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March 6, 2015

Ryan Coyne, PE
City Engineer
City of Rye
1051 Boston Post Road
Rye, NY 10580

RE: JMC Project 14108
Boston Post Road Roundabout
Boston Post Road and Parsons Street
City of Rye, NY

Boston Post Road Realignment and Roundabout Design Report

Dear Ryan:

Per your request, we have evaluated several alternatives associated with the preliminary design of a roundabout at the intersection of Boston Post Road (US Route 1) and Parsons Street. The concept also incorporates realigning Boston Post Road, accommodating a new driveway for the Rye Nature Center, and construction of off-street parking adjacent to the Rye High/Middle School property. Our office conducted a traffic analysis of the existing intersection as well as a potential roundabout. Based on our analysis, alternatives and input from the City of Rye, we have advanced a preferred roundabout design.

A. Traffic Analysis

Manual traffic counts were performed by our office at the intersection of Boston Post Road and Parsons Street as well as the existing church driveway onto Boston Post Road in order to quantify and analyze existing peak hour volumes. The count data was also used to establish base conditions for projecting operations with a potential roundabout. The counts included pedestrian activities, truck and school traffic.

Traffic counts for the intersections were conducted from 7:00 – 9:00 AM and from 2:00 – 6:00 PM on Tuesday, September 9, 2014. The peak hour volumes occurred between 7:15-8:15 AM, 2:30-3:30 PM and 5:00-6:00 PM during the weekday morning, afternoon school hour and afternoon, respectively.

The intersections have been analyzed utilizing industry standard software based on the methodologies of the 2010 Highway Capacity Manual. The analysis outputs an average delay per vehicle for each lane group which is represented by a level of service ranging from A to F. The results of the analysis are summarized on the attached Table 1.

Based on the analysis of the existing conditions, vehicles turning left from Parsons Street onto Boston Post Road experience delays. The left turn movement operates at a level of service E during the peak weekday morning hour, a level of service D during the peak afternoon school hour and a level of service C during the peak weekday afternoon hour. All other movements at the studied intersections operate at a level of service B or better during all studied peak hours.

It was observed during the peak morning hour and peak afternoon school hour that vehicles queued from the Rye High School/Middle School to Boston Post Road. This queuing is due to the drop-off/pick-up operations at the school.

We analyzed the intersection of Boston Post Road and Parsons Street as a roundabout. Based on the analysis, all approaches to the roundabout will operate at a level of service A during all studied peak hours except for the northbound Boston Post Road approach which operates at a level of service B during the peak morning hour. Based on the analysis, a roundabout will improve the levels of service for the intersection compared to existing conditions.

We recommend that the schools provide a more efficient means of drop-off/pick-up of students so vehicles do not queue back along Parsons Street to the potential roundabout. As an alternative, the school can also utilize the new off-street parking area for drop-off/pick-up operations. This would reduce the queuing along Parsons Street during these times.

B. Roundabout Alternatives Considered

Our office prepared and reviewed five different roundabout alternatives at the studied location. The roundabouts were designed to accommodate a school bus to and from all approaches. They were also designed to accommodate a WB-67 tractor trailer traveling along Boston Post Road only. The various alternatives are attached.

All alternatives incorporated a realignment of Boston Post Road within the City's right-of-way to the west. The realignment of Boston Post Road would shift the existing dirt/gravel parking lot to a new paved parking lot adjacent the existing athletic field which would be mostly within the existing roadway surface. Relocating the parking next to the field minimizes pedestrian crossings across Boston Post Road in this vicinity. The proposed parking lot is designed as a one-way flow to maximize the number of parking spaces. This new proposed parking lot provides 41 parking spaces. The exiting drive onto Boston Post Road for the new parking lot is located across from the new Nature Center driveway. The new Nature Center driveway will serve as the new vehicular access to the center. The existing Nature Center driveway will

remain for pedestrian access only. All the roundabout alternatives incorporated the realigned Boston Post Road, new parking lot and new Nature Center Driveway.

Alternative A

Alternative A depicts a roundabout centered around the existing oak tree located in the middle of the Boston Post Road/Parsons Street intersection. The inscribed circle diameter (the measurement between the outside edges of the roundabout) for this alternative is 116 feet. The travel way through the roundabout is 15 feet wide and the mountable truck apron is 20 feet wide. There is a 46 foot diameter landscaped island within the roundabout where the existing tree to remain would be located.

Alternative A realigns the existing Rye Presbyterian Church's exit-only driveway to provide direct access to the roundabout. This provides the church with access out onto Boston Post Road in either direction or Parsons Street.

The roundabout in this alternative would encroach onto the church's property which would require the City to acquire land from the Church for the improvements. Due to the realigning of the church's driveway, a temporary easement would be required for construction of their new driveway. An existing utility pole would also need to be relocated.

Alternative B

Alternative B is the same size roundabout as Alternative A; however, the roundabout is centered so that the majority of roundabout is within the existing pavement limits. Due to the position of the roundabout in Alternative B, the existing tree would likely need to be removed.

Under Alternative B, the church's driveway location will remain; however, the existing exit-only driveway will be converted to an entrance-only driveway. There would be no direct access to the roundabout for the church's driveway. Vehicles destined to enter the Church's driveway would have to enter the roundabout and make a right turn into the driveway. Vehicles traveling southbound on Boston Post Road will not be able to make left turns into the Church's driveway as there will be a concrete island preventing this movement.

The roundabout under this alternative would be within the existing City right-of-way. The reversal of the traffic flow for the existing church driveway would require coordination and further study with the Church since the reversed traffic flow would impact the internal circulation on the Church's property.

Alternative C

Alternative C is the same size roundabout and positioned in the same location as Alternative B. Due to the position of the roundabout, the existing oak tree will likely need to be removed.

In this alternative, the existing church driveway will remain in its location and will maintain its exit-only flow. There would be no direct access to the roundabout for the church's driveway. Vehicle's exiting the church driveway will only be allowed to make right turns out of the driveway onto Boston Post Road northbound. There will be a concrete island preventing vehicles to make left turns out of the driveway.

The roundabout under this alternative would be within the existing City right-of-way. This alternative would be the least intrusive to the Church property.

Alternative D

Alternative D is the same size roundabout and positioned in the same location as Alternative B. Due to the position of the roundabout, the existing oak tree will likely need to be removed.

Alternative D realigns the existing Rye Presbyterian Church's exit-only driveway, like in Alternative A, to provide direct access to the roundabout. This provides the church with access out onto Boston Post Road in either direction or Parsons Street.

The roundabout under this alternative would be within the existing City right-of-way. Due to the realigning of the church's driveway, a temporary easement would be required for construction of their new driveway.

Alternative E

Alternative E is the same size roundabout as Alternative A; however, the roundabout is positioned towards the west. The outside of the roundabout does not extend beyond the existing Parsons Street edge of pavement along the church's frontage.

Alternative E realigns the existing church's exit-only driveway, like in Alternative A, to provide direct access to the roundabout. This provides the church with access out onto Boston Post Road in either direction or Parsons Street.

The roundabout in this alternative would extend beyond the City's right-of-way onto the nature center's property. The roundabout would also be positioned adjacent to the existing retaining wall for the Blind Brook. Due to the realigning of the church's driveway, a temporary easement would be required for construction of their new driveway. An existing utility pole would also need to be relocated.

Preferred Roundabout Design

The preferred design is Alternative C, which has an estimated cost of \$1.3 million (see attached cost estimate). It is our understanding that the City met with representatives from Rye

Presbyterian Church regarding the roundabout alternatives. Alternative C preserves the Church's existing driveway on Boston Post Road. This alternative also requires no encroachment on Church property. All proposed improvements associated with Alternative C are within the existing City's right-of-way and a majority of the roundabout is within the existing pavement limits.

If you have any questions or require further assistance, please contact our office at (914) 273-5225.

Sincerely,

JMC



Richard J. Pearson, PE, PTOE
Sr. Associate



Marc Petrero, PE
Design Manager

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TABLE 1***INTERSECTION OPERATIONS***

INTERSECTION	APPROACH	LANE GROUP	PEAK WEEKDAY AM HOUR			PEAK WEEKDAY SCHOOL PM HOUR			PEAK WEEKDAY ROADWAY PM HOUR		
			V/C ⁽¹⁾	DELAY ⁽²⁾	LOS ⁽³⁾	V/C ⁽¹⁾	DELAY ⁽²⁾	LOS ⁽³⁾	V/C ⁽¹⁾	DELAY ⁽²⁾	LOS ⁽³⁾
1. 2014 Existing Boston Post Road & Parsons Street	EASTBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	WESTBOUND	LEFT	0.24	9.3	A	0.12	8.3	A	0.09	8.1	A
		THRU	-	-	-	-	-	-	-	-	-
	NORTHBOUND	LEFT	0.46	42.0	E	0.38	10.3	D	0.37	23.5	C
RIGHT		0.26	12.0	B	0.11	25.1	B	0.10	10.1	B	
2. 2014 Existing Boston Post Road & Church Driveway	WESTBOUND	LEFT/RIGHT	0.33	14.8	B	0.13	12.6	B	0.03	11.5	B
	NORTHBOUND	THRU	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	THRU	-	-	-	-	-	-	-	-	-
3. Proposed Roundabout Alternative D Boston Post Road, Parsons Street, & Church Driveway ⁽⁴⁾	EASTBOUND	SINGLE LANE	0.54	11.6	B	0.34	7.4	A	0.30	6.7	A
	WESTBOUND	SINGLE LANE	0.26	8.1	A	0.11	5.9	A	0.02	5.0	A
	NORTHBOUND	SINGLE LANE	0.30	7.3	A	0.21	6.2	A	0.21	6.1	A
	SOUTHBOUND	SINGLE LANE	0.50	9.8	A	0.45	9.0	A	0.46	9.0	A
	INTERSECTION	COMPOSITE	-	9.7	A	-	7.7	A	-	7.6	A

Notes:

- (1) V/C represents volume/capacity ratio
- (2) Delay is average seconds delay per vehicle
- (3) LOS represents level of service
- (4) Boston Post Road is the Eastbound/Southbound approaches; Parsons Street is the Northbound approach; and the Church Driveway is the Westbound approach

Intersection

Int Delay, s/veh 6.3

Movement	NBL	NBR	NET	NER	SWL	SWT
Vol, veh/h	54	121	135	180	177	188
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	115	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	0	9	1	0	1	2
Mvmt Flow	79	178	199	265	260	276

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1128	331	0	0	463	0
Stage 1	331	-	-	-	-	-
Stage 2	797	-	-	-	-	-
Critical Hdwy	6.4	6.29	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.381	-	-	2.209	-
Pot Cap-1 Maneuver	228	695	-	-	1104	-
Stage 1	732	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	174	695	-	-	1104	-
Mov Cap-2 Maneuver	174	-	-	-	-	-
Stage 1	732	-	-	-	-	-
Stage 2	342	-	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	21.3	0	4.5
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	NBLn1	NBLn2	SWL	SWT
Capacity (veh/h)	-	-	174	695	1104	-
HCM Lane V/C Ratio	-	-	0.456	0.256	0.236	-
HCM Control Delay (s)	-	-	42	12	9.3	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	2.1	1	0.9	-

Intersection

Int Delay, s/veh 2.5

Movement	WBL	WBR	NET	NER	SWL	SWT
Vol, veh/h	26	97	256	0	0	339
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	0	0	5	0	0	1
Mvmt Flow	38	143	376	0	0	499

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	875	376	0
Stage 1	376	-	-
Stage 2	499	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	322	675	1194
Stage 1	699	-	-
Stage 2	614	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	322	675	1194
Mov Cap-2 Maneuver	322	-	-
Stage 1	699	-	-
Stage 2	614	-	-

Approach	WB	NE	SW
HCM Control Delay, s	14.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NERWBLn1	SWL	SWT
Capacity (veh/h)	-	-	548	1194
HCM Lane V/C Ratio	-	-	0.33	-
HCM Control Delay (s)	-	-	14.8	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	1.4	0

Intersection

Int Delay, s/veh 4.9

Movement	NBL	NBR	NET	NER	SWL	SWT
Vol, veh/h	92	69	181	98	126	268
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	115	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	7	2	1	2	2
Mvmt Flow	107	80	210	114	147	312

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	872	267	0	0	324	0
Stage 1	267	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Critical Hdwy	6.41	6.27	-	-	4.12	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.363	-	-	2.218	-
Pot Cap-1 Maneuver	322	760	-	-	1236	-
Stage 1	780	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	284	760	-	-	1236	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	482	-	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	18.8	0	2.7
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	NBLn1	NBLn2	SWL	SWT
Capacity (veh/h)	-	-	284	760	1236	-
HCM Lane V/C Ratio	-	-	0.377	0.106	0.119	-
HCM Control Delay (s)	-	-	25.1	10.3	8.3	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	1.7	0.4	0.4	-

Intersection

Int Delay, s/veh 1.1

Movement	WBL	WBR	NET	NER	SWL	SWT
Vol, veh/h	26	36	250	0	0	368
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	30	42	291	0	0	428

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	719	291	0
Stage 1	291	-	-
Stage 2	428	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	398	753	1282
Stage 1	763	-	-
Stage 2	662	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	398	753	1282
Mov Cap-2 Maneuver	398	-	-
Stage 1	763	-	-
Stage 2	662	-	-

Approach	WB	NE	SW
HCM Control Delay, s	12.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NERWBLn1	SWL	SWT
Capacity (veh/h)	-	-	548	1282
HCM Lane V/C Ratio	-	-	0.132	-
HCM Control Delay (s)	-	-	12.6	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0

Intersection

Int Delay, s/veh 4.5

Movement	NBL	NBR	NET	NER	SWL	SWT
Vol, veh/h	102	67	209	64	99	322
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	115	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	2	2	0
Mvmt Flow	113	74	232	71	110	358

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	846	268	0	0	303	0
Stage 1	268	-	-	-	-	-
Stage 2	578	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.12	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.218	-
Pot Cap-1 Maneuver	335	776	-	-	1258	-
Stage 1	782	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	306	776	-	-	1258	-
Mov Cap-2 Maneuver	306	-	-	-	-	-
Stage 1	782	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	18.2	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	NBLn1	NBLn2	SWL	SWT
Capacity (veh/h)	-	-	306	776	1258	-
HCM Lane V/C Ratio	-	-	0.37	0.096	0.087	-
HCM Control Delay (s)	-	-	23.5	10.1	8.1	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.7	0.3	0.3	-

Intersection

Int Delay, s/veh 0.2

Movement	WBL	WBR	NET	NER	SWL	SWT
Vol, veh/h	4	9	276	0	0	417
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	1	0	0	1
Mvmt Flow	4	10	307	0	0	463

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	770	307	0
Stage 1	307	-	-
Stage 2	463	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	372	738	1265
Stage 1	751	-	-
Stage 2	638	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	372	738	1265
Mov Cap-2 Maneuver	372	-	-
Stage 1	751	-	-
Stage 2	638	-	-

Approach	WB	NE	SW
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NET	NERWBLn1	SWL	SWT
Capacity (veh/h)	-	-	567	1265
HCM Lane V/C Ratio	-	-	0.025	-
HCM Control Delay (s)	-	-	11.5	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0

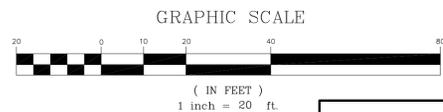
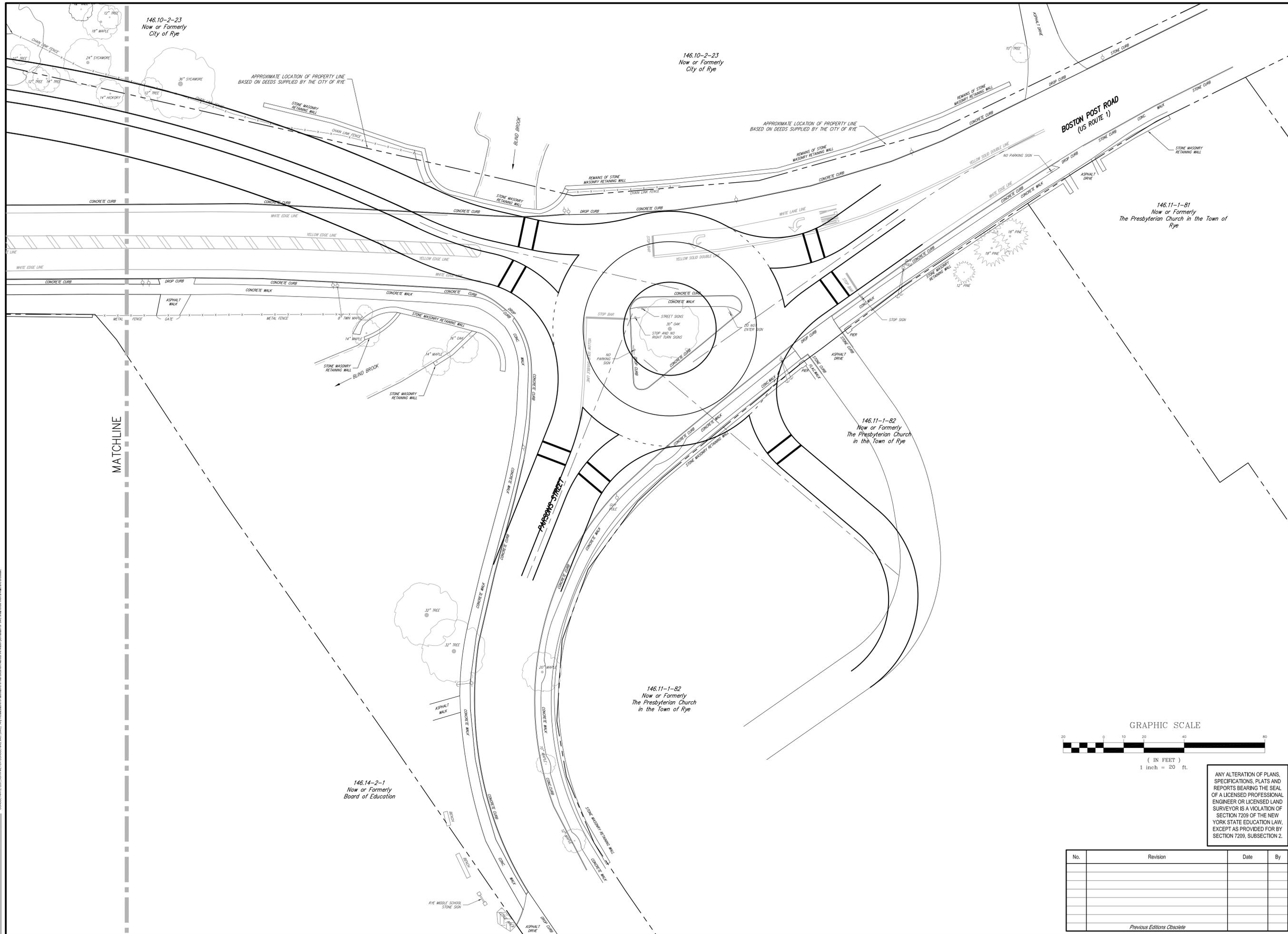
Intersection				
Intersection Delay, s/veh	9.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	464	180	257	498
Demand Flow Rate, veh/h	466	180	273	506
Vehicles Circulating, veh/h	263	474	201	116
Vehicles Exiting, veh/h	359	0	528	538
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	11.6	8.1	7.3	9.8
Approach LOS	B	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	466	180	273	506
Cap Entry Lane, veh/h	869	703	924	1006
Entry HV Adj Factor	0.996	1.000	0.941	0.985
Flow Entry, veh/h	464	180	257	498
Cap Entry, veh/h	865	703	870	991
V/C Ratio	0.536	0.256	0.295	0.503
Control Delay, s/veh	11.6	8.1	7.3	9.8
LOS	B	A	A	A
95th %tile Queue, veh	3	1	1	3

Intersection				
Intersection Delay, s/veh	7.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	324	79	187	428
Demand Flow Rate, veh/h	329	79	194	437
Vehicles Circulating, veh/h	155	408	214	143
Vehicles Exiting, veh/h	425	0	270	344
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.4	5.9	6.2	9.0
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	329	79	194	437
Cap Entry Lane, veh/h	968	751	912	979
Entry HV Adj Factor	0.985	1.000	0.966	0.980
Flow Entry, veh/h	324	79	187	428
Cap Entry, veh/h	953	751	881	959
V/C Ratio	0.340	0.105	0.213	0.446
Control Delay, s/veh	7.4	5.9	6.2	9.0
LOS	A	A	A	A
95th %tile Queue, veh	2	0	1	2

Intersection				
Intersection Delay, s/veh	7.6			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	303	14	187	463
Demand Flow Rate, veh/h	306	14	187	465
Vehicles Circulating, veh/h	112	421	234	117
Vehicles Exiting, veh/h	470	0	184	318
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.7	5.0	6.1	9.0
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	306	14	187	465
Cap Entry Lane, veh/h	1010	742	894	1005
Entry HV Adj Factor	0.990	1.000	1.000	0.995
Flow Entry, veh/h	303	14	187	463
Cap Entry, veh/h	1000	742	894	1000
V/C Ratio	0.303	0.019	0.209	0.463
Control Delay, s/veh	6.7	5.0	6.1	9.0
LOS	A	A	A	A
95th %tile Queue, veh	1	0	1	2

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No.	Revision	Date	By

Previous Editions Obsolete

PROGRESS PLOTTING

Drawn: **KRM** Approved: **RR**
 Scale: **1" = 20'**
 Date: **XX/XX/2014**
 Project No: **14108**
 H108-HIGHWAY LAYOUT-2 --scr
 Drawing No: **CRA-1**



CONCEPTUAL ROUNDABOUT PLAN ALTERNATIVE A

BOSTON POST ROAD ROUNDABOUT
 BOSTON POST ROAD AND PARSONS STREET
 CITY OF RYE, NEW YORK

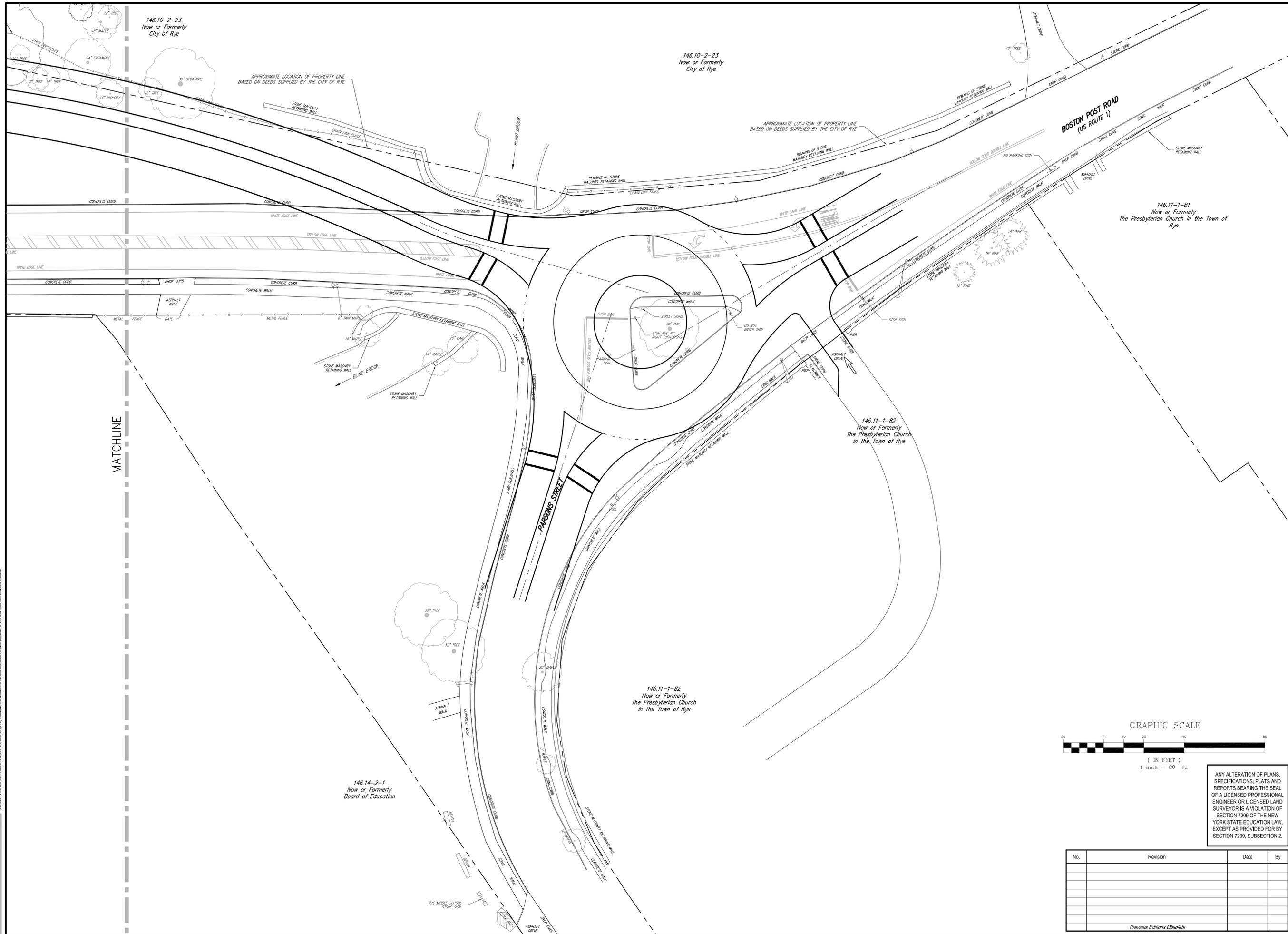
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JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
 JMC Site Development Consultants, LLC
 John Meyer Consulting, Inc.
 120 BEDFORD ROAD - ARMONK, NY 10504
 voice: 914-273-9225 • fax: 914-273-2102
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APPLICANT/OWNER:
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146.10-2-23
Now or Formerly
City of Rye

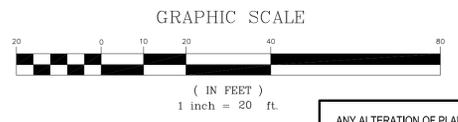
146.10-2-23
Now or Formerly
City of Rye

146.11-1-81
Now or Formerly
The Presbyterian Church in the Town of Rye

146.11-1-82
Now or Formerly
The Presbyterian Church in the Town of Rye

146.11-1-82
Now or Formerly
The Presbyterian Church in the Town of Rye

146.14-2-1
Now or Formerly
Board of Education



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PROGRESS PLOTTING

Drawn: **KRM** Approved: **RR**
 Scale: **1" = 20'**
 Date: **XX/XX/2014**
 Project No: **14108**
 H108-HIGHWAY LAYOUT-2 --scr
 Drawing No: **CRC-1**



CONCEPTUAL ROUNDABOUT PLAN ALTERNATIVE C

BOSTON POST ROAD ROUNDABOUT
 BOSTON POST ROAD AND PARSONS STREET
 CITY OF RYE, NEW YORK

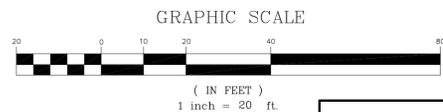
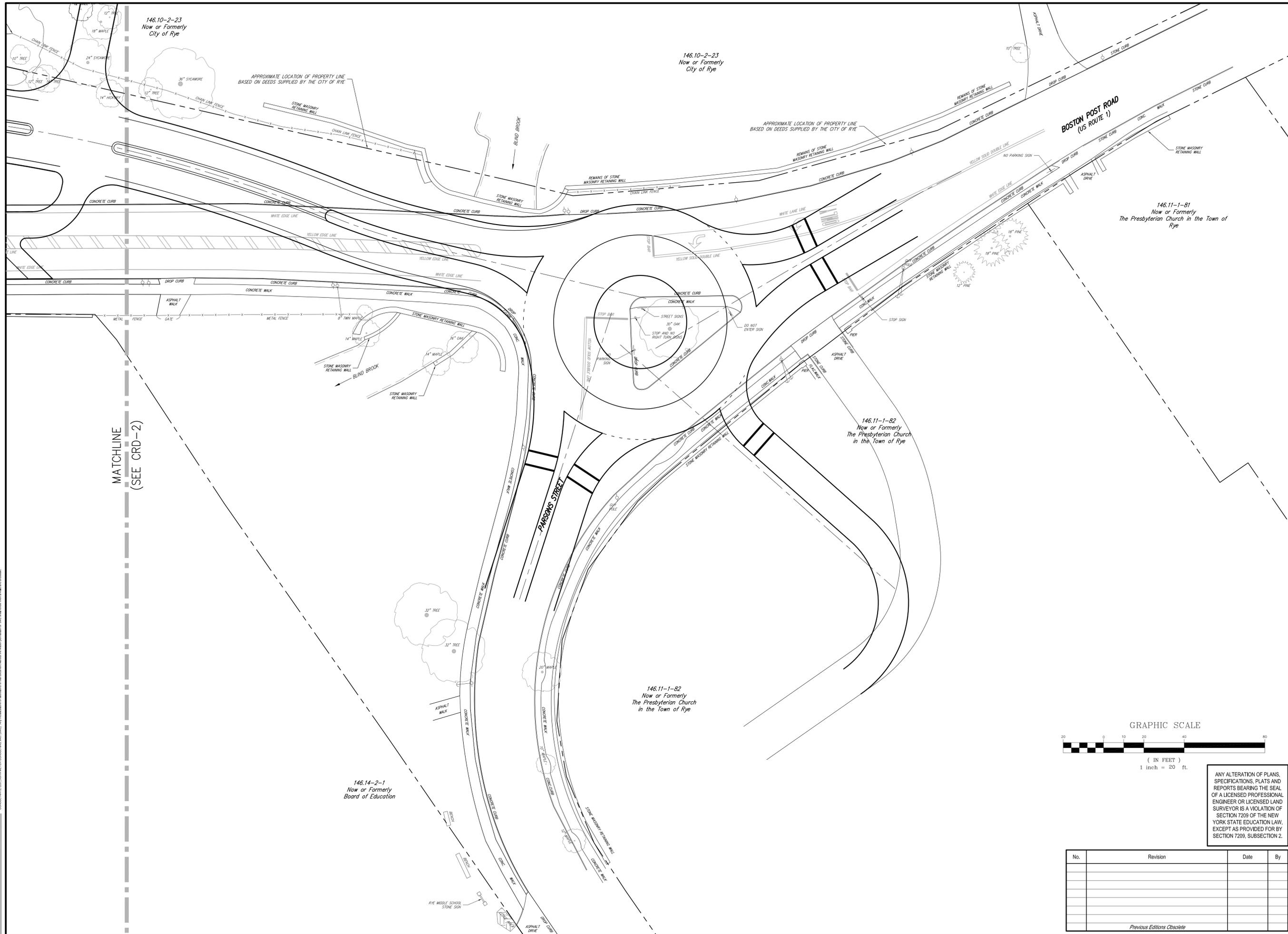
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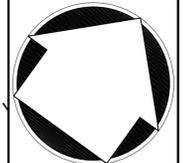
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PROGRESS PLOTTING
Drawing: 14108-HIGHWAY
Date: 2014-10-28
Time: 4:50 PM
By:

Drawn: KRM Approved: RR
Scale: 1" = 20'
Date: XX/XX/2014
Project No: 14108
H08-HIGHWAY LAYOUT-1 --scr
Drawing No: **CRD-1**



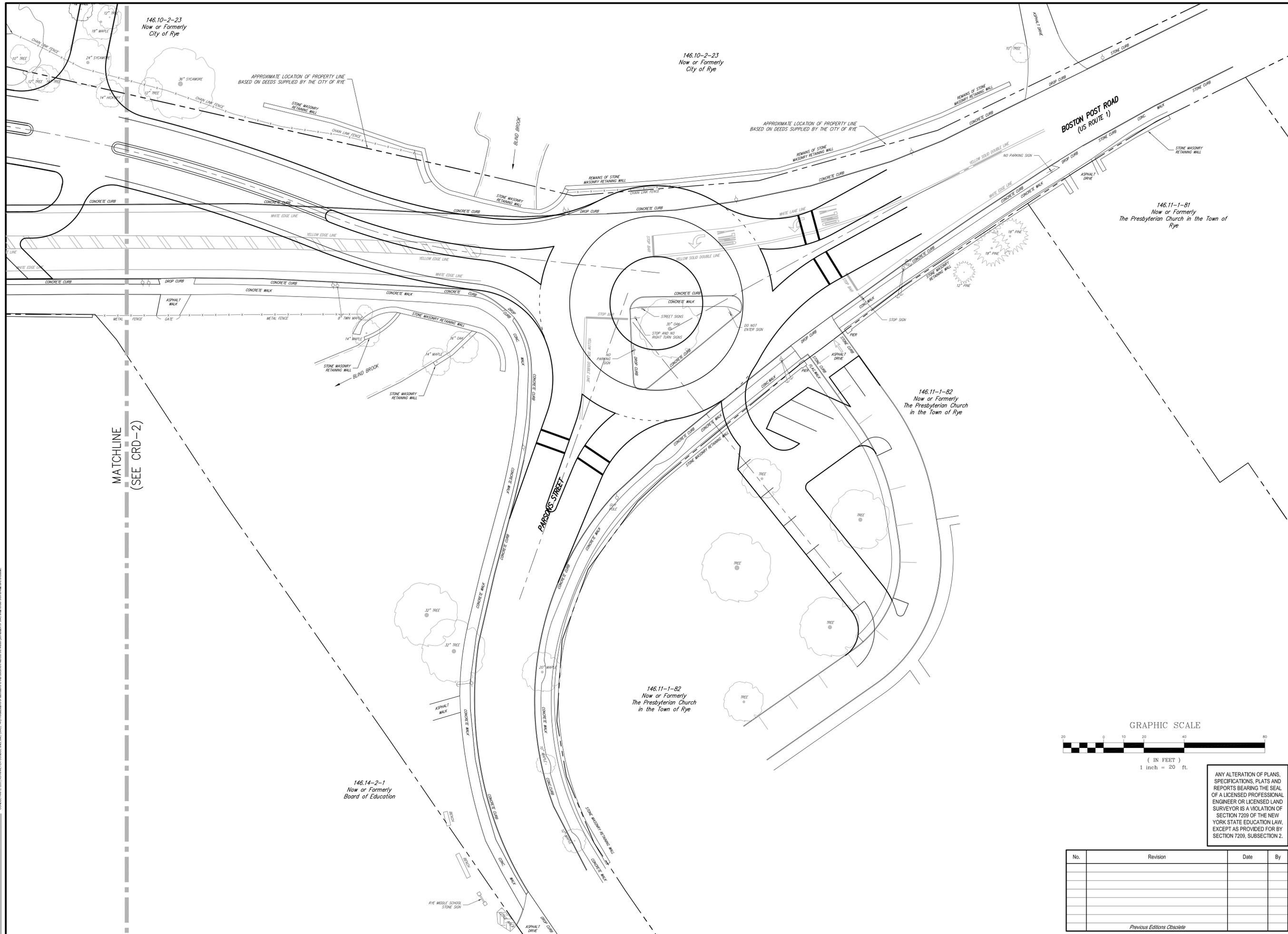
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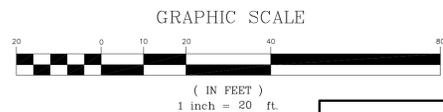
**CONCEPTUAL ROUNDABOUT
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No.	Revision	Date	By

PROGRESS PLOTTING
Drawn: KRM Approved: RR
Scale: 1" = 20'
Date: XX/XX/2014
Project No: 14108
H08-HIGHWAY LAYOUT-1 --.scr
Drawing No: CRE-1

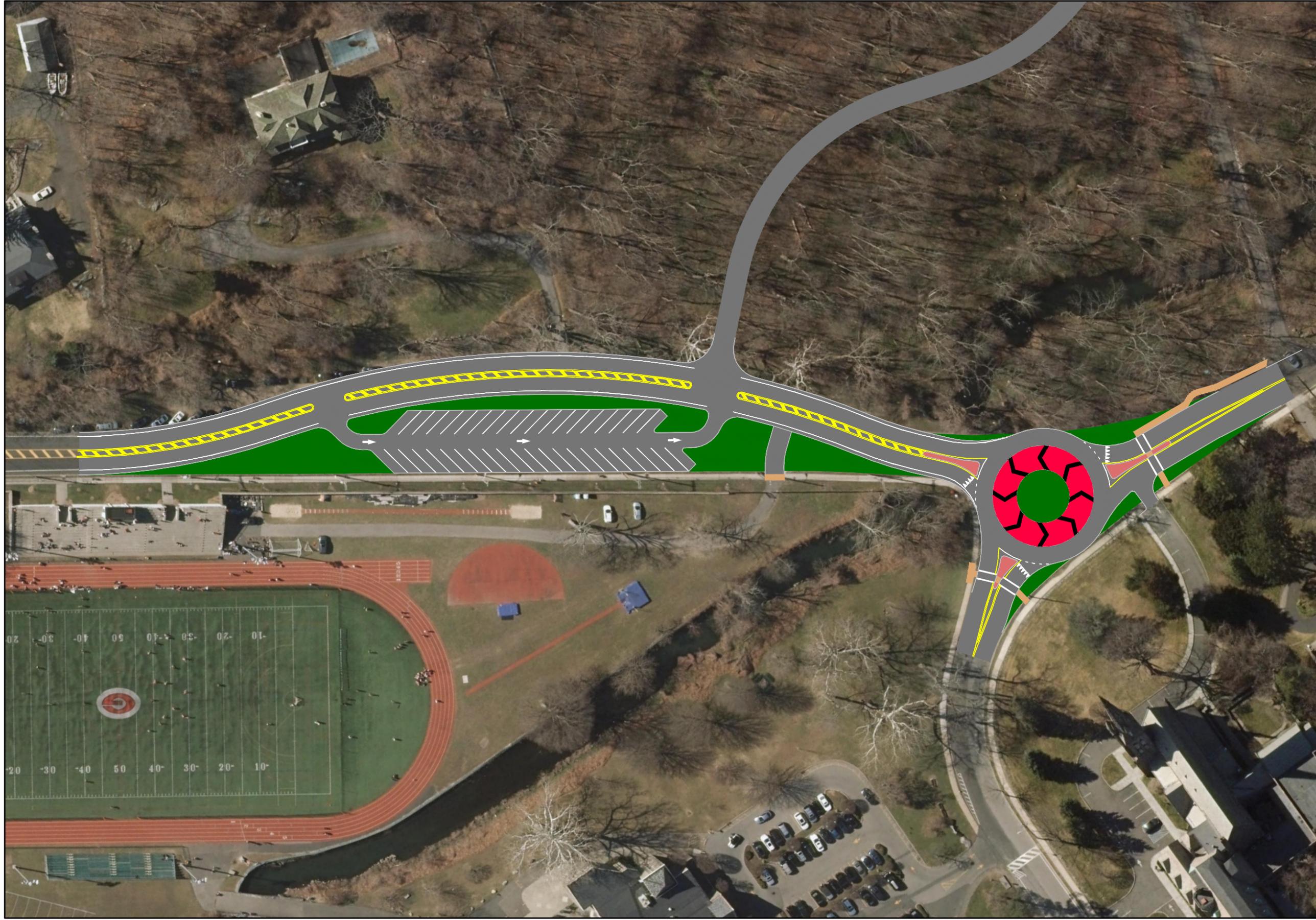


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BOSTON POST ROAD ROUNDABOUT
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CITY OF RYE, NEW YORK

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BOSTON POST ROAD ROUNDABOUT

CITY OF RYE, NEW YORK

BOSTON POST ROAD AND PARSONS STREET

AERIAL OVERLAY

REVISED: 02/27/2015
DATE: 10/30/2014

JMC PROJECT: 14108

SCALE: 1" = 80'

FIGURE: A-1



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- Site Planning
- Civil Engineering
- Landscape Architecture
- Land Surveying
- Transportation Engineering
- Environmental Studies
- Permitting
- Construction Services

Project Name: Boston Post Road Roundabout
 Location: Boston Post Road & Parsons Street
 Type of Estimate: Preliminary Budget
 Drawing Reference:
 PRD-1 "Preliminary Roundabout Layout Plan" dated 02/27/2015

Job No.: 14108
 Revised: 2/27/2015
 Cmp'd: KRM
 Chk'd: RJP

ITEM	CLASSIFICATION OF WORK	QUAN	UNIT	UNIT PRICE	AMT	SECTION TOTAL
1.00	SITE PREPARATION					
1.01	REMOVE EXISTING PAVEMENT & SIDEWALK	5,780	SY	\$15.00	\$86,700.00	
1.02	REMOVE EXISTING CURB	3,745	LF	\$7.00	\$26,215.00	
1.03	REMOVE EXISTING TREES	17	EA	\$1,000.00	\$17,000.00	
						\$129,915.00
2.00	PAVEMENT, CURBS AND SIDEWALK					
2.01	GRANITE CURB	5,065	LF	\$45.00	\$227,925.00	
2.03	CONCRETE SIDEWALK/ISLANDS	210	SY	\$70.00	\$14,700.00	
2.04	COLORED STAMPED ASPHALT (TRUCK APRON)	460	SY	\$100.00	\$46,000.00	
2.04	FULL DEPTH ASPHALT PAVEMENT	5,440	SY	\$75.00	\$408,000.00	
2.05	2" MILLING & RESURFACING	3,020	SY	\$30.00	\$90,600.00	
2.06	SAWCUT LINE	100	LF	\$25.00	\$2,500.00	
						\$789,725.00
3.00	TRAFFIC CONTROL					
3.01	PAVEMENT MARKINGS & TRAFFIC CONTROL SIGNS			ALLOW	\$15,000.00	
						\$15,000.00
4.00	UTILITIES					
4.01	ALLOWANCE			ALLOW	\$60,000.00	
						\$60,000.00
5.00	EARTHWORK					
5.01	ALLOWANCE			ALLOW	\$35,000.00	
						\$35,000.00
6.00	MISCELANEOUS					
6.01	6" TOPSOIL, SEED AND MULCH	1,885	SY	\$15.00	\$28,275.00	
6.02	LANDSCAPING			ALLOW	\$25,000.00	
						\$53,275.00
7.00	WORKZONE TRAFFIC CONTROL					
7.01	ALLOWANCE			ALLOW	\$20,000.00	
						\$20,000.00
8.00	INSPECTIONS					
8.01	ENGINEERING INSPECTIONS			ALLOW	\$15,000.00	
						\$15,000.00
						SUB TOTAL
						\$1,117,915.00
						15% CONTINGENCIES
						\$167,687.25
						TOTAL
						\$1,285,602.25

NOTES: (1) This estimate does not include engineering, surveying, legal fees, permits and approval, environmental remediation, construction management, connection fees, administration.