Belmont/Watertown-Trapelo Road and Belmont Street

**DESIGNER: BSC Group** 

Submittal: Estimate and Drainage Calculations Phase: 75% Design

Reviewer: Projects Section, Keith Arnold / Dan Fleury Date: November 4, 2011

NO.	SHEET	COMMENT	INITIAL ACTION	RESPONSE	QC Review <sup>1</sup>	Final Action/ Verified <sup>2</sup>
		Completed by Reviewer		Completed by Designer	Compl. by Designer	Compl. by MassDOT Reviewer
		General				
1	General	The construction plans show many different locations where different depths of overlay and variable depth milling are to take place. This project will be difficult to build with the information given. Please provide additional existing and proposed grades every 25-feet for final milling depths and additional final grades for the overlay operation.	А	This issue was discussed at a meeting with the District on January 4 <sup>th</sup> 2012 and it was agreed that these grades would not be required in the area of milling and overlay except in areas where either the depth of the proposed milling or overlay varies from the standard called for in the pavement notes.	PJB	
2	General	It is unclear what the cross slopes of the roadways are throughout the project. Please provide grades on the grading plans and cross slopes on the typical sections to verify cross slopes. If the cross slopes do not meet the minimum requirements set forth in Section 5.5.2 of the Project Development and Design Guide (PD&DG) then a Design Exception Report (DER) will be required.	А	The existing pavement is parabolic and the slopes in the center of the roadway are less than 2%. A DER has been submitted to allow for this slope to continue to be less than 2% in areas of milling and overlay.	PJB	

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3	General	The K values in the side street profiles do not meet the PD&DG minimum requirements. If the minimum requirements can not be met, then a DER will be required to justify why the minimum design requirements can not be met. Please refer to Section 4.3.3 of the PD&DG for clarification.	А	The profiles have been revised to meet the required K values. The design speed for the side streets has been set at 30 mph on the title sheet. We believe 30 mph is reasonable for a side street going through a signalized intersection where most vehicles are turning.	PJB	
4	General	Are the abandoned rails that are intended to be left in place deep enough to not conflict with milling operations? Is there a contingency for shallow rails that conflict with the proposed micro milling depth?	В	There is a note in the General Notes that advised the Contractor of the presence of the tracks and surrounding support system (concrete and cobbles) and advises him that he will need to adjust his milling depths with the goal of removing the pavement overlay down to the track level before placing the binder course over it.	PJB	
5	General	The limit of work for the project is in the 100-foot buffer zone for the Beaver Brook Reservation.  When will this project be coordinated with the Belmont and Watertown Conservation Commissions?	A	An RDA was submitted to the Belmont Conservation Commission in 2011 and was approved with minor conditions.  The project does not need to be submitted to Watertown.	PJB	
6	General	Please verify that all channelized islands where pedestrian cut thrus are present are 6-feet wide for the installation of two tactile warning panels.	А	All the median islands with a cross walk passing through are at least six feet wide.	PJB	
7	General	Please verify the special provisions, calculation book and plans do not reference Mass Highway. For example, Sheets TM-9 to TM-12 has the Mass Highway logo.	A	Done. We believe we have caught them all.	PJB	
8	General	Please relocate proposed catch basins or catch basin curb inlets outside of private driveways.	А	We have reviewed the plans and relocated existing catch basins out of driveways where feasible.	PJB	
		Title Sheet				
9	1	Please revise the page numbers under the index to agree with Exhibit 18-14 in the PD&DG.	А	Page number have been revised	PJB	
10	1	Please provide a locus map that meets the requirements set forth in Section 18.2.2.6 of the PD&DG.	А	Locus has been replaced	PJB	

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11	1	Please update the designation table to reflect the current year for the ADT count.	Α	This has been done.	PJB	
12	1	The future ADT in the design designation should be 20 years beyond the current year.	А	This has been done.	PJB	
13	1	Please provide the functional classification data in the design designation table. Please refer to Section 18.2.2.6 in the PD&DG for clarification.	А	This has been done	PJB	
	Key Pla	n and Boring Location Sheets				
14	2 to 4	Please correct the typo for the construction plan numbers. For example, CT-9 should be CP-9.	Α	All CTs have been replaced with actual sheet numbers.	PJB	
	Le	egend and General Notes			PJB	
15	12	The line type for proposed easements, property lines and right-of-way look the same. Please revise.	Α	This has been corrected	PJB	
16	12	Please verify that the line types agree with the plans. For example, the line type for easements is different from what is shown in the plans.	А	This has been corrected	PJB	
17	12	The word "you" should be removed from general note 14.	А	Done	PJB	
18	12	Please add the symbol for remodel and retain to the Legend and General Note sheet.	А	The abbreviations "REMOD" and "RET" are in the Legend	PJB	
	Typical	Sections and Pavement Notes			PJB	
19	TS-1 to TS-10	Please provide a typical section for Church Street.	Α	Done	PJB	
20	TS-1 to TS-10	Please rename sheets TS-1 through TS-10 "Typical Sections" to "Typical Sections and Pavement Notes."	А	Done	PJB	
21	TS-1 to TS-10	Please revise the note "Prop. Micro-Milling and Pvm't Overlay" in the typical sections to agree with the pavement notes.	А	Done	PJB	
22	TS-1 to TS-10	Please show the location of the right-of-way lines in the typical sections.	А	Done	PJB	

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23	TS-1 to TS-10 (14 to 24)	The following typical sections should be provided.  STA 23+50 to STA 24+50  STA 25+50 to STA 30+50  STA 31+30 to STA 39+00  STA 41+00 to STA 45+00  STA 51+00 to STA 53+50  STA 55+00 to STA 61+75  STA 62+90 to STA 64+10  STA 65+15 to STA 76+00  STA 77+50 to STA 88+25  STA 89+90 to STA 107+00  STA 114+00 to STA 125+00  STA 134+00 to STA 131+00  STA 138+00 to STA 142+00  STA 145+00 to STA 147+00	А	Additional Sections have been added as requested.	PJB	
24	TS-1 to TS-10 (14 to 34)	The 4-foot sidewalk in Belmont Street (STA 88+25 to STA 89+90, STA 125+00 to STA 127+00, STA 131+00 to STA 134+00) and the side street typical sections do not meet AAB/ADA minimum 5-foot sidewalk width requirements. Please revise accordingly.	А	The sidewalk on Belmont Street has been widened to 5'. The 4' sidewalks on the side streets are just short sections to meet existing conditions.	PJB	
25	TS-1 to TS-10	Please label the rails in applicable typical sections.	Α	Done	PJB	
26	TS-1 (14)	How tall will the proposed cement stone masonry wall be in the Trapelo Road (STA 21+40 to 23+50) typical section?	А	There is a proposed profile of the wall on the construction plan. The exposed height varies from 4.5 feet to 10.52 feet.	PJB	
27	TS-1 (14)	The sheet reference for the curb detail in the typical section for Trapelo Road (STA 21+40 to 23+50) is incorrect. Please revise.	А	Done	PJB	

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28	TS-6 (24)	Please edit "Trapelo Road Typical Section STA 88+25 to STA 89+90" to agree with the construction plans. The construction plans show abandoned rails but the typical section omits this information.	A	Done	PJB	
29	TS-7 to TS-8 (30-31)	Please provide a 5-foot bike lane adjacent to onstreet parking in typical sections "Belmont Street (STA 131+00 to STA 134+00)" and "Belmont Street (STA 137+00 to STA 138+00)."	А	Done	PJB	
30	TS-9 (33)	Please provide station limits for the typical section for Side Street (Full Depth Reconstruction), Beech Street, Harriet Avenue, School Street, and Grove Street typical section.	А	Done	PJB	
31	TS-9 (33)	Why is Worcester Street and Newton Street not indicated in, "Side Street (Full Depth Reconstruction)?"	А	These streets are now included	РЈВ	
		Construction	Plans PJB			
32	CP-1 to CP-28 (35-61)	Please remove the landscape notes, plant lists and proposed landscaping from the construction plans. Provide landscape details.	А	The proposed trees and shrubs have now been placed on their own set of "Landscape" Plans.	PJB	
33	CP-1 to CP-28	The word "Waverly" is misspelled in the construction plans.	А	"Waverly" is the historic name of the area. "Waverley" is now used. The discrepancies between the plans and the special provisions have been corrected.	PJB	

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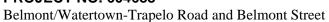


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34	CP-1 to CP-28 (35-61)	<ul> <li>Please add the following symbols, hatching and line types to the Legend and General Notes sheet.</li> <li>Full depth reconstruction hatching</li> <li>Verify the line type for the gas lines agrees with the line type shown in the legend and general notes.</li> <li>The oval symbol for the AAB/ADA ramp designation</li> <li>The symbol for retained catch basins. For example, the retained catch basin in Trapelo Road at STA 17+55, left.</li> <li>The line types that differentiates between micro milling and overlay.</li> <li>Please add the abbreviation R, R&amp;R to the Legend and General Notes sheet.</li> <li>Please add MSBD FND to the Legend and General Note sheet.</li> <li>Please add the root path linetype to the Legend and General Note sheet.</li> <li>Please add the hatching at STA 87+70, left to the Legend and General Note sheet.</li> </ul>	A	Done	PJB	
35	CP-1 to CP-28	Please provide a leader to the location where R&R structures will be relocated.	Α	Done	PJB	
36	CP-1 to CP-28	Please move utilities from the construction plans to the Drainage and Utility sheet. For example, Construction Plan Sheet CP-1 at STA 18+30, left shows a proposed gas line to be installed by others and a proposed hydrant note at STA 20+70, left. Please provide this information on the Drainage and Utility sheet.	A	Done	PJB	
37	CP-1 to CP-28	Please provide match lines between sheets.	А	Done	PJB	

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38	CP-1 to CP-28	How will full depth construction transition to existing pavement in side streets?	Α	A detail has been added on one of the Typical Section Plan sheets.	PJB	
39	CP-1 to CP-28 (35-61)	Please verify no existing utilities will fall within the proposed curb line.	A	The plans have been reviewed and the curb line modified where thought necessary and possible. A detail and pay item for a "Galvanized Curb Cover" has been provided where the conflict cannot be avoided.	PJB	
40	CP-1 to CP-28	Verify that there are no wheelchair ramp level landings proposed directly in front of building doorways. For example, please see wheelchair ramps A88, A90 and A91.	В	-We have added all the doorways and reviewed themThere is a proposed level landing in front of a doorway at 41+90 RT. Moving it counterclockwise will move the stop line more than 30' from the edge of the travelled way and moving it clockwise will direct the WCR further away from where we want to direct it. We have left it where it isA32 at 55+30 RT. Moving either way would be a problemA88 at 120+55LT will be moved four feet west to avoid doorway. As the roadway slopes to the east at a relatively steep slope having the secondary ramp running along the doorway should not be a problemA90 at 121+25LT is not in front of door (door now shown on plans) -A91 is in front of a very wide opening and a wheelchair in the level landing would not block access to the building.	PJB	
41	CP-1 to CP-28	Please check that each construction, grading and tie plan sheet has a north arrow. Sheet CP-27 and Sheet GT-6 do not have north arrows.	А	Done	PJB	

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42	CP-1 (35)	The plans show tree protection extending onto private property. Will the temporary easements need to be adjusted to keep all construction activities within the easements?	А	The symbol we are using for Tree Protection is a relatively large circle around the tree but the actual tree protection is now only wooden planks attached to the side of the tree. The tree protection detail has been revised to reflect this.	PJB	
43	CP-1	What is the REM note pointing to in Mill Street at STA 1+30, left?	Α	The note has been removed.	PJB	
44	CP-1	Shading should be consistent from one area to the next. For example, in Mill Street at STA 2+00, left the plans indicate full depth pavement that is not shaded. This contradicts the shading of full depth pavement that is shown across the street.	А	The plans have been made consistent.	PJB	
45	CP-1	It appears the bottom of slope (BOS) extends past the temporary easement on Mill Street at STA 2+45, right. Will the temporary easement need to be adjusted?	А	Done	PJB	
46	CP-1	Please include a special provision for Item 685, Cemented Stone Masonry Wall. Please indicate that a shop drawing will need to be submitted with a stamp by a structural engineer licensed in the State of Massachusetts.	В	We believe Item 685 is a Standard Item and has a standard detail. We do not believe shop drawings are required.	PJB	
47	CP-2 (36)	The leader at STA 22+70, right does not have a note associate with it.	А	Corrected	PJB	
48	CP-2	Please check for overlapping text. For example, there is overlapping text at STA 24+10, left which makes it difficult to read.	А	These issues have been corrected where found.	PJB	
49	CP-2	A proposed hydrant note at STA 25+00, left appears to be pointing to nothing.	А	The Town intended to install a hydrant at this location but installed it at another location. The plan has been revised.	PJB	
50	CP-2	What is the note R&R at STA 25+35, right pointing to?	А	It is pointing to a bound. A layer was shut off. This has been corrected.	PJB	

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51	CP-2	Should a permanent easement be shown at STA 26+50, left so future maintenance can be done on the proposed sidewalk?	А	This sidewalk connection has been moved to avoid the need for an easement.	PJB	
52	CP-3 (37)	Please label HMA sawcut for the driveways between STA 29+00 and STA 30+50.	А	Done	PJB	
53	CP-3	Will a grading easement be required at STA 33+50, left?	А	Done	PJB	
54	CP-4 (38)	Please provide sidewalk widths in Lexington Street.	Α	Done	PJB	
55	CP-4	Please clarify what the "Planting Match Line" represents.	А	The purpose of the Planting Match Line was for the tree quantity as there were overlaps in the plans and some of the trees showed up on two sheets.	PJB	
56	CP-4	The pavement notes and the construction plans conflict at the bridge approach in Lexington Street between STA 2+00 and STA 2+50. Please edit for agreement.	A	Done	PJB	
57	CP-4	Will the cold planer machine be able to change depth by 1.75-inches over 10-feet? The intersection of Church Street and Lexington Street requires the contractor to change the depth this quickly. Can a uniform depth be used instead of varying milling depths?	А	This was discussed that the meeting with the District on January 4 <sup>th</sup> , 2012. The new paving specifications require that the contractor have a small milling machine available for this kind of work.	PJB	
58	CP-6 (40)	Should the milling depth of side streets match the depth of the main line at the match lines? For example, White Street has a milling depth of 1.75-inches versus 2.25-inches for Trapelo Road at the match line.	А	Trapelo Road has an existing 7" pavement depth and the side streets are much thinner. Trapelo Road and Belmont Street needs a two layer 3.5" overlay and the side streets only need a thin overlay. The side street pavements are not deep enough to mill off 2.25 inches. The side streets will be milled after the binder course is added to the main road.	PJB	

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59	CP-6 (40)	Please label proposed sawcuts. It appears a sawcut will be necessary for the bump out at White Street but the sawcut is not labeled.	А	Saw cuts have been added to the construction plans at all reset curbing and on the Utility Plans for the drainage systems. Saw cut lines have not been added to the traffic signal conduit as it is included in the pay item for traffic signal conduit.	PJB	
60	CP-6	What does the dark linetype at the southwest corner of White Street represent?	А	The line has been removed	PJB	
61	CP-7 (41)	What is the material between the sidewalk and back of curb at STA 47+60, left?	А	4" Loam and Seed	PJB	
62	CP-7	The "Prop Hyd" note at STA 47+90, left is pointing to nothing. Please edit accordingly.	Α	Plan has been corrected.	PJB	
63	CP-9 (43)	Is the easement in the northeast corner of Beech Street permanent?	А	A meeting with the Boston Right of Way Section was held on January 10 <sup>th</sup> , 2012 and it was agreed that easements would not be needed in these situations as long as the WCR could be kept entirely within the public right of way. This location has been modified to comply with this requirement as have all other locations.	PJB	
64	CP-9	Is there one or two wheelchair ramps at STA 61+00, right?	Α	One	PJB	
65	CP-10 (44)	There should be a contrast between granite curb line weight and wheelchair ramp opening line weight. For example, Wheelchair Ramps D14, D37 and A39 ramp openings are shown with granite curb line type. Please edit this throughout the plans.	А	Done	PJB	
66	CP-10	Please provide stationing for Flett Road.	Α	Done	PJB	
67	CP-11 (45)	Should the note at STA 70+40, right refer to meet existing grade at the building?	А	Note has been moved to driveway about 100' west.	PJB	

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68	CP-14 (48)	How will the contractor get paid to remove bike racks in Trapelo Road STA 86+15, left and STA 89+75, right?	А	The Contractor will be paid under Earth Excavation.	PJB	
69	CP-14	What type of milling is required for Common Street in Sheet CP-14?	Α	One inch. Additional note has been added.	PJB	
70	CP-18 (52)	Will an additional easement be needed to construct the colored scored cement concrete walk at STA 99+00, right?	А	Yes. It has been added.	PJB	
71	CP-19 (53)	What type of micro milling is required at STA 104+00, left?	Α	Note has been added.	PJB	
72	CP-22 (56)	It appears there is enough space to incorporate a 3-foot grass strip between STA 119+25, right and STA 120+15, right. This would increase pedestrian safety.	A	This is a proposed bus stop and needs a hard surface for the passengers to use.	PJB	
73	CP- 23(57)	There are duplicate micro milling notes at STA 128+00, left.	Α	Duplicate note has been removed	PJB	
74	CP-24 (58)	A utility pole is located in the transition ramp at STA 131+22, left. Please relocate this utility pole out of the transition ramp to comply with AAB/ADA specifications.	В	The utility pole has been relocated to the only place possible that put it outside the "ramp" area of the WCR while not requiring a easement for the overhead wires.	PJB	
75	CP-27 (60)	Will a permanent easement be required at STA 142+10, right?	А	For almost all locations, the trees originally shown on private properties have been moved onto the public layout. For any trees planted on private property an agreement that has been provided by the MassDOT Landscape Section will have to be signed by the abutter. If the owner does not sign the tree will not be installed.	PJB	

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76	PR-1 (62)	Why are vertical curves needed in Beech Street? It appears Beech Street has a uniform grade.	A	If extended the vertical alignment of profile grade line across Trapelo Road would never intersect with the vertical alignment of the profile grade line of Beech Street therefore a vertical	PJB	
		DI II CI I		reverse curve is required.		
77	PR-1	Please provide corresponding profile sheet notes for each profile.	А	Done.	PJB	
78	PR-1	Please provide stopping sight distance in the profile information. Please review Exhibit 18-11 of the PD&DG.	А	Done	PJB	
79	PR-1	The existing and proposed elevations look similar. Please edit the elevations so they agree with the conventional sign note on the title sheet.	А	Done	PJB	
80	PR-1	Please explain how storm runoff will drain from North Beech Street and Harriet Avenue at the low point. Only one catch basin is shown.	A	There is no low point in the east gutter of Beech Street (See grading plan) as Trapelo Road is going downhill from west to east. For Harriet Street the cross slope of Harriet Street slope to the west from the east curb line to the west curb line and therefore there is no stormwater flow in the gutter at the low point. This is an existing condition.	PJB	
81	PR-1	Please show the grade on the Grove Street profile.	Α	Done	PJB	
		Grading and	l Tie Plan			
82	GT-1 to GT 28 (63-95)	Please provide station and offsets to all ending and deflection points along the mainline construction. For example, the ending for the curb in Trapelo Road at STA 17+90, left does not show the station or the offset to the baseline.	А	We believe we have caught and corrected all these locations.	PJB	

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83	GT-1 to GT 28 (63-95)	Please provide grades every 50-feet along the gutter per Section 18.2.2.4 of the PD&DG. Sheet GT-2 provides grades along the north gutter line every 50-feet but does not provide grades along the south gutter line.	?	It was agreed at a meeting in the District on January 4 <sup>th</sup> that proposed gutter grades would not be required in areas where a standard depth of milling and overlay is called for. Grades are provided along the north gutter because at this gutter the plans call for something other than the standard depth milling and overlay. Grades are not provided along the south gutter because at this gutter the plans call for a specific depth of milling and of overlay.	PJB	

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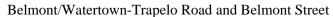


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84	GT-1 to GT 28 (36-95)	Please provide grades along the back of sidewalk.	С	The proposed depth of milling along the gutter, the proposed curb reveal, and the sidewalk cross slope have been designed so that the back of sidewalk generally meets the existing grade at the back of the sidewalk. Existing cross section grades were not taken at every 50 foot station and were instead taken at random locations at appropriate intervals, a DTM created and cross sections cut. A proposed grade at any particular 50 foot station would be an interpolation. The intention is to meet grade at the back of sidewalk at all walks, drives, and doorways. We do call for a two foot strip of driveway material at most driveways in case the existing drive is disturbed during construction or it is old and settled and needs to be regarded to match a new back of sidewalk with a smooth profile. Where the plans call for something greater than two feet we have determined we cannot meet the back of sidewalk. As an example at Sta. 127+25 Rt.	PJB	
85	GT-1 to GT 28	Please provide a bar scale for Sheet GT-5.	Α	Done	PJB	
86	GT-1 to GT 28	Please consolidate notes and abbreviations to one sheet.	А	Done	PJB	

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87	GT-1 to GT 28 (63-95)	Please provide additional grading information for the proposed bump outs.	В	We believe the bump outs that are strictly for wheel chair ramps (Sta. 39+60 Lt. and Rt.) do not need grades as the curb reveal transitions from 6" to 0" from the normal sidewalk curb to the limit of the bump out. Additional information on proposed curb reveals has been added. We have added a typical section for the bump outs between stations 106 and 112 provided to avoid the need to move the MBTA poles. We believe all other bump outs now have the necessary grades to ensure ease of construction and adequate drainage.	PJB	
88	GT-4A (67)	The cross slope in Church Street at STA 2+00 is less than 2-percent. Please provide typical sections and cross sections for Church Street. If a cross slope of 2-percent can not be achieved, then a DER will be needed.	A	The grading plan has been revised for this location and a typical section prepared.	PJB	
89	GT-7 (72)	Is it possible to orientate the sidewalk ramp at STA 46+40, right to be more in line with the proposed sidewalk along Trapelo Road?	В	It may be but we have been told by the pedestrian accessibility group in Boston that they want to see similar type ramps at both ends of the crosswalk.	PJB	
90	GT-9 (75)	Can the sidewalk ramps at the intersection of Beech Street and Trapelo Road be reconfigured to better line up with ramps across the street?	А	We have made some minor revisions to help orient the WCR better but the angle of the cross street makes it a very difficult intersection to line upwards.	PJB	
91	GT-14A (82)	It appears the level landing grade on Common Street and Trapelo Road on Sheet GT-14A at STA 87+70, left has a mislabeled grade of 149.90. Please verify.	A	Grade has been revised	PJB	
92	GT-20 (88)	The median passage way at STA 107+60 should be constructed at grade with a 1.5 percent cross slope.	А	Grading has been revised. The level landing is now 1.5% or less.	PJB	

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93	GT-27 (94)	WCR A108 at STA 140+94, left does not meet AAB/ADA minimum standards for level landing per the construction details wheelchair ramps in sheet CD-1. It seems WCR A108 has the grade to provide a 4-foot level landing at 1.55% cross slope and a 3-foot primary ramp. Please revise.	A	The plan has been revised.	PJB	
		Drainage and	Utility Plar	1		
94	DU-1 to DU-28	Please clarify if abandoned means that the contractor for this project is to abandoned utilities or if the utilities are currently abandoned.	А	The abbreviation (A) has been added to the description of the abandoned lines and to the Legend.	PJB	
95	DU-1 to DU-28 (96-122)	Please consider constructability and traffic sequencing when determining the number of times a structure will need to be adjusted in the areas of full depth reconstruction.	А	The number of times a structure will need to be adjusted in areas of milling and overlay was discussed at length at a meeting in the District on January 4, 2012 and resolved. It was agreed that it would be three times before milling (down); after binding (up); and before surface course (up). In areas of full depth construction it would be the same: after base course (down), after binder (up); and before surface (up).	PJB	

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96	DU-1 to DU-28 (96-122)	Please confirm that the following manholes will be able to accommodate additional pipe(s) without compromising the structural integrity of the manholes.  • Trapelo Road, STA 17+48, left • Lexington Street, STA 1+70, right • Lexington Street, STA 4+55, right • Trapelo Road, STA 38+10, left • Trapelo Road, STA 84+30, right • Trapelo Road, STA 87+80, left • Belmont Street, STA 114+30, right • Belmont Street STA 118+05, right	A	Trapelo Road, STA 17+48, left – The new pipe we are proposing is coming in high, 2 'above the invert of the 18" trunk line. Lexington Street, STA 1+70,Right - The design has been revised and this is no longer a possible issue. Lexington Street, STA 4+55, right – The proposed new 12" RCP is using the opening of the 10" RCP that will be abandoned. We do not see the 2" increase in size as a problem. Trapelo Road, STA 38+10, left - The proposed new 18" RCP is using the opening of the 12" RCP it is replacing. We do not see the 6" increase in size as a problem. Trapelo Road, STA 84+30, right – We did a blow up of this one and it is tight but doable. With other utilities so close a larger MH may not fit. Trapelo Road, STA 87+80, left – We believe this one will work. We are installing a 24" and a 27 ' on opposite sides of the manhole replacing existing 15" and 18 " VCPs. On the north side we are replacing a 10" with a 15" and it some adjacent to the 24" rather than the 27". We are abandoning a 10" VC on the southeast side. Belmont Street, STA 114+30, right – The design has changed and we are no longer proposing to impact this manhole. Belmont Street STA 118+05, right – The design has changed and we are no longer proposing to impact this manhole.	PJB	

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97	DU-1 to DU-28 (96-122)	Is the catch basin at STA 21+80, right to be removed? If yes, please show where the drain will be capped.	А	The catch basin at this location is now called to be abandoned. We have also labeled the drain line attached to it to be abandoned. We have not called for a plug. Our understanding is that the plug is included in the price of abandoning the catch basin and if we call out a plug the contractor may expect to get paid extra for it.	PJB	
98	DU-1 to DU-28	Have Belmont and Watertown approved the installation of 10-inch drains?	А	Both Towns have been asked that question. Belmont has responded positively. Watertown has not responded. We do not believe we are calling for any 10 inch pipes in Watertown but we asked for them anyway thinking it may be necessary during construction.	PJB	
99	DU-1 to DU-28	The survey indicates that the water services are connected to the abandoned water main. Are the water services tied to the new main? If yes, please edit the survey. If the water services are abandoned, then gate valves do not need to be adjusted.	А	Base plan has been revised.	PJB	
100	DU-1 to DU-28	Please verify that drainage manholes have sufficient invert elevations to be built. Per MassDOT construction standard detail E 202.4.0, the minimum depth for an invert is 3.5-feet for a 12-inch RCP. The following structures have less than 3.5-feet of depth from the top of casting to the invert.  Trapelo Road STA 28+71, right Church Street STA 99+00, right Church Street STA 3+35, right Trapelo Road STA 107+44, left		Trapelo 28+71 Rt. This is an existing structure right next to the MWRA water line. We will be keeping the structure and converting it to a manhole. The cone will need to be remodeled to avoid a conflict between the casting and the curbChurch 0+99 Rt. has been resolvedChurch 3+35 Rt. There is an existing shallow pipe that we need accommodate. We have now called for a DMH with a flat topTrapelo 107+44 Lt. has been resolved.	PJB	

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101	DU-1 to DU-28 (96-122)	The following structure location notes are incorrect.  • DMH, STA 48+41.7, right  • DMH, STA 78+29.1, left  • DMH, STA 107+43.7, right  • DMH, STA 119+01.9, left  • DMH, STA 119+07.4, left  • CBCI, STA 121+49.8, left  • DMH, STA 140+94.1, left	А	These have been corrected.	PJB	
102	DU-1	Is it possible to eliminate the drainage structure at STA 18+55, right?	Α	This manhole is not necessary and has been removed.	PJB	
103	DU-1 (96)	The water gate located at the ramp opening of WCR A8 in Trapelo Street at STA 23+86, right will interfere with the installation of the detectable warning panel.	A	A new curb stop and service box are now proposed.	PJB	
104	DU-2 (97)	Will the drain pipe conflict with the 54-inch aqueduct supply main at STA 24+80, right?	Α	This catch basin and drain pipe are no longer proposed.	PJB	
105	DU-3	Will the gas main at STA 28+60, right need to be relocated to install the catch basin?	Α	The gas line in question has since been abandoned.	PJB	
106	DU-3 (98)	Extend the 6-inch main to the fire hydrant at STA 29+80, left to connect to the water main instead of the sanitary sewer. This connection will likely conflict with electric. Can the hydrant be relocated or can the 6-inch main tie into the water main from a different angle to reduce utility conflicts?	А	The relocated hydrant is proposed to be connected to the same line that it is presently connected to. At one time there was a blow off to the existing sewer but it now blows off to a leaching manhole listed as a water manhole.	PJB	
107	DU-3	Is the drainage manhole at STA 30+10, left necessary?	Α	Yes for a change in vertical profile.	PJB	
108	DU-5 (100)	Please verify that the proposed MBTA catanary pole at STA 2+75, right in Church Street will not conflict with the drain.	А	Proposed location has been modified to avoid the drain line.	PJB	

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109	DU-7 (102)	Please explain why an abandoned water main is to be relocated around a catch basin at STA 47+90, left? Could the water main be cut and capped instead of relocated?	А	Plan has been revised to call for cut and plug abandoned 6" water line.	PJB	
110	DU-8	Is the 2-inch water main at STA 50+80, right being abandoned?	Α	Yes – and it is labeled as such.	PJB	
111	DU-8 (103)	Have adjustment of recorded appurtenances been included in the adjustment quantities? For example, the water gate at STA 1+60, right on Beech Street appears to be on the water line to be kept in service and should be brought to grade.	A	The water gates labeled (rec) were from old town records. The recent water project did further investigations and found that some were not correct and others are actually there and brought to the surface during the recent water work. Some were not observed by the survey crew. The base plans have been updated and most of the (rec) water gates are no longer labeled such and are identified to be adjusted.	PJB	
112	DU-8	No structures should be in sidewalk transition ramps. A power pole is in the transition ramp at STA 55+90, right. Can the location of the proposed ramp be adjusted?	А	The pole in question is a traffic signal post that will be removed.	PJB	
113	DU-11 (106)	There is a proposed plug shown in Harriet Avenue at STA 0+60, left. Is this correct? If yes, please clarify.	А	The proposed plug has been moved onto the drain line that is being abandoned.	PJB	
114	DU-11	Will the abandoned water main be removed to install the drain pipe at STA 72+25, right? If yes, has a quantity been determined and has it been taken into account in the estimate?	А	Plugs have now been shown on the plans and included in the estimate. The removal of the section of the water main that will be in the way of the new drain line is not listed as being paid separately but will be included in the price of installing the drain pipe.	PJB	
115	DU-12 (107)	Can the curb line be adjusted to avoid the water gate at STA 77+20, left?	А	This would be a minor adjustment of the curb line (widen road a bit) in the field if found to be necessary.	PJB	

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116	DU-17 (112)	Is the catch basin partially in the ramp opening at STA 92+80, left? If yes, please move it outside of the ramp opening.	А	The ramp has been redesigned to keep the grate out of the ramp. Moving the CB to a new location is problematical.	PJB	
117	DU-21 (116)	What does the triangle symbol at STA 113+30 represent? Please add this symbol to the Legend and General Notes sheet.	А	The triangle represents an angle point I the baseline. We have removed it from this set of plans.	PJB	
118	DU-21	Is the function of the drainage structure at STA 115+10, left being changed from a catch basin to a manhole? If yes, please label the disposition as CIT.	А	The structure that was at 115+10 left has been moved to 1154+90 left and in the sidewalk. It is intended to function as a sump manhole for the gutter inlet proposed at the curb line. The gutter inlet is proposed because of the anticipated utility conflict. A CB type 3 would normally be used but the adjacent utility pole is in the path of the exiting drain pipe.	PJB	
119	DU-25 (120)	Please clarify the work proposed for the catch basin at STA 135+00, right. A standard remodel is not appropriate if it is being relocated.	А	The plans now call for the structure to be abandoned and replaced with a new catch basin.	PJB	
120	DU-25	Will the removal of tracks be required to install a 24-inch RCP drain pipe at STA 139+00, left? If yes, please denote the removal of the tracks and update the quantity in the estimate.	А	The layout of the proposed drain system has been revised to eliminate the need to disturb the tracks.	PJB	
121	DU-26 (126)	The curb line in Templeton Parkway conflicts with the drain manhole at STA 0+90, left.	Α	Curb alignment has changed and this is no longer an issue.	PJB	
		Construction Details Wh	neelchair R	Ramps PJB		

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122	CD-1 to CD-4 (192- 200)	The sidewalk ramp details references the MassDOT Construction Detail E 107.9.0, but does not follow the minimum sidewalk curb transition length specified in detail E 107.9.0. For example, wheelchair ramp D2 has transition lengths of 5.23-feet which are less than the minimum 6.5-feet specified in the construction detail. Please check and edit for agreement.	A	We have reviewed all the slopes vs. the transition stone lengths and corrected any that were incorrect. D2, D3, D4, and D5 are on very sharp curves and the length given isthe length from the ramp mouth to the PC of the curve. To get to 6.5 feet would result in a 1.27 foot section of straight curb. We believe the proposed length is a better solution although it does not agree with the table.	PJB	
123	CD-1 to CD-4	Why are some of the gutter slopes in the wheelchair ramp data tables not available?	Α	Those are all on the low side of the WCR.	PJB	
124	CD-1 (199)	As shown on Detail D, Sheet DT-6, WCR A27 has the grade to provide a 4-foot level landing	Α	Chart has been corrected	PJB	
125	CD-3	Wheelchair Ramps D2, D3, D4 and D5 should be classified as a "Type H" wheelchair ramp.	А	Done	PJB	
126	CD-3 (194)	Please clarify if the wheelchair ramp at STA 29+28, right is a "Type A" ramp or a "Type G" ramp. Edit the construction plans to agree with the wheel chair ramp detail information.	A	Done	PJB	
127	CD-4 (196)	Please verify the units in the wheelchair details are consistent with the project. For example, Wheelchair Style H has a dimension of 1-meter for the wheelchair ramp opening.	А	Done	PJB	
		Construction Detail	s Miscella	neous		
128	CD-5 to CD-11 (201- 205)	Will tapping sleeve and valves be used to tap hydrants into existing water mains?	А	We are not proposing any new tapping sleeves and valves or new hydrants. We are moving some existing hydrants and we connect to the existing lead from the main line. We will keep the pay item in the contract as a contingency in case one or more are needed for some reason.	PJB	

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129	CD-5 to CD-11 (201- 205)	All fittings should be restrained with mechanical joint restraints. Confirm there is a means to pay the contractor to furnish and supply the mechanical joints.	A	There is now a special provision written for Item 309. Ductile Iron Fittings for Water Main specifying that they must have mechanical joints.	PJB	
130	CD-5 (201)	The minimum height from the ground to the pumper nozzle should be added in the Hydrant and Valve detail.	А	This has been done.	PJB	
131	CD-5	The Hydrant and Valve detail references a joint restraint detail that is not included in the detail sheets. Please add the joint restraint detail.	В	This reference has been deleted. We are not sure it is possible to detail a system that three or move manufacturers can meet.	PJB	
132	CD-5	Please specify the class of ductile iron that is to be used for the fire hydrant leads.	А	The lead comes as part of the hydrant.	PJB	
133	CD-5	What type of coupling is to be used when connecting water services to existing water service?	А	Compression fittings.	PJB	
134	CD-5	Please remove the XXFT MWRA Water Pipe note from the, "Typical Conduit Crossing Over 56-inch MWRA Water Pipe" detail.	А	Done	PJB	
135	CD-5	What material is to be used in the 6-inches of separation between the 56-inch water main and the conduit encased in concrete? Please edit the, "Typical Conduit Crossing over 56-inch MWRA Water Pipe" accordingly.	А	Compressible filler is the material to be used and the plans have been changed.	PJB	
136	CD-6 (202)	What is the diameter of the weep holes in the catch basin details?	А	1.5" Diameter dimension has been added to the details.	PJB	
		Calculation	n Book			
137	Calc Book	Please edit the following item descriptions in the calculation book to agree with the estimate and special provisions.  • Item 141.1, Test Pit for Exploration  • Item 454.5, Latex Modification of HMA	А	Done	PJB	

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138	Calc Book	Please verify all notes reference the correct pay item numbers. For example, Item 120, Earth Excavation has a note that references pavement removed under Item 127.3, Reinforced Concrete Surface Excavation. The pay estimate does not have an Item 127.3, Reinforced Concrete Surface Excavation.	А	We did a cursory review and did not find any others. Will do a move detailed review in the coming weeks.	PJB	
139	Calc Book	It is unclear how the quantity for full depth excavation less than 4-feet is generated. Please clarify.	А	The quantity was measured from the plans using AutoCAD.	PJB	
140	Calc Book	Item 120.1, Unclassified Excavation is calculated as a contingency. Should the rubble blocks between STA 0+35 and STA 1+09 in Mill Street and STA 20+90 and STA 23+60 in Trapelo Road be included as unclassified?	A	As a result of a comment from the District 4 DUCE Unit Item 120.1 has been removed. Payment for the removal and disposal of the rubble blocks will be included in 120 Earth Excavation.	PJB	
141	Calc Book	The volumes for Item 127, Concrete Excavation appear to be incorrect. Please review and revise.	Α	The volume has been corrected.	PJB	
142	Calc Book	Please provide a location of left or right when providing the locations of the work to be done. For example, Item 127, Concrete Excavation does not indicate what side of the street the concrete excavation work is to be done.	В	The areas were calculated per sheet and defining which portions were on the left or right side of the baseline would have no benefit while taking a significant effort.	PJB	
143	Calc Book	Item 151, Gravel Borrow uses square feet as the unit for full depth pavement <4-feet. The surface area calculation uses cubic feet as the unit for full depth pavement <4-feet. Please clarify which unit quantity is correct and update Item 151, Gravel Borrow if necessary.	А	The surface area for full depth widening <4' is in SF but was incorrectly labeled CF in the Pavement Areas section of the Calc Book. It has been corrected.	PJB	
144	Calc Book	It appears the quantity "beneath loamed area" for Item 170, Fine Grading and Compacting does not agree with the surface area and earthworks calculations.	A	The quantity for "Beneath Loamed Areas" is taken from the "Sidewalk Areas" worksheet. A note has been added to help find the source.	PJB	

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145	Calc Book	Please verify the stationing and the side of the road is correct for Item 201.5, Catch Basin-Municipal Standard. In addition, verify that the final quantity is correct.	A	Done	РЈВ	
146	Calc Book	Please revise Item 222.3, Frame and Grate (or Cover) Municipal Standard to reflect how many castings will actually be required.  Item 202, Manhole pays for structures with fractions of a manhole for any manhole deeper than 6.5-feet. Item 222.3, Frame and Grate (or Cover) Municipal Standard uses the final quantity from Item 202, Manhole when calculating how many castings will be needed. The casting calculation is incorrect due to Item 202, Manhole indicates more structures than what is actually needed.	А	This has been corrected.	PJB	
147	Calc Book	Please consider increasing the bituminous concrete quantities by 10% as a contingency.	А	Done	PJB	
148	Calc Book	The quantity for Item 431.1, High Early Strength Cement Concrete Base Course appears to be incorrect.	А	This item has been revised to a SY item and corrected.	PJB	
149	Calc Book	The quantity for Item 440, Calcium Chloride for Roadway Dust Control and Item 443, Water for Roadway Dust Control are incorrect. Please revise accordingly.	A	Items have been corrected	РЈВ	
150	Calc Book	Item 464, Bitumen for Tack Coat should be replaced by Item 452, Asphalt Emulsion for Tack Coat.	А	Done	РЈВ	
151	Calc Book	Please verify that the quantities in the calculation book agree with the estimate. For example, Item 701.1, Cement Concrete Sidewalk at Driveway differs between the calculation book and the estimate.	А	This has been corrected.	PJB	

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152	Calc Book	Consider increasing the quantity for Items 697, Sedimentation Fence and Item 767.8, Bales of Hay for Erosion Control to cover possible replacement throughout the project.	A	Done	PJB	
153	Calc Book	The back of walk calculations for brick walk is 258 SF. Item 706, Brick Walk and Item 706.1 Brick Walk Removed and Re-laid each have a quantity of 258 SF. If Item 706.1 Brick Walk Removed and Re-laid is to be used to reconstruct brick walkways, then Item 706, Brick Walk should be used as a contingency item.	А	Done	PJB	
154	Calc Book	The park benches to be removed and stacked at STA 37+15 (3), left is not in the calculation book.	Α	Corrected	PJB	
155	Calc Book	The project information page in the calculation book indicates the construction period is 30-months. Item 740, Engineers Field Office and Equipment – Tape A which indicates duration of 24-months. Please clarify.	А	The project duration is now set at 24 months and the Field Office at 30 months.	PJB	
156	Calc Book	<ul> <li>If the construction period is 24 months, the quantity for the following should be revised:</li> <li>Item 850.41, Roadway Flagger</li> <li>Item 851, Safety Controls for Construction Operations</li> <li>Item 856, Special Lighting Units (Flashing Arrow)</li> <li>Item 859, Reflectorized Drum</li> <li>Item 999.001, Traffic Police</li> <li>Item 999.74, Telephone Charges in the contract estimate sheet.</li> </ul>	А	All now reflect a 24 month construction period.	PJB	

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157	Calc Book	Should some of the 800 items be calculated based on project duration minus winter shutdowns?	А	In an effort to be conservative and have enough quantities to do the work we have not taken out the winter months. This winter many work crews have continued to work through the winter.	PJB	
		Special Pro	ovisions			
158	Special Provision	Please verify that all the appropriate items have special provisions. For example, Item 431.1, High Early Strength Cement Concrete Base Course requires a special provision. Please refer to the English Bid Nomenclature List for clarification on which items require special provisions.	А	This item has been changed to 431 and it no longer requires a special provision.	PJB	
159	Special Provision	Please reference the MBTA contact for the closing of bus stops in the MBTA coordination section.	А	Done	PJB	
160	Special Provision	In Sub-Section 8.03, Prosecution of Work indicates milling will proceed without castings or obstructions. Will the casting be removed and will the structures be steel plated prior to milling?	А	Yes. Gates boxes will be moved below the surface and other castings will be removed and stacked and the resulting hole covered with metal plate set below the surface. The intermediate course will be placed within three days and then all of the gate boxes and most of the castings can be brought to the intermediate surface layer.	PJB	
161	Special Provision	Please verify all item numbers are correct in the special provisions. For example, in Sub-Section 8.03, Prosecution of Work the Frame and Grate (or Cover) Removed and Stacked is referenced as Item 223, but the estimate lists it as Item 223.1.	A	The specific issue has been corrected. We searched for others and corrected what we found.	PJB	
162	Special Provision	Is there a length restriction of how far construction can proceed before the contractor is required to pave the final HMA course?	А	No. The binder course must be placed within seven days of the milling. There is no length or time restriction on the surface course placement.	PJB	

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163	Special Provision	Please provide a pay item number for utility trench repair under "Construction Staging and Scheduling" section.	А	The MassDOT Pavement Engineer asked that we remove the pay items from this section.	PJB	
164	Special Provision	It seems the "Construction Staging and Scheduling" section requires that all the trench repairs done in the road need to settle for a period of five months. Is this five month settling period incorporated into the project schedule?	А	The five month restriction has been removed.	PJB	
165	Special Provision	The construction staging and scheduling section indicates adjustment of utility castings will be done in accordance with Item 415, Micro Milling. Item 415, Micro Milling does not specify adjustment of castings.	А	This reference has been removed from the section.	PJB	
166	Special Provision	Please clarify paragraph C under roadway milling in the construction staging and scheduling section. How will traffic be eliminated on both sides of the street during rush hour? Will traffic be eliminated in residential areas during rush hour? Does a 7:00AM start time make sense?	А	That was a typo. "Traffic" has been changed to "Parking".	PJB	
167	Special Provision	Should utility structures be adjusted to their final elevation after the intermediate course has been installed? If yes, how many times would the structures be adjusted? If the structures will require two adjustments, please account for this in the calculation book and estimate.	А	This question was discussed at a meeting in the District on January 4 <sup>th</sup> , 2012 and in telephone conversations and e-mails that followed. The final decision was to: -Adjust the structures down to about an inch below the upcoming milled grade -Just after the binder course is applied adjust them up to the binder surface levelJust before the surface course is placed adjust them up to their final grade using concrete cradles. In total, three adjustments, only one with a concrete cradle.	PJB	

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NO.	SHEET	COMMENT	INITIAL ACTION	RESPONSE	QC Review <sup>1</sup>	Final Action/ Verified <sup>2</sup>
168	Special Provision	Please provide the MassDEP file number under the Massachusetts Department of Environmental Protection File Number Sign section.	А	An RDA was submitted and a finding of no significant impact was issued. A Notice of Intent will not be submitted and a DEP File Number will not be issued. This section has been removed from the SP.	PJB	
169	Special Provision	Will hazardous material be anticipated when removing rails under Item 129.52, Track Excavation – Two Rails and Item 129.54, Track Excavation – Four Rails? If yes, then please include appropriate pay items for handling and disposing of hazardous wood materials.	А	Item 184.1 has been added.	PJB	
170	Special Provision	Please verify all item numbers match the engineers estimate. For example, Item 486, Scored Cement Concrete Pavement does not agree with the item number in the cost estimate.	А	486. has been changed to 486.2. We checked the calculation book against the special provisions for others inconsistencies.	PJB	
171	Special Provision	Please check for complete methods of measurement. For example, the method of measurement defines measurement for Item 486, Scored Cement Concrete Pavement but does not define the method of measurement for Item 486.2, Colored Scored Cement Concrete Pavement.	А	Item 486 has been removed and the method of measurement corrected.	PJB	
172	Special Provision	Edit the materials section of Item 531, Timber Edging and Item 531.1, Timber Edging-Removed and Reset to refer to section 955 instead of Item 955.	А	Done	PJB	
173	Special Provision	Please verify the item descriptions agree throughout the special provision. For example, the method of measurement for Item 655.31, 22-inch Metal Gate with Gate Posts is referred to as Item 655.31, 30-inch Metal Gate 22-inch wide. Please edit for agreement.	А	All three items have been removed from the special provisions and the Calc Book as the work is no longer required.	PJB	

<sup>1.</sup> Designer QC Reviewer

<sup>2.</sup> Verified and completed by Mass DOT Reviewer at Comment Resolution Meeting



Belmont/Watertown-Trapelo Road and Belmont Street

NO.	SHEET	COMMENT	INITIAL ACTION	RESPONSE	QC Review <sup>1</sup>	Final Action/ Verified <sup>2</sup>
174	Special Provision	There is no detail or description of what is required to construct Item 705, Flagstone Walk and Item 706, Brick Walk. Will concrete be used to set the stone and brick? If yes, what type of concrete will be required? What type of Flagstone and Brick will be required? Will excavation be required? If yes, how deep will it need to be? Will grading and compaction be part of these items or will another pay item be used for grading and compaction?	A	Both of these items are contingency items and not expected to be needed. The items have been removed from the Special Provisions and the Calc. Book.	PJB	
175	Special Provision	Please remove the space next to the word, "black" in the Products for Item 707.1, Park Bench.	Α	Done	PJB	
176	Special Provision	The method of measurement and the method of payment references the incorrect pay items for Item 707.71, 3-inch Waverly Trail Medallion (Installation Only) and Item 707.72, 12-inch Waverly Trail Medallion (Installation Only).	А	This has been corrected.	PJB	
177	Special Provision	Please remove the last sentence under the General Section for Item 707.9, Bicycle Rack.	А	This has been done.	PJB	
178	Special Provision	The special provision for Item 745.1, Pedestrian Bus Shelter-Removed and Reset is incomplete.	Α	This has been corrected.	PJB	
179	Special Provision	Please verify the special provisions provided are included in the engineers estimate. For example, Item 767.9, Matting for Erosion Control is not in the engineers estimate.	A	This item has been removed from the Special Provisions as it is not called for on the project.	PJB	
		Estima	ate			
180	Estimate	Please verify item descriptions match the MassDOT Standard Items-English Nomenclature list. Item 451, HMA for Patches should show Item 451, HMA for Patching.	А	Item 451 has been corrected. The item list has been checked against the latest Standard Nomenclature.	PJB	
181	Estimate	Add the word pavement to the description for Item 415, Micro Milling.	А	Done	PJB	

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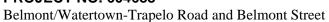


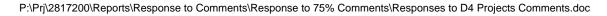
Belmont/Watertown-Trapelo Road and Belmont Street

NO.	SHEET	COMMENT	INITIAL ACTION	RESPONSE	QC Review <sup>1</sup>	Final Action/ Verified <sup>2</sup>
182	Estimate	Should Item 187.3, Removal and Disposal of Drainage Structure Sediment and Item 187.31, Removal and Disposal of Drainage Pipe Sediment be non-participating?	А	These items have been removed. Each Town will be asked to clean their systems just before the construction starts. Each Town was given the option of paying the Project's Contractor to do it or to do it with their own staff.	PJB	
		Drainage Cal	<b>Iculations</b>			
183	Drainage Calcs	In many instances, total system flow is greater than full flow capacity of the pipe. Please clarify.	А	We called for the pipe to be replaced with a larger pipe only if the hydraulic grade line was higher than the rim elevation. If the pipe was over capacity but not enough to block the gutter flow from entering the catch basin we did not replace it.	PJB	
184	Drainage Calcs	The drainage calculations are difficult to follow. The drainage calculations uses different baseline stationing and uses a nomenclature to label the utility structures that is not used in the plans. It is difficult to verify if the hydraulic grade line (HGL) meets minimum requirements set forth in Section 8.4.4.5 in the PD&DG.		This is a shortfall of the software. We tried to overcome it by adding the street and station limits above the profile. The hydraulic grade line is shown graphically on the profiles.	PJB	
185	Drainage Calcs	Please correct the slopes in the drainage calculation profiles. For example, in Sheet PD-14 drain line P-725 has a slope of 0.073%. The slope should be 7.3%.		The slopes are in FT/FT and not in percentages as incorrectly indicated on the profiles.	PJB	
186	Drainage Calcs	Please provide the velocity of the storm water runoff through the pipes.		We inadvertently failed to include the velocity column in the proposed pipe calculations table. The velocities have been checked to determine if they fall within the proper range. A few did not but these are constrained systems that started with an invert that we could not raise and ended in an existing outfall elevation that we could not lower.	PJB	

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<sup>2.</sup> Verified and completed by Mass DOT Reviewer at Comment Resolution Meeting







- 1. Designer QC Reviewer
- 2. Verified and completed by Mass DOT Reviewer at Comment Resolution Meeting