



April 20, 2021

Landis Hershey
Conservation Agent
Town of Walpole – Conservation Commission
135 School Street
Walpole, MA 02081

Re: Proposed Multifamily Development – 55 Summer St Peer Review of Applicant’s January 2021 Submission

Ms. Hershey:

Howard Stein Hudson has reviewed the responses provided by BETA Group, Inc. (BETA) on March 30th, 2020. Herein, BETA’s responses are depicted in bold and denoted as “**BETA 2**”. HSH offers the following responses to BETA’s comments in **red** with plan images provided where applicable. The information listed below is a complete documentation of the comments and responses provided by both HSH and BETA.

BETA Group, Inc. (BETA) has reviewed the plans and other materials submitted to the Conservation Commission by the Applicant on January 27, 2021 for the proposed Multifamily Housing Development located at 55 Summer Street in Walpole, Massachusetts (the Site). BETA previously provided letters dated August 10, 2020, September 29, 2020, and October 6, 2020. This letter is provided to update findings. The project is being concurrently reviewed by the Walpole Zoning Board of Appeals under the Comprehensive Permit review process. BETA understands that a Draft Permit is being developed by the ZBA that approves the project with Conditions and that generally waives the Walpole Wetlands Protection Bylaw.

Basis of Review

- Notice of Intent, dated May 14, 2020, prepared by Howard Stein Hudson.
- Project Plans: “Site Plan for Proposed Multifamily Development,” dated January 10, 2020, revised January 27, 2021, prepared by Howard Stein Hudson (51 Sheets).
- Supplemental Data Report, dated January 2021, prepared by Howard Stein Hudson.
- Watershed Plans, dated March 9, 2020, revised January 22, 2021, prepared by Howard Stein Hudson (7 Sheets).



- Abbreviated Notice of Resource Area Delineation, dated November 20, 2019, prepared by Oxbow Associates, Inc.
- Site Plan and RFA Narrative Revisions, dated June 20, 2020, prepared by Howard Stein Hudson.
- Comprehensive Permit (40B) Peer Review, dated April 20, 2020, prepared by Tetra Tech.
- Massachusetts Stormwater Handbook.
- Town of Walpole Wetland Protection By-Law, Chapter 561, Wetland Protection, Division 2 of the General Bylaw (as revised 5/07/201) and Regulations (the Bylaw).
- MACC Buffer Zone Guidebook, dated June 6, 2019.
- Massachusetts Wetlands Protection Act (M.G.L. Chapter 131 Section 40 - the Act).
- Site Plan and Peer Review Response, dated September 14, 2020, prepared by Howard Stein Hudson.
- Responses to BETA August 10, 2020 Peer Review Letter prepared by Howard Stein Hudson.

Site and Project Description

The Site consists of three lots identified by the Walpole Assessor's Office as Lots 52-78-1, 52-59, and 52-60. In total, the Site consists of 54.73± acre parcel and is located to the north of Summer Street. The existing Site is currently vacant and predominantly woodlands.

An internal wetland system is present throughout the Site. The Site is bounded to the north by Cedar Brook and Cedar Swamp, and the 200-foot Riverfront Area extends into the Site. Several vernal pools are located throughout these wetlands. Portions of the Site to the north and east are within a FEMA-mapped 100-year flood zone (Zone A and Zone AE). The north end of the Site is also within a NHESP-mapped Priority Habitat of Rare Species. The resource area boundaries on the Site were confirmed by two Order of Resource Area Delineation decisions, both of which are still valid.

The project proposes to clear and grade most of the non-wetland areas to construct multi-family housing development. The development will include several larger apartment/townhouse buildings as well as a series of single-family homes. Associated Site improvements include paved parking areas, paved roadways, wetland crossings, and utilities (domestic water, fire service, sewer, gas, electric). Stormwater management is proposed through a network of catch basins, manholes, subsurface infiltration systems, and infiltration / detention ponds.



Stormwater Management

The project is large, dense, and complex relative to stormwater management. The project proposes a closed drainage system consisting of deep-sump, hooded catch basins and drainage manholes to capture stormwater runoff from proposed paved areas. This system conveys runoff to one of several BMPs, including subsurface infiltration systems, Infiltration ponds with sediment forebays, or extended detention wetland areas. These BMPs include overflow outfalls or emergency spillways that discharge runoff into adjacent wetland buffer zones.

BETA was asked by the Conservation Commission to review the ZBA peer review consultants' letter. The scope of this review is the project's compliance with the Massachusetts Stormwater Handbook. This letter is not intended to be a comprehensive peer review of the stormwater management design.

PEER REVIEWER COMMENTS – STORMWATER MANAGEMENT

The project's stormwater design has been reviewed by Tetra Tech (TT) in their peer review letter dated April 10, 2020. BETA has reviewed these findings and is in general agreement with these comments. BETA previously provided peer response comments, recommendations, and clarifications, provided below in italics. Howard Stein Hudson's (HSH) provided a response to BETA's previous response letters, as provided below in plain text.

BETA has updated their findings and have included in this letter a revised set of clarifications, comments, and recommendations provided below in Bold italics and labeled as "BETA2." Comments that were previously identified as "resolved" have been removed for brevity, unless otherwise noted.

MASSACHUSETTS STORMWATER STANDARDS

The following section details BETA's review of project compliance with the MassDEP Stormwater Standards and good engineering practices.

NO UNTREATED STORMWATER (STANDARD NUMBER 1)

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

The proposed stormwater management system includes outfalls which discharge to wetland buffer zones. Prior to discharge, stormwater is treated by deep sump catch basins, sediment forebays, and infiltration ponds, subsurface infiltration systems, or extended detention wetland systems. Riprap aprons are proposed at each outfall to control erosion.

SW1. Provide calculations for sizing of riprap aprons to ensure that runoff will not cause erosion.



HSH: Standard riprap aprons lengths and quantities for flared end sections has been provided on detail sheet 1 of 18 based on standard drainage pipe sizes. See detail sheet 1 of 18 (sheet 69 of 86) from the plan set dated 5/1/20.

BETA: Provide calculations as requested to confirm.

HSH2: Detail below provided to Conservation Commission on sheet 69 of 86 on plan set dated 5/1/20 located via: https://www.walpole-ma.gov/sites/g/files/vyhlif1381/f/pages/plan_set_5-1-20.pdf

BETA2: Provide riprap apron for outfalls for Infiltration Pond #1 and Extended Detention Wetland #1.

Applicant: Agree – Riprap aprons have been added to both Infiltration Pond #1 and Pocket Wetland #1 and can be seen on sheet 45 and 46 of the plan set.

Figure 1. Infiltration Pond #1 Riprap Apron

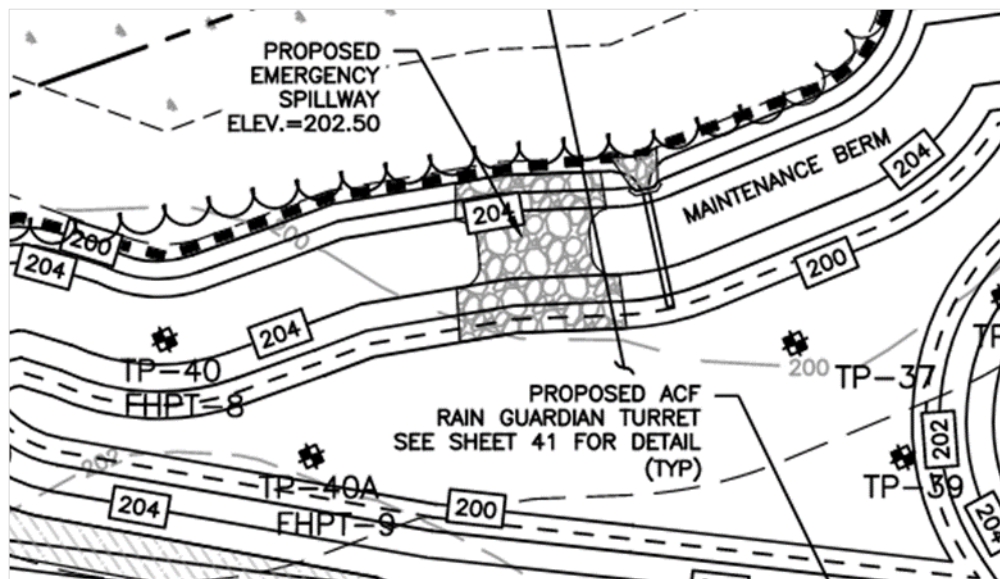
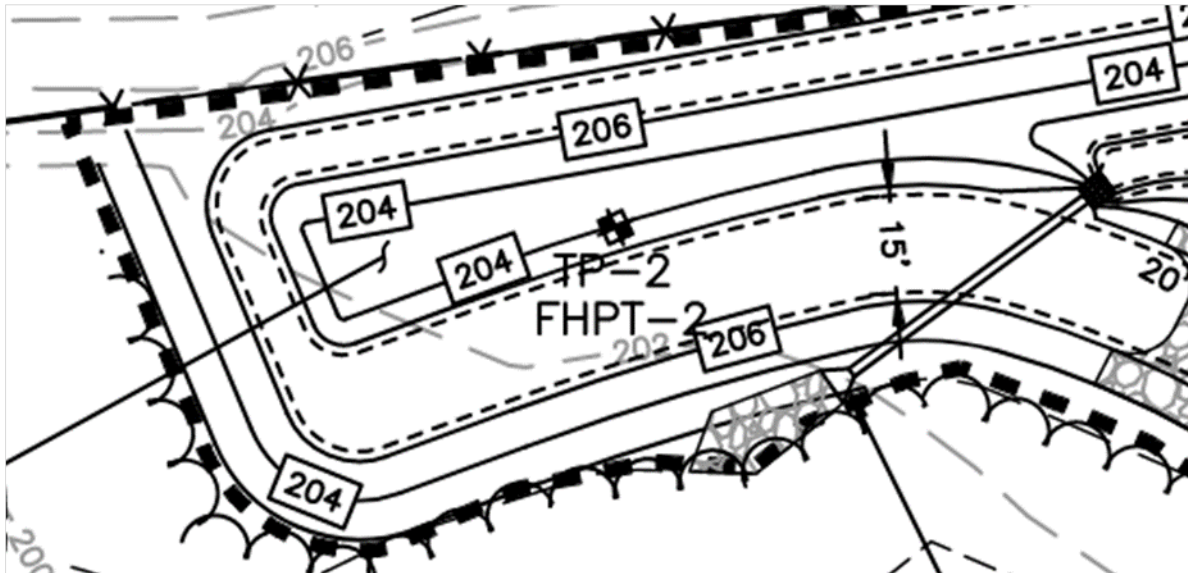




Figure 2. Pocket Wetland #1 Riprap Apron



DEVELOPMENT PEAK DISCHARGE RATES (STANDARD NUMBER 2)

Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. The project proposes a significant change to ground cover which will greatly increase the discharge rate of stormwater runoff from the Site. This increase will be mitigated by infiltration ponds to capture, store, and infiltrate runoff. The provided calculations indicate a decrease in peak discharge rate and runoff volume for the 2, 10, 25, and 100-year storm events.

SW2. The Applicant is using an infiltration rate for "A" soil based on soil test data taken throughout the site and yet is using "B, C and D" soil in the hydrology model. If soils data indicates "A" soils revise pre- and post-development HydroCAD models, modeling all upland soils as "A" soils.

HSH: The Hydrologic Soil Group is broken down into four groups based on the soil's runoff potential. Soils categorized as Group A generally have the smallest runoff potential and the highest infiltration rate, whereas Group D soils have the highest runoff potential and the lowest infiltration rate. This is specifically talking about how the land cover will react to a rainfall event, and how the water will travel over the ground surface. When designing an infiltration pond, testing needs to be performed within the soil layer which the infiltration will be occurring to determine the soil texture. For the design of each infiltration basins, test pits were performed, and the soil type and texture were obtained from the C horizon. Based on the information obtain from the test pit logs, it was determined that most of the test pits, within the C horizon, were loamy sand with some test pits yielding a texture class of sand. These correlate to infiltration rates of 2.41 in/hr. and 8.27 in/hr. respectively from the



Massachusetts Stormwater Handbook Rawls Rate table 2.3.3. The following information was taken from the Massachusetts Stormwater Handbook to support the above design methodology: “Conduct tests at the point where recharge is proposed. The tests are a field evaluation conducted in the actual location and soil layer where stormwater infiltration is proposed (e.g., if the O, A and B horizons are proposed to be removed, the tests need to be conducted in the C soil layer below the bottom elevation of the proposed recharge system). The tests shall be conducted by a Competent Soils Professional.” “when the static or simple dynamic method is proposed for sizing... in-situ tests for saturated hydraulic conductivity are not required for purposes of the stormwater standards and the saturated hydraulic conductivities listed by Rawls 1982 shall be used”. “When Static or simple dynamic methods are used, the Rawls Table (table 2.3.3) must be used to establish the exfiltration rate associated with the soil textures determined at the actual location on site where infiltration is proposed.”

BETA: BETA recommends updating the HydroCAD model to reflect test data soils rating and providing in-situ saturated hydraulic conductivity test to verify soils data as identified, see attachment for further explanation.

HS2: The stormwater basins as currently designed throughout the site were modeled following the procedures outlined within the Massachusetts Stormwater Handbook. Volume 3, documenting and compliance, outlines that “For undisturbed soils in Massachusetts, NRCS has assigned each soil type to a Hydrologic Soil Group. However, that classification is based on the upper and not lower soil horizons. When the lower soil horizons or layers are proposed for stormwater infiltration, the soils must be assigned to a Hydrologic Soil Group by the Competent Soils Professional” Since the existing site has been undisturbed since it was utilized as a piggery, the topsoils have remained unchanged and the NRCS classifications are valid for this site. Stage 2 from the Massachusetts Stormwater Handbook discusses how to determine the site conditions when recharge is proposed: “Conduct tests at the point where recharge is proposed. The tests are a field evaluation conducted in the actual location and soil layer where stormwater infiltration is proposed (e.g., if the O, A and B soil horizons are proposed to be removed, the tests need to be conducted in the C soil layer below the bottom elevation of the proposed recharge system). The tests shall be conducted by the Competent Soils Professional.... When the "Static" or "Simple Dynamic" Methods or LID Site Design Credits are proposed for sizing stormwater recharge BMPs, in-situ tests for saturated hydraulic conductivity are not required for purposes of the Stormwater Standards and the saturated hydraulic conductivities listed by Rawls 1982 (see Table 2.3.3) shall be used.”

BETA2: BETA concurs with the use of in-situ test pit data to model proposed infiltration basins. BETA does not concur with the assumption that NRCS soil



classifications are the most accurate representation of the Site’s soils. Test Pits conducted at the Site typically show soil consisting of Sandy Loam, Loamy Sand, and Loam. These soil types are associated with NRCS Hydrologic soil groups of HSG A or HSG B according to the 1982 Rawl’s Rates.

Volume 3, Chapter 1, Page 9 of the Massachusetts Stormwater Handbook includes the Section “Stage 1B,” which indicates measures to be taken when site conditions are found that are inconsistent with the NRCS soil survey. The aforementioned test pits show that actual site conditions differ from the HSG C and HSG D soil suggested by the NRCS soil surveys. In accordance with Stage 1B, a soils textural analysis should be performed, and the hydrologic soil groups used in the model revised. The previously completed test pits are anticipated to be of sufficient quantity to complete this analysis.

Applicant: Additional in-situ test pits were performed in conjunction with the existing test pits previously completed on-site to perform a soil textural analysis within each pit. The soils as depicted via the NRCS soil survey was either verified or changed based on the additional data collected. The revised soil delineations are found with the drainage and stormwater maps attached to the supplemental data report. The below figures show how the soils have been modified based on the in-situ testing which was performed. Per the below, Pre-Development to Pre-Development comparisons from the 5/2/20 to 4/12/21 HydroCAD show the changes in the different HSG’s more clearly. Also, due to slight changes in the drainage areas a small reduction in total area is see in the Pre development from the 4/12/2021 HydroCAD.

Figure 3. 5/1/20 Pre-Development Soil Listing

19097 Pre-Development		
Prepared by Howard Stein Hudson		Printed 5/2/2020
HydroCAD® 10.10-3a s/n 02930 © 2020 HydroCAD Software Solutions LLC		Page 5
Soil Listing (all nodes)		
Area (sq-ft)	Soil Group	Subcatchment Numbers
300,761	HSG A	103S, 104S
780,772	HSG B	101S, 102S, 104S
697,394	HSG C	102S, 103S, 104S
802,818	HSG D	102S, 103S, 104S
0	Other	
2,581,745		TOTAL AREA



Figure 4. 4/12/21 Pre-Development Soil Listing after Revised Soil Testing had been Performed

19097 Pre-Development		
Prepared by Howard Stein Hudson		Printed 4/12/2021
HydroCAD® 10.10-3a s/n 02930 © 2020 HydroCAD Software Solutions LLC		Page 5
Soil Listing (all nodes)		
Area (sq-ft)	Soil Group	Subcatchment Numbers
302,340	HSG A	103S, 104S
716,175	HSG B	101S, 102S, 104S
885,673	HSG C	102S, 103S, 104S
669,732	HSG D	102S, 103S, 104S
0	Other	
2,573,920		TOTAL AREA

Note areas are different due to increased accuracy within summer street from the purchase of the access easement. The watershed areas were revised accordingly.

SW3. Revise model using a CN value of 98 (water surface) for all infiltration basins to avoid double counting infiltration.

HSH: HSH will change the Hydro Cad to test this extreme case. Applicant will update plans accordingly and provide in final plan revision.

BETA: Calculations not revised – issue remains outstanding.

HSH2: Calculations will be provided in updated set of plans

BETA2: Calculations revised – issue resolved.

RECHARGE TO GROUNDWATER (STANDARD NUMBER 3)

Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to maximum extent practicable. NRCS soil maps indicate the presence of various soil groups predominantly including fine sandy loam. Hydrologic Soil Group (HSG) ratings are primarily B, C, and D. Infiltration ponds are proposed to provide the required recharge volume. Drawdown calculations have been provided showing the BMPs will drain within 72 hours.

SW4. Due to the reliance on infiltration to provide mitigation for stormwater impacts and the fact that the design does not allow for flexibility (due to density) if infiltration rates do not match the assumed rates as well as the difference in assumed hydrologic group rating of soils from NRCS



mapping, BETA recommends the Applicant provide two in-situ saturated conductivity tests for each of the proposed basins to confirm design.

HSH: Sufficient testing has been done to comply with the stormwater handbook and regulations. According to the Massachusetts Stormwater Handbook, the Dynamic field method suggested above is the least conservative method of determining an infiltration rate. The method chosen is the most conservative method with the highest factor of safety built into the design.

BETA: BETA maintains the Applicant obtain in-situ hydraulic conductivity tests to verify infiltration rates since the stormwater design relies heavily on the basins, see attachment for further explanation.

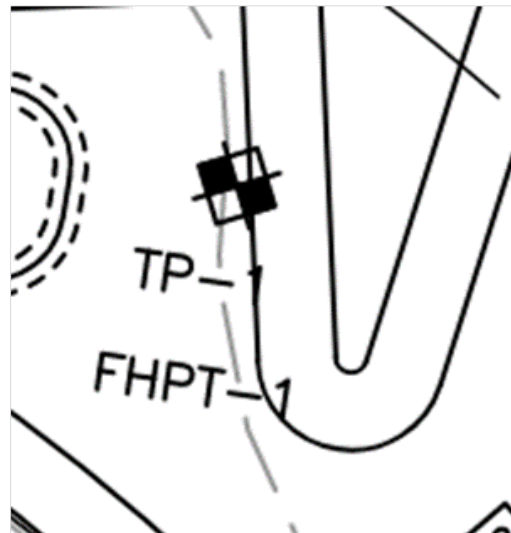
HSH2: Sufficient testing has been done to comply with the stormwater handbook and regulations. According to the Massachusetts Stormwater Handbook, the Dynamic Field Method suggested above is the least conservative method of determining an infiltration rate. The method chosen is the most conservative method with the highest factor of safety built into the design.

BETA2: *The Applicant has completed in-situ hydrologic conductivity tests and revised the basin models to use these rates. Clarify locations of falling head permeability tests on the plans (OTH- 1 to OTH-52).*

Applicant: *Symbols have been shown on updated plans and are labeled with FHPT-#.*



Figure 5. Test Pit Symbol with Falling Head Permeability Test Labeled



Locations where falling head permeability tests were conducted have been marked on the plans. The locations have been denoted with FHPT (Falling Head Permeability Test).

TOTAL SUSPENDED SOLIDS (STANDARD NUMBER 4)

For new development, stormwater management systems must be designed to remove 80% of the annual load of Total Suspended Solids. The proposed design includes treatment trains consisting of deep sump catch basins, sediment forebays, and infiltration basins to provide both 44% pretreatment and 80% total treatment. One treatment train includes an isolator row and subsurface system to achieve a similar result. The infiltration BMPs have been designed to treat the 1" water quality volume. BETA defers to the peer review by Tetra Tech regarding the accuracy of water quality volume calculations.

HIGHER POTENTIAL POLLUTANT LOADS (STANDARD NUMBER 5)

Stormwater discharges from Land Uses with Higher Potential Pollutant Loads (LUHPPLs) require the use of specific stormwater management BMPs. The project is not considered a LUHPPL – not applicable.

CRITICAL AREAS (STANDARD NUMBER 6)

Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas. The project proposes discharges from Infiltration Pond #1 to several vernal pools which are defined as Class B Outstanding Resource Waters under 314 CMR 4.00 Section 4.06(2). Infiltration basins and sediment forebays are recommended BMPs for discharges to this critical area.



SW8. *Correct project narrative to indicate the presence of a critical area.*

HSH: HSH will correct narrative to recognize the critical area that is protected by stormwater design.

BETA: *Correction not provided – issue remains outstanding.*

HSH2: There is only one potential vernal pool that is downstream (potential vernal pool 1) from stormwater discharges. Currently there are no certified vernal pools on site. Nonetheless we have adopted BMP's that are compliant with the performance standards applicable to Class B ORW's. Additionally, the applicant agrees to move the BMP more than 100' away from potential vernal pool 1. See revised plan dated 10/14/20.

BETA2: ***BETA concurs that infiltration basins and sediment forebays are recommended BMPs for discharges to vernal pool critical areas, and only requests that the stormwater report narrative (Page 18) be revised to identify the potential vernal pools.***

Applicant: Agree – The stormwater report narrative has been revised to include excerpts about the potential vernal pools on site and can be found on Page 20 of the report. Standard 6 now reads as follows:

“There are three potential vernal pools located on the property. Potential vernal pool #1 is located on the eastern side of the property just north of Driveway-B and adjacent to the railroad. Potential vernal pool #2 is isolated and located just to the north of PVP#1, also adjacent to the railroad. Potential vernal pool #3 is located on the southern side of the parcel to the south of both wetland crossings. A pocket wetland is proposed to outlet more than 180' upslope from potential vernal pool #1.”

SW10. *Setback stormwater BMPs at least 100' from vernal pool.*

HSH: Not applicable under the Wetlands Protection Act 10.57 regulation. “Vernal Pool Habitat” is only protected 100 feet from the pool if WITHIN AN AREA REGULATED UNDER THE ACT – Buffer Zone is not a resource area under the Act. Work near the other 2 pools (1, 2) is in Buffer Zone, but not resource area therefor this comment is not applicable.

BETA: *Item 3 of Table CA 2, Stormwater Discharge Near or To Outstanding Resource Waters including Vernal Pools and Surface Water Sources for Public Water Systems, under Standard 6 of the Stormwater Handbook states: “BMPs must be set back 100' from a certified vernal pool and comply with 310 CMR 10.60[1]. Proponents must perform a habitat evaluation and*



demonstrate that the stormwater BMPs meet the performance standard of having no adverse impact on the habitat functions of a certified vernal pool.”

HSH2: APPLICANT: See revised plan dated October 14, 2020 showing the BMP more than 100' feet from PVP #1.

BETA2: *Setback provided – issue resolved.*

SW11. Perform required habitat evaluation.

HSH: Not applicable under the Wetlands Protection Act 10.57 regulation. “Vernal Pool Habitat” is only protected 100 feet from the pool if WITHIN AN AREA REGULATED UNDER THE ACT – Buffer Zone is not a resource area under the Act. Work near the other 2 pools (1, 2) is in Buffer Zone, but not resource area therefor this comment is not applicable.

BETA: see BETA’s reply comment to WS10 HSH response.

HSH2: See below document “Protecting Vernal Pools” found at vernalpool.org or go to link here: <https://www.dropbox.com/s/s99un7qdr9zs8zl/mass.gov%20vernal%20pools.pdf?dl=0>

BETA2: *The Applicant’s response HSH2 is unclear as to their position. DEP’s Stormwater Standard 6 requires that stormwater BMPs be set back 100 feet from a CVP and comply with 310 CMR 10.60. To demonstrate compliance with 310 CMR 10.60, project proponents must perform a habitat evaluation and demonstrate that the stormwater BMPs meet the performance standard of having no adverse impact on the habitat functions of a CVP. The regulations require the design engineer to address the impacts from a stormwater BMP on an adjacent CVP; for example: impacts to the pool’s water budget, stormwater discharges, accidental breeding, construction impacts, etc. According to the Standards, Constructed Stormwater Wetlands can serve as decoy wetlands, intercepting breeding amphibians moving towards vernal pools.*

Applicant: Not applicable – As stated in HSH and HSH2 above, there is no work proposed within “vernal pool habitat”. See Wetlands Protection Act 10.57(2)a6. Further, the Standard 6 reference to 310 CMR 10.60 compliance is not applicable. In the first order, there are no certified vernal pools within the Site. Regardless of certification status however, 310 CMR 10.60 (1) (a), is inapplicable in that no work that will alter vernal pool habitat is proposed – “on inland Banks, Land under Water, Riverfront Area, or Land Subject to Flooding”. Additionally, the wildlife



habitat characteristics that are the subject of 310 CMR 10.60 (2) (c), are specific to “Vernal Pool Habitat”,

Considering the regulatory definition of Vernal Pool Habitat (310 CMR 10.04)...

“Vernal Pool Habitat means confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions, to the extent that such habitat is within an Area Subject to Protection under M.G.L. c. 131, § 40 as specified in 310 CMR 10.02(1)”. (font change added)

...neither 310 CMR10.60, nor Stormwater Standard 6 is applicable to activities proposed on this Site.

Figure 6. Standard 2: Pre- vs Post- development chart from Supplemental Data Report

Pre-Development Rates (cfs) AP2	12.30	27.75	41.12	70.33
Volume (cf) (Wetland at track)	85,349	184,006	270,829	464,971
Post-Development Rates (cfs) AP2	8.25	20.02	32.07	58.34
Volume (cf) (Wetland at track)	82,712	173,061	250,706	421,404
Rate Reductions (cfs)	-4.05	-7.73	-9.05	-11.99
Volume Reductions (cf)	-2,637	-10,945	-20,123	-43,567

Applicant: Figure 6 depicts Analysis Point 2 (AP2) which is potential vernal pool #1. Potential vernal pool #1, while still maintaining a reduction in pre- to post- rate and volume per the stormwater standard, maintains very closely the volume of water in the post development condition, with just under a 6% reduction in the 10-year storm event. The Pocket Wetland, which is located more than 100’ upslope from the potential vernal pool (PVP), discharges out of the BMP further than 100’ from the PVP to upland. Due to the BMP being placed upslope with a large upland vegetated buffer and erosion control, the PVP should not experience any construction impacts from the Pocket Wetland.

The limit of tree clearing for the Pocket Wetland will stop at the limit of grading for this BMP, additional arborvitae trees have been provided to offer additional screening further buffering the wetlands from the development and significant vegetation has been retained or improved where possible. Additionally, on the



northern edge of the Pocket Wetland there is nearly 80 feet of undisturbed vegetated buffer between the PVP and limit of grading. Each of these items should help to deter amphibians from utilizing the pocket wetland as a vernal pool.

Additionally, BETA recommends that the limit of clearing associated with Extended Detention Wetland #1 be tightened up on its northern end to leave additional intact upland habitat for the vernal pool species.

Applicant: The limit of clearing associated with Pocket Wetland #1 has been reduced to provide as much intact upland habitat for the vernal pool species as possible. The newly adjusted limit of clearing stands roughly 40 feet, on average, as measured from the 25-foot no disturb buffer where the previous limit of clearing resided.

Figure 7. *Pocket Wetland #1 Limit of Clearing, as revised in response to BETA comments.*



REDEVELOPMENT (STANDARD NUMBER 7)

Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. The project is not a redevelopment – Not Applicable.



EROSION AND SEDIMENT CONTROLS (STANDARD NUMBER 8)

Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities. As the project proposes to disturb greater than one acre of land, it will be required to file a Notice of Intent with EPA and develop a Stormwater Pollution Prevention Plan (SWPPP). The Applicant has provided limited erosion control notes and no SWPPP was included in the submittal. Plans indicate perimeter erosion controls and stabilized construction entrance. Given the size of the Site and significant impact to resource areas, additional information is required to show compliance with this standard.

SW13. Provide phasing plan that controls the area of the Site to be disturbed at any one time, recommended to be no greater than 5 acres.

HSH: Project will comply with the existing regulations.

BETA: See SW12.

HSH2: Agree to include as a condition.

BETA2: BETA notes that future phasing plan and construction sequencing must include the seven-step construction sequence for constructed wetlands, identified on Volume 2, Chapter 2, Page 45 of the Massachusetts Stormwater Handbook.

Applicant: The seven-step construction sequence for constructed stormwater wetlands found in Volume 2, Chapter 2, Page 45 of the Massachusetts Stormwater Handbook has been added to detail sheet 9 and can be found within the Operation and Maintenance Plan and Long-Term Pollution Prevention Plan.



Figure 8. Seven step construction sequence

Construction

A seven-step process to prepare a wetland bed prior to planting (Shueler 1992):

1. Prepare final pond-scaping and grading plans for the constructed stormwater wetland. At the same time, order wetland plant stocks from aquatic nurseries.
2. Once the constructed stormwater wetland volume has been excavated, grade the wetland to create the major internal features (pool, aquatic bench, deep water channels, etc.).
3. Because deep subsoils often lack the nutrients and organic matter needed to support vigorous plant growth, add topsoil and/or wetland mulch to the wetland excavation. If available, wetland mulch is preferable to topsoil.
4. After the mulch or topsoil has been added, grade the constructed stormwater wetland to its final elevations. Temporarily stabilize all wetland features above the normal pool. After final grading, close the pool drain to allow the pool to fill. MassDEP recommends evaluating the wetland elevations during a standing period of approximately six months to assess how the constructed stormwater wetland responds to storm flows and inundation, where the pond-scaping zones are located, and whether the final grade and micro-topography will persist over time.
5. Before planting, measure the constructed stormwater wetland depths to the nearest inch to confirm planting depth. If necessary, modify the pond-scape plan at this time to reflect altered depths or availability of plant stock.
6. Aggressively apply erosion controls during the standing and planting periods. Stabilize the vegetation in all areas above the normal pool elevation during the standing period (typically by hydroseeding).
7. Dewater the constructed stormwater wetland at least three days before planting, because a dry wetland is easier to plant than a wet one.

SW19. Revise erosion control plan to include perimeter controls at all limits of wetlands. Several areas do not depict erosion control measures.

HSH: Agreed. Change will be shown on next plan revision.

BETA2: Controls revised – issue resolved.



OPERATIONS/MAINTENANCE PLAN (STANDARD NUMBER 9)

A Long-Term Operation and Maintenance Plan shall be developed and implemented to ensure that stormwater management systems function as designed. A Stormwater Operation and Maintenance (O&M) Plan has been included in the submittal.

ILLCIT DISCHARGES (STANDARD NUMBER 10)

All illicit discharges to the stormwater management system are prohibited. The report narrative indicates that an illicit discharge compliance statement will be provided under separate cover.

SW24. Recommend a condition to require providing a signed illicit discharge compliance statement.

HSH: Applicant will provide signed form.

BETA: Recommend including a condition.

HSH2: Provided to Conservation Commission on September 14, 2020. located via:
https://www.walpole-ma.gov/sites/g/files/vyhlif1381/f/pages/9-15-2020_link_to_drop_box_plans.pdf

BETA2: Statement provided – issue resolved.

MASSACHUSETTS STORMWATER HANDBOOK – BMP DESIGN

The Massachusetts Stormwater Handbook provides guidance for design of stormwater BMPs. The following section details the project’s conformance with these design standards. BETA defers to peer review by Tetra Tech regarding suitability of soil conditions.

SW27. Revise infiltration basin detail to include outfall pipe and emergency spillway.

HSH: Detail sheets 9, 10 and 11 of 18 (77, 78 & 79 of 86) from plan set dated 5/1/20 have been revised to depict the inflow pipe(s) to the infiltration ponds and outlet pipe exiting the infiltration ponds where applicable. The outlet pipes which are located within a Multi-Stage Discharge Outlet Structures have remained depicted within the corresponding outlet detail associated with each infiltration pond. The emergency spillway is labeled within the plan view for each detail and within the section view as “weir outlet” with a corresponding elevation. Please refer to detail sheets 9, 10, and 11 of 18 dated 9/14/20 attached to this response.

BETA: Plans not provided for review.



HS2: Provided to Conservation Commission on plan set dated 9/14/20 located via:
https://www.walpole-ma.gov/sites/g/files/vyhlif1381/f/pages/9-15-2020_link_to_drop_box_plans.pdf

BETA2: Details revised. Issue resolved

BETA offers the following new comments uncovered during the course of the March 2021 review:

SWA1. Verify time of concentration used for post-development watershed S209. The model shows that this time of concentration is greater than that used in the pre-development model, yet no alterations are proposed that would result in this increased flowpath.

Applicant: The time of concentration used for post-development watershed S209 has been revised and now yields a total time of 27.3 minutes.

SWA2. Provide labels for the reaches used to model overland flow, and verify that widths, depths, and slopes reflect the grading present along these reaches. In several areas, swales are present which have a smaller width than that depicted in the reach.

Applicant: Labels have been provided within the Drainage and Stormwater Plans depicting the locations of the overland flow reaches. The reaches have been reviewed and have been adjusted where necessary to more conform to the existing contours.



Figure 9. Overland Reach Labels

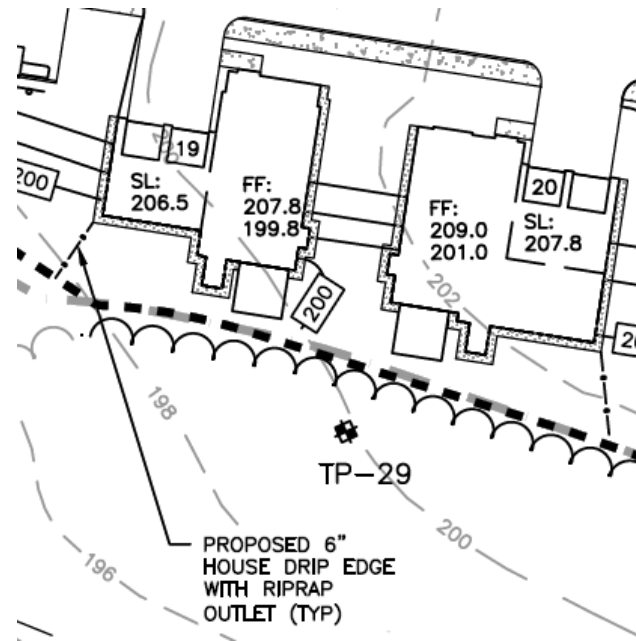


SWA3. *Indicate proposed outlet locations for underdrains from house drip systems.*

Applicant: the underdrain outlet locations are depicted on the Grading Plans, sheets 17-21 of the plan set. See figure 10.



Figure 10. Drip Edge Outlets

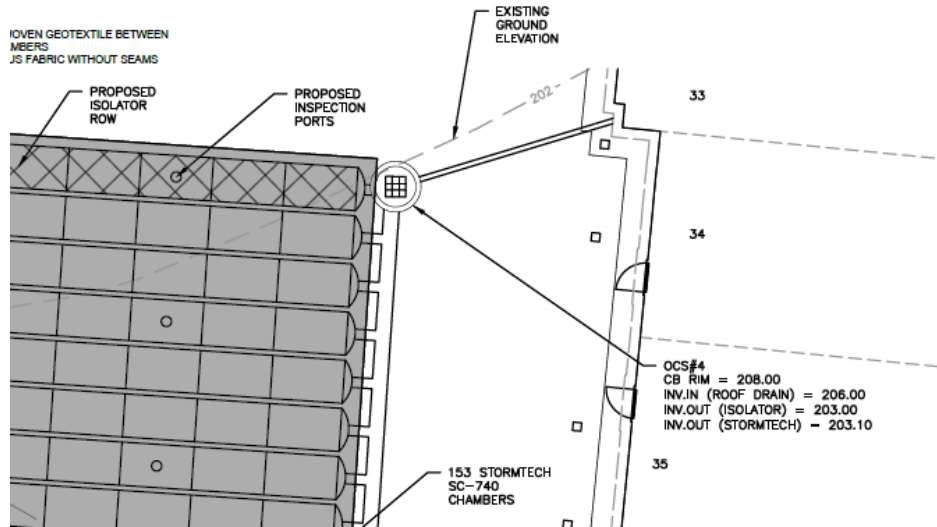


SWA4. Clarify how runoff from S208 will be conveyed to Pond P204. Grading suggests that flow will be directed overland to the nearby wetland system which is inconsistent with the HydroCAD model.

Applicant: All runoff included in Subcatchment S208 has been directed to an outlet control structure with a catch basin grate which will be routed to the subsurface infiltration system (P204) before being discharged to the surrounding area. Once discharged, the runoff will be directed to overland flow and then directed to Analysis Point #4 (AP4). This information can be located on sheet 49 of the plan set. See figure 11.



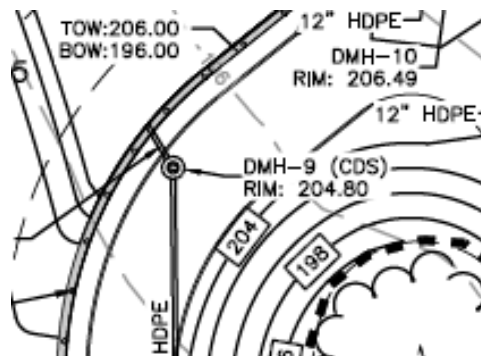
Figure 11. Stormtech Infiltration System (P204)



SWA5. Clarify if DMH-9 is intended to be installed as a water quality unit or other proprietary treatment structure to provide the necessary 44% pretreatment to Pond P207. If so, provide associated detail and supporting calculations for removal capacity.

Applicant: DMH-9 will be a Contech Water Quality Unit – STC 900. All necessary TSS removal calculations have been provided in the stormwater report on page 17 with an operation and maintenance guide being included as Appendix C within the Operation and Maintenance Report. A detail of the unit has been provided on Detail Sheet 5 of the plan set and labeled on sheet 18 of the plans well.

Figure 12. DMH-9 (Contech water quality unit)

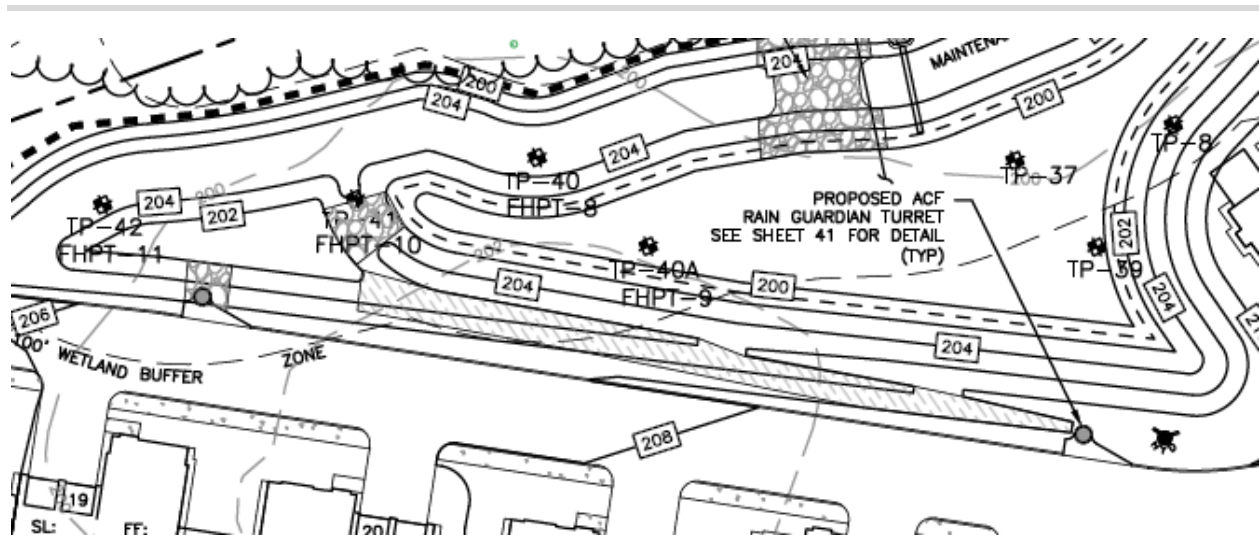




SWA6. Runoff from Watershed S210 to Pond P212 is required to meet the 44% pretreatment requirement for areas with rapid infiltration rates (>2.4 in/hr.). The narrative indicates that this is proposed to be accomplished via a grassed channel and sediment forebay. Volume 1, Chapter 1, Page 11 of the Stormwater Handbook indicates that grassed channels only receive TSS removal credit if combined with pretreatment, which has not been provided. Furthermore, a detail and specifications must be provided to ensure the channel is designed in accordance with the Handbook.

Applicant: The addition of two ACF Rain Guardians pre-treatment units have been added. The first Rain Guardian unit has been placed prior to the grassed channel to make it so that the grassed channel receives the full TSS credit and the second one is placed prior to the entry of the sediment forebay so that the combination of the Rain Guardian unit and the Sediment Forebay will also receive the full credit. These units can be found on the Grading Plan, Sheet 18 within the plan set.

Figure 13. ACF Rain Guardians



SWA7. Revise inspection/maintenance requirements for extended detention wetlands. The narrative suggests that after the first three years, the BMP will never be inspected again.

Applicant: All extended detention basins have been revised to pocket wetlands and include an updated operation and maintenance manual with annual inspections being required throughout the life span of the BMP. The maintenance schedule can be found on page 13 of the O&M Plan and page 85 of the Supplemental Data Report.



SWA8. Provide long-term pollution prevention plan, per Standard 4 of the Massachusetts Stormwater Handbook.

Applicant: A long-term pollution prevention plan has been created and can be found within the stormwater report as Appendix C.

SWA9. Provide pond-scaping plan for extended detention wetlands, as described on Volume 2, Chapter 2, page 42 of the Massachusetts Stormwater Handbook. Provide table identifying the design criteria on Volume 2, Chapter 2, page 43.

Applicant: The Landscaping plans sheets 27-31 depicts the plantings required for the constructed stormwater wetland. The design criteria for each Pocket Wetland are depicted on sheet 148 and 149 of the Supplemental Data Report. The remainder of the drainage calculations required to satisfy this section are supplied within the appendix of the Supplemental Data Report.

SWA10. Indicate plantings proposed for use in extended detention wetland areas. Plantings should conform to Volume 2, Chapter 2, Page 46 of the Stormwater Handbook.

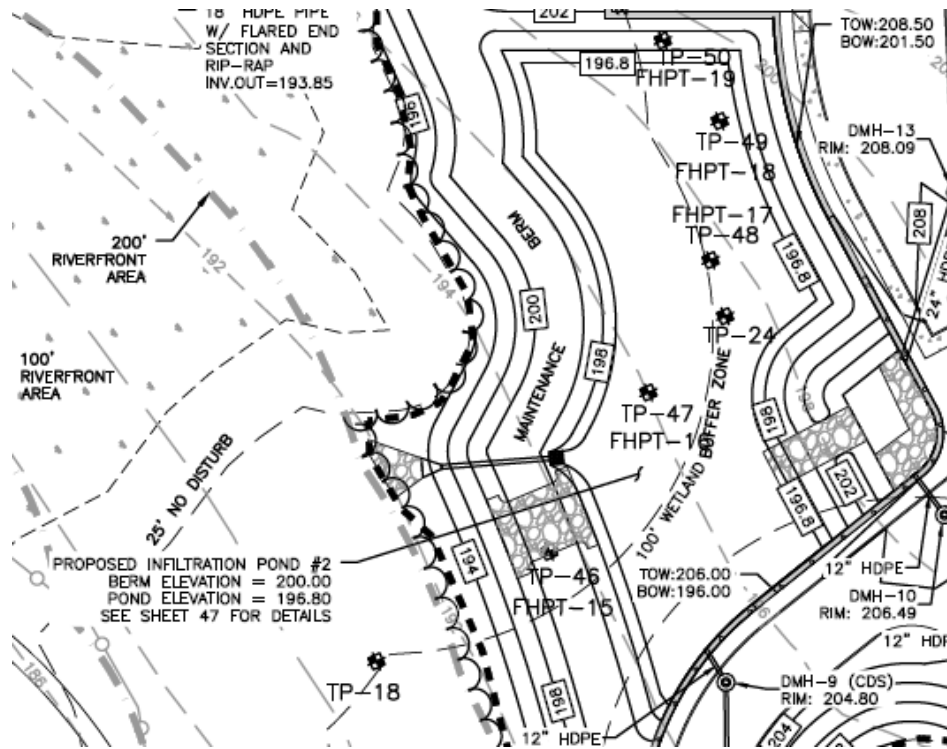
Applicant: Plantings have been depicted on sheets 27-31 by a licensed landscape architect within the pocket wetlands and conform to all standards found inside Volume 2, Chapter 2, Page 46 of the Massachusetts Stormwater Handbook.

SWA11. Revise design of Infiltration Basin #2 (P207). Test pits TP-47 and TP-48 show seasonal high groundwater elevations of approximately 193.5' and 195'. The basin bottom is at elevation 194', which is not the required 2' above seasonal high groundwater elevation. Of the other test pits completed in this area, TP-49 and TP-50 were not completed to sufficient depth to evaluate groundwater, and TP-24 identified mottling at elevation 193.5'.

Applicant: The design of Infiltration Basin #2 on sheet #17 has been revised to a bottom depth of 196.80' instead of the previous 194.00'.



Figure 14. Infiltration Basin #2

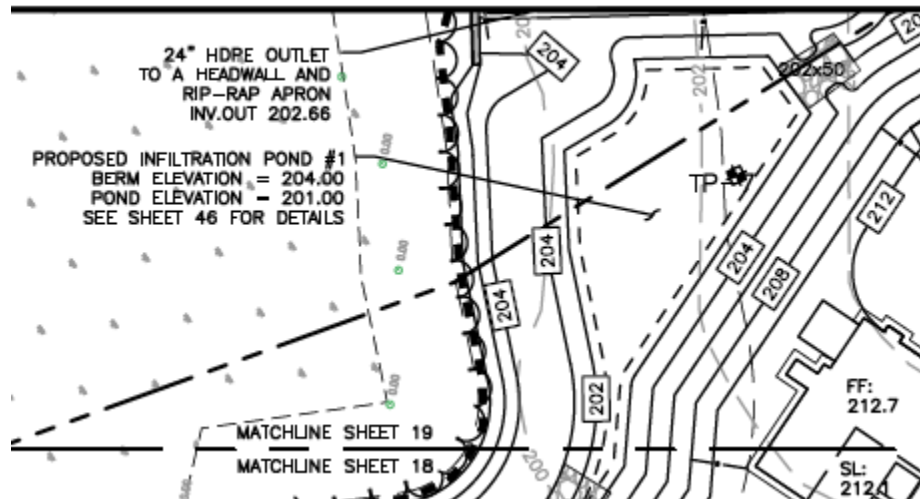


SWA12. Raise bottom elevation of Infiltration Basin #1 (P212) to be at least 2' above seasonal high groundwater. Test Pits TP-40 and TP-40A show seasonal high groundwater at approximately 198.67 ft compared to bottom elevation of 200'.

Applicant: The first cell of Infiltration Basin shown on sheet #18 has been raised by a foot to 201'. This provides at least 2' of clearance between the bottom of the basin and the seasonal high groundwater.



Figure 15. Infiltration Basin #1



SWA13. Provide data for TP-35

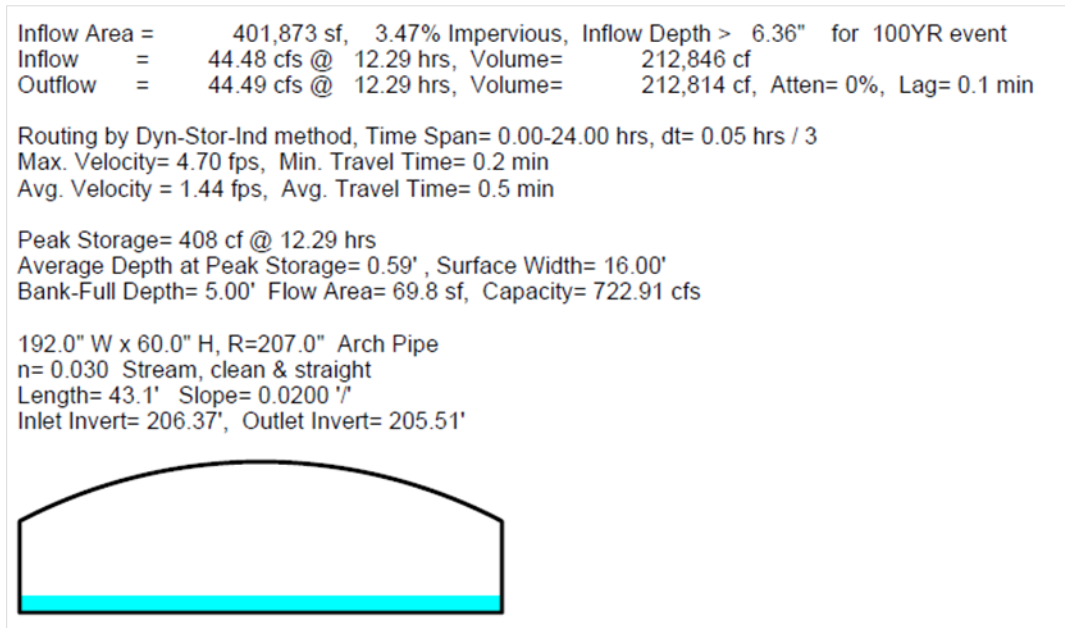
Applicant: This test pit was determined not to be necessary during the soil exploration and was not dug or observed. The test pit has been removed from sheet #18.

SWA14. Provide hydraulic calculations and inverts for all proposed wetland crossing culverts to ensure they can convey anticipated flows.

Applicant: The proposed wetland crossings have been modeled within HydroCAD and have been attached within the report. The HydroCAD models (page #761 in the Supplemental Data Report) show that the crossings are oversized.



Figure 16. Stream Crossing #1



100-year storm event produces a flow depth of 0.59' out of a 5' clear opening.

SWA15. BETA recommends a condition requiring owner to provide copies of all maintenance reports for stormwater operation and maintenance plans to the conservation commission.

Applicant: Agree.

SUMMARY OF PREVIOUSLY RECOMMENDED CONDITIONS

Previous letters included the recommendation of several conditions of approval as resolutions to comments. **BETA defers to the Commission but recommends that these, or as many as possible, required documents be provide with next submission.** These items are summarized below:

- Recommend including a condition requiring observation of excavation for each infiltration basin/system by an agent of Town prior to installation of loam and seed.
 - **Applicant agrees as condition and not deliverable prior to order of conditions.**
- Provide provision to protect the infiltration basins during construction to ensure they operate as designed after construction is complete.



- *Applicant agrees as condition and not deliverable prior to order of conditions.*
- Provide a draft SWPPP.
 - *Applicant: SWPPP will be provided upon completion.*
- Provide phasing plan that controls the area of the Site to be disturbed at any one time, recommended to be no greater than 5 acres.
 - *Applicant agrees as condition and not deliverable prior to order of conditions.*
- Provide anticipated locations of proposed staging and stockpile areas.
 - *Applicant agrees as condition and not deliverable prior to order of conditions.*
- Provide typical inspection and maintenance requirements for all erosion control BMPs.
 - *Applicant: This has been included in O&M and LTPPP attached with this letter in the appendix section of the Supplemental Data Report.*
- Expand construction sequencing plan to include time of storm water system installation. Provide means of protecting stormwater BMPs during construction and restoring any damaged areas prior to the BMP coming online.
 - *Applicant agrees as condition and not deliverable prior to order of conditions.*
- Provide specifications for temporary and final seeding.
 - *Applicant agrees as condition and not deliverable prior to order of conditions.*
- Recommend including a condition requiring submission of a copy of the final, signed SWPPP.
 - *Applicant agrees.*
- Update O&M to provide minimum required information. The O&M is located in the Appendix of the Supplemental Data Report:
 - Stormwater System Owner (contact information)
 - *Applicant: The owner of the stormwater system has been added to each BMP.*
 - Party(ies) responsible for operation and maintenance, including how future property owners will be notified of the need for maintenance.



- ***Applicant: The responsible parties have been added to the required sections of the operation and maintenance report.***
- Plan depicting the location of all stormwater BMPs including discharge points include vehicle access paths for stormwater basin/system maintenance.
 - ***Applicant: A plan depicting the location of all stormwater BMP's and all associated information has been created and can be found within the operation and maintenance plan.***
- Estimated operations and maintenance budget.
 - ***Applicant: An estimated cost associated with the maintenance of each system has been added to the operation and maintenance report.***
- Attach manufacturer maintenance recommendations for Stormtech system and isolator row.
 - ***Applicant: The manufacturer maintenance recommendations have been attached within the Operation and Maintenance Manual.***
- Provide inspection and maintenance tasks for proposed outfalls and culverts.
 - ***Applicant: The inspection and maintenance tasks for the proposed outfalls and culverts have been attached within the Operation and Maintenance Manual.***
- Provide measures in the pollution prevention plan to prevent illicit discharges to the stormwater management system.
 - ***Applicant: Applicant agrees as condition and not deliverable prior to order of conditions.***

Wetland and Environmental Resource Areas

BETA has updated their findings and have included in this letter a revised set of clarifications, comments, and recommendations provided below in ***Bold italics*** and labeled as ***“BETA2:”***

BETA reviewed the Notice of Intent (NOI) submitted by the Applicant on May 14, 2020 and found it provided few construction details, limited wetland restoration procedures and design, and no information regarding construction activities within buffer zones (e.g., staging, dewatering, etc.). Temporary and permanent activities proposed within areas subject to jurisdiction under the Bylaw and the Act will need to be reviewed. This review focuses on the information provided in the May 14, 2020 NOI that is subject to the interests of the Bylaw and the Wetlands Protection Act. As part of the review, BETA conducted a site visit to observe existing conditions and areas of proposed impacts within and adjacent to resource areas on the site. The site is primarily wooded undeveloped land



with numerous wetland resource areas separated by hilly topography with steep elevation changes. Puddingstone cobbles and boulders are scattered throughout the site and a unique cluster of large puddingstone erratic boulders were observed in the northeastern corner. The site provides significant wetland, vernal pools, and upland habitats for a number of wildlife species including terrestrial amphibians that spend the majority of their lives in the uplands and utilize the site's vernal pools during the breeding season. Dense shrub thickets throughout the site provide nesting habitat for bird species. During the visit BETA observed wood frogs within the northern forested uplands and a young red tail hawk in the tree canopy of the inner portion of the site.

The January 2021 site design maintains the use of the majority of the upland buffer zones and will cause an adverse impact on the site's resource area's wildlife habitat functions. BETA has recommended minimal design changes that may mitigate the full impact to the site's and regional wildlife habitat function for the Commission's and Applicant's consideration. Our recommendations take into consideration the proposed limit of work. Compliance with the Stormwater Regulations and Standards may change the current site design. Therefore, BETA's comments should also be addressed in a future revised development layout.

HSH: This NOI is not subject to the interests of the Bylaw. No comment required as not applicable to the WPA.

BETA: ZBA will address the Project's compliance with the Bylaw.

It should be noted here that it is BETA's opinion that Applicant has not overcome the burden of proof that there is not practical alternative to siting the structural stormwater management measures within the outer Riverfront Area (RA). The Applicant needs to analyze the impacts of reducing the development footprint to avoid impacts to the RA altogether.

HSH: See revised plan. The use of the RFA for detention has fallen from 14% to approximately 8.8%. The reduction was accomplished by 1) reducing the number of multifamily buildings from four to three, two of which are connected in an L configuration and adding a 5 floor to each multifamily building and by creating approximately 30 additional underground parking spaces and 2) reducing by 4 the number of single-family homes on the western portion of the site to move more of the detention out of the RFA. (Four additional rental town homes were added to the eastern portion of the site).

Pursuant to the Wetlands Protection Act, the standard for the alternatives analysis is whether there is a "practicable and substantially equivalent economic alternative." An alternative is defined by the Act as practicable and substantially economically equivalent if it is "available and capable of being done after taking into consideration: costs, and whether



such costs are reasonable or prohibitive to the owner; existing technology; the proposed use; and logistics in light of overall project purposes.”

As described in the June 30th alternatives analysis submission, 5 floor buildings cost roughly \$10,000 more per unit than 4 story buildings. However, by reducing the number of buildings from 4 to 3, one roof, one foundation and one fire stair will be eliminated from the project which will partially offset the additional per unit cost of adding a 5th floor in order to reduce the development footprint. Reducing the development footprint created more area for detention outside the RFA and will reduce the amount of water that needs to be detained. The detention areas shown on the revised plan are estimates and will be finalized after the 9-23 hearing.

Any further reduction in the development footprint would require a diminution of the purpose of project as the number of units would need to be reduced. A reduction in the number of affordable and market housing units would clearly not be a substantially equivalent economic alternative.

Additionally, the RA boundary needs to be better depicted on the Grading and Drainage Plans to be able to determine what RA impacts are associated with the stormwater management measures and what is associated with site development activities.

There is no development activity in the RFA.

BETA: TBD (additional site visit to exam proposed activities within RA scheduled for October 3, 2020.)

HSH2: There is no detention or any development activity in the riverfront. See revised plan dated October 14, 2020.

BETA2: Resolved. No further comment.

BETA reviewed vernal pool boundaries and found the extent of Vernal Pool #3, in the southern portion of the site, larger than the area delineated in the field and shown on the site plans. Vernal pools size and shape vary from year to year based on environmental conditions and boundaries should be delineated to encompass all suitable areas within a wetland. Vernal Pool #3 is situated within contour 212', a large area with no defined slope change, which amphibians could utilize for breeding in any number of locations. Evidence of mean annual highwater was observable that indicated suitable breeding habitat beyond that shown on the site plans.



WE1. Vernal Pool#3 boundary and associated 100' buffer is larger than that currently shown on the site plans and should be enlarged based on detailed elevation or numerous breeding season surveys.

HSH: The Wetlands Protection Act Regulations define Vernal Pool Habitat at 310 CMR 10.04 (bold added):

“Vernal Pool Habitat means confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions, to the extent that such habitat is within an Area Subject to Protection under M.G.L. c. 131, § 40 as specified in 310 CMR 10.02(1). These areas are essential breeding habitat and provide other extremely important wildlife habitat functions during nonbreeding season as well, for a variety of amphibian species such as wood frog (*Rana sylvatica*) and the spotted salamander (*Ambystoma maculatum*) and are important habitat for other wildlife species.”

Vernal Pool #3 was scrutinized in May 2019 and subsequently in March, April, and May of 2020. The boundary of the feature, which is not a “confined basin depression”, but rather an area impounded by a farm road with the borrow used to construct a cart road at its current northward limit. A culvert beneath the cart road provides an outlet for part of the drainage from the palustrine forest to the south.

The boundary of the pool flagged in the field and indicated on the record plans was based on credible biological evidence of functional amphibian breeding within the depression that was historically excavated. The basin, as delineated provides adequate water depth to provide a relatively reliable hydroperiod to support metamorphosis by wood frogs and spotted salamanders in most years. Southward of the anthropogenically excavated basin feature is an expanse of maple forest with pit and mound topography and clear indicators of the annual high-water elevation in the form of mossy tussocks and tree mounds with consistent water marks (Photo 1). Beyond the flagged pool limit water depths are inconsistent and typically less than six inches in depth. In that regard these backwaters provide unreliable localities for egg deposition by amphibians; localized biological selection has resulted in the deposition of eggs by progeny of previously successful amphibian adults, to the nearly fully insolated basin where larvae can undergo their entire development cycle in an environment providing structural habitat and cover, thermal diversity and a relatively persistent hydroperiod in most years.

Regardless of the true, biological functionality of “Vernal Pool #3”, we “chased” the limits of contiguous flooding and mapped same using a Trimble GEO XH GPS device. The criteria applied were far in excess of any tenable functional aquatic habitat for vernal pool



vertebrates. Rather we chased all areas of even tenuously confluent seasonally high surface water, ignoring elevated peninsulas and other features separating seasonally flooded areas, and connected the outlying points of potentially confluent seasonal high-water areas.

The above should not be construed as a vernal pool; to define a vernal pool as such would undermine the legitimacy of the MDFW Certification process. However, we undertook this excessively conservative delineation in order to demonstrate that regardless of any intermediate boundary (between currently flagged and excessively exaggerated configuration as shown) **there is no regulatory effect upon the proposed build-out scenario (see site plan set)**. The vernal pool definition provided above clearly states the limits of regulatory jurisdiction as limited to 100 horizontal feet from the pool boundary – **only within a jurisdictional area regulated under the Act**.

To demonstrate that the dimensions of “Vernal Pool #3” in even the most exaggerated configuration are inconsequential to review and permitting under MGL Ch. 131 §40, our delineated pool boundary is about 4,800 square feet. The exaggerated polygon flagged in the field is over 1000 percent greater (108,000 sq. ft.) than the actual, biologically functional basin previously observed, documented, and defined in the field.

The definition, or physical limits of the boundary of the potential vernal pool, with the exception of the north, self-evident, road-impounded limit (Flags 1-3 through 1-7) indicated on the submittal plans is of no regulatory consequence to the regulatory review of the project.

The project will develop approximately 75% of the site’s uplands as well as grade and clear large areas adjacent to vernal pools. Terrestrial amphibians that use vernal pools for breeding depend on adjacent upland habitat most of their life. Although the project maintains a 100’ buffer around each vernal pool, most of this buffer area is covered by wetlands and provide little upland habitat.

BETA: Revised boundary to the Vernal Pool will be reviewed in the field.

HSH2: No work is being done within 100 ft of VP that is also within a resource area. See above (SW11) “Protecting Vernal Pools” found at vernalpool.org or go to link here: <https://www.dropbox.com/s/s99un7qdr9zs8zl/mass.gov%20vernal%20pools.pdf?dl=0>

We do not agree that the potential, functional vernal pool should be expanded however to demonstrate that an expanded potential vernal pool has no regulatory significance to any portion of the proposed project, we have conceded and expanded limit of continuous flooding as indicated on the plan dated October 14, 2020. The western expanded boundary was reviewed in the field by Beta on 10/3/20. This expanded boundary terminates at the stone



wall/property boundary to the south east of the old farmer's cart road forming the north limit of the potential vernal pool. The delineation was stopped there because any work with regulatory relevance beyond that would necessarily be on property of others. The eastern boundary of the potential vernal pool was also expanded to the east and south as shown on the plan. Neither expansion triggers any regulatory significance for the proposed development plan.

BETA2: Based on BETA's observed evidence of extended periods of standing water well south of the originally delineated pool, it is likely that breeding occurs in these pit and mounded topographic areas during normal or above precipitation years. Therefore, the vernal pool habitat (100 feet from the pool within the BVW in this case), is presumed to provide important wildlife habitat per the Regulations. Based on the Applicant responses, it appears that their position is that work in the adjacent upland buffer, beyond the vernal pool habitat boundary has no regulatory relevance.

The Commission should note that such work has regulatory relevance. Per 310 CMR 10.53(1), the Commission has the authority to condition work in the 100-foot upland buffer zone to assure that the functions and values of the adjacent resource area (in this case BVW/vernal pool habitat) are protected.

Based on the current design plans and road layout, there will be minimal remaining upland buffer zone surrounding PVP3. Once the site is developed, the majority of the vernal pool species non-breeding habitat will be lost. Therefore, BETA recommends at a minimum the following:

- Eliminate Unit 6 located northwest of VP3. This upland area is important to the migration of VP species to the north towards the 2nd wetland crossing and also provides critical upland habitat. Upland buffer should be maintained between all development and the wetland boundary. This allows some room for wildlife to travel around the wetland as they won't travel through wetlands unless necessary.
 - ***Applicant: Although not a requirement of the WPA, Unit #6 has been removed to maintain as much of this critical upland habitat and buffer.***

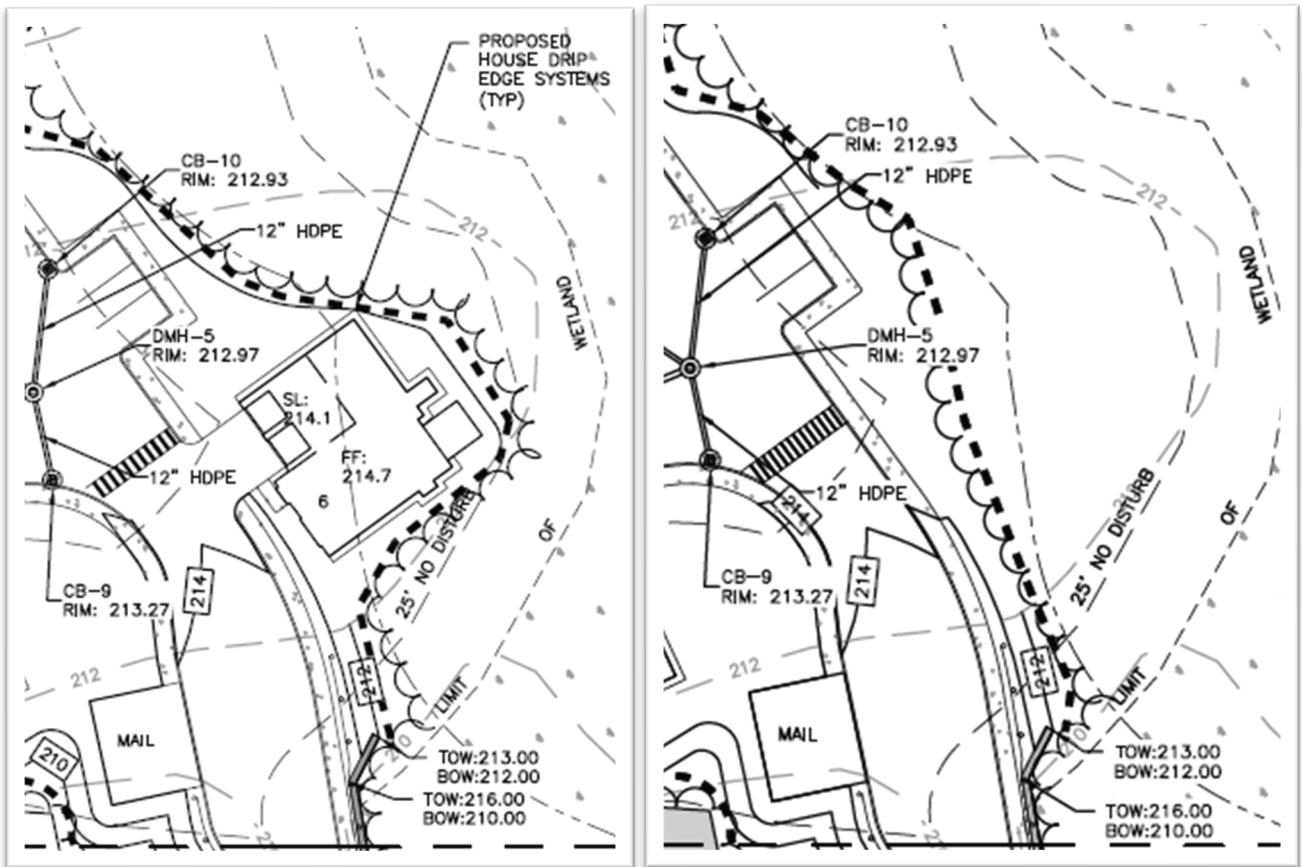
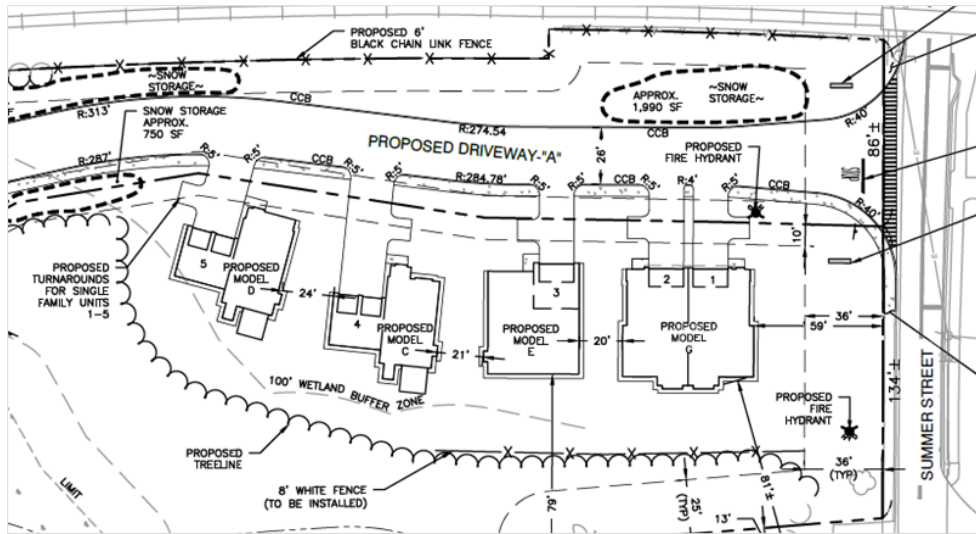
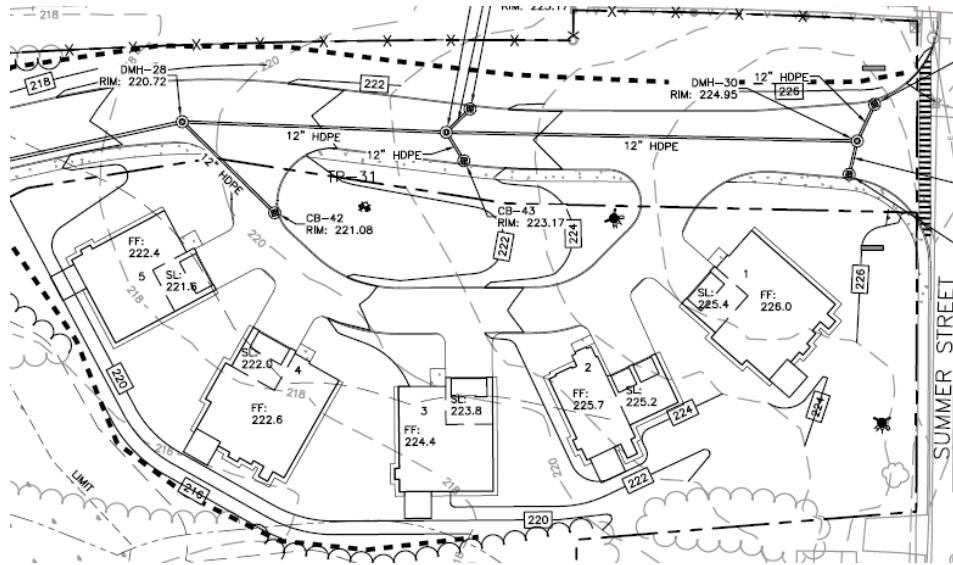


Figure 17. Before and After removal of Unit 6

- Provide more upland buffer behind Units 1 through 5 located east of VP3, near Summer Street. This could be accomplished by turning the units or eliminating the cul-de-sac type layout.
 - *Applicant: Although not a requirement of the WPA, units 1-5 have been redesigned to provide more upland buffer behind the units and provide greater separation between the units and the edge of the wetland. Units 1-4 are completely out of the 100' wetland buffer and unit 5 has a corner in the buffer. See the below figure for the layout redesign.*



Figure 18. Before and After Layout for Units 1-5





WE2. The project should provide more undisturbed upland areas contiguous to vernal pools to protect Vernal Pools 1, 2 and 3. Development of the upland buffers between the vernal pool complex will eliminate safe migration of vernal pool species between pools.

HSH: This is not a requirement of the WPA and the project, as proposed complies with all applicable standards for vernal pools provided by the WPA. There is no alteration of resource area within 100 horizontal feet, and within regulated resource area within the entire development. Vernal Pool #2 and Vernal Pool# 3 we will have an intact corridor between them by way of an over-sized, bottomless culvert exceeding the “Openness” standards and the revised plan has eliminated development activity between VP # 1 and VP# 2.

BETA: Given the amount of lost upland habitat the Applicant should provide as much connectivity of wetlands to Riverfront Area and uplands as possible. The current design has further isolated Wetland C from natural areas. A wildlife crossing tunnel under the road at the northern end of Wetland C, between the proposed basins, would allow wildlife movement between the wetland, Cedar Swamp, and Riverfront Area. This would be considered mitigation for impacts in Areas Subject to Jurisdiction including the 100-foot Buffer Zone.

HSH2: From a practical point of view, this one way stretch of road will be used by school buses and emergency vehicles only. There will be a 24-inch culvert that can be used by small vertebrates to transit north to south. Larger mammals such as deer and coyote can traverse to and from RFA and Wetland C overland as they want to do regardless. Further, under the current plan (10/14/20, attached), we have eliminated all disturbance in the RFA to the benefit of local wildlife.

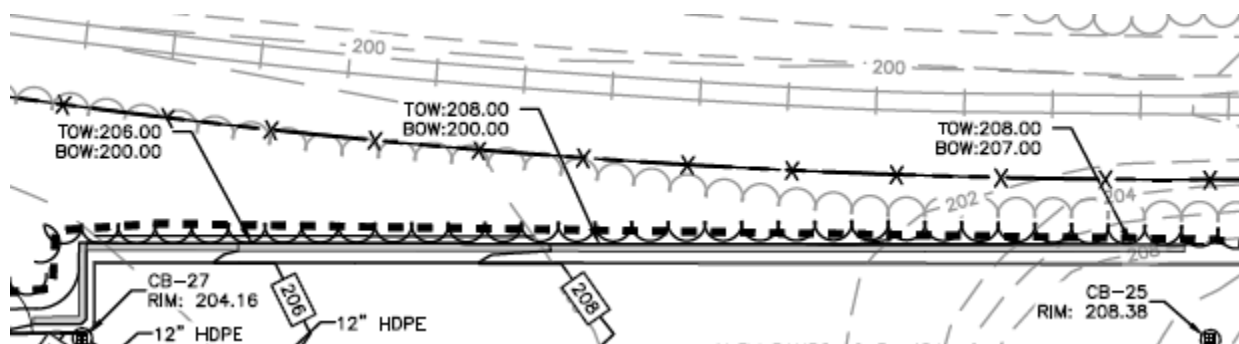
BETA2: See WE2 BETA2. BETA Recommends the following to minimally protect the functions of VPs 1 and 2:

- ***Revise the plans to tighten up the limit of clearing / tree line directly adjacent to the limit of proposed grading. As shown on Grading and Drainage Sheet 3 of 5, tree and vegetation clearing is proposed beyond the limit of work in several locations.***
 - ***Applicant: The limit of clearing has been revised to closely follow the limit of work where possible. See Grading sheets 17-21***



- **Revise the plans to limit clearing on the northern end of the Proposed Extended Detention Wetland #1 to maintain more upland buffer to VP#1.**
 - **Applicant: This change has been made and can be found on Grading sheet 19. See response to SW11.**
- **Eliminate the proposed Snow Storage area located east of multi-unit Building #1, directly adjacent to the RR ROW fencing. Eliminate the grading, replace with a retaining wall to maintain the only narrow vegetated buffer for the wildlife travel from VPs #1 and 2 to the Riverfront Area / Cedar Swamp Brook corridor. It is critical to maintain a densely vegetated connection in this north – south direction. Otherwise, any safe pathway will be eliminated.**
 - **Applicant: Although not a requirement of the WPA, the snow storage and grading adjacent to the parking for the multi-family Building #1 has been removed and replaced with a retaining wall and the tree line has been restored. This change can be found on sheet 17 of the plan set (figure 19). The wildlife corridor parallel to the rail alignment is thus maintained as suggested by BETA.**

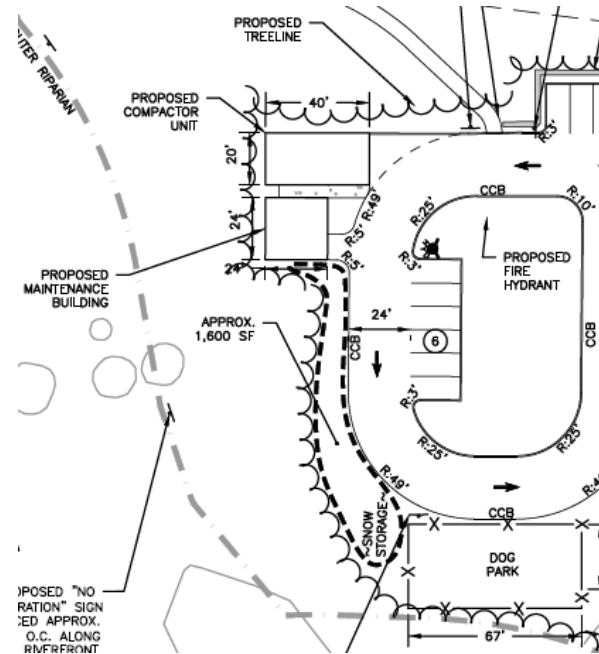
Figure 19. Removal of the grading and addition of a retaining wall.



- **Eliminate the proposed Dog Park from its current proposed location. Having a dog park next to a very minimal wildlife travel corridor will disrupt movement significantly.**
 - **Applicant: Although not a requirement of the WPA, the Dog Park has been moved to the west, adjacent to the loop road for the drive under. The Maintenance building has also been moved to the other side of the compactors unit to further minimize the impact to the wildlife corridor. This change can be found on sheet 12 of the plan set.**



Figure 20. Relocation of the Maintenance Building and Dog Park



WE3. The Applicant should provide additional assessments on how the proposed impacts to habitat meet applicable performance criteria and adequately protect vernal pool upland habitats as well as the capacity of the RA to provide important wildlife habitat functions in the locations of the proposed alterations.

HSH: BVW/Bank: The project meets the performance standards (regulation 10.58) in the riverfront area. A 100-foot (inner riparian zone) intact corridor is provided and only obligatory stormwater components are proposed within the outer riparian zone. The facilities proposed in the outer riparian zone will be without fences or other barriers to wildlife and so compliant with 310 CMR 10.58 (4) 3. (d) a. and b. **Riverfront Area:** Two, Habitat Assessments were provided examining wildlife habitat values and features of the two proposed crossings which in aggregate belie 5,000 square feet of impact to regulated areas. Please consult these Appendixes B for regulatory compliance.

BETA: Item 3 of Table CA 2 “Stormwater Discharge Near or To Outstanding Resource Waters including Vernal Pools and Surface Water Sources for Public Water Systems”, under Standard 6 of the Stormwater Handbook states: “BMPs must be set back 100’ from a certified



vernal pool and comply with 310 CMR 10.60¹. Proponents must perform a habitat evaluation and demonstrate that the stormwater BMPs meet the performance standard of having no adverse impact on the habitat functions of a certified vernal pool.”

HSH2: See revised plan dated October 14, 2020 showing the BMP more than 100’ feet from PVP #1.

BETA2: Resolved. No further comment relative to setbacks from the BMP.

WE4. The Wildlife Habitat Evaluation provided with the NOI should provide more assessment of the overall connectivity of the wetland and vernal pools systems to the Cedar Swamp Brook. Upon site development, the wetland systems will be the only migration pathway from Vernal Pool #1 to the RA and river system. Vernal Pool #2 will be completely cut off.

HSH: No Appendix B Habitat Assessment is required pursuant to 310 CMR 10.60 because no regulatory threshold for Riverfront Area is exceeded. Similarly, there is no impact proposed within 100 horizontal feet of actual or potential vernal pool(s) and within the limits of a resource area regulated under the Act.

BETA: See BETA’s reply to HSH’s response to Item WE3 above.

HSH2: There is no regulatory requirement to assess habitat connectivity outside of the thresholds specified at 310 CMR 10.60 (1) (a) particularly whereas all work in the RFA has been removed. See revised plan dated October 14, 2020. Applicable regulation cited below: 310 CMR 10.60[1] is not applicable as 310 CMR 10.60[1] only applies “ To the extent that a proposed project on inland Banks, Land under Water, Riverfront Area, or Land Subject to Flooding will alter vernal pool habitat or will alter other wildlife habitat beyond the thresholds permitted under 310 CMR10.54(4)(a)5., 10.56(4)(a)4.,10.57(4)(a)3. and 10.58(4)(d)1.,”.

BETA2: Per 310 CMR 10.53(1), the Commission has the ability to condition work in the 100-foot upland buffer zone to mitigate the impacts from construction and the built project on the resource area’s ability to protect the interests of the Wetlands Protection Act. Therefore, given the extensive system of wetlands, rivers and streams and vernal pool throughout the project, the Commission has jurisdiction over a substantial amount of upland buffer zone. It is absolutely in the Commission’s legal authority to ensure that the wildlife habitat function of the resource areas is maintained.

¹ Wildlife Habitat – <http://www.mass.gov/eea/docs/dep/service/regulations/310cmr10a.pdf>



Applicant: With minor exceptions, we have consistently avoided alteration of the 25-foot buffer and have further withdrawn all proposed work from the Riverfront Area in order to preserve wildlife habitat and functions. All the wildlife-related project configurations proposed by BETA have been assessed and adopted to the maximum extent practical as described below:

- *Reduction in limit of grading and tree cutting where possible throughout the entirety of the development.*
- *Reconfiguration of single-family units 1-5.*
- *Removal of single-family unit 6.*
- *Addition of a retaining wall to retain the wildlife corridor between Potential Vernal Pool #2 and the 200' Riverfront Buffer adjacent to Multi-family Building #1.*
- *Relocation of the maintenance building and the dog park to the west to maintain the wildlife corridor as best as possible adjacent to the rail alignment.*
- *Increasing the size of the culvert under Driveway-D from a 24" pipe to a 4'x4' open bottom box culvert.*
- *Increasing the plant density of the replication areas by 10%.*
- *Addition of replication buffers where possible and the addition of a natural arborvitae vegetative fence in other areas.*

The proposed project includes two stream and wetland crossings that will result in impacts to banks of intermittent streams, vegetated wetlands, the 25' No Disturbance Zone², and the 100' buffer zone. The impacts are necessary to gain access to the site and mitigation has been provided at a 1:1.5 ratio as shown in the plan details at each crossing.

WE5. A Wetland Restoration Plan developed in accordance with the Massachusetts Inland Wetland Replication Guidelines and Checklist should be provided (Section 1.5.2 of the Bylaw). Restoration area details, such as existing and proposed contours and cross-sections, should be provided with the Site Plans.

HSH: The Applicant has attached plan detailing the restoration areas as well as cross sectional plans dated 9/14/20.

BETA: Avoid clearing mature trees associated with constructing Mitigation Areas by conducting a tree survey within proposed mitigation areas and either redesign the areas

² According to the Walpole Bylaw Regulations Section 1.4.1 The Commission shall require the Applicant to maintain a twenty-five (25) foot wide contiguous, undisturbed vegetative buffer measured from, and parallel to, the wetland resource boundary, as a minimum.



around the trees or move the mitigation sites to more appropriate locations. For instance, consider moving the proposed mitigation areas located on the west side of the wetlands, at the stream crossings, to the east side of the wetlands. Reduce or eliminate sharp corners of the mitigation design to provide more natural transition to existing contours.

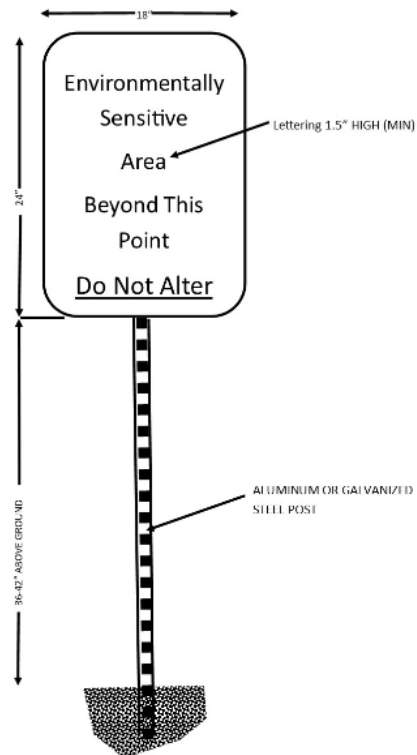
HSH2: Project wetlands replication areas meet the requirements of the WPA. Additionally, this is not practical given that there any trees saved would create upland islands while still compromising their root mounds.

BETA2: *The location of the proposed wetland replication areas requires the removal of mature overstory trees and existing upland vegetated understory. Until the re-establishment of the wetland vegetation, wildlife traveling towards and through the wetland crossing culverts will be exposed and they may avoid using it resulting in isolation of areas. Therefore, at a minimum, these areas should be densely planted and a fence separating the built development from these minimal wildlife pathways.*

Applicant: *The proposed plantings show on sheet 52 of the proposed plan set have been bumped up 10% to help with the density of the replication areas establishment. The applicant has provided signage on the Layout and Materials Plans, sheets 12-16 of the plan set and a natural fence made of arborvitaes to buffer the replication areas from the abutting development.*



Figure 21. 100' Wetland and 200' Riverfront Buffer Sign



WE7. The Wetland Restoration Plan should include a designated minimum 25' No Disturbed Zone of native vegetation and the area should be indicated on the plans.

HSH: This is not a requirement of the WPA or Regulations for replication of BVW. The project proposes a 25' No Disturbed Zone around all resource areas except for three unavoidable impact areas.

BETA: See BETA's reply to HSH Response to Comment WE5, redesign Restoration Areas may provide additional 25' No Disturbed buffer. Further, although not a specific stated requirement, the Commission has the regulatory authority to require a vegetated buffer between the developed area and the constructed wetland if they feel a 25-foot vegetated buffer is necessary to protect the interests provided by the newly formed wetland³.

³ 310 CMR 10.53(1): For work in the Buffer Zone subject to review under 310 CMR 10.02(2)(b)3., the Issuing Authority shall impose conditions to protect the interests of the Act identified in the adjacent Resource Area. The Issuing Authority may require the



HSH2: The project wetlands replication areas meet the requirements of the WPA standards for replication. Given the requirements for BVW replication we are constrained with regard to location and elevation of the replication areas. The areas have been chosen to comply with the standards for replication areas.

BETA2: *The Applicant's statement that "this is not a requirement of the WPA" is not applicable in this case. Once the constructed wetland is established and meets the performance standards, there will be no adjacent upland buffer between the wetland and site development. Therefore, it is likely that the proposed work will impact the ability of the wetland to protect the interests of the Act.*

Applicant: *We have shown on the plans two locations where a buffer has been provided and, in the areas, where a buffer cannot be provided, 8' tall arborvitae (*Thuja occidentalis*) have been provided as a natural fence to buffer the replication areas from the abutting development. See sheet 52 for plans and details specific to the wetland replication areas.*

As stated above, the Commission has the regulatory authority to condition work in the buffer zone to mitigate impacts to the resource area's ability to protect the interests of the Act.

Applicant: *Plan is compliant under the Wetlands Protection Act.*

WE9. *An Invasive Species Control Plan should be included in the NOI application to ensure areas within 100 feet of resources will not be affected by invasive species that typically spread to disturbed areas as a result of construction activities.*

HSH: The site, an historic piggery is infested with varying degrees of invasive vegetation, much of it within jurisdictional wetlands. The Applicant is not required to manage, eliminate, or mitigate exotic vegetation that is pre-existing on the site and widely distributed in the local vicinity.

BETA: *Much of the Site will be excavated or cleared and an Invasive Species Control Plan is critical to the protection of remaining habitat and areas Subject to Protection on-site and off-site. The Commission has jurisdiction over all activities proposed in areas Subject to Jurisdiction including the 100-foot Buffer Zone. If they feel that control and management of invasive species is required to protect the adjacent Resource Areas and the interest they*

preservation of natural vegetation adjacent to the Resource Area and/or other measures commensurate with the scope and location of the work within the Buffer Zone to protect the interests of M.G.L. c. 131 section 30. The purpose of the preconstruction review of work in the Buffer Zone is to ensure the adjacent Resource Areas are not adversely affected during or after completion of the work.



protect, then they are within their regulatory authority to require the applicant to provide and implement an ISCP. An ISCP is required by other permitting authorities and on all MassDOT transportation and infrastructure projects.

HSH2: This is not a requirement of the WPA. The request is impractical without the extensive use of herbicides as there is approximately one mile of untreated property line. The applicant will not agree to use herbicides.

BETA2: *BETA recommends that the Commission include a Special Condition requiring the Applicant to provide a ISMP that addresses the handling and disposal of existing invasive species throughout the site and buffer zones. The ISMP should include a performance standard for the re-use of soils containing seed stock of the invasive species. A cut and fill grading plan should be provided for the Commission's review and approval as part of the ISMP.*

Applicant: We agree to manage invasive in disturbed areas and will manage invasive species in our landscaped areas. A Cut and Fill grading plan will be provided to the town when the final construction bid plans are produced. A section relative to Invasive species management has been added to the O&M and LTPPP attached to this response. Approval of a cut and fill grading plan is not a requirement of the WPA.

Clearing and grading associated with the Project will significantly permanently alter 100-Foot buffer zone Bylaw resource area. The 100-foot buffer zone (or Bordering Land) on the Site is presumed to protect the important functions and values of the wetland resource areas. According to the Bylaw Regulations, scientific research and the Commission's own experience in reviewing a wide variety of projects, clearly demonstrates that alteration and construction activities within Bordering Lands (i.e., 100 foot buffer zone) consistently results in destructive and cumulative impacts on wetland resource areas. Bordering Land plays a significant role in wildlife habitat protection. Many studies document that amphibians, reptiles, birds, and mammals regularly use upland buffer zones for nesting, feeding, over-wintering and reproducing⁴. Removing the natural features of the 100-foot buffer zone, as currently proposed, will remove wildlife cover resulting in a permanent adverse impact to wildlife escape and migration pathways, nesting, and forage. The Bylaw Regulations protect the wildlife habitat interest of the Buffer Zone, presuming that a 25-foot vegetated buffer is the minimum buffer necessary to protect the important functions and values of the resource areas.

HSH: This NOI is not subject to the interests of the Bylaw and the Bylaw Regulations are non- scope. The Project, as designed and throughout its extent complies with applicable

⁴ MACC Buffer Zone Guidebook, dated June 6, 2019



provisions at 310 CMR 10.53(1). The Project further complies with the Department's Stormwater Management Standards within and beyond the extent of the buffer zone and is therefore compliant with applicable performance standards conferred to the various applicable resource areas extant on the site.

BETA: The Applicant shall comply with Stormwater Standards as well, see BETA's reply to HSH response to Comment WE3.

HSH2: Applicant does comply with Stormwater Standards as required by law. See revised plan dated October 14, 2020 showing the BMP more than 100' feet from PVP #1.

BETA2: The project does not currently comply with the DEP Stormwater Regulations and Standards as described in this letter.

Applicant: This project is compliant with all Stormwater Regulations as a result of the changes to the plans and supplemental information.

Buffer zone width is one of the most important variables for water quality protection, especially when a Project will result in intense use of the adjacent land. Since the current Project will result in a high-density residential neighborhood, migration of nutrients and sediment are likely, therefore a minimum of a 50- foot undisturbed buffer is recommended.

HSH: This NOI is not subject to the interests of the Bylaw and the Bylaw Regulations are non- scope. There is no such standard provided for, nor recommended in the Wetlands Protection Act or corresponding Regulations.

BETA: The Commission has the authority to regulate and condition work in the Buffer Zone that may affect a Resource Area⁵. The Applicant has the burden of proof to demonstrate compliance with Buffer Zone regulatory criteria listed in 310 CMR 10.24(1)⁶ and 10.53(1)⁷.

Provide language in the Development's O & M Plan prohibiting the use of chemicals or lawn fertilizers within 100 feet of wetlands, post signs in strategic locations as reminders of the "Protected Wetland Areas" and implement dog curbing rules to further reduce nutrient overload within wetlands. At completion of construction consider installing a wooden post and

⁵ MACC Buffer Zone Guidebook, dated June 6, 2019

⁶ 310 CMR 10.24(1) states "if the issuing authority determines that a resource area is significant to an interest identified in M.G.L. c. 131, § 40 for which no presumption is stated in the Preamble to the applicable section, the issuing authority shall impose such conditions as are necessary to contribute to the protection of such interest."

⁷ 310 CMR 10.53(1) further states "For work in the Buffer Zone subject to review under 310 CMR 10.02(2)(b)3., the Issuing Authority shall impose conditions to protect the interests of the Act identified for the adjacent Resource Area."



rail fence system, or similar, for a barrier between wetland resource areas and the development.

HSH2: The proposed activities, with a prevailing minimal buffer zone preservation of 25 feet or greater is consistent with countless approvals by the Department under the Act. There are no unique or unusual aspects to the site wherein actual alteration of resource areas will result from the work, as proposed, within jurisdictional buffer zone.”

Applicant will agree to a condition prohibiting the use on non-organic fertilizer or the use of chemical pesticides or herbicides in outdoor areas within 100 feet of “protected Wetland Areas”. Applicant will agree to install signage every 150 feet. Landscape maintenance will be at the direction of the rental property owner and the homeowner’s association for the ownership units and the contracts will include information on restricted areas.

BETA2: BETA recommends the Special Conditions described in this section be included in an OOC.

Applicant: Agrees.

In addition to providing wildlife habitat, upland buffer zones help control the rate at which water enters and leaves a wetland system and regulates stream base flows during dry times. The Site’s steep topography and varied subsurface soil conditions are features that provide and maintain the hydrology required to support the wetland system and the potential vernal pool habitat. The Project will result in significant changes to the current watershed to the BVW, vernal pools and stream system. Therefore, a reduction in local recharge upgradient and cross-gradient of the wetland system may have a significant adverse effect on water budgets.

WE10. The Applicant should provide the Commission with a specific graphic that illustrates both current and proposed watersheds to the on-site resource areas and describe the changes in groundwater recharge within 100 feet of the boundaries to the resource areas.

HSH: Project meets or exceeds all applicable stormwater performance standards; so, doing also assures compliance with the standards of the Wetlands Protection Act and corresponding Regulations.

BETA: Maintaining hydrology is critical to the site’s vegetated wetlands, stream systems and vernal pools to remain viable and BETA maintains the Applicant provide the Commission with a graphic of current and proposed watersheds to the on-site resource areas and describe the changes in groundwater recharge within 100 feet of the boundaries of the resources aeras. Further, a pre-and post-watershed map is required to adequately design the stormwater



management system to comply with the Standards. Therefore, this graphic is immediately available and should be provided in a separate submission to the Commission that describes any changes in watersheds to the Resource Areas or Vernal Pools.

HSH2: Provided to Conservation Commission in the appendices of the Stormwater Report from May 2020. https://www.walpole-ma.gov/sites/g/files/vyhlf1381/f/pages/supplemental_data_report_0.pdf

BETA2: *The applicant has not fully addressed this comment.*

Applicant: *See responses to SW11 above regarding the effect on the Potential Vernal Pools. The Pre- and Post- watershed maps are provided within the Supplemental Data Report and can be found between sheets 139 and 146.*

At this time the Applicant has not provided sufficient information to describe the site, the work, or the effects of the work on the interests protected by the Site's resource areas and vernal pools. The Applicant has not overcome the burden of proof that they have no practical alternatives to the significant impacts resulting from construction of stormwater management structures and site development activities in the RA. Therefore, the Commission should not issue an Order of Conditions approving the project.

HSH: See revised plan. The use of the RFA for detention has fallen from 14% to approximately 8.8%. The reduction was accomplished by 1) reducing the number of multifamily buildings from four to three, two of which are connected in an L configuration and adding a 5 floor to each multifamily building and by creating approximately 30 additional underground parking spaces and 2) reducing by 4 the number of single-family homes on the western portion of the site to move more of the detention out of the RFA. (Four additional rental town homes were added to the eastern portion of the site).

Pursuant to the Wetlands Protection Act, the standard for the alternatives analysis is whether there is a "practicable and substantially equivalent economic alternative." An alternative is defined by the Act as practicable and substantially economically equivalent if it is "available and capable of being done after taking into consideration: costs, and whether such costs are reasonable or prohibitive to the owner; existing technology; the proposed use; and logistics in light of overall project purposes."

As described in the June 30th alternatives analysis submission, 5 floor buildings cost roughly \$10,000 more per unit than 4 story buildings. However, by reducing the number of buildings from 4 to 3, one roof, one foundation and one fire stair will be eliminated from the project which will partially offset the additional per unit cost of adding a 5th floor in order to reduce



the development footprint. Reducing the development footprint created more area for detention outside the RFA and will reduce the amount of water that needs to be detained. The detention areas shown on the revised plan are estimates and will be finalized after the 9-23 hearing.

Any further reduction in the development footprint would require a diminution of the purpose of project as the number of units would need to be reduced. A reduction in the number of affordable and market housing units would clearly not be a substantially equivalent economic alternative.

BETA: The Applicant's Alternative Analysis does not provide the Commission with adequate information to confirm that the alternative that is practicable and substantially equivalent economically if it is available and capable of being done after taking into consideration costs, existing technology, proposed use, and logistics, in light of the overall project purposes per 310 CMR 10.58(4)(c).

HSH2: Project meets or exceeds all applicable stormwater performance standards; so, doing also assures compliance with the standards of the Wetlands Protection Act and corresponding Regulations. APPLICANT: There is no detention or any development activity in the riverfront. See revised plan dated October 14, 2020.

BETA2: The current design plans do not include proposed work in the RA. Issue resolved.

The Applicant has not provided sufficient information describing the effects of the work on the Site's Resource Areas and Certified Vernal Pools or compliance with DEP's Stormwater Regulations and Stormwater Standards. Therefore, the Commission should not issue an Order of Conditions approving the project at this time.



Howard Stein Hudson feels that they have addressed each issue discussed within this letter including incorporating design suggestions which were not a requirement of The Wetlands Protection Act as a means of producing a more beneficial project for the environment.

Please see attached materials:

- Supplemental Data Report with attachments
- Revised Plan Set

Please do not hesitate to call Howard Stein Hudson's Chelmsford Office with any questions or concerns.

Sincerely,

Howard Stein Hudson

Patrick Bogle, P.E.
Civil Engineer

Katie Enright, P.E.
Associate / Senior Civil Engineer