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*Updated Project Memo.
per M. Leach*

MEMORANDUM

To: Amesbury Planning Board	Date: November 8, 2016
Cc: Mr. Nipun Jain – City Planner Mr. William Scott – Director of Community & Economic Development	Re: Village at Bailey's Pond Site Plan Route 150 and Summit Avenue Amesbury, MA
From: Gerard J. Fortin, P.E. Michael E. Leach Stantec Consulting Services Inc.	Owner: City of Amesbury Applicant: Fafard Real Estate Project No. 1951-13172

Stantec Consulting Services Inc. has conducted another design review of the above referenced project. The following information was provided by the Applicant for review:

1. Copy of letter to Amesbury Planning Board relative to site plan Review, Village at Bailey's Pond dated October 4, 2016 prepared by Jeffery Roelofs with attachments for summary of plan changes, phasing narrative and waiver requests.
2. Copy of revised plans sheets T-100, C-101, C-102, C-201 through C-206, C-301, C-302, C-401 through C-405, C-601 thorough C-605 dated 10/1/15 and last revised 10/4/16, prepared by Oak Consulting Group.
3. Copy of revised drainage calculations printed on October 3, 2016 for Bailey's Pond prepared by Oak Consulting Group.
4. Copy of photometric plan prepared by Hubbell lighting dated 10/5/16.
5. Turning templates at Phase 1 and 2 cul-de-sacs for fire truck dated September 9, 2016 prepared by Oak Consulting Group.
6. Phasing plans PH-001 and PH-002 dated 10/4/16 prepared by Oak Consulting Group.
7. Sight Distance Figures – Figure 1 dated 10/4/16 prepared by Oak Consulting Group.
8. Copy of letter to Amesbury Planning Board relative to supplemental information dated October 12, 2016 prepared by Jeffery Roelofs with attachments consisting of Beacon Street Access details/figures and overall site plan

The project is located on Route 150 and Summit Avenue and has a small amount of frontage on Beacon Avenue. The project site has frontage along a portion of Bailey's Pond. The application information indicates that this is a modification of a prior approval. The modification in this submittal appears to be significant. Under this application, the proposed project is a 100 unit multi-family development located on vacant land. In general, the project proposed to construction private roadways, sidewalks, and install public water and sewer utilities to serve the residential units. A trail is proposed adjacent to Bailey's Pond and the associated riverfront area. The information references a previous traffic report submitted under the previous approval and notes it is relevant to this application. We note that the most recent project plan set submittal does not include the landscaping sheets or architectural plans. Stantec has reviewed the latest submission relative to



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Section XI.C Site Plan Review of the Amesbury Zoning Bylaws and the responses provided in the letter noted above to our previous review comments dated July 25, 2016. We offer the following comments:

Summary of Findings:

XI.C.5 - Material for Review:

The Applicant has provided updated information for review with the latest submission.

XI.C.6 - Additional Review Material:

*The Applicant has provided updated information for review with the latest submission. We note the following for consideration by the Board, which is further noted in detail in **Section XI.C.6** below:*

- 1. B- Soils: Stantec recommends that appropriate testing be conducting in each of the proposed infiltration areas under this design as noted in our previous comments. See additional comments below in XI.C.6.b.*
- 2. B- Soils: The project proposes significant alteration of the site with cutting and filling to achieve the proposed elevations, but the volume of soil to be excavated and filled was not included in the application information or this latest submission relative to Sections XI.A & XI.B of the bylaws. A special permit appears necessary. The Applicant should provide additional information relative to these items and submit a special permit application, as applicable, acceptable to the Planning Board.*
- 3. F- Legal Documents: It is our understanding that no draft versions of the legal documents (covenants, or agreements) associated with the public access, open spaces and trail system of this current project have been provided by the Applicant to the City. The Applicant should provide draft documents for review by the City.*

XI.C.8 - Development and Performance Standards:

*The Applicant has provided updated information for review with the latest submission. We note the following for consideration by the Board, which is further noted in detail in **Section XI.C.8** below:*

- 1. A- Access and Traffic Impact: With this submission, the Applicant provided additional information relative to the project driveway sight distance at Beacon Street. However, the information indicates that the City's minimum 300 foot sight distance is not provided in the westerly direction. In addition, the design intersection sight distance per AASHTO is not provided. See additional comments below in XI.C.8.a.*
- 2. C- Landscaping: The Applicant did not provide landscaping plans in the submitted project plan set in conformance with the bylaws. We understand that the Applicant is working with the Board on this issue.*
- 3. C- Landscaping: The Applicant indicates retaining walls with heights up to 20 feet within the building setback lines along Summit Avenue. We are concerned with the proposed deep excavations along the roadway and recommend engineering designs be provided for the walls. See additional comments below in XI.C.8.c.5.*
- 4. D- Site Plan and Architectural Design: The Applicant did not provide architectural plans in the submitted project plan set in accordance with the bylaws. We understand that the Applicant is working with the Board on this issue.*



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5. **E- Stormwater Runoff:** *The Applicant has not addressed the on-site drainage flow discharge from the existing 1.5 foot diameter culvert under Route 150 as requested in our previous reviews (January 20, 2016 and July 25, 2016) and states there is no runoff through the pipe in the latest response letter, but this does not appear correct. We note that the previous drainage reports have stated "High stormwater flows have caused some significant erosion at these outfalls." A USGS Streamstats review indicates a large watershed area contributing to Baileys Pond that includes a portion of the watershed located upstream of the 18" culvert under Route 150. See additional stormwater comments below in XI.C.8.e.*
6. **F – Erosion control:** *The Applicant has submitted phasing plans and phasing notes, but the plans do not indicate the erosion control measures to be implemented for each phase as requested previously. The phasing notes appear to indicate that the detention basins would not be installed first, but after the drainage and roadway are to binder, which is not appropriate. The phasing does not address what temporary measures will be implemented to contain site runoff during construction if the basins are not in place. See additional erosion control comments below in XI.C.8.f.*
7. **I- Lighting:** *The submitted photometric plan indicates the light levels will be exceeded at each roadway intersection. See additional comments below in XI.8.i.*
8. **N- Roadways and sidewalks:** *The Applicant has provided centerline roadway design information with the latest submission (sheets C-203, through C-206). We note the following items:*
 - *The intersection design at Route 150, at Beacon Street and at Summit Avenue do not provide the minimum 100 foot platform at 3% maximum for the new roadways as required by section 7.09.D.10 of the Subdivision Regulations.*
 - *The design information submitted for the Beacon Street intersection and Summit Avenue intersection do not include information relative the existing roadway grades and if the minimum 100 foot long platform at 3% maximum along the existing roadways is provided as required by section 7.09.D.10 of the Subdivision Regulations.*
 - *The intersection design for road A at road B on sheet C-205 indicates a platform slope of 3.43 percent that exceeds the maximum platform of 3% as required by section 7.09.D.10 of the Subdivision Regulations.*
 - *The intersection design for road A at road B on sheet C-205 has a grade change of 5.35 percent and does not provide a vertical curve at the intersection and change in slope of greater than 1 percent consistent with standard engineering practice.*
 - *The profile design indicates the crest curve at sta. 0+90, 20+80 and 31+00 do not provide the minimum k value of 12 per AASHTO Table 3-34 for a 25 MPH design speed.*
 - *The profile design indicates the sag curve at sta. 11+10, 23+00 and 34+80 do not provide the minimum k value of 26 per AASHTO table 3-36 for a 25 MPH design speed.*
 - *The plan does not show bearings and distances, radii and arcs, central angle and tangent distances on all curves with stationing on the center line as required by section 6.03.3 of the Subdivision Regulations.*

See additional roadway comments below in XI.C.8.n.



Section XI.C.5 Material for Review:

- a. **Parcel information:** Existing conditions plans are provided that indicate the site boundary and include a reference to the recorded boundary plan certified by a land surveyor.
- b. **Topographic and existing land features:** The existing condition plans indicate the topographic contours from 2004. ***The Applicant has submitted a waiver for trees over 8" in caliper for Board consideration.***
- c. **Buildings:** Conceptual plans provided under a previous submission. ***Updated architectural plans were not provided in the latest submission in compliance with the bylaws. It is our understanding that the Applicant is working on updated plans for review by the Planning Board.***
- d. **Parking and driveways:** Indicated on plans provided. ***See XI.C.8.b below for additional comments.***
- e. **Sidewalks, bike paths and recreational trails:** Indicated on plans provided. ***See XI.C.8 n and p below for additional comments.***
- f. **Utilities:** Indicated on plans provided. ***See XI.C.8.m below for additional comments.***
- g. **Grading and Stormwater Drainage:** Indicated on plans provided. ***See XI.C.8 e and n below for additional comments.***
- h. **Landscaping:** Conceptual plans and details provided under a previous submission. ***Updated Landscaping plans prepared by a registered landscape architect were not provided in the latest submission in compliance with the bylaws. It is our understanding that the Applicant is working on updated plans for review by the Planning Board.***
- i. **Lighting:** ***Separate lighting plans were provided with the latest submission. See XI.C.8.i below for additional comments.***
- j. **Signs:** ***Information relative to the sign configuration (dimensions, height and characteristics) was not provided with the latest submission. The Applicant notes that this information will be submitted with a building permit application in the response letter.***
- k. **Open Space:** Not labeled on plan. ***Recommend the open space be clarified on the site plan.***
- l. **Traffic Generation:** Additional information submitted. ***See XI.C.8.a below for additional comments.***
- m. **Building Facades and Floor Plans:** Conceptual plans provided under a previous submission. ***Updated architectural plans were not provided in the latest submission consistent with the bylaws. It is our understanding that the Applicant is working on updated plans for review by the Planning Board.***



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Section XI.C.6 Additional Review Material:

- a. **Surface and water pollution:** Revised stormwater calculations were submitted. **See XI.C.8 e and n below for additional stormwater comments. A report on impacts to subsurface ground water or water tables was not provided with the latest submission as previously requested. The Applicant should provide additional information relative to these items acceptable to the Planning Board.**

- b. **Soils:** Test pit information conducted in 2004 was provided in a previous submission. **The Applicant suggested that the test pits be conducted during the rough grading of the site in the latest response letter. This approach could only occur after approval and signature of the project by the Board. The infiltration areas cross sections on sheet C-605 indicate almost all of the basins are to be below ground varying from 3 to 8 feet. We note that test pits 4-12, 4-13 and 4-6 indicate seasonal water tables of 22", 28" and 78" respectfully. MassDEP stormwater regulations require a separation from the water table as part of the design for infiltration systems that has not been demonstrated. As noted in our previous comments, Stantec recommends that appropriate testing be conducting in each of the proposed infiltration areas substantiating that this project meets the requirements of the regulations under this design.**

Separately, the project proposes significant alteration of the site with cutting and filling to achieve the proposed elevations, but the volume of soil to be excavated and filled does not appear to be included in the application information relative to Sections XI.A & XI.B of the bylaws. A special permit appears necessary. The Applicant should provide additional information relative to these items acceptable to the Planning Board. **Information on the volume of soil to be excavated or filled was not provided with the submission. In addition, an application for a special permit has not been submitted (repeat comment).**

- c. **General environmental impact:** No Information provided. The site proposes to create more than 6 acres of impervious area and a MEPA review appears necessary for this current design. We recommend the Applicant provide a report to address the project impacts acceptable to the Board. In addition, the Applicant should submit for a MEPA review for this current project design. **The Applicant states in the previous response letter that "The Applicant does not believe preparation of a stand-alone general environmental impact report is warranted..." In this latest submittal, the Applicant notes that: "As indicated in our June 23, 2016 letter, given the nature of the changes from the approved project in 2013 to the current project, additional MEPA permitting is not necessary." The Board should review and consider if this latest project should have an updated general impact statement for the City file and/or additional MEPA review.**

- d. **Traffic impacts:** The report previously submitted is based upon information obtained in 2010, for a previous project, which does not include any recent developments. We note that the reports' project description is inconsistent with the design submitted with this application; but that the previous report was for 136 residential units versus the current proposal with 100 units and thus the impacts noted in the report would be less than noted in the report. The driveway on Summit Avenue is relocated under this latest submission, but this is not reflected in 2010 report. The sight distance for the Summit Avenue driveway is now different that described in the 2010 report. In general, the issues identified in the previous traffic reviews have been addressed. **Supplemental traffic review information was submitted. See comments below under Section XI.C.8.a.**



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- e. Architectural Drawings: Some Information provided previously. The architectural drawings for the project do not appear to be prepared by a registered architect in accordance with the bylaws. **Information was not provided in the latest submission to address this comment. It is our understanding that the Applicant is working on updated plans for review by the Planning Board.**

- f. Legal Documents: Some Information provided relative to the previous project. Draft versions for the legal documents (covenants, or agreements) associated with the public access, open spaces and trail system should be provided by the Applicant to the City. In addition, we note the proposed drainage design indicates the existing drainage flowing from Route 150 and Summit Avenue would be relocated and create a new discharge within in the 200 foot river front area. It is unknown if Mass DOT has agreed to this change to their drainage system, if access is needed to the new pipe and outlet location for maintenance, or if this new outlet location and discharged within the 200 foot riverfront area is acceptable to the Conservation Commission. Additional legal documents may be necessary associated with the submitted design. The Applicant should discuss the necessary legal documents for the project with the Board. **Information was not provided in the latest submission to address this comment.**

- g. Additional Information: Copies of the previous Mass DOT, MEPA submittal and Planning Board approval information was previously provided. The revised project appears to require an order of conditions for the wetland and buffer impacts, revised Mass DOT permit for the wider driveway and MEPA certification for the current design. It is unclear if the previous project had addressed the MEPA comments. The Applicant should provide a listing of all state and federal permits, licenses and approvals necessary for this project and provide the estimated schedule for application and approvals in accordance with the bylaws. **We recommend the project permits and approval numbers be noted on the project plans.**

Section XI.C.8 Development and Performance Standards:

- a. Access and traffic impacts: We note the following relative to the submitted design:
 - 1. The project proposes three curb cuts with one from each abutting roadways; Route 150, Summit Avenue and Beacon Street. The proposed access drive from Beacon Street and the proposed driveway on Summit Avenue do not exceed 24 feet. The number of access points appears to be minimized in accordance with the bylaws.

 - 2. The proposed entrance from Route 150 includes an island that separates the traffic entering and exiting the site. The width of the entire curb cut including the island and travel lanes is approximately 30 feet and exceeds the 24 feet maximum at the ROW with Route 150 per XI.C.8.a.3 of the Bylaws. We note that each lane in and out is dimensioned as 12 feet on the site plan sheet C-201. The design as shown would require a revision the current Mass DOT permit with the increased width indicated. The raised island may require changes to be acceptable to Mass DOT. **The Applicant has submitted a waiver request for Board consideration.**

 - 3. The roadway sight distance figures for Beacon Street and Summit Avenue have been provided separately under this latest submission to the Board. A sight distance figure for Route 150 and for the intersection of road A and B within the project was not



included in the project submission. We recommend that these intersection sight distance plans be included in the project plan set. We note the following:

- A. The Applicant's submittal states that the sight distance is adequate for the Beacon Street speeds (noted as 35 MPH at 85th percentile), but the minimum sight distance of 300 feet per section 7.09.D.2 of the Amesbury Subdivision Regulations is not provided. The submitted plan indicates a sight line to the east to the departing travel lane, but the measurement and minimum distance should be to the approaching traffic lane at the intersection. The sight distance for the approaching travel lane to the proposed intersection scales to be about 270 feet and is less than the minimum 300 feet required by the City's regulations. It is unclear from the information submitted how the intersection sight distance is adequate as stated by the Applicant.
- B. The minimum design intersection sight distance per AASHTO (Table 9-6 case B1- left turn) for a design speed of 35 MPH is 390 feet. For a speed of 30 MPH (posted speed limit) the AASHTO table notes a design intersection sight distance of 335 feet. Both intersection sight distances exceed the City's minimum of 300 feet. As noted above, it is unclear from the information submitted how the intersection sight distance is adequate as stated by the Applicant.
- C. The submitted plan does not dimension the location of the indicated sight lines from the existing roadway, but they scale to approximately 10 feet and may not indicate the appropriate sight line for the intersection. Per AASHTO, (Case B1 – Left Turn from Minor Road – page 9-36) "The vertex (decision point) of departure sight triangle on the minor road should be 4.4m [14.5 ft.] from the edge of the major-road traveled way. This represents the typical position of the minor-road driver's eye when a vehicle is stopped relatively close to the major road." We recommend that the Applicant review, update and dimension the intersection sight distances line locations accordingly and verify the proposed intersections sight distances meet the requirements of the City.
- D. The submitted information is only a plan view of the intersection and does not include a sight distance profile consistent with standard practice. We note that the Beacon Street plan indicates a stone retaining wall that could block the driver's sight line. In addition, the Summit Avenue plan indicates a proposed fence would be placed in the indicated sight line. We recommend that the Applicant provide intersection sight distance profiles with the plan views indicating that all season intersection sight distance is provided.

We recommend that the Applicant update and provide intersection sight distance plans and profiles for all project intersections in the project plan set with certification from a licensed professional engineer that proper and safe all season sight distance is achieved upon completion of the site improvements for all proposed roadways. The plans should specify all work needed to achieve the sight distance for proper construction.

4. The project roadway design proposes to decrease the separation between the proposed sidewalks and roadways from 6 feet to 3 feet that is contrary to the intent of Section 7.09.H the Amesbury Subdivision Regulations and Section XI.C.8.a.5 of the bylaws. Appropriate separation from vehicular traffic is generally a key component to promoting a safer circulation of pedestrians as recommended in section XI.C.7.a.2 of the bylaws. We recommend the design be revised to provide the minimum



separation for sidewalks consistent with the Subdivision Regulations and Bylaws or as acceptable to the Board. **The Applicant has submitted a waiver to reduce the separation distance for the sidewalk from the roadway to 3 feet for Planning Board consideration.**

5. The proposed project roadway design included two separate cul-de-sacs with interior pavement radii of 16 feet, a pavement width of 26 feet in the cul-de-sac and outside pavement radius of 42 feet that do not comply with Section 7.09.D.4 of the Subdivision Regulations. We recommend the Applicant revise the roadway cul-de-sac design consistent with the Subdivision Regulations. The Applicant is requesting a waiver to the cul-de-sac requirements. **The Applicant has submitted a waiver to reduce the size of the cul-de-sac for Planning Board consideration.**

b. Parking: We recommend the Applicant clarify the following:

1. The proposed residential use requires 1.5 spaces per dwelling unit in accordance with Section VIII of the Bylaws. The site plan notes that adequate parking is provide with this revised design.
2. The project layout indicates that cars will back out into the roadway, which is not allowed by section VIII.G.12 of the Bylaws. The proposed driveways shown do not provide a means to turn around when exiting the garage and face roadway traffic. It is our understanding that parking in the driveways is not accounted for in the parking calculations. We recommend the Applicant discuss the proposed design with the Board and revise the design as necessary acceptable to the Board.
The Applicant states in the previous response letter that "Backing from the proposed driveways onto these roads does not present a legitimate concern" in the response letter. The Board will need to consider this issue.

c. Landscaping: We recommend the Applicant address the following:

1. The landscape plans submitted previously were not prepared (stamped) by a registered landscape architect as required by Section XI.C.5h of the bylaws. The Applicant should revise the plans accordingly. **Landscape concepts were not provided with the latest submission. It is our understanding the Applicant is working on updated plans for review by the Planning Board.**
2. The roadway design does not appear to provide the minimum tree planting in accordance with section 7.09.I of the Subdivision Regulations. The Applicant should revise the plans accordingly. **Landscape concepts were provided with a previous submission. It is our understanding the Applicant is working on updated plans for review by the Planning Board. We note the Applicant has included a waiver request for tree planting with this submission for Planning Board consideration.**
3. The project plans do not include details indicating the appropriate methods to install/construct the landscaping as described in the subdivision regulations. The Applicant should revise the plan set accordingly. **Landscape concepts were provided in a previous submission, but did not include specific details for construction. It is our understanding the Applicant is working on updated plans for review by the Planning Board.**



4. The utility plans indicate several transformers are to be placed on the site but landscaping in accordance with section XI.C.8.c.5 does not appear to be provided. The Applicant should review and revise the design accordingly. ***Landscape concepts were provided in a previous submission, but did not include specific details for construction. It is our understanding the Applicant is working on updated plans for review by the Planning Board.***

5. The site revised design includes several retaining walls varying in height to 20 feet. The latest landscape design indicates a picket fence is proposed along the walls and provision to limit access to the other walls in the series is indicated on sheet C-202. The design on sheet C-201 indicates only one fence would be placed along the proposed tiered retaining walls. The Applicant should review with the Building Department and confirm that picket fencing along the walls is appropriate. In addition, it appears a fence is needed along the retaining wall opposite units 9 and 10. We recommend the Applicant confirm the walls and proposed picket fencing acceptable to the Board and Building Department. In addition, we recommend that the Applicant note the top and toe elevations of each wall on the grading plan for clarity and proper construction. ***A portion of the site layout has been revised including relocation and revisions to the retaining walls. We note that the wall behind units 15-16 is within the building setback and only 10 feet from the roadway right of way and is 18 feet high, which exceeds the 6 foot maximum noted in the bylaws. The retaining wall behind units 97-100 is also within the building setback and is 19-20 feet high and exceeds the maximum height noted in the bylaws. However, it is unknown if the revised retaining wall design is acceptable to the Building Department. We note a typical retaining wall detail is provided in the revised plan set on sheet C-605, but a stamped design of the retaining walls is not included in the submission. We are concerned with the deep excavation proposed for the proposed walls adjacent to the Summit Avenue. The Applicant has submitted a waiver request for the retaining walls for consideration by the Board.***

Separately, the previous submission includes landscape concepts at the retaining walls, but the concepts do not indicate the wall heights. The Board should review and consider if the revised site layout and retaining wall configuration and landscaping are acceptable. (See comments 6 and 7 below.)

6. The project details include a large block retaining wall will be used on the site, but a separate fence detail is not provided with the latest submission. The updated detail references the landscape plans for the railing that is missing from the landscape concepts. We note the several of the walls are tiered and understand that the Building Department requires retaining walls over four feet be designed by a professional engineer and have appropriate fencing for walls over four feet high. ***The Applicant notes the design of the retaining walls by a professional engineer will be prepared and submitted to the Building Department prior to construction in the previous response letter. In addition, the Applicant notes "This submittal will be provided to the building department prior to construction and can be addressed through a condition in the Site Plan Approval." in the latest response letter.***

7. The roadway design shown on sheet C-201 includes placement of the guardrail along the top of one the tiered retaining walls that varies to 10 foot high. The revised plans



include a typical detail on sheet C-605 for the guardrail along a tiered retaining wall. The Applicant should address if calculations will be provided for the wall and indicate that the wall is adequately designed to address the adjacent guardrail and potential impacts along this curved section of the roadway. **The Applicant notes" As indicated in our June 22, 2016 letter, as with typical procurement and construction of these systems, the contractor will supply a final wall design from the manufacturer, stamped by a professional engineer, prior to construction. This submittal will be provided to the building department prior to construction and can be addressed through a condition in the Site Plan Approval." in the latest response letter.**

However, steel beam guardrail will deflect and proper clearance needs to be provided to the retaining wall system. The Applicant should provide proper design to substantiate that proper clearance is provided for the retaining wall.

8. The landscaping concepts plans do not address maintenance in accordance with Section XI.C.8.c.6 of the bylaws. The Applicant should update the plans accordingly. **This comment was not addressed with the latest submission.**

d. Site Plan and Architectural Design: We recommend the Applicant address the following:

1. The previously submitted building plan information are only schematic plans and renderings, but the plans are not included in the project plan set, are not endorsed by a registered architect, are not at the appropriate scale and do not include all information noted in the bylaws. The Applicant should revise the plan set accordingly to include the building plans in accordance with the bylaws and acceptable to the Board. **Updated architectural plans were not provided in the latest submission. It is our understanding that the Applicant is working on updated plans for review by the Planning Board.**
2. The Applicant has revised some of the building locations, but several are shown in close proximity to the roadway and sidewalk. The Board should review and consider if the revised site layout and building configuration is acceptable.
3. The revised plans indicate some buildings with separations of 15 feet. The Applicant notes that the building separation meets approval of the Fire Department in the response letter. **We recommend that the Applicant provide documentation of the Fire Department approval for the Board's file and also confirm that the separation meets the approval of Building Department.**

e. Stormwater runoff: We recommend the Applicant clarify the following:

1. The latest revised and submitted project stormwater calculations still do not address or account for the flow from the existing 1.5 foot culvert under Route 150. As noted in our previous reviews, the project design does not address or account for the flow from the existing 1.5 foot culvert under Route 150. The latest revised project design state that there is no flow from the existing culvert under Route 150 and does not address or account for flow in the revised project stormwater calculations. The previous reports note significant erosion at the culvert outlets, but the reports have not associated flow from the historic culvert in the previous reports. We note that the revised design indicates proposed buildings are located downstream of the existing culvert outlet. **The Applicant should update the stormwater analysis to identify and properly address the on-site flows contributing to the site through the 1.5 foot culvert under Route 150.**



Additional information should be provided to clarify that the site is designed to properly address discharge from the pipe since there is no swale designed or shown behind units 11-14 to handle the flows. The design should indicate the existing culvert flow would not impact the proposed dwellings acceptable to the Board.

2. The Applicant has included flow from the existing 18" pipe outlet along Summit Avenue with the latest calculations, but has not provided a drainage area map to clarify the drainage area associated with the flow. The revised plans indicate a proposed retaining wall would be constructed adjacent to the existing outlet flow that could hinder maintenance of the outlet by Amesbury Department of Public Works. The design indicates a double grate catch basin is proposed downstream of the existing culvert and a riprap apron is to be placed at the existing culvert outlet. **Please verify the revised design at the culvert outlet is acceptable to with Department of Public Works and will provide appropriate and adequate access for maintenance of the culvert outlet by the Department of Public Works. Will flowage rights be provided for the existing culvert here and for the other culverts?**
3. Provide analysis indicating the current flows from all culverts to the site and impacts/flows to Bailey Pond. **The submitted analysis does not appear to address or include all the existing culvert flows onto the site as previously requested. We note a 12" culvert along Route 150, and outlets and drain pipes westerly of the proposed driveway on Summit Avenue that are not included.**
4. Stone apron sizing is provided with the calculations and sizing is included in the plan set. **The Applicant should provide outlet protection calculations for sizing the stone aprons shown at the existing 18" pipe outlets and 2.5 foot pipe onto the site. In addition, please provide an apron at the outlet from the existing 1.5 foot culvert under Route 150. Please update the detail on sheet C604 accordingly.**
5. Address proposed impacts to Bailey's Pond and abutters. **The revised submission provides calculations which are relative to the proposed impacts to Bailey's Pond. The Applicant should provide a complete report with the report narrative containing a summary table indicating each abutter, and the pre and post development flows to each abutter to clarify the project impacts for review by the Board.**
6. **The revised pond analysis at pond 2-2 does not address the catch basin outlet device with a rim of 39.0 and pipe outlet (HDPE pipe). The Applicant should revise the analysis to address the proper rim elevation noted on the grading plan according.**
7. **The revised analysis for ponds 2-1, 1-5, 1-2 and 1-5 do not address the catch basin outlet device or the outlet pipe (HDPE pipe). The Applicant should revise the analysis accordingly.**
8. **The revised 25-year analysis indicates a significant increase in discharge runoff from pond 1-3 adjacent to Bailey's Pond from the previous submittal (2.50 cfs. now with zero previously). The pond does not have an outlet device and is indicated to operate with flow discharging over the emergency overflow device- a riprap emergency spillway. The emergency spillway location and design would appear to discharge to an embankment depicted on sheet C-302 and then flow across the proposed walking**



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trail toward Bailey's Pond. We recommend an outlet device consistent with the other detention ponds be provided. In addition, the Applicant should review and address the potential downstream impacts associated with this increased flow located within the 100 foot waterfront buffer.

9. **The separately submitted sequencing narrative indicates, in note 4 of the Phase 1A and 1B, that roof runoff infiltration systems are to be utilized for this site, but the project plans and drainage report do not include information or details of the noted systems. The Applicant should update the project plans and report accordingly.**
 10. A cursory review of the drainage system information indicates several pipes to outlets such as to FES P2-2, FES P2-1, FES P1-3, etc. do not provide the minimum 3 feet of cover over the drain pipe as required per section 8.04.A.1 of the Subdivision Rules and Regulations. **The Applicant has submitted a waiver for pipe cover for the proposed drainage system for Planning Board consideration.**
 11. The proposed drainage system is noted to be HDPE that does not comply with section 8.04.A.1 of the Subdivision Rules and Regulations requiring concrete pipe. **The Applicant has submitted a waiver to use HDPE pipe for the proposed drainage system for Planning Board consideration.**
- f. **Erosion Control:** We recommend the Applicant clarify the following:
1. Erosion control configuration for the site shown on sheets C-301 and C-302, but appears incomplete. For example, construction entrances and the erosion control matting areas indicated in the details on sheet C-601 are missing along with staging and stock pile areas typically associated with construction. The Applicant has included phasing notes and separate phasing plans, but phasing is not noted for the project in the site plan notes. We recommend that separate plans related to erosion control be prepared that include, construction entrances, erosion control matting, staging and stock pile areas, phasing, temporary facilities such as construction trailer, portable toilets, dumpster, etc. the seeding notes of the landscape plan and erosion control should be updated accordingly to be consistent. **The Applicant has submitted phasing plans and phasing notes. However, the plans do not indicate the erosion control measures to be implemented for each phase as requested previously as noted above. The phasing notes appear to indicate that the detention basins would not be installed first, but after the drainage and roadway are to binder, which is not appropriate. The submitted phasing does not address what temporary measures will be implemented to contain site runoff during construction if the basins are not in place. We recommend that the entire site not be cleared and grubbed as noted in Phase 1 note 2. We recommend that existing tree cover along Bailey's Pond (Phase 1B) remain in place until Phase 1A is nearly complete. We recommend that the Phase 1 portion be further divided into small sub-phases with more specific erosion control details which address what happens under the scenario that the 50 units with all the necessary infrastructure is not completed in the 2 years as implied by the schedule. The phasing should also address the specific utilities to be constructed to serve each the sub-phases. We also recommend that the phasing include provisions for access by emergency vehicles during the sub-phase construction acceptable to the Fire Department. We recommend the plans and narrative be updated to properly and clearly address the phasing construction acceptable to the Board.**



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2. The proposed design includes construction of a trail along Bailey's Pond located mostly in the buffer zone and water front area of the site. The revised plans include details for the proposed trail to be construction of proposed steps and the trail that is made of wood chips. The wood chips would not appear to be a resilient and stable surface. **We recommend that the Applicant review and confirm the proposed trail design is acceptable to the Conservation Commission and Board.**
- g. Water Quality: We recommend the Applicant clarify the following:
1. The project design proposes to utilize drywells as one of the measures to provide groundwater recharge as indicated by the detail provided on sheet C-604.
 2. We note the design includes infiltration within the detention basin areas and proposes 4 foot deep sump catch basins. The measures noted above are consistent with the water quality performance standards outlined in the bylaws.
- h. Hazardous Materials and Explosive Materials: The Applicant has included a general note on the site plan indicating the project would comply with this requirement. We recommend the Applicant confirm that the note on the site plan meets the approval of the Fire Department for inclusion in the Board's project file.
- i. Lighting: The Applicant has provided lighting plans with the latest submission. We recommend the Applicant clarify the following:
1. Light poles are indicated on the utility plans, but the utility line to serve each pole is missing. Please update the utility plan accordingly. **Comment not addressed in latest submission.**
 2. The light pole detail indicates with the lighting plans does not address the height of the proposed fixture to confirm compliance with the 16 foot maximum per XI.C.i.2 of the bylaws. Please revise the detail accordingly. **Comment not addressed in latest submission.**
 3. A photometric plan indicates portions of the lighting at the each intersection would exceed the maximum light levels per XI.C.i.6 of the bylaws. We recommend the Applicant update the photometric plan indicating the proposed lighting levels in compliance with XI.C.8.i of the Bylaws is achieved. **Comment not addressed in latest submission.**
 4. The proposed street lights spacing does not appear to provide the minimum light levels anticipated for an urban type design and are spaced greater than 300 feet apart per section 7.13 of the Subdivision Regulations. **The Applicant has submitted a waiver to reduce the lighting levels and increase the pole spacing for Planning Board consideration.**
- j. Environmental Performance Standards: The Applicant has previously submitted information on how the project has met the development and performance standards of the Bylaws for review for consideration of the Planning Board and for the project file.



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- k. **Noise:** The Applicant has included a general note on the site plan indicating the project would comply with Section XI.C.8.k of the Bylaws. We recommend the Applicant confirm that the note on the site plan meets the approval of the Board.
- l. **Wetlands:** The project site is located along Bailey's Pond with an on-site stream that discharges into Bailey's Pond entering the site from a culvert under Summit Avenue. In addition, an isolated on-site wetland area is indicated on the plans. The project design includes impacts to the 100 foot buffer to Bailey's Pond, impacts to the 200 riverfront buffer of the existing stream, impacts adjacent to the isolated wetland and impacts to the stream and adjacent wetlands for construction of utilities under the stream to serve the site. An order of conditions for the proposed wetland and buffer impacts is needed for the project as proposed. **We recommend the Applicant obtain an Order of Conditions for this project design and incorporate the necessary measures of the Order of Conditions in the plan set to address this performance standard. Recommend that the Order of Condition be noted on the site plan.**
- m. **Utilities:** We recommend the Applicant clarify the following:
1. The project design indicated the site would be served by public sewer. The revised layout includes a new sewer manhole for receipt of the site sewer pump station discharge that would flow by gravity into the existing manhole on Beacon Street. We recommend the Applicant discuss the proposed sewer pump station discharge design with the Department of Public Works and update the design as necessary acceptable to the Department. **The Applicant should confirm the revised proposed design meets the approval of the Department of Public Works.**
 2. A cursory review of the revised sewer design was conducted. We note the following:
 - A. Recommend that drop manholes P1-10 and P2-4 be 5 foot diameter to allow for proper construction of the internal drops.
 - B. The sewer profile does not address the force main or the gravity sewer connection on Beacon Street. The design should be revised accordingly.
 - C. We recommend that trench dams be provided for the sewer pipe with slopes of 8% or more. Please include a detail for proper construction.
 - D. The detail for the pump station identifies a generator will serve the facility, but the generator is not indicated on the utility plan or sewer profile. Please update the design accordingly and obtain any permits as applicable.
 - E. The pump station does not include a vent. Please update the design accordingly.
 - F. The control panel notes indicate that there is a dialer for the remote alarm. Who will be notified to address the alarm of this private system? Please address acceptable to the Department of Public Works.
 - G. The pump station notes the alarm and control box will be mounting in an accessible place near the pump station, but the location is not indicated on the plans. Please clarify for proper construction.
 - H. The design implies the gravity line and force main will be constructed in the same trench, but a detail was missing from the submission. Please update the plan set accordingly.
 - I. The sewer calculations do not address infiltration for the pipe, manholes or station. We note that a portion of the sewer line, manholes and pump station will be below the elevation of Bailey Pond. Please review and update accordingly.



We recommend the Applicant carefully review the proposed sewer and utility design and revise as necessary in compliance with the regulations and acceptable to the Department of Public Works.

3. The design indicates the site will be served by public water with connections at Route 150, Beacon Street and Summit Avenue. The Applicant should indicate the pavement sawcut limits associated with the connections for proper construction. The Applicant should obtain any permits for the proposed water service from the Department of Public Works. In addition, the Applicant should obtain a permit/permission for the proposed work in Route 150 from Mass DOT. **We recommend the Applicant obtain all permits associated with the proposed water line connections from the Department of Public Works and Mass DOT. The Applicant should indicate the pavement sawcut limits associated with the connections for proper construction.**
 4. The plans indicate underground electric and communication utility connections to serve the site will be from Beacon Street for the easterly development area and from Summit Avenue for the northerly development area. We recommend the Applicant obtain and provide letters from each utility provider indicating the proposed service location is acceptable and service is available for the Planning Board's file. **The Applicant noted in the previous submission that the utility service letters will be provided when received.**
- n. Roadways and Sidewalks: We recommend the Applicant clarify the following:
1. The Applicant has provided centerline roadway design information with the latest submission that includes both horizontal and vertical design information (sheets C-203, through C-206). With this new information, we note the following items:
 - A. **The intersection design at Route 150, at Beacon Street and at Summit Avenue do not provide the minimum 100 foot long platform at 3% maximum for the proposed roadways as required by section 7.09.D.10 of the Subdivision Regulations. The proposed roadway design should be revised to comply with the regulations. With this new information, the Applicant has also submitted a waiver request to reduce the intersection platform length to 60 feet for the new roadways which appears to be measured from the edge of existing pavement. It is unknown if the reduction of the platform is suitable for emergency vehicles. The new waiver request is submitted for Planning Board consideration.**
 - B. **The design information submitted for the Beacon Street intersection and Summit Avenue intersection do not include information relative the existing roadway grades and if the minimum 100 foot long platform at 3% maximum along the existing roadways is provided as required by section 7.09.D.10 of the Subdivision Regulations. The Applicant should provide additional intersection design information indicating compliance with the regulations is achieved.**
 - C. **The intersection design for road A at road B on sheet C-205 indicates a platform slope of 3.43 percent that exceeds the maximum platform of 3% as required by section 7.09.D.10 of the Subdivision Regulations. The design should be revised accordingly.**
 - D. **The intersection design for road A at road B on sheet C-205 has a grade change of 5.35 percent and does not provide a vertical curve at the intersection and change in slope of greater than 1 percent consistent with standard engineering practice. The design should be revised accordingly.**



- E. *The profile design indicates the crest curve at sta. 0+90, 20+80 and 31+00 do not provide the minimum k value of 12 per AASHTO Table 3-34 for a 25 MPH design speed. The design should be revised accordingly.*
 - F. *The profile design indicates the sag curve at sta. 11+10, 23+00 and 34+80 do not provide the minimum k value of 26 per AASHTO table 3-36 for a 25 MPH design speed. The design should be revised accordingly.*
 - G. *The plans do not show bearings and distances, radii and arcs, central angle and tangent distances on all curves with stationing on the center line as required by section 6.03.3 of the Subdivision Regulations. The design should be revised to comply with the regulations.*
 - H. *The plans indicate centerline arc radii with five separate locations indicated with radii less than 200 feet (i.e. to 100 feet) which does not comply with Section 7.09.D.7 of the Subdivision Regulations. The design should be revised to comply with the regulations. The Applicant has submitted a waiver request for the centerline radius under this project.*
 - I. *The plans do not show the proposed drainage, catch basins, manholes, pipes and any other drainage facilities on both plan and profile as required by section 6.03.6 of the Subdivision Regulations. The design should be revised to comply with the regulations.*
 - J. *The plans do not show the proposed Utilities (including sewers) where possible in the profile per 6.03.10 of the Subdivision Regulations. The design should be revised to comply with the regulations.*
 - K. *The roadway profiles do not extend along the cul-de-sac centerlines to indicate the minimum slope of 1% is provided along the roadway per section 7.09.D.10 of the Subdivision Regulations. The design should be updated to include the cul-de-sacs and clarify compliance with the regulations.*
2. The revised site design does not provide sidewalks on both sides of the roadway per section 7.09.H of the Amesbury Subdivision Regulations. **The Applicant has submitted a waiver request for the proposed sidewalk for Planning Board consideration.**
- o. Marina or Docking Facilities: The project design does not indicate any proposed marina or docking facilities and this performance standard does not appear to apply to this application.
 - p. Specific Design and Construction Standards: We recommend the Applicant clarify the following:
 1. Please provide roadway names and unit address acceptable to the Board and Fire Department. **The Applicant noted this will be addressed at a later time in the response.**
 2. The project proposed a trail adjacent to Bailey's Pond mostly located in the 50 and 100 foot buffer zone requiring approval by the Conservation Commission. Details for the trail construction are provided in the updated plan set. We note the trail to be 4" of wood chips and this surface type would not remain in place. We recommend that the Applicant provide a more suitable trail surface acceptable to the Board and Commission. An easement for use by the public appears necessary. The Applicant should discuss the trail design and public access with the Board and Conservation Commission and should update the plans and application information acceptable to



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the Board and Conservation Commission. ***The Applicant noted that the proposed trail will be discussed with the Board and Conservation Commission in the response letter.***

Other information for Planning Board Consideration:

1. The City tax maps indicate there are three separate lots in this area with only lot 50 map 88 and lot 1 map 98 labeled. A lot consolidation plan that combines the existing lots into one lot that allows the proposed development is needed to meet the setback requirements of the Bylaws. ***The Applicant notes approval in the March 21, 2016 response letter that lot consolidation would occur after.***
2. A special permit may be required under section XI.A and/or IX.B of bylaws. ***The Applicant indicates that a special permit will be filed at a later date in the response letter.***
3. The Applicant has noted that additional information would be submitted under separate cover to the City related to the project that was not included with this review and further comments on the additional plans and information may arise.

Summary:

Upon receipt of a complete revised information package submitted to the City, Stantec will prepare a supplemental review response for the Board. Unless instructed otherwise, we will only do the supplemental review upon receipt of a revised package from the Applicant submitted through the City that addresses each comment noted above. A summary response letter addressing each comment noted above should be included with the revised drawings and supporting information package from the Applicant.

Stantec is available to meet with the Applicant's design and engineering team with written authorization from the Board to discuss these comments with the City present prior to the submittal of a revised information package. For such a meeting to be most effective, we request that the Applicant's team clearly identify the specific issues that need further clarification or discussion with Stantec prior to the meeting. We further recommend that the Applicant arrange a meeting with the Technical Assistance Group to discuss any specific comments related to input from City officials prior to meeting with Stantec.

GJF/ml