

HD Design

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Amesbury Planning Board
Attn: Mr. Pascal Rettig, Chairman, and
Amesbury Community & Economic Development
Attn: Mr. Nipun Jain, Director of Planning
39 South Hunt Road - Amesbury, MA 01913

**Re: Proposed Single-family Dwelling
31 Newton Road, Amesbury MA
Assessor Map 33, Lot 32 at 31 Newton Road
Response to Comments**

Dear Mr. Rettig and Mr. Jain:

HD Design is pleased to submit this correspondence and enclosed plans and reports in response to Stantec comments received on October 17, 2024, for the subject site. Stantec comments are provided below in standard text, followed by our responses in ***Bold Italic Text***.

Comments:

- 1- The project proposes to fill a portion of the existing wetland area along Newton Road within the roadway right-of-way and upon the subject lot, install twin culverts in the roadway wetlands and indicates a wetland replication area is proposed on the subject property. It is our understanding the Applicant has submitted a Notice of Intent (NOI) for the proposed wetland impacts with the Amesbury Conservation Commission. It appears that most of the wetland impact is within the Newton Road right-of-way, and it is unknown if the submitted NOI Application includes both property owners (Applicant and City of Amesbury). In addition, we are not aware that the Department of Public Works has agreed to the proposed driveway location and the associated wetland impacts under this project application. We recommend the approved Order of Conditions for this project be a condition of the Planning Board's approval.

Response: The Notice of Intent Application is currently under review with the Conservation Commission. All comments related to the wetland area have been addressed, and the MA DEP Form was accepted by the Conservation Commission and MassDEP (WPA Form 3). Per MassDEP, Conservation Agent, and prior approval of

this site, in 2017, the City of Amesbury was not required to be a co-signer on the Notice of Intent Application. These questions can be discussed with the Conservation Commission outside of the Planning Board Permitting process if needed.

Also, on October 18, 2024, DPW reviewed the Site Plan Application and provided no comments on the driveway location and the proposed work with the right-of-way. We agree that the Order of Conditions for this project is a condition of the Planning Board's Decision.

- 2- The plan set does not include a driveway sight distance plan and profile that demonstrates the minimum sight distance of 300 feet is provided. We recommend the plan set be revised accordingly.

Response: As requested, a Stopping Sight Distance Plan Sheet C-800 has been added to the Site Plan Set. The site design has the minimum sight distance of 300 feet.

- 3- The Applicant's design indicates the proposed stormwater basin will be excavated into the existing ground with depths below the existing ground varying from 1.5 to 5.5 feet to construct the bottom elevation of 115 for the proposed bioretention basin. The bioretention detail on sheet C-201 indicates the depth below the basin bottom to install the manufactured bioretention treatment layers is another 38 inches (~3.2 feet) below the basin bottom or to elevation 111.8. The design plan indicates the existing elevations along the wetlands adjacent to the basin vary from 112 to 120 and implies the bottom of the proposed stormwater basin would be below the existing seasonal high water table and does not provide the minimum three feet of separation above the seasonal high water table required per Section XIV.I.B.7(2) of the Amesbury Zoning Bylaws. We note the submission does not indicate any test pits were conducted in the proposed basin area as required by the Structural BMP's design manual. The Applicant should provide additional information relative to the existing soil conditions at the proposed basin area to demonstrate the basin has proper seasonal high water table separation, and revise the bioretention basin design as necessary, in compliance with the Massachusetts Stormwater Handbook.

Response: The previously proposed bioretention area has been removed, and a constructed stormwater wetland area is now included near the existing wetland area. A stormwater basin (Basin#1) is now incorporated in the design and located outside of the 50-foot buffer as requested by the Conservation Commission Agent to minimize the grading adjacent to the wetland area. The site design now includes the required test pits for the proposed stormwater management practices. Refer to the attached Test Pits Plan C-002.

- 4- The Applicant's driveway grading design indicates the last 50 feet of the driveway will sheet flow directly to the Newton Road pavement edge and create a ponding effect on Newton Road that is typically not allowed by the Department of Public Works (DPW). It is our understanding the DPW typically requests driveways to slope away from the roadway pavement edge to a low point located at least 10 feet from the pavement edge or to the existing roadway swale location to ensure site development runoff with not directly discharge to the roadway travel lanes. We note the proposed design shows the proposed driveway slope extending to the roadway travel lane. The Applicant shall review and revise the driveway design to provide a driveway low point to prevent to prevent driveway sheet flow discharge to the roadway and meeting approval of the DPW. Please include spot elevations in the updated grading design to clarify the proper grading intent and for proper construction. Please provide documentation from the DPW that the updated driveway is acceptable for the Planning Board's project file.

Response: We refer to the Amesbury Online Permitting Portal, where the DPW, on October 18, 2024, reviewed the project and provided no comments indicating the acceptance of the driveway design. We do not recommend sloping the driveway away from Newton Road into this hilly, challenging site that slopes upward from the roadway, as that would require unnecessary alteration and impact to the environmentally sensitive wetland area. Additionally, sloping the driveway away from the roadway would significantly impact the safe stopping sight distance requested in previous comments. The driveway material is now changed into a precast paver to improve the drainage conditions significantly, and a trench drain with an inline catch basin has been added to the design located at the end of the driveway to capture any stormwater runoff, that may not be captured by the precast paver in extreme events, before entering the right-of-way.

- 5- The proposed bioretention detail on sheet C-201 is incomplete and does not provide the proposed plant species to be installed per volume 2, chapter 2 of the Massachusetts Stormwater Handbook and Structural BMP's design manual for bioretention basins. In addition, the proposed filter media does not meet the specifications noted for the BMP. Also, the detail indicates filter fabric, but the BMP design manual indicates the use of the filter fabric is not recommend due to clogging. The Applicant should review and revise the bioretention detail in compliance with the Massachusetts Stormwater Handbook.

Response: The previously proposed bioretention area has been removed from the site design, as requested by the Conservation Commission Agent. Test Pit TP-5 indicates the suitability of a constructed stormwater wetland area, which has been included in lieu of the bioretention area.

- 6- The grading design indicates a swale is proposed along a portion of the driveway, but the detail provided does not indicate information on proposed width and depth for the swale for proper construction. We note the drainage report does not address the proposed swale and the required width and depth necessary to properly convey the runoff to the basin. In addition, the thickness and specification for the rounded stone bottom is absent. Should rounded stones be used on this steep slope? Also a detail for construction of the sediment forebay located downstream of the swale is absent from the plans. The Applicant should review and update the plans and analysis accordingly.

Response: The attached plans, stormwater reports, and hydroCAD report now include the design parameters of the grassed swale (conveyance channels). The rounded stones have been removed from the design. A detail of the sediment forebay is now included in the typical cross section shown on the detail sheet C-201.

- 7- With the proximity of the swale to the driveway and the varying driveway cross slope, we recommend a cross section detail for the driveway and swale be provided in the plan set for proper construction. Please update the plan set accordingly in the revised plan set submission.

Response: As requested, a driveway Cross section detail has been added to the plans Sheet C-201.

- 8- The proposed driveway is designed at a general 15% slope along the driveway length and there is a concern with erosion along the edges of the pavement with the steep driveway grade. We recommend turf reinforcement measures be provided on the downstream shoulders of the driveway. In addition, the driveway grading design presented indicates a portion of the driveway will have a 15% cross slope that could be difficult maneuver and a safety concern during wet/winter conditions, especially downhill, and recommend the Applicant review and reconsider the design of the driveway. Please update the plan set accordingly in the revised plan set submission.

Response: As requested, the updated design now incorporates a 2-foot-wide gravel shoulder along the downstream edge of the driveway to enhance durability. The driveway material has been upgraded to permeable pavers with a granite/concrete edge, ensuring added stability. Additionally, the finished floor elevation has been lowered by two feet, resulting in a smoother longitudinal slope and a gentler cross slope. Minor driveway alignment and grading adjustments have further refined the cross slope, which now ranges between 2-5%, as shown on the attached plans and Sheet C-502.

While we acknowledge concerns about the longitudinal slope, the site's challenging topography and environmental and zoning constraints necessitate these design choices. Reducing the slope further would be cost-prohibitive and impose significant hardship.

This approach aligns with standard practices for residential driveways on hilly terrain across Massachusetts.

For comparison, a 2017 design included retaining walls that were financially unfeasible and unable to achieve softer slopes on this site. A heated driveway can be considered during construction if the budget allows it to address winter safety concerns. Otherwise, it remains the homeowner's responsibility to maintain the driveway during winter conditions, consistent with common residential practices.

- 9- The plans indicate an underdrain around the building, but an outlet is not indicated. In addition, the retaining wall indicates an underdrain, but the outlet is absent from the plans. Please clarify how the underdrains for the house and retaining wall will drain. Also, the plan indicates an 8" HDPE pipe from the building to an outlet with an invert elevation of 151.0, but a drain pipe trench detail is missing from the plan set. Please review and update accordingly in the revised plan set submission.

Response: The foundation and retaining wall underdrains are to daylight, and the final location is typically determined in the field. However, the outlines for the underdrains have been included on the plans, as requested. A drain trench section detail has been added to the plans Sheet C-202.

- 10- The design indicates overhead utility services from the roadway for a significant portion with three service poles that does not comply with section XI.C.8.m requiring underground utilities from existing roadway utilities. Please update the design accordingly for compliance and provide a utility trench detail in the revised plan set submission.

Response: The referenced zoning provision appears to aim at preventing commercial developments from installing overhead wires; however, it is NOT typical for a single-family dwelling to install underground electrical service crossing the roadway. National Grid Standards Specifications also recommend standard overhead service with a pole-mounted transformer for loads under 300V and 400A rather than underground installations.

A review of neighboring properties shows that overhead wires crossing roadways are common in this area. In line with this common practice, the service drop wiring will traverse Newton Road overhead, terminating at a riser pole installed on the property. Beyond this riser pole, the electric service to the house will transition to an underground installation, as detailed in the plans.

- 11- The project proposes clearing on the site, but the plans do not identify all trees larger than 8" per XI.C.5.b of the Zoning Bylaws. We note portions of the existing tree canopy along the property lines is shown to remain undisturbed. The trees to remain should also be noted on the site layout plan.

Response: We note that this site's 2017 Planning Board approval did not require a detailed tree survey as part of the review process. In accordance with Section XI.C.5, the Applicant, respectfully, requests a waiver from the Planning Board to allow for the depiction of a general treeline on the plans instead of the requested detailed tree survey. This request is based on the fact that most of the proposed project activities will occur in a brushy area with sparse tree coverage, where previous clearing activities have already occurred in the past.

Requiring a detailed tree survey in this instance would impose an unnecessary burden on the Applicant, given the minimal presence of significant tree vegetation within the project area. Moreover, in our opinion, the use of a general treeline would provide sufficient context for the Planning Board to evaluate the proposal without compromising the intent of environmental and site development regulations. The Applicant believes this approach strikes a reasonable balance between regulatory compliance and practicality, ensuring that project impacts are properly addressed while avoiding undue costs and delays.

- 12- The design calls for an impervious barrier to be installed upstream of the proposed retaining wall but a detail for the proper construction of the barrier was absent from the submission. Please review and update accordingly in the revised plan set submission.

Response: A Cross Section of the Proposed leaching area is included on Sheet C-203 which indicates the impervious barrier top and bottom elevations as needed.

13- The Applicant has provided a stormwater management report for the project. We note the following general concerns:

- A. The Applicant's design approach does not consider or address the uphill contributing watershed flows to the subject parcel and the proposed stormwater facilities. A review the City's GIS information indicates the uphill contributing watershed to the subject parcel is about the same area as the subject lot and the proposed stormwater facilities may likely be undersized. The Applicant shall update the design approach to consider and address the entire watershed flow to and through the subject parcel under this application and provide an appropriate design for all the watershed flows. Please demonstrate compliance is achieved with no increase in runoff under the post development conditions to each abutting property including the right-of-way of Newton Road.

Response: The watershed area has been updated as requested. Please refer to the attached Stormwater Report and Drainage Area Map in Section 3 of the Stormwater Report. No Increase in peak discharge flows is expected as a result of this project.

- B. The Applicant's grading design indicates portions of the proposed site development runoff are directed towards the westerly abutter, but the analysis does not consider or address this issue. Please review and revise the analysis and design to demonstrate no increase in runoff to the abutters occurs in compliance with Massachusetts Stormwater Management Standards.

Response: The grading has been updated, and a double-grate catch basin has been incorporated into the design. No increase in runoff to the abutting property is expected as a result of this project. Please refer to the attached Stormwater Report and Drainage Area Map.

- C. The Applicant's design approach does not consider or address the proposed driveway, grading and wetland impacts shown within Newton Road or the roadway runoff that contributes flow to the wetland in the pond analysis. Please review and revise the analysis and design to consider all contributing runoff to the wetlands and demonstrate no increase in runoff to the abutters occurs in compliance with Massachusetts Stormwater Management Standards.

Response: The updated model considers the items referenced above as requested. The design includes updated grading, preambles pavers, infiltration basin, catch basin structure, and a constructed wetland area to ensure no increase in runoff to the abutters in compliance with Massachusetts Stormwater Management Standards. The project now considers all contributing runoff to the wetlands and demonstrates no runoff increase to the abutters. The project fully complies with MA Stormwater Regulations.

- D. Standard 1: The Applicant proposes a new paved driveway from Newton Road with most of the grading design indicating the driveway runoff would be directed eventually to the stormwater basin. However, the lower portion of the driveway grading design does not appear to capture all of the new pavement area runoff and provide treatment before discharge to the existing wetlands and this Standard does not appear to be fully met. The Applicant should review and provide treatment for this new pavement discharge to meet compliance with standard 1.

Response: The driveway grading has been amended to prevent any untreated flows from discharging directly into the wetland area. The new driveway material, permeable pavers, provides an opportunity for infiltration prior to discharging to the downstream trench drain. A trench drain with an inline catch basin was added to the design at the bottom of the proposed driveway to capture any runoff that may not have infiltrated the permeable pavers during extreme events. In compliance with MA DEP and the Conservation Commission's requests, the design has minimized the proposed disturbance in the wetland buffer zones while capturing all impervious areas into the proposed Stormwater Management System that provides the required treatment.

- E. Standard 1: The plans indicate a swale, and a plunge pool are proposed to convey most of the site runoff, but design and analysis of this stormwater feature is absent from the report. The Applicant shall update the report accordingly and update the project details as appropriate.

Response: The updated HydroCAD report includes the design features of the grass conveyance channels (Swales), as requested. The plans also include a detailed cross-section of the grass channel. The stormwater report and plans include a design of the riprap plunge pools.

- F. Standard 2: As noted above, the Applicant's analysis and calculations do not address all the existing watershed flows or the proposed impacts to all abutters and compliance with this Standard has yet to be demonstrated. Please update the analysis to demonstrate compliance is achieved with no increase in runoff under the post development conditions.

Response: As explained earlier in this letter, the design analysis has been updated as requested. The site design accounts for the entirety of the watershed, contributing to the wetland area. This Standard is fully met.

- G. Standard 2: The existing conditions subcatchment calculations indicate "fair" conditions (versus good) for all soil types. Please provide supporting information for the determination of fair site conditions noted in the calculations.

Response: While the fair and good conditions do not describe the soils but the land covers, the land cover conditions have been revised from fair to good, as requested. Please refer to the attached HydroCAD model.

- H. Standard 2: The limits of pond Wetland A are unclear and appear to include property outside the subject parcel. We note the calculations do not include a starting elevation and the size and volume of the pond is unchanged from existing to post development analysis and does not appear to consider or address the proposed driveway filling. The Applicant should clarify the limits of the pond and review and revise the analysis to properly address the post development conditions and demonstrate compliance is achieved – no increase in runoff.

Response: As requested, the updated watershed map (DA-MAP) included in the Stormwater report and hydroCAD model addresses the change in the wetland storage ponding and accounts for the entirety of the tributary areas into the wetland area, including all offsite areas.

- I. Standard 2: The post development delineation of subcatchment 2P includes a portion of the driveway, but the post development calculations do not include any pavement and are not representative of the post development conditions. Please review and revise to be representative of the design presented.

Response: Subcatchment 2P is updated as requested to include the proposed driveway and roof area.

- J. Standard 2: The amount of impervious area in post subcatchment 1P in the calculations appears to be more than represented in the design provided. Please review and revise to be representative of the design presented.

Response: Subcatchment 1P is updated as requested.

- K. Standard 3: The submitted checklist indicates the required recharge volume calculations are provided and that recharge BMPS have been size to infiltrate the required recharge volume, but the project information does not include test pits in the designated location to demonstrate the bioretention basin would be constructed above the seasonal high water table in accordance with the BMP design criteria. Due to the proximity of the proposed bioretention basin to the existing wetlands, it is possible the noted Group A soil used in the calculations may not be present in the chosen stormwater facility location. We recommend the Applicant conduct test pits (minimum of 2) in the selected basin location by a qualified professional to determine the seasonal high water table and the existing soil conditions at the proposed basin and confirm the bioretention basin design and soil type assumptions are appropriate for this project to meet compliance with Standard. The results of the test pits and any updates to the design should be included in the revised submission to demonstrate compliance with this Standard.

Response: As part of the Septic system permitting, we conducted official onsite witnessed test pits in September of 2024; in addition, two test pits (TP-5 and TP-6) at the location of the previously proposed bioretention area and the new proposed infiltration basin (Basin #1) outside of the 50-ft buffer, as requested by the Conservation Agent. The test pit results led to converting the previously proposed bioretention area into a constructed stormwater wetland area and incorporating an infiltration basin (Basin #1) outside of the 50-ft buffer zone while achieving the required separation to groundwater as required by MA Stormwater Regulations.

- L. Standard 4: The report includes a Long-Term Pollution Prevention and Operations and Maintenance Plan document in section H which also includes both construction management and other construction related information along with post construction information. It appears the Applicant has confused this portion of the Stormwater Checklist - Standard 4 Post Construction BMP's with the construction standards under Standard 8 based upon the information provided. We recommend the Applicant clarify/address the following in the Post Construction BMP's that is part of Standard 4, which appears to be absent or in need of further clarification and typically includes the following....

Response: A stand-alone post-construction long-term pollution prevention plan is now provided as section 2.0 of the stormwater report. A separate document entitled "Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan Stormwater Standard 8" is also now provided for construction period pollution prevention and erosion. Refer to Section 2.1 of the Stormwater Report.

- M. Standard 4: The analysis does not indicate or address treatment of the new driveway pavement below the swale and sediment forebay that is not addressed in the post development calculations and partially shown in post subcatchment 2P. The report and analysis should be revised to provide additional information to clarify how this Standard has been met under this design.

Response: The updated design incorporates BMPs to capture the entirety of the impervious surfaces by implementing an infiltration basin, permeable pavers, constructed stormwater wetland, grass channels, and a trench drain with an inline catch basin at the end of the driveway. The proposed design provides the required treatment or pretreatment prior to discharging into the wetland area. It should be that the Conservation Commission and MassDEP are also limiting the alteration in the wetland and buffer zones to the maximum extent practicable which limits the project from implementing additional practices.

- N. Standard 6: The submitted information identifies the new driveway pavement area that is untreated and noted above under Standard 4 and states it is infeasible to construct additional stormwater features and states it has met this Standard. We disagree with the statement of compliance and recommend the Applicant provide some possible treatment measures to achieve compliance for consideration by the Board, since this is a critical area of concern for the City. We recommend the Applicant discuss this issue with the Community & Economic Development Department, Planning Board and DPW and provide a suitable BMP to meet compliance with this Standard. The report and analysis should be revised to provide additional information to clarify how this Standard has been met under this design.

Response: As indicated above, it is the Conservation Commission and MassDEP request to minimize the alteration in the buffer zones and wetland area to the maximum extent practicable. The revised design now incorporates permeable pavers and a trench drain with an inline catch basin before discharging to the wetland area and providing the required treatment. It should also be noted that wetland A receives untreated stormwater discharges from Newton's Road Right-of-way.

- O. Standard 8: The report includes a document in section H that includes discussion about construction management, good housekeeping practices during construction and minimizing exposure during construction but the document does not reference the plans and details. This information should be part of a separate document. We note this section does not address that the project is subject to an EPA Construction General Permit (CGP) and a SWPPP has not been prepared or provided. We note a separate erosion control plan was not provided showing the location of all the necessary erosion control details such as the construction entrance, soil stock piles, and temporary sediment basin and recommend a separate plan be provided that would also identify the location of other temporary controls required under CGP such as refueling, maintenance, dumpsters, and sanitary facilities, etc. We recommend the Applicant clarify/address the following relative to standard 8...

Response: A separate Demolition and Erosion and sedimentation plan is now provided; Refer to C-003. A SWPPP has been prepared and provided with this submission. A separate document addressing Standard 8 is now provided in Section 2.1 of the Stormwater Report. Please refer to the attached plans and documents for additional information.

Special Permit under Section XIV of the Bylaws:

- A- The submission indicates that not all proposed impervious areas are designed to provide treatment prior to discharge to the wetland resource as required in XVI.B.7(a). The Applicant indicates treatment for the impervious area not directed to a BMP is impractical and the design complies since most of the impervious area is run through the proposed bioretention basin. The Applicant has not provided supporting information to demonstrate that it is impractical as stated. We recommend the Applicant provide additional information on some possible BMP measures that could be implemented to achieve compliance. The Board will need to consider if the Applicant's design has met the requirements of the Ordinance.

Response: The design now incorporates a new stormwater management system consisting of an infiltration basin, constructed wetland and permeable pavers, and a trench drain to capture any stormwater runoff that could potentially drain into the right of way. The proposed design meets or exceeds the treatment required by the Zoning Ordinance. Additionally, we ask the Board to consider the challenging site topographic and environmental constraints and limitations when reviewing this single-family home proposal.

- B- The Applicant has submitted an NOI application to the Conservation Commission and DEP for this project that is currently under consideration by the Commission and DEP.

Response: No response is needed.

We trust that the attached material is completed and informative. Should you require additional information, please do not hesitate to contact me at your earliest convenience.

Regards,
HD Design
Hazem Dani, PE