



October 6, 2020
David T. Faist, PE
Principal Engineer
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RE: *Stormwater Design Engineering Peer Review*

ADESA Inc.
194 Lowland Street, Holliston, MA
CMG ID 2020-151
Comment Responses

Review Comments found on page:

Stormwater Review 1

Stormwater Review

General Engineering & Drainage Design Comments:

1. Existing Conditions Plan sheets 5 of 23, 7 of 23, & 9 of 23 note a Flood Zone AE along Bogastow Brook with a defined flood elevation ranging from 155~154. Flood Zone AE line should match the respective topographic contour elevation.

Response: Comment noted. Flood Zone AE line has been updated to a location between elevation and 154 and 155.

2. Pre-development drainage mapping does not appear to accurately represent the two existing subcatchment areas and discharge points. CMG recommends the applicant's engineer re-evaluate the watershed areas. CMG is providing a highlighted sketch (see attachment #1) depicting where we believe the limits are based on our review of the existing conditions topography.

Response: Pre-development drainage mapping has been revised to reflect the attached sketch attached from the previous submission.

3. Time of concentration flow path for POI#2 should terminate near Tc point D at the edge of the wetland line. The additional 927 ft. should not be included as it appears to flow in the opposite direction of both site topography and Bogastow Brook flow towards the east.

Response: Comment noted. Time of concentration for POI#2 has been revised.

4. Existing conditions analysis point POI#2 should be relocated near Tc point D at the end of the revised flow path.

Response: Analysis point POI#2 has been relocated near point D at the end of the revised flow path

5. Post development watershed mapping Subcatchment labels should correspond with the hydrology calculations and watershed areas clearly depicted on Figure DA-2. Limits of Subcatchment 11 and 13 are not accurately depicted.

Response: Subcatchments are now clearly depicted on both Figure DA-2 and the hydrology calculations.

6. No on-site soil testing has been performed for the project. Soil testing is required at each infiltration area in accordance with MA-DEP Stormwater Management Standards. Soil testing must confirm in-situ soil conditions including estimated seasonal high groundwater (ESHGW) based on soil mottling, soil classification, and saturated hydraulic conductivity. CMG recommends this soil testing be performed by a State of Massachusetts licensed soil evaluator and witnessed by the Holliston Board of Health Agent.

Response: Soil testing was performed on site. Please see Appendix G of the Stormwater Report for the Soil Evaluation Technical Memo prepared by Tetra Tech on September 17, 2020.

7. NRCS soil mapping identifies the site soils as (655) Udorthents, wet substratum with no hydrologic soil group specified. Soil testing should be complete to verify the on-site soil classifications and whether soils are hydrologic soil group C or D.

Response: Soil testing was performed on site. Please see Appendix G of the Stormwater Report for the Soil Evaluation Technical Memo prepared by Tetra Tech on September 17, 2020. Hydrologic soil groups have been classified as A and B soils.

8. Subsurface drywell system manhole rim elevations for several structures shown on the Structure Table on Sheet 15 of 23 appear to be incorrect.

Response: Underground detention system manhole rim elevations have been revised.

9. A Notice of Intent is required to be filed with the Holliston Conservation Commission for all work within the 100 ft. wetlands buffer zone and/or 200 ft. riverfront zone.

Response: Comment noted. A Notice of Intent was filed upon submitting the initial Stormwater Report and is under review.

10. Snow storage areas need to be labelled on the plan and snow management procedures identified in the Long-Term Operation and Maintenance plan to ensure snow is not deposited in or near on-site wetland resource areas. Conservation Commission may also have additional requirements.

Response: Snow storage areas are now labeled on Sheet 14 of 23. Snow storage areas are located along the perimeter of the parking area and are five feet wide.

Stormwater Standard 1:

No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or water of the Commonwealth.

11. Adequate treatment is not provided for the proposed site stormwater runoff given the site's location within a Zone II watershed protection area. Three (3) new outfall pipes are proposed, two (2) of which discharge directly to surface waters including Bogastow Brook and a separate on-site pond area.

Response: Plans and reports now clearly depict water quality treatment devices ("Barracuda" inserts) to be installed to pre-treat runoff before entering the underground detention basins and outfalling to the respective surface waters. Barracuda inserts have been designed to accommodate water quality flow to provide at least 50% TSS removal to comply with Zone II watershed protection area regulations.

12. Rip-rap apron is not provided for Underground Detention Basin #1. 18" RCP headwall outlet F1.

Response: Structure F1 is a grate inlet that captured runoff to convey to Underground Detention Facility #1. A rip-rap apron is now provided for the detention basin #1 outfall.

13. Underground detention basin #1, 12" RCP pie outlet H0 rip-rap apron appears to be at or within the limits of the bank of the on-site pond. CMG recommends this be relocated further back from the wetland resource area.

Response: Comment noted. Outlet H0 and associated rip-rap apron has been relocated to be removed from the wetland resource area as much as possible.

14. 15" RCP pipe outlet G0 from underground detention basin #2 is located within the 100-year flood zone and below the defined Zone AE Flood Elevation of 155.

Response: Outlet G0 has been relocated. It is now located outside the 100-year flood zone and above the defined flood elevation of 155.

Stormwater Standard 2:

Stormwater management systems shall be designed so that post development discharge rates do not exceed pre-development peak discharge rates.

15. CMG recommends hydrology calculation be revised to reflect the revised watershed areas, time of concentration, and hydrologic soil group.

Response: Hydrology calculations have been revised.

16. Pre-development and post-development total watershed areas differ slightly by approximately 1,742 +/- s.f. These areas should be equivalent.

Response: Pre- and post-development watershed areas have been revised to show equivalent areas.

17. Stormwater calculations and peak flow summary should include the 2-year, 10-year, 25-year and 100-year storm event.

Response: The 25-year storm event is now included in stormwater calculations and peak flow summary. The 2-, 10-, and 100-year storm events have been revised as well.

Stormwater Standard 3:

Loss of annual recharge of groundwater shall be eliminated or minimized.

18. Design must provide a minimum 2 ft. separation from estimated seasonal groundwater (ESHGW). Give the close proximity of Bogastow Brook and prior gravel removal activities the bottom of the two underground detention areas (Bot. Elev – 154.5 & 153.50) may be at or close to ESHGW. Soil testing to confirm ESHGW based on soil mottling must be provided.

Response: Soil testing was performed on site and confirmed the ESHGW elevation is located between elevation 152 and 153. Please see Appendix G of the Stormwater Report for the Soil Evaluation Technical Memo prepared by Tetra Tech on September 17, 2020.

19. No supporting information or on-site in-situ permeability testing is provided to support the infiltration rate of 0.17 cfs used in the hydrology calculation. Hydraulic conductivity values based on on-site soil classification (Rawls Rate) or in-situ permeability testing must be provided for each underground drywell system.

Response: Soil testing was performed on site. Please see Appendix G of the Stormwater Report for the Soil Evaluation Technical Memo prepared by Tetra Tech on September 17, 2020.

20. Stormwater system design must provide supporting information and details to document compliance with infiltration basins and / or drywells design standards outlined in the MA DEP Stormwater Management Structural BMPs – Volume 2 Chapter 2.

Response: The Stormwater Report and design documents have been updated to provide additional supporting information and details to document compliance with underground infiltration basin standards outlined in the MA DEP Stormwater Management Structural BMPs – Volume 2 Chapter 2.

21. Required Recharge Volume must be calculated using the required recharge value specified in the MA DEP Stormwater Management Standards for either Type C or Type D soils depending on the results on-site soil testing.

Response: Soil testing performed on site has classified the soils as Type A and Type B. Updated required recharge volume calculations are now provided in Appendix D of the Stormwater Report.

22. Test pit data must be provided documenting subsurface soil conditions, infiltration rates, and estimated seasonal high groundwater for each stormwater basin. Soil boring and/or test hole locations and data must be shown on the plan.

Response: Test pit data is now shown on Sheet 15 of 23.

23. Stormwater basin design details and cross-sections must be provided for each of the proposed underground basins to document compliance w/ MA DEP Stormwater Management Standards including but not limited to separation to ESHGW, design elevations, and peak elevations for each storm event. The current plan set only provided limited layout and design schematics.

Response: Underground detention basin design details and cross sections are now provided in greater detail on sheets 19 and 20 to document compliance with MA DEP Stormwater Management Standards.

24. Hydrology calculations do not include the 2nd 18" RCP outlet pipe for underground detention basin #1. The calculations appear to detail a separate outlet control structure using 4" orifice and weir, however not details are provided in the plan set.

Response: The 2nd 18" RCP pipe is conveying to the underground detention system and is not an outlet pipe. Details for the outlet control structure for each basin are now provided in the design documents.

25. Stormwater basin 72-hour drawdown calculations based on hydraulic conductivity per on-site soil testing are not provided.

Response: Stormwater basin 72-hour drawdown calculations are now provided in Appendix D of the Stormwater Report.

26. If soil test pits show the bottom of any of the proposed stormwater infiltration basins are within 4 ft. estimated seasonal high groundwater, a mounding analysis must be provided.

Response: A mounding analysis for each infiltration basin is now provided in Appendix D of the Stormwater Report.

27. CMG recommends the Applicant's Engineer consider the use of surface stormwater infiltration basins with sediment forebays depending on the results of on-site soil testing.

Response: Noted. Due to existing site constraints and operational needs of ADESA, there is not adequate area for an above-ground stormwater treatment system.

Stormwater Standard 4:

Stormwater management systems shall be designed to remove 80% of the average annual post construction load of Total Suspended Solids (TSS).

28. Water quality volume (WQV) calculations are incorrect as the WQV must be stored below the lowest outlet of the infiltration system or shown to recharge the WQV using the dynamic method.

Response: Water quality volume calculations have been revised to provide volume for water stored below the lowest outlet (orifice) of the infiltration system.

29. CMG recommends TSS removal calculation worksheets be provided to document the proposed treatment train for each outfall which receives runoff from the proposed project's pavement areas to document 80% TSS Removal.

Response: TSS removal calculation worksheets have been provided in Appendix D of the Stormwater Report to document the proposed treatment train for each outfall.

30. Site is within a Critical area (Zone II) therefore additional water quality treatment measures are necessary in accordance with MA DEP Stormwater Management Standards 44% TSS removal pre-treatment is required prior to stormwater discharge to an infiltration structure.

Response: Plans and reports now clearly depict water quality treatment devices ("Barracuda" inserts) to be installed to pre-treat runoff before entering the underground detention basins and outfalling to the respective surface waters. Barracuda inserts have been designed to accommodate water quality flow to provide at least 50% TSS removal to comply with Zone II watershed protection area regulations.

31. Drop inlet Type-CF catch basin detail shown on Sheet 18 op 23 shows a 3-FT maximum sump and notes Town of "Weymouth". A minimum 4-FT sump is required for all deep sump catch basins and the detail should reference the Town of Holliston design standards.

Response: Drop inlets have been revised to reflect a 4-foot sump and reference Town of Holliston design standards.

32. Barracuda water quality unit detail is shown on Sheet 20 of 23, however, it is not shown on the design plan or included in the stormwater report.

Response: Baracuda water quality inlets are now clearly shown on design plans, details and the Stormwater Report.

Stormwater Standard 5:

Land uses with higher potential pollutant loads (LUHPPL), source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable.

33. Not applicable – Site is not a LUHPPL. Stormwater Standard 6: Stormwater discharges within a Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area.

Response: Comment noted.

34. Current MassGIS mapping shows a portion of the Site is within a Zone II watershed protection area. Stormwater discharges near or to a critical area must include the appropriate best management practices and setbacks in accordance with the MA-DEP Stormwater Management Standards. Stormwater report must document compliance with this standard.

Response: The Stormwater Report now documents compliance with this standard.

35. Calculations must document the treatment train meets the 80% TSS removal requirement and the 1" WQV. CMG recommends Applicant's engineer consider the addition of water quality units in addition to the deep sump catch basins prior to discharge to the infiltration basin.

Response: The Design Plans and Stormwater Report now clearly depict water quality treatment devices ("Barracuda" inserts) to be installed in addition to deep sump catch basins to pre-treat runoff before entering the underground detention basins and outfalling to the respective surface waters. Barracuda inserts have been designed to accommodate water quality flow to provide at least 50% TSS.

Stormwater Standard 7:

Redevelopment Projects

36. Site is considered a mix of new and re-development. Re-development standards only apply to existing impervious areas of the Site. All new impervious area must comply fully with the MA Stormwater Management Standards.

Response: Comment noted. This submission now reflects new development only and intends to comply with MA Stormwater Management Standards for new development.

37. CMG recommends the Applicant's Engineer use the Checklist for Redevelopment Projects located in Volume 2 Chapter 3 of the MADEP Stormwater Management Standards to document compliance for both new and re-development portions of the Site.

Response: Comment noted.

Stormwater Standard 8:

Construction period erosion and sedimentation control

38. The Site is > 1 Acre therefore an EPA NPDES Construction General Permit (CGP) registration and SWPPP is required to be submitted prior to construction. CMG recommends the Planning Board make this a condition of approval.

Response: Comment noted.

39. Erosion control hay bales and silt fence is shown on the plans. CMG recommends "straw" bales be specified.

Response: "Straw" bales are now specified on the plans.

40. Limit of construction and erosion control barriers should extend into the areas within the wetland buffer zone used for construction of the outlet pipe from each underground detention basin. Erosion control barriers must be clearly labelled on all related plan sheets. 41. CMG recommends Mirafi 700x Filter Fabric or approved equal be specified for geotextile fabric beneath stone on construction entrance detail.

Response: Limit of construction and erosion control barriers extend into the areas within the wetland buffer zone used for construction. Erosion control barriers are clearly labeled for this submission, and a note has been added to reflect the filter fabric recommendation beneath the rock construction entrance.

42. Rip-rap apron and headwall details should be provided consistent with the Stormwater Report to provide dimensions and rip-rap stone sizing for each individual outlet.

Response: Rip-rap apron and headwall details are now consistent with the Stormwater Report. Dimensions and rip-rap stone sizing for each individual outlet is now provided.

43. CMG recommends a construction sequence be provided on the Erosion Control Plan along with additional notes relating to proposed construction dewatering practices, stockpile storage location, and related construction activities to prevent impacts to Site wetlands.

Response: A construction sequence is provided on Sheet 17 of 23.

Stormwater Standard 9:

Long term operation and maintenance plan

44. Deep sump hooded catch basins inspection frequency should be listed as 4 times / year.

Response: The stormwater O&M Plan has been updated to reflect this revision.

45. Public safety feature section is not included in the O&M Plan. CMG recommends at a minimum: "All cast iron storm water structure grates and covers shall be kept in good condition and kept closed at all times. Any damaged or broken structures will be replaced immediately upon discovery".

Response: The stormwater O&M Plan has been updated to reflect this revision.

46. Operation and Maintenance Log forms should be labeled as "Quarterly" and conducted 4 time / year.

Response: The stormwater O&M Plan Maintenance Frequency section has been updated to reflect a quarterly frequency.

47. CMG recommends specific water quality unit manufacturer's O&M manual, if specified for the project, also be included within the Site's O&M Plan.

Response: A copy of the Barracuda maintenance document from the manufacturer is now provided in the stormwater O&M Plan.

Stormwater Standard 10:

Illicit discharges

48. A signed Illicit Discharge Statement is not provided within the O&M Plan.

Response: A signed Illicit Discharge Statement is now provided with the O&M Plan.