



Peer Review Comment Form

NO.	SHEET NO.	SECTION	GREEN'S COMMENT	Applicant's RESPONSE	CONFIRMED BY	DATE
APPLICATION						
1	3	Special Permit Application Submission Requirements	In the application the summary table is checked indicating all of the information has been provided. The summary table on the plans is missing gross floor area, density, trip generation and open space. Please provide this information or why this has been omitted from the summary table.			
2	3	Special Permit Application Submission Requirements	Dimensions shall be provided for all driveways. Provide dimension for proposed east exit driveway.			
TRAFFIC IMPACT STUDY						
3	3	Existing Conditions	The existing conditions paragraph for Ayer Road (Route 2A/110) states the posted speed limit is 40 miles per hour (mph). Per MassDOT Roadway inventory the posted speed limit is 35 mph. Confirm and update the posted speed limit for Ayer Road.			
4	8	Collisions	A Road Safety Audit was conducted for the study intersection. More information regarding the collisions maybe be found and should be included in this section. (https://gis.massdot.state.ma.us/arcgis/rest/services/Roads/RoadSafetyAudits/MapServer/0/22167/attachments/22918)			
5	10	Observed Travel Speeds	Table 3 states the posted speed limit for Ayer Road (Route 2A/110) is 40 miles per hour (mph). Per MassDOT Roadway inventory the posted speed limit is 35 mph. Confirm and update the posted speed limit for Ayer Road.			
6	11	Sight Distance Summary	The desirable intersection sight distance for the westbound driveway should be 500' per Table 9-7 of AASHTO.			
7	13	Trip Generation	Per MassDOT TIA Guidelines, the number of pass-by-trips must not exceed 15% of the adjacent street traffic during the peak hour per ITE's Transportation Impact Analyses for Site Development. This development is currently exceeding with an approximate 30% of adjacent street traffic during the peak hour. Please reduce pass-by-trips such that they do not exceed 15% of the adjacent roadway volume.			
8	33	Figure 14 Concept #1/2	Please provide turning movements to show the proposed modifications at the driveway are beneficial for trucks entering/exiting the sight.			
9	33	Figure 14 Concept #1/2	Per MUTCD, taper lengths for turning lanes shall be at least 100 feet in urban areas. The addition of the second turn lane decreases the proposed turn lane taper on the MassDOT project. With this change, neither turning lane is compliant with MUTCD standards.			
10	34	Table 8	The Applicant should provide justification for the proposed changes to the study intersections since the operations are expected to worsen or have very minimal improvements.			
SITE PLAN						
11	General		Both proposed alternatives would require extensive changes to the adjacent MassDOT project which is currently under construction, and would require a MassDOT access permit. The eastern driveway under the MassDOT project is proposed as a two way entrance/exit. This current site plan has the driveway proposed as one-way exiting the gas station. This needs to be coordinated with MassDOT as it will affect proposed signal timing and equipment location. Allowing for two-way access at the east driveway allows vehicles to take left turns into the gas station at the signal instead further down in the road. As previously noted, the addition of a left turn lane into the western driveway would reduce the eastbound left turn storage length at the traffic signal. Please clarify whether any coordination with MassDOT has taken place to discuss these potential changes.			
12	4 Site Plan		Pedestrian signage (W11-2 & W16-7P) should be provided at the proposed crossing within the Gas Station.			
13	4 Site Plan		The proposed relocated driveway does not match in with the proposed sidewalk/edge of pavement for the MassDOT intersection project. Please provide site plans that show revised driveway radii with proper tie in to the MassDOT project.			
14	4 Site Plan		Please justify the need for the proposed raised mountable concrete island on the western driveway. The island could make turning movements more difficult for trucks entering the site and blocks the existing sidewalk for pedestrians.			
15	4 Site Plan	ADA	Please show locations for all detectable warning panels on the plans. There is one detail that shows the detectable warning panel but it is required in other locations such as on the sidewalk between the two accessible parking stalls.			
16	4 Site Plan		The snow storage limits are not clear. Snow storage should not be stored in the forebay or infiltration basin. Please revise.			



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17	4 Site Plan		Plans should be clearer on the division on the proposed improvements by the Applicant and the proposed improvements by MassDOT.			
18	4 Site Plan		The sidewalk around the building calls for monolithic curb and sidewalk. The detail for this shows no curb reveal. Can you confirm there is no curb reveal? We recommend a curb with a reveal in locations where the sidewalk is not protected by bollards or wheel stops to prevent vehicles from driving on the sidewalk.			
19	5 Grading and Drainage Plan		The pipe angles for DMH-6 might not work with a regular size manhole. Please check the angles and constructability of the DMH-6.			
20	5 Grading and Drainage Plan		The flow angle from INF-2 to DMH-6 to DMH-8 is not recommended. Please revise.			
21	5 Grading and Drainage Plan		Both invert in and out for DMH-6 are 252.35. Please revise invert out to be lower than invert in to ensure gravity flow.			
22	5 Grading and Drainage Plan	MA Stormwater Handbook Vol 2. Chp. 2.	Per the MA Stormwater Handbook, one soil sample for every 5,000 ft of basin area is recommended, with a minimum of three samples for each infiltration basin. Samples should be taken at the actual location of the proposed infiltration basin so that any localized soil conditions are detected. The test pits are shown on the grading plan where the stormwater bmps are located except for the stormwater infiltration basin. There should be a test pit for the stormwater infiltration basin.			
23	5 Grading and Drainage Plan	MA Stormwater Handbook Vol 2. Chp. 2.	CB-9 directly discharges to the infiltration basin. CB-9 shall provide pre-treatment before discharging to the infiltration basin.			
24	5 Grading and Drainage Plan		The plan shows the infiltration basin overflowing into MassDOT's closed drainage system. The manhole that the overflow ties into a manhole that has 5 pipes please confirm this is constructable. This work should be coordinated with MassDOT.			
25	5 Grading and Drainage Plan		The proposed work in the Ayer road for drainage does not have any invert information shown. Please provide inverts for the connection from the roadway to detention basin at east side of the site to confirm flow from Ayer Road will not discharge to the basin.			
26	5 Grading and Drainage Plan		There is a proposed catch basin on the northwest driveway. Please coordinate with MassDOT project in this area to revise design of driveway or relocate catch basin out of driveway.			
27	5 Grading and Drainage Plan		The inspection ports for the subsurface chamber system are not located on the plan but are included in the details. Please locate them on the plan.			
28	5 Grading and Drainage Plan, 10 Detail Sheet		The detail for eccentric catch basin requires pipe inverts to be more than 3'. All proposed catch basins have inverts 3' or less. CB-5 has an pipe invert 2.05' which is not constructible based on the detail. Please revise inverts or provide a new detail to accommodate the inverts.			
29	5 Grading and Drainage Plan	MA Stormwater Handbook Vol 2. Chp. 2.	Oil/water separator should not bypass the 2 year storm or smaller. The HydroCAD model shows DMH-9, which is the bypass, having an outflow for the 2 year storm. Please revise so the bypass DMH-9 is utilized for storms larger than the 2 year storm.			
30	6 Utility Plan		The sewer disposal system at southeast side of the site is located under proposed curb and no detail has been provided. Please confirm there are no conflict with sewer disposal system and curb.			
31	6 Utility Plan		Sewer inverts should be shown for drainage crossings at northwest side of the site. Confirm sewer forcemain does not have sags and has positive pitch.			
32	6 Utility Plan		The proposed water service does not have callouts for size and material. Please provide.			



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33	6 Utility Plan		Can shutoff valves be provided for the drainage system so in the event of a spill it can be contained and not discharge into MassDOT's drainage system or infiltrate into the ground?			
33	7 Erosion and Sediment Plan	§38-17.C.5.	A delineation and number of square feet of the land area to be disturbed shall be added to the plans.			
34	7 Erosion and Sediment Plan		The parcel north of Ayer road do not have erosion control measures shown. Please revise.			
35	8 Landscape Plan	ADA	It appears there is a sidewalk from Ayer Road to the crosswalk within the site. The sidewalk is hatch as proposed landscape stone with weed barrier. Is this material ADA compliant? This sidewalk should be ADA complaint. Please revise.			
36	12 Detail Plan	H-20 Loading	The detail for the slotted drain does not indicate loading requirement. Will the slotted drain be sized for H-20 loading?			
ZONING BYLAWS						
37		§173-18.C.	The proposed work requires major topographic changes and removal of existing trees . We defer to the board if there are any issues with the tree removal proposed.			
38		§173-18.D.	Adequate access to each structure for fire and service equipment shall be provided. Confirm this has been reviewed and coordinated with the Littleton Fire Department.			
39		§173-32.B.13	As per Motor vehicle service station with retail store, the required parking space is 12 space for 12 fueling location and 120 spaces for the retail area (one space per 50 square feet of gross floor area). Please clarify if parking requirement has been met.			
40		§173-32.C.3	Parking lots for eight or more cars shall be screened from any abutting residential use or public way by a four-foot width of densely planted shrubs or a fence of not less than four feet in height. Please confirm this has been met along the public way and along the abutting residential use.			
Aquifer and Water Resource District Special Permit						
41		§173-62.D.3	The project requires evidence of approval by the board of health for their wastewater redesign. Their narrative notes it is pending approval. We recommend that board of health approval of the wastewater system is a condition of approval.			
42		§ 173-63.E	Monitoring wells shall be constructed onsite; a monitoring schedule will be determined by the Planning Board in consultation with the Littleton Water Department. We recommend that the number and location of these monitoring wells be coordinated with the Town of Littleton Water Department.			
STORMWATER REPORT						
43	Pre/Post Development Drainage Plan	§38-17.C.6.	The Applicant is required to add the existing and proposed ground surfaces with runoff coefficient for each on a site plan.			
44	Post Development Drainage Plan/HydroCAD		CB-9 directly discharges to the infiltration basin but is included in 100S which does not discharge to the basin. There is no subcatchment discharging to CB-9 in HydroCAD. Please revise.			
45	Oil/Water Separator	MA Stormwater Handbook Vol 2. Chp. 2.	For gas stations, automobile maintenance and service areas, and other areas where large volumes of petroleum and oil are handled, the MA stormwater handbook recommends adding coalescing plates to increase the effectiveness of the device.			



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46	HydroCAD		A minimum Tc of 6 minutes should be used in HydroCAD. Please revise.			
47	HydroCAD		On recent past projects the Conservation Commission requested the use of NOAA Atlas 14 rainfall data. The Applicant is using NRCC rainfall data. Please use the most conservative rainfall data.			
48	HydroCAD		HydroCAD model for 1P Above ground basin has two outlets modeled but only one outlet is shown on the plans. The plans are missing the 24" x 24" orifice/grate outlet control structure modeled in HydroCAD. Please revise the plans or the HydroCAD model to be consistent.			
49	HydroCAD		HydroCAD model for INF-1 models the isolator row with an infiltration rate. The isolator row should be treated like a forebay and not modeled in HydroCAD. The isolator row pretreats the system collecting sediment which will clog the voids and will not infiltrate like the rest of the underground chamber system. Please revise.			
50	HydroCAD		For the 10 year storms, the HydroCAD model has warnings that storage is being exceeded. Please revise or provide an explanation on why the warning is acceptable.			
51	HydroCAD		The breakdown for the HydroCAD model was not submitted for storms other than the 10 year storm. The HydroCAD model shall be submitted for the 2, 10, 25, and 100 year storms. If the HydroCAD model has additional warnings for larger storm events please revise or provide an explanation on the warning is acceptable.			
52	SW checklist		No disturbance to any wetland resource areas is not checked. Please confirm there will be no disturbance to wetland resource areas.			
53	SW checklist		It notes that the all of the impervious area on site is not discharging to an infiltration bmp. Therefore, a capture area adjustment calculation should be performed to confirm the recharge requirement has been met. Please revise recharge calcs to include a capture area adjustment.			
54	Drawdown Calcs		INF-1 and INF-2 uses an infiltration rate of 2.41 in/hr in HydroCAD but uses 8.27 in/hr in the drawdown calculations. Please revise to use 2.41 to match the HydroCAD model.			
55	First Defense		Provide back up water quality flow calculations to confirm correct size/model has been chosen.			
56	Pretreatment Calculation	MA Stormwater Manual Vol. 2. Ch. 2	Pretreatment calculations are missing for forebay, isolator row, and crushed stone apron. These act as forebays and the Applicant should provide calculations showing they hold a minimum of 0.1 inch/impervious to pretreat the water quality volume.			
57	Pretreatment Calculation	MA Stormwater Manual Vol. 2. Ch. 2	How was the oil/water separator size determined? Back up calculations conforming to the MA stormwater Handbook should be provided.			
58	Geotech/Haz report		A geotechnical/hazardous material report was not submitted. Since the site is an existing gas station with underground tanks, has the site been analyzed for contaminated soils? If the soils are contaminated infiltration practices are not allowed. Please confirm.			
O&M Plan						
59	O&M	MA Stormwater Manual Vol. 2. Ch. 2	The O&M plan did not mention the sediment forebay. The sediment forebay needs to be inspected monthly and cleaned four times a year and when sediment depth is between 3 to 6 feet.			
60	LTPPP	LTPPP	Long term pollution prevention plan should describe what needs to be done if there is a spill.			



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61	O&M	38-18.B.3.	The O&M plan shall be signed by the owner.			