massDOT
Massachusetts Department of Transportation
Highway Division

INTEROFFICE MEMORANDUM

TO: Marie Rose, P.E., Director of Project Management

ATTN: Sreelatha Allam, Project Manager

FROM: Barry Lorion, District 3 Highway Director

DATE: June 12, 2018

SUBJECT: Acton
Kelley's Corner Roadway Project
File No. 608229
25% Submission Review
Designed by: GPI
Contact:

TIP Amount: $ 8,671,000

25% Estimate: $ 14,637,000
(w/25% Contingency)

The District has reviewed the 25% Submission for the above-mentioned project. Comments are attached in the following documents. The following concerns with regards to project costs and right of way impacts need to be discussed prior to the project advancing:

- The project cost is significantly higher than the amount programmed on the TIP. The design consultant and community must develop a plan to reduce these costs prior to the next submission.
- There are several comments regarding the brick walks, landscaped areas and accent strips. Please be advised that brick will not be allowed within State Highway layout. Stamped cement concrete in some of these areas is acceptable. If the Town wishes to use brick within their layout, they will be responsible for the difference in cost.
- The total cost of Item 685 – Stone Masonry Retaining Wall in Cement Mortar is $1,608,750. By decreasing the width of the proposed landscape strip buffer and proposed brick sidewalk buffer to lessen the impacts to the abutting private properties could potentially eliminate the need for the proposed retaining wall or decrease the height and cost of the proposed retaining walls, for example, from Station 39+50 LT± to Station 44+50 LT± on Route 111.
- Please refer to the letter dated March 22, 2018 from the Acton Historical Society in regards to the proposed impacts to the Hosmer House at Station 69+25 LT±. The letter recommends that the project limits be adjusted to eliminate impacts to the parcel in question.
- The proposed traffic signals at Route 111/Charter Road intersection do not meet the necessary warrants. The District also has significant concerns about the proposed signal at Route 27 and Community Lane.

- There are a considerable number of impacts to underground utilities throughout the project limits. This is due to the significant widening and retaining wall work throughout the corridor. The plans also show discrepancies in underground utility line locations as well as incomplete underground utility information. The DUCE section recommends that the plans and scheduling of utility meeting cannot move forward until the underground utility information is identified via subsurface utility exploration (test pits).
- The District doesn't support the large area of brick at STA 30+25±RT. The proposed landscaping presents additional visual obstructions and represents an excessive cost that includes a retaining wall, brick and additional ROW.
- The proposed 145 ornamental light poles appears to be significantly more than the existing amount of light poles that are currently within the project limits. These should be non-participating items. MassDOT only lights limited access highways and highway interchanges. If the lighting is included it needs to be clearly stated that the Town will assume ownership and payment for service once transferred from the contractor. It needs to be confirmed that the Town will assume maintenance and service fee.

Given the extensive review comments and significant concerns with the design, the 25% design will need to be resubmitted. In an effort to resolve the above concerns and other attached review comments, a meeting will need to be scheduled. Please provide written responses to the 25% review comments along with revised cross section that minimize both costs and impacts to abutting properties.

If you have any questions or require additional information, please call Dimitrios Makos, Project Reviewer at (508) 929-3920; Tom Emerick, District Utility/Constructability Engineer, at (508) 929-3919. For traffic related comments, contact Joe Frawley, P.E., District Traffic Engineer at (508)-929-3916.

cc: Projects File, EC, Pinfo.

AAF/sr/aes

DESIGN REVIEW COMMENT AND RESOLUTION FORM

PROJECT NO.: 608229

DESCRIPTION: ACTON KELLEY'S CORNER RTE. 27 & RTE. 111

DESIGNER: GPI

SUBMITTAL: 25% SUBMISSION

REVIEW SECTION: PROJECTS

PROJ. MANAGER: SREELATHA ALLAM

massDOT Massachusetts Department of Transportation Highway Division

CONSULTANT EVALUATION SCORE: 4

DATE: 5/18/2018

REVIEWER NAME: DIMITRIOS MAKOS

Comment No.	Sheet or Item No.	Comments [1] (COMPLETED BY REVIEWER)	INITIAL ACTION	Response [2] (COMPLETED BY DESIGNER)	QC REVIEW INITIAL	FINAL ACTION VERIFIED[3]
1.	General	A Design Exception Report has been submitted for the Project requesting exceptions from lane width, shoulder width, horizontal alignment (length of curve), and vertical alignment (sag curve K value).				
2.	1	Please include all applicable information for Charter Road under the Design Designation section.				
3.	7	Please verify that the proposed pavement design has been approved by the MassDOT Boston Pavement Section.				
4.	7	The proposed HMA walkway layer thicknesses do not correlate with the required layer thicknesses provide on page 178 of the MassDOT Standard Specifications for Highways & Bridges.				
5.	7	Recommend including the tack coat application rates under the Pavement Notes.				

6.	7	In regards to the proposed "Brick Sidewalk". Please evaluate using stamped cement concrete with a painted brick pattern in place of Item 706, as the unit cost would significantly be reduced. The total cost of item 706 is $673,750 per the 25% contract estimate which is considerably high.				
7.	General	Please evaluate decreasing the width of the proposed landscape strip buffer and proposed brick sidewalk buffer to lessen the impacts to the abutting private properties, for example from Station 39+50 LT± to Station 44+50 LT± on Route 111, which could potentially eliminate the need for the proposed retaining wall or decrease the height and cost of the proposed retaining walls. Page 5-14 of the 2006 MHD PD & DG states "Common widths of landscape buffer are between 2 and 6 feet, although larger buffers are possible." The total cost of Item 685 is $1,608,750 per the 25% contract estimate.				
8.	General	Has the use of HMA instead of concrete been considered for the proposed sidewalks to save on the overall project cost?				
9.	8 & 9	A portion of the proposed retaining walls as shown on the Typical Section detail, are depicted outside of the "60 ft. Right of Way" limit. Is the intent to keep the retaining walls within the right of way? Please review the cross sections on Sheet 137 for additional information.				
10.	11	Please evaluate installing fencing on the proposed retaining walls to prevent a possible falling hazard as shown on the Typical Sections.				

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11.	23	For the proposed Bus Shelter at Station 23+00 LT±, please review page 5-38 of the 2006 PD & DG for the proposed Bus Bay taper guidelines and also please verify the bus stop waiting area meets the ADA requirements per Section 5.4.2.2 on page 5-38 of the 2006 PD & DG. Should a wheelchair ramp be installed at the Bus Shelter to board the Bus?				
12.	23	Recommend replacing the existing wheelchair ramps at the RJ Grey Junior High School parking lot driveway at Station 17+00 LT±, to meet ADA/AAB standards. Also, recommend replacing the existing wheelchair ramp at Station 17+40 RT±. Recommend removing the existing 36 inch tree at Station 17+15 RT± to improve crossing site distance at the existing crosswalk.				
13.	23	Please verify that the existing trees can be retained along the proposed sidewalk from Station 17+50 LT± to Station 18+25 LT± without impacting the installation of the proposed concrete sidewalk.				
14.	23	Please clarify if the existing fence along the Junior High School property will need to be removed and reset at Station 18+50 LT±, as the plans currently show the existing fence being removed.				
15.	23	Please label "Jaimes Way" on the plan at Station 19+25 RT±.				
16.	23	The existing landscape trees that will be impacted by the proposed retaining wall installation at Station 21+75 RT± should be shown on the plan. Please clarify if they will need to be replaced.				

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17.	23	There is an existing steep slope along the edge of road at Station 22+75 RT±. Please evaluate and verify that the proposed grading limits shown on Sheet 99 of the Cross Sections are sufficient or if they need to be extended to provide an improved transition. Also, please clarify if a fence is required at back edge of proposed sidewalk.				
18.	23	Selective tree trimming will be required for the existing tree to remain at Station 22+05 LT± to install the proposed Street Light. Please update the estimate accordingly.				
19.	23	During a recent field visit, a low point was observed at Station 22+25 LT± beyond the edge of existing pavement. Please verify that ponding will not inundate the proposed sidewalk and existing tennis court in the proposed condition.				
20.	23	The existing (private) sewer manhole at Station 22+50 RT± is not shown on the plan. Please update the plan accordingly to verify that it will not be impacted by the proposed work.				
21.	23	The locations of the existing crosswalks should be depicted on the existing survey for informational purposes.				
22.	24	The location of the existing fence gate to the tennis courts should be labeled on the plan.				
23.	24	The proposed location of the existing boulder/monument to be removed and reset at Station 23+15 RT± should be labeled on the plan.				
24.	24	The location and disposition of the existing picnic tables along Charter Road at Station 1+50 LT± should be provided on the plan.				

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25.	24	The disposition of the existing catch basin at Station 23+33 RT± should be labeled on the plan.				
26.	24	A section of the existing wood fence to be retained will have to be removed as part of the roadway widening and sidewalk work at Station 23+32 RT±.				
27.	24	The new driveway access and driveway realignment will impact parking spaces for 256 Main Street and 432 Mass Ave. Have the owners agreed to the proposed driveway/parking lot work including parking space changes?				
28.	24	Please verify that the proposed turning radius at the intersection of Charter Road and Mass. Ave can accommodate school buses.				
29.	24 & 55	During a filed visit it was observed that pedestrians crossed Charter Road at Station 2+25 RT±, to access the parking lot behind the tennis courts. Please evaluate installing a crosswalk at this location.				
30.	24	The plans should depict how the proposed 7.5 foot sidewalk will transition into the existing 4 foot hma walkway at Station 2+30 LT on Charter Road. Furthermore, the existing wheelchair ramp at this location is removed as part of the proposed design. Please verify if the wheelchair ramp needs to be maintained in the proposed condition. Per page 18-9 in the 2006 MHD PD & DG, the base plan should extend at least 100 feet beyond the project limits for Charter Road. This will help in determining the impacts beyond the project limits as it appears that an existing crosswalk and wheelchair ramp will be impacted by the proposed sidewalk work at Station 2+30.				

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31.	24	The plan should show the existing catch basin at Station 22+20 RT± on Charter Road, which may be impacted by the proposed roadway realignment.				
32.	24	The existing Rte. 27 sign at Station 26+30 RT± should be shown on the plan along with its disposition.				
33.	24	In regards to the property at Station 27+00 RT, please clarify if there are any Town restrictions in regards to the proximity between a private buildings front access/door and the proposed sidewalk as shown on the plan.				
34.	24	Please provide the new location of the existing boulder to be removed and reset at Station 0+50 RT± on Charter Road.				
35.	24	The existing landscaping located in front of the 2 story building at Station 27+00 RT is not shown on the plan, which could potentially restrict maneuverability through the parking lot as the driveway access has been altered. Please review for conformance.				
36.	24	Temporary earth support and fencing will be required to maintain the existing baseball field behind the proposed retaining wall at Station 28+00 LT±.				
37.	24	The proposed roadway mill and overlay station limits for Mass Ave should be labeled on the plan.				
38.	General	Please review all proposed driveway openings within the project limits and provide the required turning flare per Section 15 in the 2006 MHD PD & DG.				
39.	25	Please clarify if any obstruction removal is anticipated to install the proposed retaining wall at Station 29+00 LT±.				

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40.	25 & 56	Please verify that there is enough sidewalk width to install the existing business sign(s), the existing state route signs and proposed mast arms at the intersection of Route 27 & 111, specifically at Station 30+70 LT±.				
41.	25 & 56	The existing business and apartment stairways and pathways will be impacted by the parking lot widening/realignment at Station 60+00 LT± and Station 61+00 LT± on Main Street. Please update the existing survey to show the stairways/pathways to verify that the proposed parking lot widening is feasible. Furthermore, it appears that many of the existing parking spaces will be impacted by the proposed parking lot work.				
42.	25	The location of the existing boulders and/or retaining wall that is located at Station 61+25 LT± should be shown on the plan as it will need to be removed to install the proposed retaining wall and sidewalk.				
43.	25	The proposed landscape area at Station 61+50 RT± will eliminate the existing parking space(s) for the Sunoco Gas Station.				
44.	25	Please verify that the new driveway re-alignment and proposed driveway opening locations allows for the maneuverability of fuel delivery trucks for the Sunoco Gas Station.				
45.	25 & 46	Please verify that the existing trench drains, at Stations 32+50 LT± and 33+25 LT± can be removed, and that they are not required as part of the Sunoco Gas Station building permit and can be removed as labeled on the plan. A typical MassDOT permit application requires the applicant to provide measures to capture private property storm flows that are directed towards the state highway layout.				

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46.	25	Please verify that the proposed roadway widening will not require the installation of a new retaining wall at Station 33+00 LT±, as there is a significant difference in elevation between the existing Sunoco Parking lot and the sidewalk.				
47.	25	During a field visit it was observed that the area behind the existing sidewalk at Station 34+25 LT±, contained ledge that could impact the installation of the proposed retaining wall. Please include the appropriate items in the estimate to compensate the contractor for any ledge or boulder removal. Also, the existing survey should be update accordingly.				
48.	25	Please verify that the existing guardrail to be removed will not need to be replaced at Station 29+50 RT±.				
49.	25	Please clarify if fencing will be required at back of proposed sidewalk from Station 29+00 RT± to Station 29+75 RT±, to prevent a possible falling hazard.				
50.	25	The existing traffic controller box cabinet and its disposition should be provided on the plan at Station 30+20 RT±.				
51.		Not used.				
52.	25	Please clarify on why the existing driveway width isn't maintained in the proposed condition for proposed driveway number 26 at Station 58+25 RT± on Main Street.				
53.	25	Please clarify if the owner of the "Bueno Y Sano" restaurant has agreed to the change in the existing parking space layout and the realignment of the driveway openings at Station 32+00 RT± on Rte. 111.				

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54.	26	It appears that fencing will be required at the top of the proposed retaining wall at Station 34+50 LT± to prevent a falling hazard.				
55.		Not used.				
56.	26 & 47	The plans show a proposed sewer manhole installed, along with a new section of sewer line, at Station 36+25 RT± within the proposed mill and overlay area. Please update the plans to show the additional trench work required for this work.				
57.	26	Please verify that the owner of the property has agreed in the aesthetic design of the proposed retaining wall as it will replace the existing landscape concrete block wall at Station 35+80 LT± , which is the same design/color of the other retaining walls on the property.				
58.	26	The disposition of the existing fire hydrant should be labeled on the plan at Station 36+80 LT±.				
59.	26	The plans should be updated to alleviate all overlapping information, for example the "36' Wide Right Of Way" label as shown on Community Lane.				
60.	26 & 47	The existing catch basins and their disposition should be provided on the plan for the driveway at Station 34+90 RT±.				
61.	26	Please verify that a retaining wall is not needed at the back of proposed sidewalk, at Station 35+30 RT± to limit the grading impacts to the adjacent private property.				
62.	26	Please verify that the existing TD Bank sign is not impacted by the proposed work at Station 37+10 RT±.				

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63.	26	The proposed roadway widening will impact existing parking spaces at Station 101+65 RT±. Please verify that the owner has agreed to this work.				
64.	26	The location of the existing bike racks, at Station 102+75 RT± that are proposed to be removed and reset, should be provided on the plan.				
65.	26	Please verify that the removal of the existing parking lot access at Station 101+00 LT± will not impact vehicle maneuverability through the 411 Mass Ave. Business Plaza. Currently the business plaza has two access points.				
66.	27	It appears that the existing CVS irrigation system will be impacted by the proposed sidewalk work at Station 40+25 RT±.				
67.	27 & 48	Water control will be required to install the proposed culvert extension and the proposed retaining wall in the existing wetlands at Station 43+60 RT±. Will the existing stream have to be diverted to install the proposed retaining wall?				
68.	27 & 48	Please clarify if the proposed sewer work will impact the existing sewer pump station at Station 45+50 RT±.				
69.	27	The location of the existing fire hydrant at Station 45+50 LT± should be depicted on the plan.				
70.	27	Recommend using hma instead of concrete for the proposed sidewalk at Station 45+50 RT±, which will tie-into an existing hma walk section.				
71.	27	The plans should provide the proposed station installation limits of the stone masonry wall in cement mortar.				

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72.	28	The existing fence that is labeled to be retained on the plan will be impacted by the proposed sidewalk work at Station 50+35 LT±. This is a private fence that should be removed and reset.				
73.	28	Please verify that the existing detention basin at Station 50+75 LT± will not be impacted by the proposed grading work.				
74.	General	The plans should show and label the locations of the proposed filter tubes wherever applicable. Please verify that the proposed grading limits will not impact the existing wetlands at Station 51+65 LT±.				
75.	28	Please clarify if the existing private vinyl fence at Station 51+75 RT± will have to removed and reset instead of just removed as labeled on the plans.				
76.	29	The plans should show how the proposed wheelchair ramps on Main Street will connect to the existing sidewalks on Beverly Road.				
77.	29	Please clarify if the property owner of 257 Main Street has agreed to the proposed parking lot changes including the new driveway access locations.				
78.	29	It appears that the existing detention basin and rip rap, for the condominium parking lot drainage, will be impacted by the proposed sidewalk work at Station 53+50 LT±. Does the detention basin have an existing outflow pipe?				
79.	30	The plans are unclear whether the existing driveway opening at Station 61+60 LT± is going to be retained or removed in the proposed condition.				

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80.	30	Please verify that the proposed design will not impact the recent townhouse development property and parking lot access at Station 62+50 LT±. The existing survey should be updated accordingly to show the new existing sidewalk and property work.				
81.	30	The disposition of the existing walkway at Station 62+95 RT± should be labeled on the plan.				
82.	30	The proposed driveway number should be labeled at Station 62+40 RT±.				
83.	30	Please verify that the proposed Gulf Gas Station driveway opening realignment at Station 65+00 RT± will allow for fuel delivery trucks to maneuver through the property.				
84.	30	Please verify that the existing wetlands will not be impacted by the proposed retaining wall work at Station 67+00 LT±.				
85.	30	The driveway reconstruction limits at Station 63+50 LT±, should be adjusted to tie-into the existing edge of driveway pavement and provide a better transition.				
86.	30	The proposed mill and overlay station limits for Community Lane and Main Street should be labeled on the Plan.				
87.	30	Please evaluate the existing crosswalk at Station 104+25 RT± on Community Lane and verify that it can be eliminated in the proposed design as shown on the plan.				
88.	General	The location of proposed filter tubes should be shown and labeled on all applicable Construction Plan sheets.				
89.	31	Please clarify on why the existing driveway opening at Station 68+65 LT± has been eliminated in the proposed design.				

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90.	31	Please refer to the letter dated March 22, 2018 from the Acton Historical Society in regards to the proposed impacts to the Hosmer House at Station 69+25 LT±. The letter recommends that the project limits be adjusted to eliminate impacts to the parcel in question.				
91.	31	The existing wheelchair ramp at Station 68+60 RT±, which connects the existing sidewalk to the parking lot, has been eliminated as part of the proposed design.				
92.	31	Please verify that the pedestrian crossing site distance is sufficient enough at the Route 2 EB Off-Ramp. Will additional clearing and grubbing along the off-ramp be required? Will additional cross-walk pedestrian signal control(s) be required because of the high volume of vehicles and speed of vehicles using the off-ramp? Do the existing State Highway Signs impact the crossing site distance?				
93.	31	The existing guardrail along the Route 2 EB Off-Ramp should be shown on the plan.				
94.	31	Please verify that the owner of the Dunkin Donuts at Station 71+50 RT± has agreed to the removal of the existing driveway opening.				

95.	31	All MassDOT Projects advertised after October 21, 2017 will have to meet updated standards for MASH – Compliant Guardrail. These performance requirements are contained in the 2016 edition of the Manual for Assessing Safety Hardware (MASH) and further delineated in MassDOT's Engineering Directive E-17-001 and the MassDOT Construction Standard details dated October 2017. Please update the contract documents accordingly. The existing buried guardrail end at Station 73+30 RT± should be updated accordingly.				
96.	31	Please clarify on why the proposed wheelchair ramps at Station 69+85 RT± & LT are not installed parallel of each other, creating a skewed pedestrian access through the proposed median as shown on the plan. Will the skew through the median create a hazard for the vision impaired users?				
97.	31	Please provide stationing for the proposed limits of roadway work for the Route 2 EB Off-Ramp.				
98.	33	Per the 25% Design Checklist the plans should provide a Profile Plan for Charter Road.				
99.	33, 34, 36	The proposed HSD & SSD values should be provided on the plans as this information is missing from various profile curves. Also, please verify that the HSD values meet the design criteria in the 2006 MHD PD & DG.				
100.	37 & 42	The proposed HSD values and K values do not meet the design criteria provided in the 2006 MHD PD & DG. The location of the existing culvert at Station 43+55± should be depicted on the Profile Plan.				

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101.	44	Please clarify on how the Contractor will be compensated for the work described in Note 11. Also, a functioning drainage system should be maintained throughout Construction and should be incidental to the applicable drainage items.				
102.	General	All private drainage connections on Rte. 111 should be reviewed and evaluated to verify that they have been previously permitted per the MassDOT Drainage Connection Policy. Also, please refer to the MassDOT Standard Operating Procedure No. HMD-02-02-2-000 in regards to illicit drainage connections and/or discharges to a state owned drainage system.				
103.	General	Please clarify if sewer upgrades are anticipated, beyond what is proposed, and adjust the utility plans accordingly.				
104.	General	The proposed drainage design (structures and drainage lines) appear to impact various existing underground utilities as shown on the Drainage & Utility Plans. Please review and update accordingly. Also, all existing underground utility information should be shown. Various water gates, gas gates and catch basins are shown without any existing connections. The various existing drainage lines that are not shown in their entirety will need to be evaluated to verify that they will not impact the proposed drainage design. All private underground utility service connections should be shown on the plan.				

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105.	45	In regards to the proposed leaching basins on Charter Road. The Town of Acton should be informed accordingly of any maintenance procedures. Has soil testing been performed to measure the permeability of the surrounding soil? Any concern(s) in regards to depth of groundwater or existing obstructions? Will an overflow outlet be required if the leaching basins reach capacity?				
106.	46	Please verify if the existing hand hole to be adjusted by others at Station 60+05 LT± on Main Street will need to be relocated outside the roadway widening limits and onto the sidewalk.				
107.	47	Please verify with the Town of Acton that pvc can be used for the replacement of the sewer line as shown on the plan.				
108.	47	The proposed catch basins on Community Lane are not located at the low point at Station 100+34, as shown on the profile plan.				
109.	47 & 48	Please verify that the spacing between the proposed catch basins meets the guidelines provided on pages 8-92 & 8-93 in the 2006 MHD PD&DG.				
110.	48	Please verify that the temporary easement shown is sufficient to perform the proposed wetland replication work.				
111.	General	Please clarify if the "25% Design Water Quality Data Form" has been completed for the project.				
112.	48	Please evaluate installing rip rap at the proposed discharge outlets at Station 43+55 RT±.				

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113.	48	Please clarify if proposed manholes 502, 503 and 504 are necessary for the proposed drainage design.				
114.	48	Please clarify if the proposed sewer work will impact the existing sewer pump station at 386 Mass Ave.				
115.	48	Recommend using the top of the plan sheet to alleviate some of the clutter that the proposed drainage labels are creating at the bottom of the plan sheet.				
116.	48	Please verify that the existing CVS parking lot drainage outlet into the wetlands to be maintained at Station 41+90 RT±, is permitted per the MassDOT Standard Operating Procedure No. HMD-02-02-2-000 in regards to drainage connections and/or discharge.				
117.	50	The connection to the existing fire hydrant to be relocated at Station 53+25 LT± should be depicted on the plan.				
118.	50	The proposed grading limits are shown impacting the existing detention basin at Station 53+50 LT±				
119.	50	Please verify that proposed GICI-407 will not be impacted by the existing sewer manhole and sewer line(s).				
120.	50	Please verify that proposed CB-415 is required as part of the proposed drainage design.				
121.	51	Please verify that the spacing between the proposed catch basins meets the guidelines provided on pages 8-92 & 8-93 in the 2006 MHD PD&DG.				
122.	51	The existing drainage manhole scheduled to remain will need to be relocated away from the proposed curb line at Station 105+86 LT± on Community Lane.				

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123.	51	Please verify that a minimum of 36 inches of unobstructed path of travel is maintained in the sidewalk past all proposed light poles from Station 66+15 LT± to Station 67+60 LT± on Main Street.				
124.	51	Please verify that the excavation for the proposed retaining walls will not impact the existing wetlands at Station 67+00 LT± on Main Street.				
125.	52	The relocated fire hydrant is shown installed within the proposed wheelchair ramp at Station 69+80 RT±. Please adjust the plan accordingly.				
126.	54	Recommend replacing the existing pedestrian crosswalk markings with new crosswalk markings at Station 17+30±.				
127.	General	Please verify that the proposed mast arm foundations, traffic signal conduit and hand holes will not impact any of the existing underground utility lines.				
128.	73	The shading of the line type for the existing curb line at the intersection of Community Lane and Main Street should be changed to alleviate confusion.				
129.	75	Please refer to MssDOT's Standard detail 801.1.0 in regards to the required pavement replacement limits when installing conduit across a roadway in the proposed mill and overlay sections. The pavement replacement limits should extend 1 foot beyond the limits of trench.				
130.	76	Please coordinate with the District 3 Traffic Section in regards to any work hour restrictions.				
131.	80	Please verify that all temporary traffic management signs installed beyond the project limits can be installed within the "right of way".				

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132.	General	Please clarify that the proposed trees are drawn to scale. Also, who will be responsible for maintaining the proposed plants installed within the raised landscaped median islands?				
133.	82	Please verify that the proposed tree locations will not impact the intersection sight distance at Mass Ave. and Charter Road.				
134.	84	Please verify that the proposed brick sidewalk limits are depicted accurately at the intersection of Community Lane and Mass Ave.				
135.	General	Please review the location of the proposed trees along Route 111 for clear zone impacts per the 2011 AASHTO Roadside Design Guide.				
136.	91	With the next design submission please provide the dimensions of the proposed wetland replication limits.				
137.	93	With the next design submission please provide Special Provisions for the deep sump and shallow manholes that are proposed for the project.				
138.	General	With the next design submission please provide the proposed driveway grades on the applicable cross sections and verify that they meet the requirements provided on page 15-7 of the 2006 MHD PD & DG. In addition, please review all proposed driveway grades and verify that there is enough clearance so the underside of a vehicle does not drag on the driveway surface. The change of driveway gradient should be evaluated accordingly for the Cross Sections on Sheets 103, 127, 129 and 134.				

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139.	General	To alleviate confusion, the street names (Main Street/Mass Ave./Community Lane) should be provided under the project file block on each applicable cross section plan sheet.				
140.	General	Please refer to section 7.00 of the 25% Highway Design Checklist in regards to depicting the existing walls, hydrants, utility, ledge, etc. on all applicable cross sections.				
141.	General	The location of the drawing scale, at the bottom of each cross section plan sheet, should be moved as proposed information is overlapped.				
142.	General	Please provide the proposed roadway cross slope on all Cross Sections.				
143.	108 & 117	Please remove overlapping information at proposed gutter line.				
144.	General	The "ROW" label should be changed to "existing state high way layout" for Route 111 and existing "town layout line for Route 27" to alleviate confusion. Please update the applicable cross sections accordingly.				
145.	130	The proposed parking lot work should be depicted on Cross Section 61+00 per the Construction Plan.				
146.	131	Please verify that the proposed grading limits shown on Cross Section 61+69.15 correlate with the grading limits shown on the Construction Plan.				
147.	143	Please clarify that the multiple "ROW" labels are accurate.				
		Estimate				

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(3) To be determined by MassDOT.

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148.		Please clarify if item numbers: 220.2, 220.6, 223, 258 and 630 are required for the project.				
149.		Please clarify if limited deflection barrier will be required for the project.				
150.		Please verify that the unit prices for item numbers: 101, 104, 241.12, 241.15, 241.18, 241.24, 431, 455.23, 455.42, 506.1, 594, 685, 701.1, 701.2, 706, 710.4, 804.15, 804.3, 811.22 and 811.31 are accurate per the weighted average bid prices provided on the MassDOT website.				
151.		Please verify that the estimate contains sufficient quantity for Items 472, 702 and 853.2.				
152.		The proposed 145 ornamental light poles appears to be significantly more than the existing amount of light poles that are currently within the project limits. Please verify that the additional light poles are necessary. Should the additional proposed precast pedestrian light pole foundations (Item 812.991), beyond the *existing* amount of light poles to be replaced, be included under the non-participating items?				
153.		Please verify with the MassDOT Project Manager that the 25% contract estimate is consistent with the TIP.				

DESIGN REVIEW COMMENT AND RESOLUTION FORM

PROJECT NO.: 608229
DESCRIPTION: ACTON KELLEY'S CORNER RTE. 27 & RTE. 11
DESIGNER: GPI
SUBMITTAL: 25% SUBMISSION
REVIEW SECTION: UTILITY/CONSTRUCTABILITY
PROJ. MANAGER: SREELATHA ALLAM

massDOT
Massachusetts Department of Transportation
Highway Division

CONSULTANT EVALUATION SCORE: 4
DATE: 6/1/2018
REVIEWER NAME: ROSS GOODALE

Comment No.	Sheet or Item No.	Comments (1) (COMPLETED BY REVIEWER)	INITIAL ACTION	Response (2) (COMPLETED BY DESIGNER)	QC REVIEW INITIAL	FINAL ACTION VERIFIED (3)
1.	GEN	There are a considerable number of impacts to underground utilities throughout the project limits. This is due to the significant widening and retaining wall work throughout the corridor. The plans also show discrepancies in underground utility line locations as well as incomplete underground utility information. The DUCE section recommends that the plans and scheduling of utility meeting cannot move forward until the underground utility information is identified via subsurface utility exploration (test pits).				

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2.	23	The project begins at STA 19+60 but there is additional work extending to STA 17+10±LT. This work includes a sidewalk extension on the North side of Route 111 to the school entrance. There are no cross sections provided to determine impacts to the existing features or confirm ADA compliance. The proposed sidewalk is shown around mature trees (that are called out as retain) and there appears to be a need to cut the existing slope. Please provide the necessary cross sections and appropriately show the limits of grading and any tree removal (as the existing trees will likely be damaged during excavation).				
3.	Const. Plans/ X-Sections	Cross sections at all driveways should indicate the proposed slope percentage. For example the cross section for the driveway at STA 20+40±RT is missing this information. Please revise accordingly.				
4.	23,98	The cross section for STA 20+00RT should indicate the existing stone retaining wall that is being retained. As shown in the cross section the line work shows a slope.				

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5.	GEN	The proposed permanent easements need to be labeled more clearly. The line work appears to be in place but permanent easements are only labeled at utility anchor locations. For example from STA 20+50±RT to STA 31+50±RT there is roadway widening with a bold line that appears to delineate a permanent easement but it is unlabeled. Please better define the permanent easements required for the project.				
6.	GEN	Typically, utility easements are labeled as PUE's (Permanent Utility Easement) and are labeled separately from permanent easements required for roadway construction. Please confirm with MassDOT ROW.				
7.	23,99	At STA 22+00RT there is a proposed 1:1 slope and drop of 4-ft minimum at the back of sidewalk. Should fencing be considered for protection of sidewalk users? Please evaluate.				
8.	24	Show the existing school sign that will need to be relocated at STA 24+20±LT. The sign is shown as relocate on the signage plans but should be included on the construction plans.				

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9.	24,101	Cross Section for STA 25+50±LT is shown with grading limits 2-ft off the back of proposed sidewalk. This is incorrect as the back of sidewalk is the old Charter Road that will be graded much farther back. Please revise.				
10.	24	Provide a proposed location for the R&R boulder at STA 24+75±LT.				
11.	24	At STA 24+75±RT there is an existing vent pipe shown within the slope limits. In this location a mast arm is proposed to be installed within 20-ft of the vent pipe. Is this vent part of a septic system? Please investigate and verify if any of the proposed work will negatively impact the existing system, if present.				
12.	34	The profile at STA 26+50 is called out as staying approximately the same with a .03-ft increase. The profile line work indicates a .3-ft reduction in profile. Please clarify the discrepancy and update accordingly.				
13.		Not used.				

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14.	24	The current layout of Charter Road is delineated with property lines. The new alignment of Charter Road appears to only be included within a temporary easement. Please confirm with MassDOT ROW that the proper easement or layout is shown and update the plans accordingly.				
15.	24	The property at 432 Massachusetts Avenue currently has a large curb cut. The large opening appears necessary for fuel truck access to the tanks at the back of the parking lot. Do the two smaller proposed curb cuts at this property take into consideration the use of this property and can fuel trucks still enter and exit without issue. Please evaluate and confirm.				
16.	24	The grading limits at STA 28+50±LT and STA 29+00±LT are shown incorrectly. At these stations the proposed retaining wall has a batter that would extend into the existing ball field. It does not appear that the benches at STA 28+55±LT can be retained. The construction plan grading limits need to be updated to correlate with the associated cross sections. The retaining wall work would require the ball field to be closed during construction. This should be coordinated with the school.				

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17.	24	The retaining wall work between STA 28+00LT and STA 30+00LT show the wall with a maximum height of approximately 13-ft. Temporary earth support may be necessary to construct the retaining wall. Please verify the proposed temporary easement is sufficient enough to build the wall.				
18.	24	Label the disposition of the existing 6-ft high metal fence at STA 27+45±LT. The metal fence will be within the excavation limits for the proposed retaining wall.				
19.	25	The proposed retaining wall at STA 30+10±LT is not shown tying into the existing retaining wall that extends up the driveway for 268 Main Street. Additionally, the existing retaining wall is not shown completely as it ends 55-ft off the baseline while street view shows the wall continuing up the driveway. Please update.				

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20.	25	At the Southwest quadrant of the intersection there is proposed wall approximately 50-ft off the curb line. The wall and brick sidewalk are shown within a temporary easement. There is no permanent easement shown or labeled. Please update as the wall and brick sidewalk should be included in a permanent easement. Please verify with MassDOT ROW.				
21.	25	What is the need for the large area of brick at STA 30+25±RT? The landscape plans only show trees with no benches, bike racks or any features. The trees present additional visual obstructions and will need to be maintained. This appears to be an excessive cost that includes a retaining wall, brick and additional ROW. The construction of the wall also presents a potential issue as there is an existing underground telephone conduit and a sewer line that could be impacted. Please evaluate alternatives for this quadrant that reduce cost and impacts.				

22.	25	The intersecting point between Cross Section 59+00LT at 50-ft offset and STA 30+50RT at 15-ft offset show differing levels of profile change. The profile decreases at STA 59+00LT approximately 1.25-ft while the cross section of STA 30+50RT shows a .5-ft increase in profile. Please clarify the discrepancy. Please note that the boring logs closest to this area are C-4 and C-9 which show 7-inches and 12-inches of existing pavement respectively. If the profile is decreasing as indicated on STA 59+00LT is there enough pavement to mill and overlay? Please evaluate.				
23.		Not used.				
24.	25,46	From STA 32+90±RT to STA 33+10±LT it is proposed to remove the existing concrete curb. With the curbing removed there is nothing to prevent runoff from flowing over the sidewalk into the road from the gas station. The drainage in this area needs to be further evaluated.				

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25.	25,46	On the Northeast quadrant of the intersection the curb line is shifting back in an area with several manhole covers. Please investigate what the manhole covers are associated with and if any of the proposed work including grading, sidewalk and mast arm installation impact any existing underground structures.				
26.	25	The HMA driveway work behind the sidewalk from STA 32+50±LT to STA 33+50±LT should extend to include the removed trench drain and concrete curb.				
27.	25	Why does the proposed retaining wall extend from STA 33+10±LT to STA 33+45±LT? The proposed wall can begin at STA 33+45±LT and the old driveway can be filled and proposed curbing can be installed at the back of walk for potential parking spaces. Please evaluate.				

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28.	26	At STA 34+95±LT there are two existing 6-inch vent pipes that are in the footprint of the proposed retaining wall. What are these vent pipes for and how will the proposed wall be installed without impacting the vent pipes? Please evaluate to confirm the wall can be installed as shown. Also, if the vents can be relocated or adjusted is it possible?				
29.	27	Verify the contract documents include a method to pay for the dewatering required to install the retaining wall from STA 42+25±RT to STA 44+50±RT.				
30.	27	The profile at STA 44+00 is called out as staying approximately the same with a .04-ft increase. The profile line work indicates a .5-ft increase in profile. Please clarify the discrepancy and update accordingly.				
31.	27, X-Sections	Cross Culverts should be shown on the associated profile sheets. For example the culvert at ST 44+60± should be shown on the profile sheet at the correct invert elevations.				

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32.	25, X-Sections	The cross sections from STA 58+00±RT to STA 59+00±RT show limits of work several feet behind the back of sidewalk and driveway. While the construction plans show the entire driveway being paved. There does not appear to be a need to pave the entire driveway. Please revise construction plans to match the cross sections.				
33.	25, X-Sections	The intersecting point between Cross Section 59+50RT at 36-ft offset and STA 31+50RT at 5-ft offset show differing levels of profile change. The profile increases at STA 59+50RT approximately .9-ft while the cross section of STA 31+50RT shows almost no increase in profile. Please clarify the discrepancy.				
34.	25, X-Section	In areas along the cross section for STA 59+50RT there is an increase in profile of approximately 1-ft. This is indicated as mill and overlay of 2-inch surface course. How will this profile increase be achieved? This applies to every location where the profile is increasing in greater than 2-inches in a mill and overlay section. Please verify with Boston Pavement that the mill and overlay treatment in these areas is appropriate. Additionally, ensure the pavement quantities are accurately estimated.				

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35.	25, X-Sections	From STA 60+00±LT to STA 61+50±LT the grading limits on the construction plans do not match the cross sections. There appears to be unnecessary driveway work extending to the limits of the parking lot for 268 Main Street. The proposed retaining walls are being built so limited HMA work should need to be done other than the driveway slope modifications. Please evaluate.				
36.	30	At STA 61+95±RT there is a label for "SP" which correlates with a PVC pipe. Does this indicate a "Stand Pipe"? The pipe will be in the proposed sidewalk and will need to be adjusted or modified. Please evaluate what this stand pipe is for and if it can be adjusted.				
37.		Not used.				
38.	30	From STA 63+25±LT to STA 65+00±LT there are two existing trees and hedges that are called out as retain in the vicinity of the proposed retaining wall. The trees and hedges will fall in the excavation limits for the wall and will need to be removed. Please revise.				

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39.	30	At STA 66+20±LT the construction plans label a 5.0-ft cement concrete sidewalk while the landscape plans indicate a brick sidewalk. This comment applies throughout the project limits. Please revise for consistency.				
40.	30	At STA 66+65±LT there is a label for proposed cement concrete retaining wall with protective bridge rail. • The associated cross sections only show the wall and no protective bridge rail. • There is no detail provided for the wall with protective bridge rail. • Is the bridge rail proposed to be crashworthy? If so, this would likely require a moment slab. • There are leading and trailing guardrail sections at ST 66+02LT and STA 67+50LT. How will the guardrail tie into bridge barrier? There will need to be a crashworthy connection detail provided. • The two guardrail sections will need to have crashworthy end treatments which are not provided.				
41.	31	At STA 72+00RT there is a stone wall shown on the construction plans as remove. This should be added to the associated cross sections.				

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42.	31	The Acton Historical Society provided a letter to MassDOT in March of 2018 that requested the roadway widening be stopped short of the Hosmer House at STA 69+00±. Cross section changes through this section need to be finalized and updated plans provided to the DUCE section prior to holding a utility meeting.				
43.	GEN	Verify all private irrigation systems are accounted for and shown on the plans. If impacted they should be relocated accordingly. For example at STA 72+10±RT the property appears to have an existing sprinkler system that may be impacted by the roadway widening.				
44.	26,30	Community Lane does not appear to be an existing County Layout. The existing road appears to be in a series of easements used for the businesses. The proposed layout/easement lines are not clearly labeled. Although the cross sections indicate "Proposed County Layout". Is this the intent? Please coordinate with MassDOT ROW and the Town on appropriate labeling.				
45.	GEN	The base survey on the construction plans is far more detailed and clear than the utility plans. The base survey for both plans should match. Please revise for consistency.				

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46.	GEN	National Grid Gas noted to be aware of proposed work over any gas infrastructure, but especially services because they are on average 18" below grade. On average gas mains are 36" below grade. Be sure any work over services take into consideration the vertical location of gas laterals and gas mains.				
47.	GEN	National Grid owns and maintains 2-inch coated steel, 4-inc plastic, and 8-inch plastic gas mains within the project area. Please note the following comments were provided to MassDOT by National Grid Gas and need to be addressed. Coordination should be done with National Grid Gas to ensure all gas mains and gas laterals are accounted for and shown on the plans. It should also be verified that any of the proposed drainage work (structures, laterals and trunk lines) are shown to limit the need for gas relocations. If impacts to gas cannot be avoided then relocation of the gas mains should be shown.				

48.	GEN	• Sheet 44 of 145: Existing gas main is shown incorrectly from STA 16+00 to STA 27+90. Existing gas main is 2-inch coated steel, not 4-inch plastic. • Sheet 44 of 145: Proposed CB-20 1 w/ F&C may conflict with existing 2-inch coated steel main at STA 22+90. • Sheet 46 of 145: Proposed 12-inch RCP drainage crosses existing 4-inch plastic gas main at STA 29+30, STA 30+60, and STA 31 +90. Existing gas is assumed to be 3 feet below existing grade. • Sheet 46 of 145: Existing gas main is shown incorrectly from STA 32+50 to STA 46+00. Existing gas main is 4-inch plastic, not 8-inch plastic. • Sheet 46 of 145: Proposed DMH-309 conflicts with existing 4-inch plastic gas main at STA 34+50. • Sheet 47 of 145: Proposed DMH-311 conflicts with existing 4-inch plastic gas main at STA 34+60. • Sheet 47 of 145: Proposed DMH-313 conflicts with existing 4-inch plastic gas main at STA 37+ 10. • Sheet 47 of 145: Proposed IS-inch RCP drainage crosses existing 4-inch plastic gas main at ST A 38+50. • Sheet 48 of 145: Proposed 12-inch RCP drainage crosses existing 4-inch plastic gas main at STA 40+40 and STA 43+75. • Sheet 49 of 145: Proposed 12-inch RCP drainage crosses existing 8-inch plastic gas main at STA 51+60. • Sheet 50 of 145: Proposed 12-inch RCP drainage crosses existing 8-inch plastic gas main at STA 54+00 and STA 55+85. • Sheet 51 of 145: Proposed DMH-503 and DMH-504 conflict with existing 8-inch plastic gas main from ST A 66+60 to ST A 67+00				

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49.	44	At STA 22+90±RT and STA 23+10± there are two gutter inlets (GICI-201 and GICI-203) that are shown over existing "6- 3.5-inch" telco conduit. Although gutter inlets are used to avoid underground conflicts the horizontal and vertical location of the telco bank needs to be identified to confirm these structures can be installed as shown. Gutter inlets still extend 36-inches while the telco banks vary from 30-inches to 18-inches buried. Recommend test pits be performed in design.				
50.	45	The proposed pole, anchor and wires at STA1+05±LT on Charter Road are shown within a temporary easement. Any utilities proposed outside the layout will require a PUE. Please revise and show all utilities with the appropriate easements.				
51.	45	At STA 0+70±RT the proposed utility pole is shown over an existing sewer line. Please revise to avoid the conflict.				
52.	45	At STA 24+85±RT there is an existing telephone manhole/vault shown on the plans. The new curb line for the driveway is shown on top of the vault. Considering the vault was previously in a grass area there may be shallow cover. Confirm the depth of cover over the vault with the owner to ensure the curbing can be installed as shown.				

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53.	45	At STA 27+55±LT the proposed stub pole would be within the batter of the proposed wall. If the pole is to remain there will need to be a notch out in the wall or a caisson proposed. The need for this pole will also be evaluated at the utility meeting.				
54.	45	At STA 27+90±RT the existing gas lines do not connect. Please verify the location of the gas and provide the missing connection.				
55.	Utility Plans	The proposed light poles should not be shown underneath the proposed overhead wires. For example the proposed light posts at STA 28+70±RT and STA 29+30±RT. Depending on the height of the light posts there may be interference with telecommunication wires. Please verify location of the light posts avoid the proposed overhead wires.				
56.	46	At STA 29+00±LT there are existing electric overhead wires that cross the proposed location of retaining wall. Considering the wall is approximately 10-ft in this location the electric wires may conflict or restrict the installation of the wall or any earth support methods. It should be noted on the plans that the contractor should coordinate with the electric company prior to work in this area and that any construction methods should take into account the presence of the electric lines.				

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57.	46	There is an existing sewer line that ends abruptly at STA 30+45±RT. If this line continues it could potentially be impacted by the proposed retaining wall in this location. Please show the sewer line location and verify if there would be a conflict.				
58.	46	Label the existing sewer gate within the driveway work of 268 Main Street at STA 30+50±LT. The gate has no associated lines. Please also provide any lines associated with the gate and determine if any of the retaining wall work or cut in driveway slope impact any sewer laterals.				
59.	46	At STA 60+15±RT there is a proposed DMH over an existing water main. Recommend moving the structure off the water line.				
60.	46	At STA 60+45±LT there is an existing utility vault called out on the plans. There is a proposed retaining wall and sidewalk work in this location. Please verify the proposed work does not impact the vault. The disposition of the vault should also be labeled.				

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61.	Utility Plans	There are numerous underground electric risers throughout the project limits. Many of these risers are accounted for and labeled as relocate or relocate by others. It needs to be confirmed by National Grid electric on which electric risers will be the responsibility of the MassDOT contractor to relocate. These risers will be called out as relocate and an item with a special provision will be required in the contract. The remaining risers that are owned by National Grid and need to be relocated should be called out as "Relocated by Others". This can be confirmed after the utility meeting.				
62.	46	The proposed CBCI-305 and connection to DMH 303 at STA 31+95±RT are in conflict with two telco duct banks and an 8-inch gas main. Please confirm the location of these underground utilities and verify the drainage structures can be installed as shown.				
63.	47	At STA 34+50±RT and STA 37+05± there are two gutter inlets (GICI-311 and GICI-312) that are shown over an existing "9- 4-inch" telco conduit. Although gutter inlets are used to avoid underground conflicts the horizontal and vertical location of the telco bank needs to be identified to confirm these structures can be installed as shown. Gutter inlets still extend 36-inches while the telco banks vary from 30-inches to 18-inches buried. Recommend test pits be performed in design.				

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64.	47	At STA 36+80±LT there is an existing hydrant in the proposed curb line that needs to be relocated. Please adjust and label accordingly.				
65.	47	At STA 37+75±LT there is a proposed mast arm and traffic cabinet shown over an existing CATV underground line. Although the pole this line services will be relocated the location of the line needs to be coordinated with the cable company to avoid the proposed mast arm and cabinet.				
66.	Utility Plans	There are no sewer laterals shown on the utility plans. Please verify the properties have private septic systems. If not, the sewer laterals need to be shown.				
67.	47-48	Confirm the width of the existing telecommunications bank between STA 36+50±RT and the project limits at STA 46+00±RT. There are numerous potential impacts with drainage structures, mast arms and utility poles depending on the width of the duct bank. The plan calls out the telecommunication bank as "9- 4 inch" conduits that may be concrete encased. Please confirm.				
68.	47	At STA 100+80±LT the existing conduit from the utility pole at the corner of Route 111 and Community Lane end abruptly. Please show these utility lines completely.				

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69.	47	At STA 102+60±LT there is an existing light pole and foundation called out as "R&R" to the new sidewalk. Is this pole a privately owned pole? If not, how is power supplied to the light post as there is no existing electric lines shown on Community Lane. Will this type of pole match the proposed poles throughout the project? Will the Town assume ownership of the pole if it is privately owned and fed? Please clarify and update the plans.				
70.	47	There are two existing manholes labeled as "OT" with no associated lines. Please identify the owner of the manhole and show any associated underground lines.				
71.	47	At STA 39+50±RT there is an existing telephone manhole that is in an area that will be cut approximately 1-ft. Please verify with Verizon that the manhole can be adjusted and does not have to be rebuilt.				
72.	48	At STA 42+00± the location of the 8-inch plastic gas main does not correlate with the dig safe mark outs on street view from Nov 2017. Please confirm with National Grid gas that the gas line is shown correctly.				

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73.	48	The two existing catch basins at STA 41+25±LT were previously outside the SHLO. With the road widening the two CB's are now within SHLO. Recommend moving the two cb's outside of SHLO. The existing location of the cb's is also within the entrance of the proposed wheelchair ramps. Please evaluate and update accordingly.				
74.	48	Label the material of the existing box culvert at STA 43+60±.				
75.	48	Verify the proposed retaining wall at STA 43+60±LT does not impact the top of the existing box culvert. There is no invert of the box culvert provided to confirm the depth of the culvert. The culvert should also be shown on the associated profile sheet.				
76.	48	The existing water main is shown ending at STA 43+40±LT. At STA 45+45±LT there is an existing water hydrant with a lateral shown but no water main. The water main location should be shown through the limits. Please update accordingly.				
77.	49	At the beginning of the project limits on Route 27 the existing UP at approximately STA 50+00±RT will be out of line and will require a stub pole across the street. This could affect the two 30-inch trees and they may need to be removed. This needs to be confirmed.				

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78.	49	To avoid having to install a new sewer manhole at STA 52+00LT can the nose of the proposed center median be pulled back 5-ft to avoid the existing manhole? Please evaluate.				
79.	46, 49-50	From STA 50+00LT to STA 59+00LT there is an existing duct bank that runs along the Northern curb line. This duct bank is shown as a "9- 4 inch" that transitions to "6- 4 inch". There are proposed utility poles, drainage structures and curbing that are in conflict through this section. The location of this duct bank needs to be confirmed via test pit to properly location drainage structures and utility poles.				
80.	50	The proposed hydrant at STA 53+30±LT is shown outside the county layout with no easement. Please update.				
81.	46,49-50	The existing gas gates are shown but not the laterals between STA 50+00LT and STA 59+00LT. Update the plans with the gas laterals locations.				
82.	50	At STA 54+30±LT there is an existing telephone vault with proposed curbing shown on top. Please confirm the depth of cover over the manhole to verify the curbing can be installed.				

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83.	46, 49-50	The existing sewer laterals between STA 50+00LT and STA 59+00LT are not shown. There is an existing sewer manhole shown on private property at STA 53+98±LT that has no lines associated. Please verify if there are sewer laterals and if so show them on the plans.				
84.	50	It appears the proposed pole and guy anchor for UP 97-1X will be within the existing parking lot. Please verify the utility pole and/or guy anchor will not impact the use of the parking lot.				
85.	50	There is an existing manhole labeled as "OT" with no associated lines at STA 56+95±LT. Please identify the owner of the manhole and show any associated underground lines.				
86.	51	At STA 63+15±LT the proposed utility pole will now be on the roadside of the retaining wall. There is an existing underground conduit that feeds the property. There will need to be a box out in the new wall to avoid impacting the underground conduit. This needs to be labeled on the plans.				
87.	51	At STA 64+60±LT there is an existing underground gas line that services the property. There will need to be a box out in the new wall to avoid impacting the gas. This needs to be labeled on the plans.				

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88.	51-52	At STA 66+00RT there is an existing telecommunication line that ends abruptly. If the line is projected as shown there are potential impacts to drainage structures. If the line deviates and moves off the road there are potential impacts with the proposed wall between STA 67+00±RT and STA 70+50±RT. Please verify the line is shown completely and accurately through the plans.				
89.	51	At STA 64+65±LT Google Street view shows dig safe mark outs of two Verizon duct formations (one in sidewalk and one partially in the road). Please verify with Verizon if there are one or two formations.				
90.	51	Street view shows at least one duct bank location marked out by dig safe from STA 61+50±LT to STA 67+50±LT. This duct bank is not shown on the plans. If a moment slab is needed for the crash barrier for the retaining wall between STA 66+15±LT and STA 67+50±LT then the duct bank could potentially be impacted by construction of the moment slab or retaining wall. The plans need to show the telephone duct bank. Please coordinate with Verizon.				
91.	51	There is no easement or layout alteration for the proposed wall between STA 67+10±LT and STA 67+65±LT. Please coordinate with MassDOT ROW that the layout is shown correctly.				

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92.	51	There is a potential conflict with the proposed CB's at STA 66+80±LT and STA 67+10±LT (CBCI 503,504) with the existing duct bank as based on street view. The dig safe mark outs are shown in front of the existing guardrail. Please verify.				
93.	51	The existing CATV line at STA 105+30±LT ends abruptly. Please show this underground line completely.				
94.	51	At STA 104+20±RT and STA 105+45±LT there are two existing light poles and foundations called out as "R&R" to the new sidewalk. Are these poles privately owned? If not, how is power supplied to the light posts as there is no existing electric lines shown on Community Lane. Will these poles match the proposed poles throughout the project? Will the Town assume ownership of these poles if they are privately owned and fed? Please clarify and update the plans.				
95.	51	The proposed utility pole might be impacted by the wall construction at STA 67+40±LT. If a moment slab is needed for the crash barrier the pole may have to be shifted or a caisson installed.				

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96.	52	At STA 67+95±RT there is a private light post that is being relocated. While at STA 70+05±RT a similar light post is being relocated by others. If the light posts are being moved due to construction impacts the light posts should be moved as part of this project if customer owned. Please clarify the discrepancy.				
97.	52	There is no easement shown for UP 31 at STA 70+50±RT offset 130-ft. If deemed necessary at the utility meeting an easement could be required.				
98.	52	There is an existing CATV line shown in the roadway at STA 71+50 that is only 50-ft long and does not connect to any structures. If the CATV line is there it should be shown correctly and completely.				
99.	GEN	The landscape plans include proposed brick sidewalk. Installation of brick sidewalk increases the cost of this item. The brick walk should be eliminated to reduce cost or included as non-participating.				
100.	Lighting	The lighting plans show no proposed conduit or highway lighting load centers. Considering the amount of underground utilities the plans should include locations of the conduit. Additionally, load centers need to be shown to ensure there is sufficient ROW as well power. Please update the plans accordingly.				

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101.	Lighting	MassDOT only lights limited access highways and highway interchanges. If the lighting is included it needs to be clearly stated that the Town will assume ownership and payment for service once transferred from the contractor. It needs to be confirmed that the Town will assume maintenance and service fees.				
102.	Lighting	Provide a detail for the proposed lighting. Will these be standard light posts or ornamental?				

DESIGN REVIEW COMMENT AND RESOLUTION FORM

PROJECT NO.: 608229

DESCRIPTION: ACTON KELLEY'S CORNER RTE. 27 & 111

DESIGNER: GPI

SUBMITTAL: 25% SUBMISSION

REVIEW SECTION: TRAFFIC

PROJ. MANAGER: SREELATHA ALLAM

massDOT
Massachusetts Department of Transportation
Highway Division

CONSULTANT EVALUATION SCORE: 4

DATE: 3-26-18

REVIEWER NAME: LORI SHATTUCK

COMMENT No.	SHEET OR ITEM No.	COMMENTS (1) (COMPLETED BY REVIEWER)	INITIAL ACTION	RESPONSE (2) (COMPLETED BY DESIGNER)	QC REVIEW INITIAL	FINAL ACTION VERIFIED(3)

(1) This section to be completed by MassDOT Reviewer.
(2) This section to be completed by Designer.
(3) To be determined by MassDOT.

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1.	General	The District does not support the installation of a traffic signal at the Route 111/Charter Road intersection, as it does not currently meet the Eight-Hour Warrant, Warrant 1, and is not expected to meet Warrant 1 under future traffic volume conditions without further development. It is recommended that, at this time, conduit is installed as part of the project for the future potential installation of a traffic signal.				
2.	General	The traffic signal warrants analysis (TSWA) for the Main Street/Community Lane intersection was conducted using the Community Lane right turn volume for the minor street approach. A traffic signal is typically not installed to process only right turns. The TSWA should be conducted using the Main Street SB left turn volume for the minor street approach and the Main Street NB volume as the major street approach. A preliminary analysis indicates that the intersection would operate with minimal delay with the Community Lane approach under Stop control.				
3.	General	The cycle lengths and splits contained in the FDR differ from those on the signal plans. Please resolve any discrepancies.				
4.	General	At locations where pedestrian activity is expected to be measureable, the number of times that the pedestrian phase will be called during the peak hours should be estimated and included in the capacity analysis to determine the impact that the exclusive pedestrian phase will have on the traffic signal operations.				

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5.	General	The District has concerns with the false sense of security for cyclists with the bike box. We also have concerns with the maintenance of green pavement markings. Please remove the bike boxes and green pavement markings from roadways under state jurisdiction.				
6.	General	If the crosswalk for the school is signalized, a school zone is not warranted, per the 2012 Massachusetts Amendments to the MUTCD (Section 7E-2). The School Zone should be reviewed.				
7.	Sheet No. 54	Please remove the raised median proposed on Route 111 between STA 20+75 and 22+00 and stripe with diagonal yellow lines.				
8.	Sheet No. 54	Verify that the Bus Stop markings that are proposed comply with MUTCD standards.				
9.	Sheet No. 56	There is only 160 feet of two receiving lanes on the north leg of Main Street before it reduces to one lane. The two receiving lanes should be extended ±200 feet (to approx. STA 63+00) to accommodate most of the queue that will be formed in the two Route 111 EB left turn lanes.				
10.	Sheet No. 56	Please verify the width of the Route 111 EB travel lanes. The inside left turn lane appears to be 9.5 feet wide.				
11.	Sheet No. 56	Please verify that a WB-67 can make a left turn from Main Street NB to Route 111 WB.				

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12.	Sheet No. 56	Please remove the tracking lines through the intersection for the SB bike lane. The dotted white lines on the bike lanes on the Main Street approaches should not follow the curb radius at the intersection.				
13.	Sheet No. 56	Look at the opportunity to restrict access at the driveway on Route 111 located on the northwest corner given the proximity to the traffic signal.				
14.	Sheet No. 56	A No Left Turn sign should be posted for the Route 27 SB approach. Replace R3-5a with R3-2.				
15.	Sheet No. 56	The note for the commuter rail sign should be corrected to state it will be mounted with MA-D1-6.				
16.	Sheet No. 57	Consider improving the angle of Community Lane for left and right turns from Route 111. Verify that the largest design vehicle expected to use Community Lane can make a left turn from Route 111 EB to Community Lane.				
17.	Sheet No. 57	The raised median proposed on Route 111 between STA 36+30 and 37+00 restricts left turns from entering the Northern Bank & Trust driveway. The raised median should be removed and a left turn pocket should be provided.				
18.	Sheet No. 58	The delta island on the right-in/right-out driveway should be modified so it does not create an obstruction in the crosswalk. The striping around the island should be 6" SWL.				

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19.	Sheet No. 58	Please remove the raised median proposed on Route 111 between STA 40+50 and 41+20 and stripe with diagonal yellow lines.				
20.	Sheet No. 58	Change the M1-5 at STA 42+25 to "2".				
21.	Sheet No. 60	It is recommended that the median proposed on Main Street between STA 52+00 and 52+70 is striped with diagonal yellow lines, not raised.				
22.	Sheet No. 60	A two-way left turn lane (TWLTL) is proposed on Main Street south of Beverly Road. Are there existing driveways located on the east side of the roadway?				
23.	Sheet No. 60	The crosswalk on Main Street between Beverly Road and the Kmart driveway should be relocated.				
24.	Sheet No. 60	If there is a potential for a traffic signal for the Kmart driveway on Main Street, the District feels that signalized access on Route 111 is not necessary.				
25.	Sheet No. 61	Consider modifying the alignment of Community Lane to physically prohibit left turns from exiting Community Lane.				
26.	Sheet No. 61	JCT 27 signs are proposed at Community Lane. Is this correct?				

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27.	Sheet No. 62	The alignment of the crosswalk proposed at STA 70+00 does not provide a clear, safe path for the visually impaired. A crosswalk at this location does not appear necessary. Pedestrians can use the crosswalk at Community Lane. Please remove the crosswalk and raised median (stripe with diagonal yellow lines).				
28.	Sheet No. 62	The striping around the island should be 6" SWL.				
29.	Sheet No. 63	Provide a dashed line transitioning from the bike lane to the sharrow.				
30.	Sheet No. 64	There are 23 bike lane signs, R3-17, proposed for the project. Consider reducing the number of bike lane signs proposed.				
31.	Sheet No. 65	Signs D10-2(3) and R10-7 should be added to the sign summary.				
32.	Sheet No. 66	Correct the spelling of "Fitchburg" on MA-D1-7a(5).				
33.	Sheet No. 66	Please provide an explanation for the change on the Route 111 North guide signs from "Ayer" to "Harvard".				
34.	Sheet No. 66	The advance signage at Community Lane, D1-7a(4) and D1-7(4), should have "To" Route 111.				

35.	Traffic Signal Plans	The District does not support using standard video detection on State Highway (Route 111). Conduit and pullboxes should be provided for the installation of loops, if found to be necessary in the future. Please be more specific on the type of detection that is proposed.				
36.	Traffic Signal Plans	Unless there is an issue with the visibility of the overhead signals, it is not necessary to provide post mounted supplemental signals for the protected left turn phases.				
37.	Traffic Signal Plans	Please provide pedestrian and yellow and red clearance calculations with the next submission.				
38.	Traffic Signal Plans	The coordinated hours should be justified with count data, particularly for Plan 3 (Saturday 9:30 AM to 6:00 PM and Sunday 11:00 AM to 5:00 PM).				
39.	Traffic Signal Plans	Please increase the passage time to 3 seconds.				
40.	Traffic Signal Plans	Please increase the minimum initial time to 10 seconds for major movements.				
41.	Sheet Nos. 68, 70 & 72	The District prefers not to install the 3-section flashing yellow arrow (FYA) for permitted left-turns.				

42.	Sheet No. 67	Please explain the purpose of the system detectors. Note that it appears to be difficult to provide system detectors with video detection placed at the intersection given their range.				
43.	Sheet No. 67	A better alignment should be provided for the signal heads over the eastbound approach.				
44.	Sheet No. 67	Consider placing Signal Head "D" overhead for the main line.				
45.	Sheet No. 68	It appears that EB and WB are switched in the Emergency Vehicle Preemption chart. Please clarify.				
46.	Sheet Nos. 69-70	Is there a crash history for the NB left turn? Was a protected NB left turn phase considered?				
47.	Sheet No. 70	Change Signal Heads "C" and "M" to a green ball. A vertical arrow should be provided on Signal Head "Q".				
48.	Sheet No. 71	Consider placing Signal Head "D" overhead for the main line.				
49.	Sheet No. 72	Phase 5 will get 6 seconds of green time when in coordination. Please review.				
50.	Sheet No. 73	Three signal heads are not necessary for the one lane approach on Community Lane.				

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51.	Sheet No. 74	Does it make sense to put this intersection in coordination with the signals along Route 111, which have coordinated EB/WB phases? Consider installing a queue detector on the NB approach instead.				
52.	Sheet No. 74	If concurrent pedestrian phasing is proposed, Phase 1 would have to run without Phase 6. The Main Street crossing cannot occur concurrently with Phase 6.				
53.	TTCP	Provide staging for maintaining traffic signal control at the Route 111/Route 27 intersection during construction.				
54.	Sheet No. 76	Nighttime work will likely be required for some stages of this project. Note 7 should be modified to state that work within the traveled way will be restricted during peak commuter periods, typically 6:00-9:00 AM and 3:00-6:00 PM.				

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