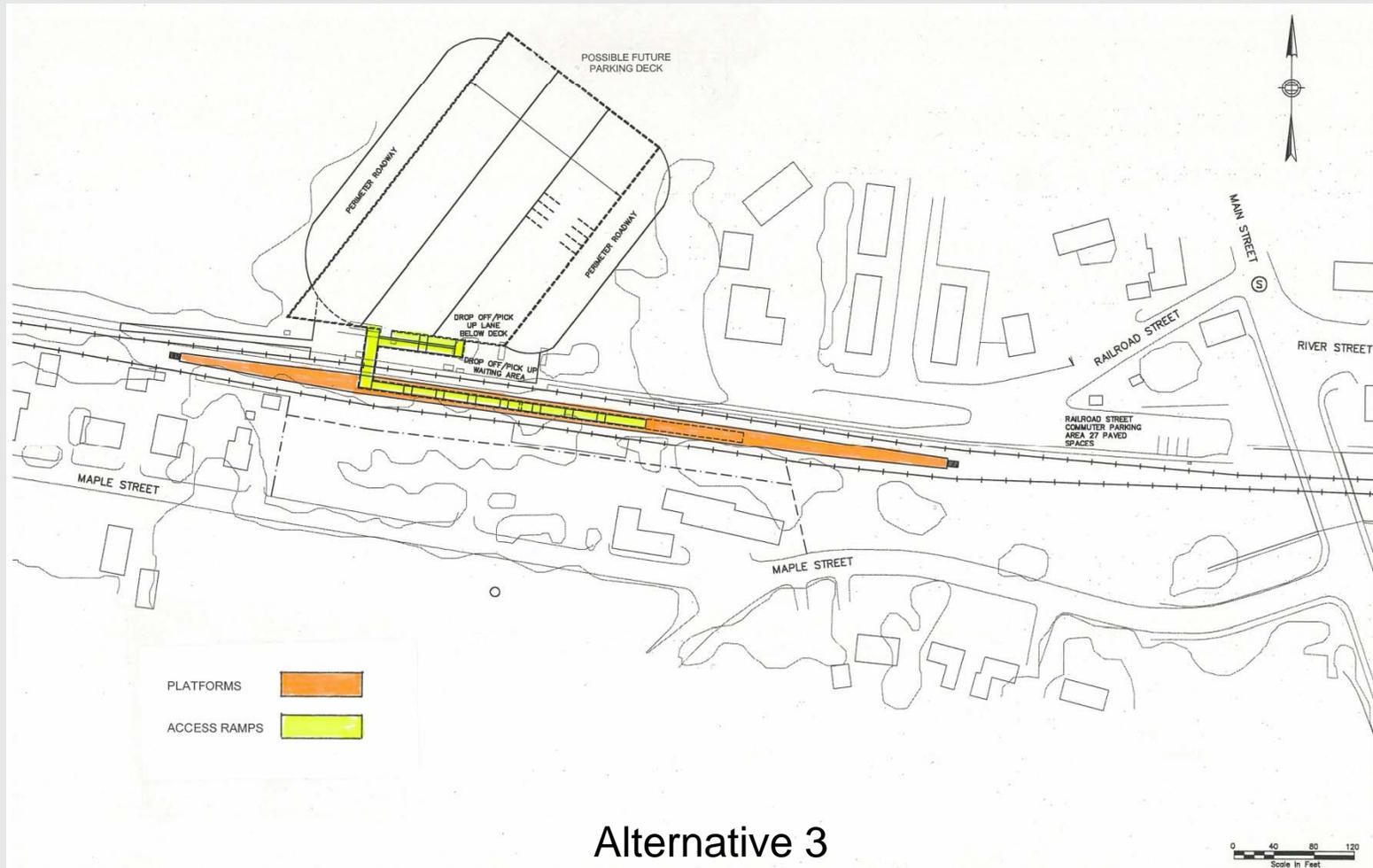
Alternative 2

Side Platforms with a Pedestrian Underpass

Advantages	Disadvantages
<ul style="list-style-type: none">• Provides for a direct route from the drop off area to the inbound platform.• Primary use of the underpass will be in the morning rush hour when security is less of a concern than in the evening.• Allows provision of a south side drop off area with access from Maple Street.	<ul style="list-style-type: none">• There is no clear view through the underground passageway of areas ahead.• The high water table and high rock surfaces add greatly to the cost of underground construction.• A permanent drainage pumping system will be necessary.• Increased traffic along Maple Street.• Property Acquisition requirements.
<p>Conclusion: The underground passageway will not be comfortable for many station users and the underground construction will be extremely expensive.</p>	



South Acton Station



Alternative 3



Alternative 3

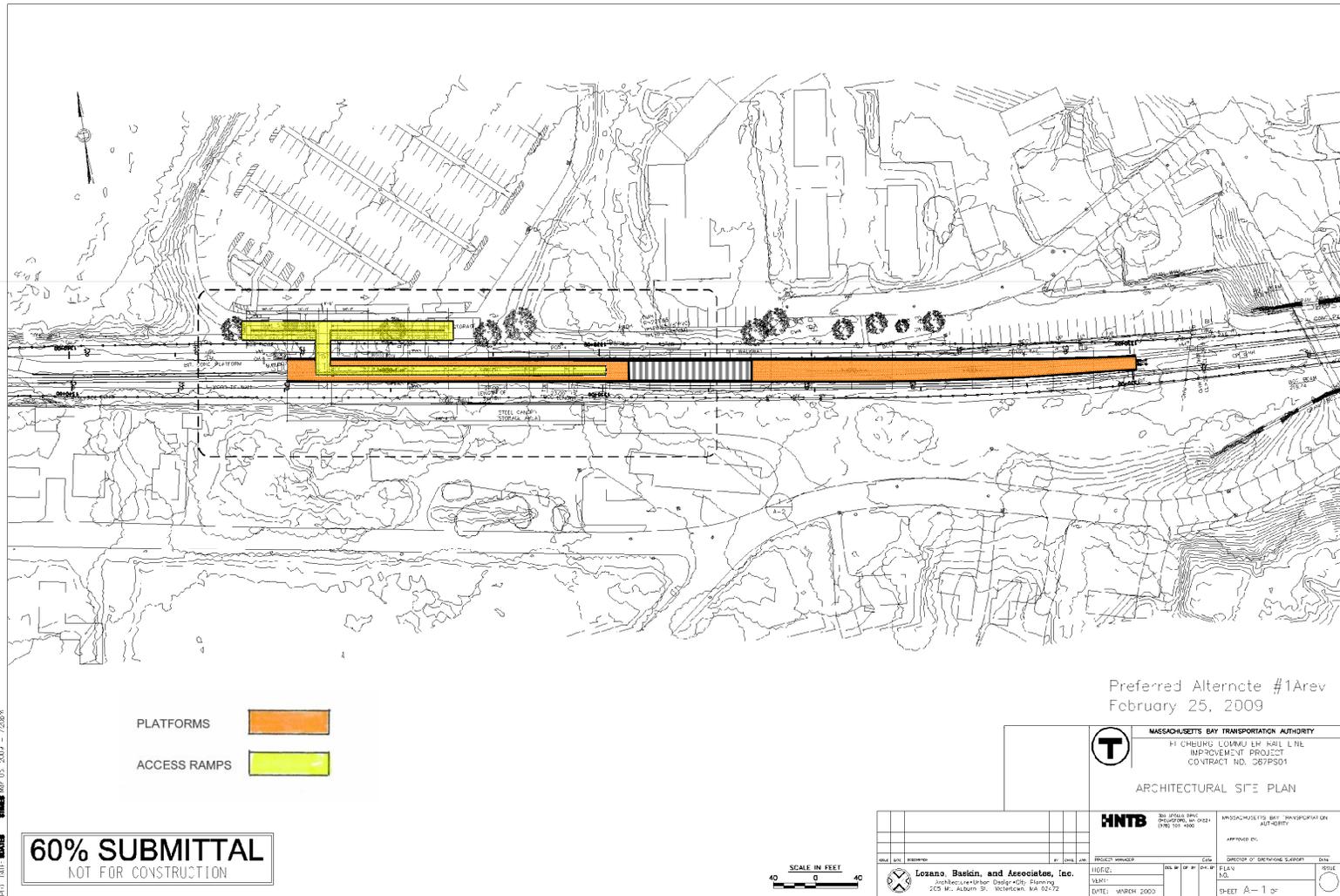
Center Island Platform with Pedestrian Overpass

Advantages	Disadvantages
<ul style="list-style-type: none">• Close proximity to parking/platform.• Center island platform serves the terminal function of the station well.• A single platform provides for efficiencies in operations and maintenance.• The concentration of station users on a single platform is a security advantage.• An overpass at the drop off area would be compatible with a future parking deck.• No increase to traffic on Maple Street.• Significant reduction in property impacts.	<ul style="list-style-type: none">• Concentration of access at the overpass and platform ramp.• Emergency egress within the railroad right of way.

Conclusion: The center island platform offers major operational advantages for both the station user and for railroad operation.

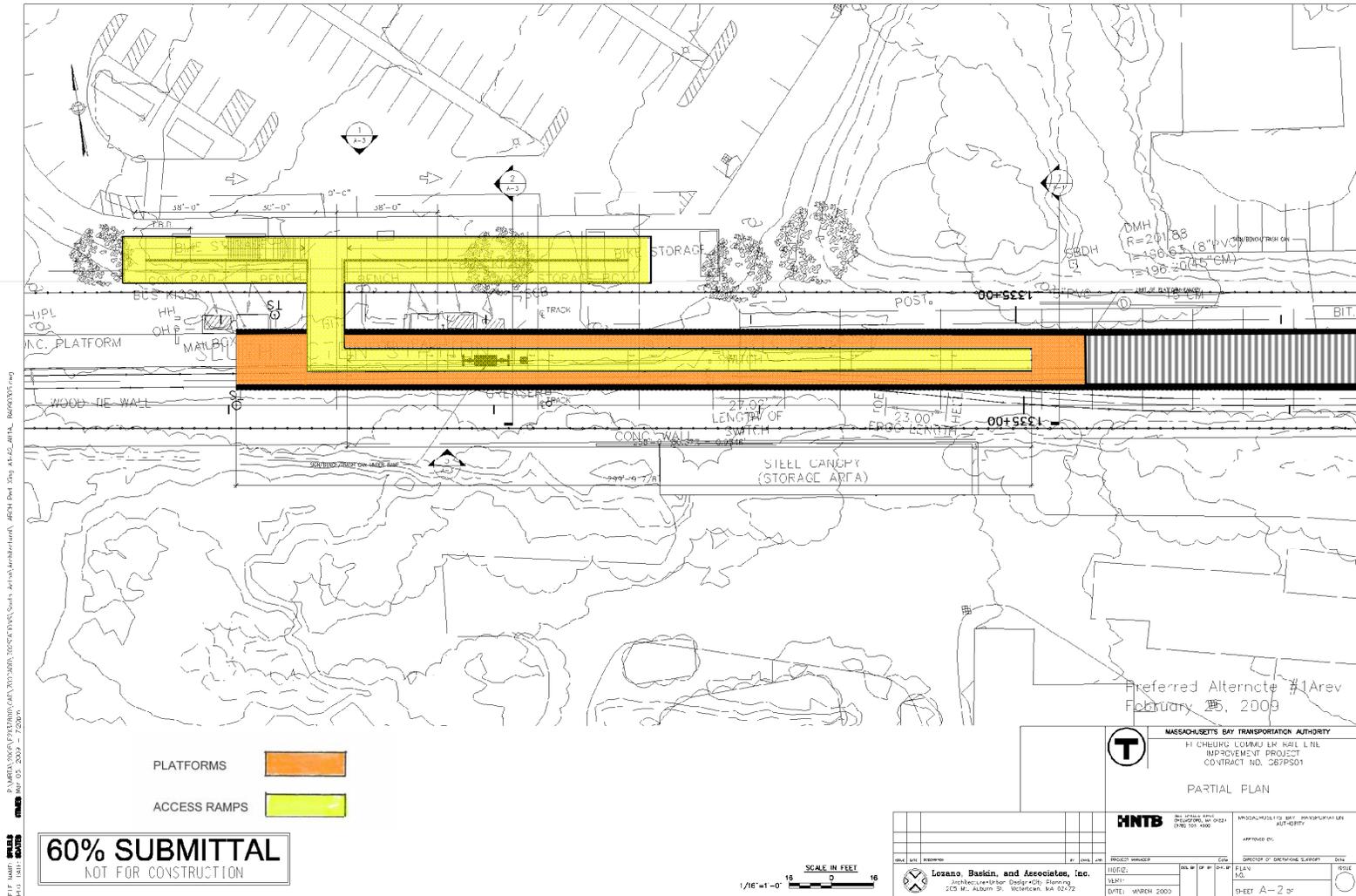


South Acton Station



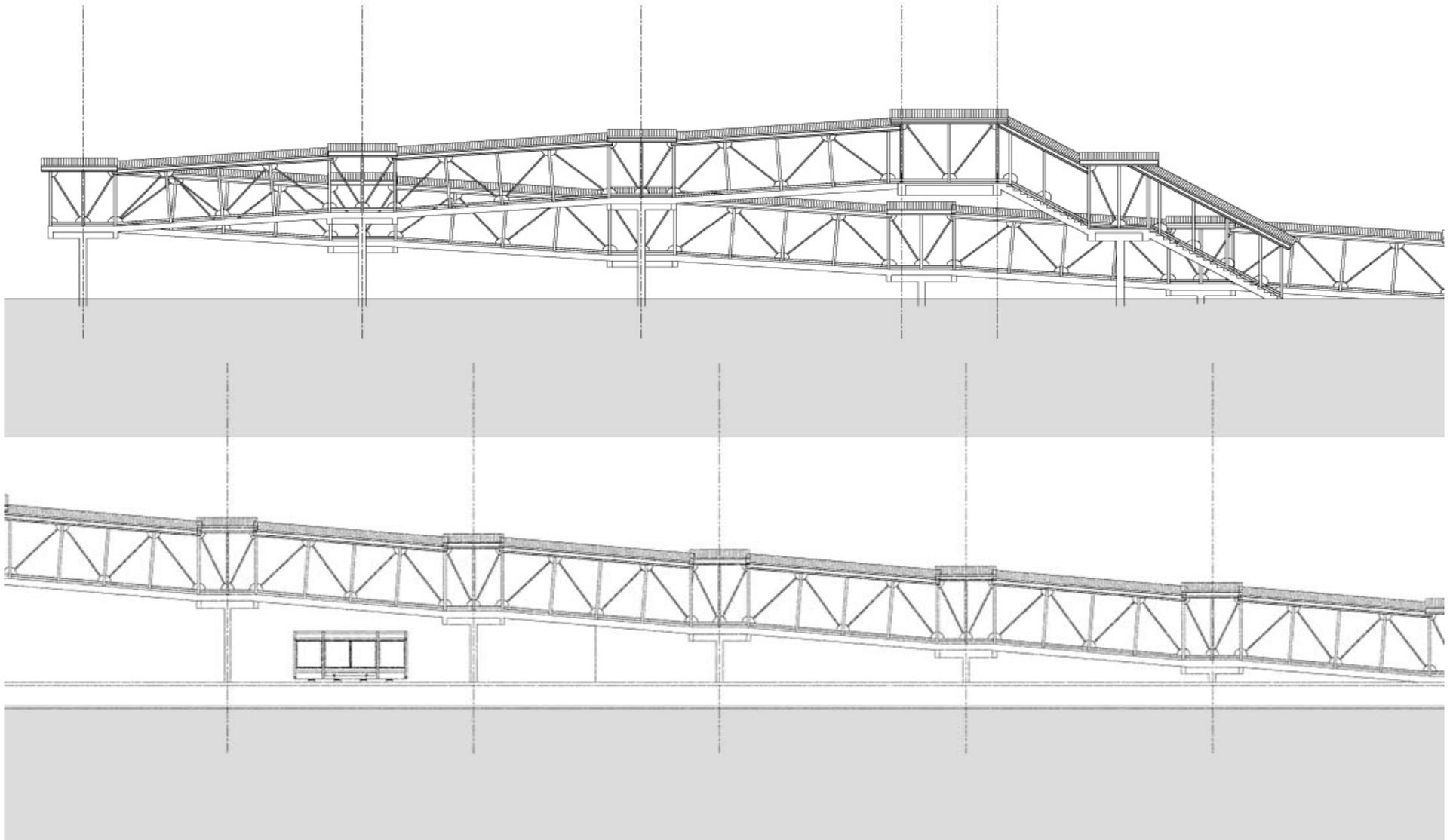


South Acton Station





South Acton



EXAMPLES OF OTHER STATION DESIGNS

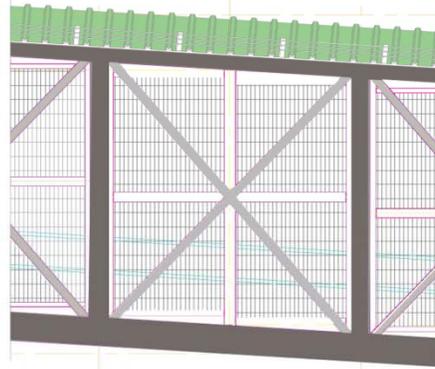




South Acton Station

RAMP AND OVERPASS

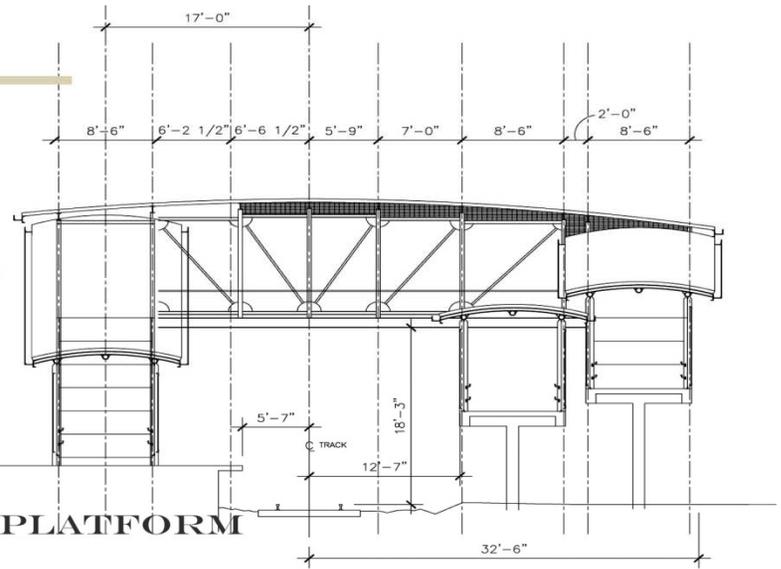
SCHEME 1



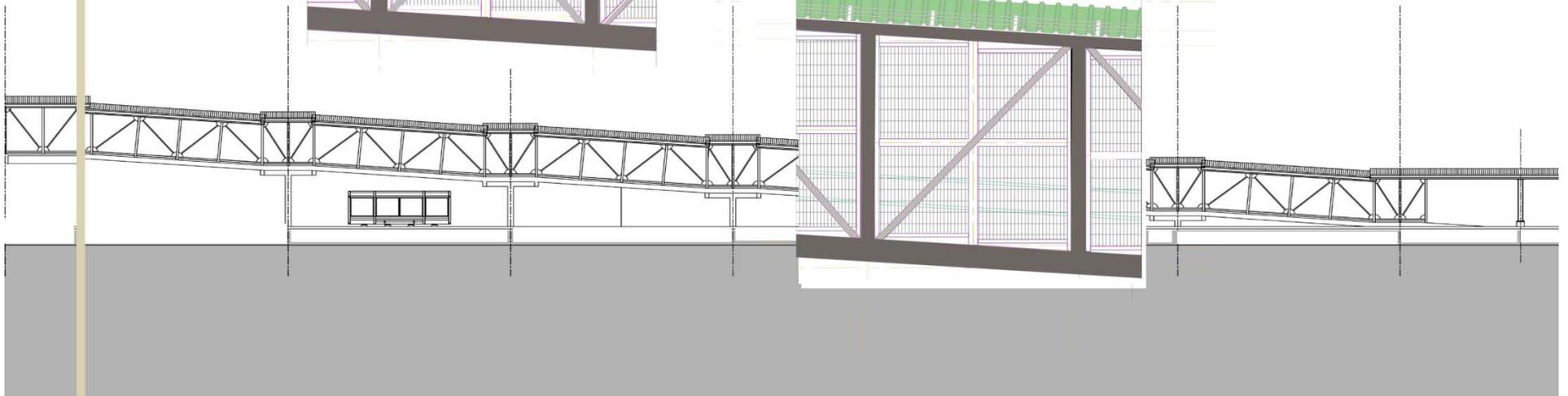
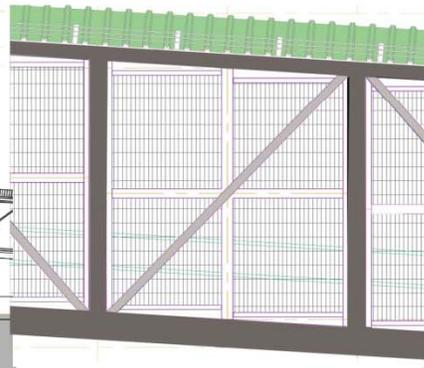
OVERPASS

- EL. 19.25' BRIDGE
- EL. 18.25' B.O. STRUCTURE

- EL. 4.00 T.O. PLATFORM
- EL. 0.00' T.O.R.



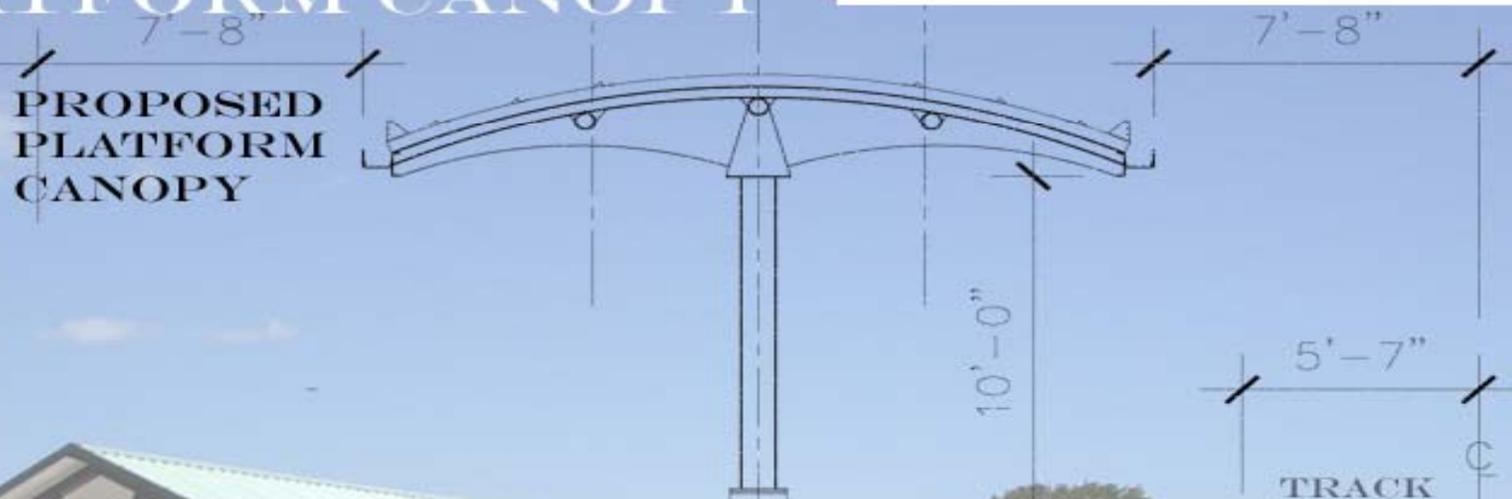
SCHEME 2



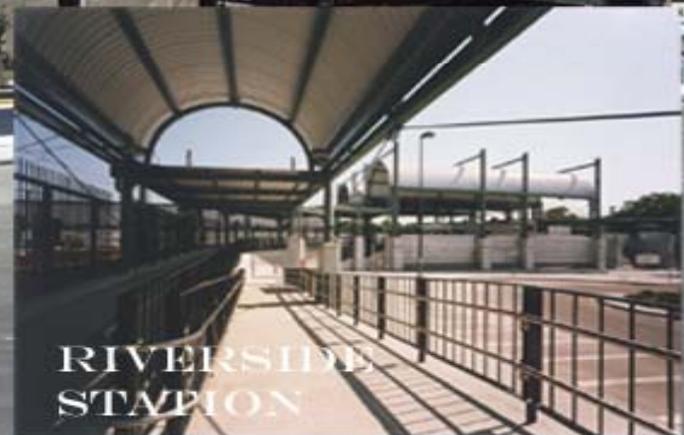


South Acton Station

PLATFORM CANOPY



EXISTING GREENBUSH TRAIN STATION



RIVERSIDE STATION



Fitchburg Commuter Rail Line Improvement Project