



January 19, 2023

Mr. Gregory Rondeau, Chairman
355 East Central Street
Franklin, MA 02038

**Re: 704 Washington Street
Site Plan Peer Review**

Dear Mr. Rondeau:

BETA Group, Inc. is pleased to continue our engineering peer review services for the proposed **“Amego School”** group home located at 740 Washington Street in Franklin, Massachusetts. This letter is provided to outline findings, comments, and recommendations.

BASIS OF REVIEW

In response to our 2nd review, the following documents were received by BETA on November 29, 2022 via email. The comments provided will be based upon this revised information as submitted.

- Drainage calculations entitled **“Stormwater Report for 704 Washington Street, Franklin, MA”** dated June 30, 2022, revised January 04, 2023 prepared by Level Design Group, L.L.C. of Plainville, MA.
- Plans (8 sheets) entitled: **Site Plan Amego Inc. 704 Washington Street**, dated July 19, 2022, revised January 04, 2023, prepared by Level Design Group of Plainville, MA.
- Plan (2 sheets) entitled: **Amego, Site Lighting Plan** dated October 25, 2022, prepared by William J. Masiello, Architect, Inc. of Worcester, MA.
- Landscape Plan entitled: **Amego Adult Homes, Landscape Plan** revised January 11, 2023, prepared by Shepherd Engineering, Inc. Electrical Consultants, of Worcester, MA.
- Architectural Plan entitled: **Amego Adult Homes, Exterior Elevations**, noted as Progress Print November 16, 2022, prepared by William J. Masiello, Architect, Inc. of Worcester, MA.
- Letter from Level Design Group, LLC to the Town of Franklin Planning Board, RE: 704 Washington Street, LDG Proj. No. 2013.00, dated January 04, 2023.

Review by BETA will include the above items along with the following, as applicable:

- Site Visit
- **Zoning Chapter 185 From the Code of the Town of Franklin**, current through July 2021
- **Zoning Map of the Town of Franklin, Massachusetts**, attested to October 7, 2020
- **Stormwater Management Chapter 153 From the Code of the Town of Franklin**, Adopted May 2, 2007
- **Subdivision Regulations Chapter 300 From the Code of the Town of Franklin**, current through March 8, 2021
- **Wetlands Protection Chapter 181 From the Code of the Town of Franklin**, dated August 20, 1997
- **Town of Franklin Best Development Practices Guidebook**, dated September 2016

INTRODUCTION

The project site includes one parcel, Lot 322-030, with a total area of 2.4 acres located at 704 Washington Street in the Town of Franklin (the “Site”). The Site is located within the Rural Residential I Zoning District.

Lots surrounding the Site are also within this district. The Site is also located within the Water Resource District.

The existing Site is a 1-story single-family dwelling with a detached 1-story barn. A driveway connects to Washington Street to the north and provides access to both the dwelling and barn. Associated site features include a retaining wall, a walkway, a shed, and landscaping. Beyond these features, most of the existing Site is a grassed lawn with some wooded area in the rear of the property. A sidewalk is present along both sides of Washington Street in this area.

Topography at the Site is generally directed south towards an area of vegetated wetlands. According to data available from MassGIS, this wetland resource area connects to Miscoe Brook further to the south. A portion of the Site is graded towards Washington Street to the north. The Site is located within a Zone II Wellhead Protection Area. The Site is not located within a FEMA mapped 100-year floodplain, an NHESP-mapped estimated habitat of rare or endangered species, or any other critical area. NRCS soil maps indicate the presence of Merrimac fine sandy loam with a Hydrologic Soil Group (HSG) rating of A (high infiltration potential), Ridgebury fine sandy loam with an HSG of D (very low infiltration potential), and Canton fine sandy loam with HSG B (medium infiltration potential).

The project proposes to demolish existing site features and construct two 3500± sq. ft. one-story group homes. Associated site features will include a parking lot, vinyl fence, patio areas, landscaping, and 2 new septic systems.

The site design has been modified in response to the comments received at the last hearing. The entrance driveway and parking and access alignment remains unchanged. There is a 16-space lot in the front followed by a 7-space area in front of the second building. A driveway between the structures will provide access to the doorway openings on the sides of the buildings. Vertical granite curbing is proposed around the entirety of the parking lot except at the opening provided to allow runoff from the pavement to enter the stormwater features. Sidewalk access to Washington Street as well as the adjacent site has been added. A Lighting plan has been submitted which includes all outside fixture locations and manufacturers information and a photometric plan. The landscaping plan has been modified. Trees have been added, and some additional screening from Washington Street has been proposed at the front left edge of the parking.

The stormwater design has been modified also. They will now be installing 2 bioretention basins. The larger basin will accept the runoff from the pavement and the front of the buildings. A smaller basin will be placed at the rear right corner of the lot to treat the runoff from the roof area at the rear of the buildings. Except for a small strip along Washington Street, all the runoff from the site will follow the existing grades and flow south towards the wetlands which are identified on the plans approximately 140' from the property line.

To assist with the review, the response from Level Design Group to the 3rd review is identified as

LDG3: The information.....

The response from BETA and the additional comments are all labeled

BETA4: The information.....

All the previous comments that were addressed in the prior submissions have also been discontinued, and only those comments that were relevant to this revision will be continued.

FINDINGS, COMMENTS, AND RECOMMENDATIONS

GENERAL

- G1. Overall, the site development will result in a disturbance of approximately 78,000 square feet. Since this is greater than 1.0 acre, the site development is subject to §153-1 of the Zoning by laws. In accordance with Article III. Post Construction Stormwater Management, a stormwater management plan which includes calculations is required. In accordance with Volume 1, Chapter 1, the site is also subject to the requirements of the Massachusetts Storm Water Standards. A stormwater design is provided however supporting calculations have not been submitted. These calculations including documentation of compliance with the standards and the bylaws is required.

BETA2: Overall disturbed area associated with the site development has been reduced but remains greater than an acre. Accordingly, the site remains subject to §153-1 of the by-laws. A stormwater report has been filed. Comments relative to the report are shown below. In addition, the limit of disturbance shown on the site does not encompass the proposed material stockpile area at the front of the site.

LDG: The limit of work has been revised to encompass all disturbance proposed by the revised design.

BETA3: The limit of disturbance will be approximately 66,000 square feet. As previously noted, it will remain subject to §153-1 of the by-laws and a stormwater permit will be required from the DPW.

- G2. The site is located within the Water Resource Protection District and is also located within the limits of a Zone II to a public water supply well. These should be noted on the plans. This is defined as a **Critical Area** as it relates to the stormwater standards. In addition, although this is primarily a Board of Health issue, it does qualify as a Nitrogen Sensitive zone as it relates to the subsurface sewage disposal system.

BETA2: The Water Resource Protection District is a Zoning overlay and therefore should be noted accordingly on the site plans and on the Zoning summary table. The drainage report incorrectly states that the site is not located within a Critical Area and none of the stormwater features required to Address this location have been included in the design.

LDG: The plans have been revised to include a bioretention Basin and the TSS removal calculations have been revised and are included in the report. Phosphorus removal calculation show 60% removal are included with this submittal.

BETA3: See stormwater design comments below.

LDG3: Comments addressed below

BETA4: See Below

- G3. There is a stone retaining wall along the frontage along Washington Street in front of the existing house. It is unclear from the drawings whether this wall will be removed. Based upon its proximity to the sidewalk, BETA recommends that this portion of the wall be maintained, and the grading adjusted accordingly.

BETA2: *A portion of the wall is now shown to be removed in accordance with the letter to provide sight distance. The sight distance needed should be shown to identify the extent of the wall removal needed. In addition, the grading that would be needed once the wall is removed should be shown. A note should also be added that any damage to the sidewalk resulting from the removal of the wall will be repaired to the satisfaction of the DPW.*

LDG: *A note has been added to the plans for clarity.*

BETA3: *The sight distance line has been provided and is located outside of the wall. In addition, the driveway opening was moved so that the eye height of the driver is now above the wall. Regardless, the wall remains scheduled for removal. If the wall is to be removed than show the grading necessary to address the 3-4' of exposed grade that will remain if the wall is removed.*

LDG3: *The plans have been revised to show the wall is to remain.*

BETA4: *The wall will remain, comment addressed*

SCHEDULE OF LOT, AREA, FRONTAGE, YARD AND HEIGHT REQUIREMENTS (§185 ATTACHMENT 9)

As shown on the schedule on the Zoning table on Sheet 4 of the set, the Site meets the requirements for lot area, depth, frontage, width. The proposed building will meet the front, side, and rear yards and building height is also identified as 3 stories; calculations for impervious coverage within the Water resource district should be corrected as noted below.

SCH1. Add a note to the plan that documents the percentage of lot coverage by the proposed impervious surfaces within the Resource District.

BETA2: *Note has not been added comment remains.*

LDG: *A note has been added to the plans to address this comment.*

BETA3: *The Zoning Summary on Sheet C2.0 should be corrected. The Maximum Building coverage is 15% and Maximum Impervious coverage is 80%.*

LDG3: *The zoning table has been revised accordingly.*

BETA4: *Comment addressed. FYI correct the typo to change feet to percent.*

SIGNS (§185-20)

Provide details, sizes, and locations of any proposed signs on site if applicable.

PARKING, LOADING AND DRIVEWAY REQUIREMENTS (§185-21)

Access to the Site is proposed via a 42'+ long, 14' wide driveway connected to Washington Street 32± feet from the existing driveway opening. The parking lot is located between the 2 buildings. Sidewalk access is provided from the parking area to the buildings. No sidewalk access is proposed to Washington Street.

As part of the proposed work, the existing curb cut will be abandoned. The proposed driveway entrance is approximately 32 ft east of the existing driveway. The existing granite curbing on Washington street will be removed to establish this opening.

As defined by the bylaw, 1.0 parking space is required per guest. Thus, for the 20 guests, 20 spaces are required. As noted earlier, the parking has been increased to provide 23 spaces which include 1 van accessible space. Proposed parking spaces are 9' wide and 19' long, with a 24' wide access aisle. The access driveway is 20' wide.

- P1. In accordance with the bylaws, the access driveway should be widened to 24'. If the waiver is requested, the minimum width should be 20' in accordance with NFPA requirements for fire and emergency vehicle access.

BETA2: *The access driveway has been widened to 20' however, dimensions in the parking lot should be provided to show overall pavement dimensions. Waiver has not been requested.*

LDG: *Driveway dimensions have been added to the plans and a waiver will be requested. Though under the Dover Amendment, this is a local requirement which exempts applicants from complying with public health and safety requirements.*

BETA3: *Comment addressed*

LDG3: *The plans have been revised to provide a 24' wide access aisle and a waiver request is no longer needed. The parking stalls have been revised to be 19' in length and the detail has been revised accordingly. The stormwater report has been revised based upon this change.*

BETA4: *Comment addressed*

- P4. In accordance with §185-21, C. (5). Parking lots for 20 or more cars shall contain or be bordered within 5' by at least one tree per 10 parking spaces, , with not less than 40 square feet of unpaved soil area per tree. Planting areas are identified between the pavement and the buildings, but no trees are identified.

BETA2: *All landscaping notes have been removed from the plans and are no longer shown. Comment remains.*

LDG: *A landscape Plan has been provided with this submission.*

BETA3: *6 trees are shown on the Landscape Plan which satisfy this criterion. No further comments.*

LDG3: *No response*

BETA4: *Although not specifically a Planning Board issue, BETA recommends that the Red Oak in the landscape island in front of the doorway into the 2nd building be moved away from the proposed subsurface sewage disposal system.*

SIDEWALKS (§185-28)

An existing 5' wide sidewalk is present along Washington Street. The site is now proposed to be connected to the sidewalk on Washington Street. In addition, a sidewalk has been added to connect this site with the adjacent "Amego" site.

CURBING (§185-29)

Vertical granite curbing is now proposed around the entire parking area and the access driveway. A gap in the curbing is proposed to allow runoff from the pavement area to flow into the proposed bio retention basin.

BETA4: *It appears that a gap in the proposed curbing from the original design in the back left corner of the first 8 parking spaces on the north side of the site is still shown on the plans. This gap should be closed, and the spot grades corrected to direct runoff towards the gap south of this corner.*

SITE PLAN AND DESIGN REVIEW (§185-31)

The project has been submitted for Site Plan Review and is required to conform to the requirements of this section.

SP5. In accordance with §185-31.1.C(4)(e) No site feature shall create glare or illumination which extends beyond a site's property lines and creates a hazard or nuisance to neighboring property owners. There are no exterior lights shown on the plans nor was a lighting plan submitted. The applicant should note if any lighting is proposed and provide intensity.

BETA2: *As noted on the site plans, all lighting on site will be provided by residential fixtures mounted on the face of the building. However, the nature of the fixtures nor the intensity of the lighting has been shown. Comment remains.*

LDG: *A lighting Plan and Photometrics plan has been included with this submission.*

BETA3: *This plan was not included in the information forwarded to BETA. In addition, the Landscape Plan shows lights along the parking lot yet there are none indicated in the site plans. The 2 plans should be coordinated.*

LDG3: *Lighting and Photometrics plan are included with this submittal and the site and Landscape Plans have been revised accordingly.*

BETA4: *The photometrics plan has the previous plans as a base, however it should not have any impact on the results as noted. Based upon the Photometrics Plan, there is some light spillage on to the Washington Street right of way. It is similar to the intensities that have been accepted by the Board in the past, however a waiver will be required.*

SCREENING (§185-35)

The project proposes outdoor parking for 10 or more cars which must be screened in accordance with this section.

S1. **BETA2:** *Existing vegetation along the outside of the lot will be removed and additional plantings should be shown in accordance with this section of the bylaws. Site plan should identify existing vegetation to be removed in conjunction with the proposed development.*

LDG: *Proposed plantings for screening have been added to the Landscape Plans.*

BETA3: *BETA recommends that some additional plantings be provided along the northerly edge of the 1st parking area to help screen the view from Washington Street and the residential properties across the street.*

LDG3: the planting plan has been revised accordingly.

BETA4: A landscaped island and 5 additional trees have been added along this edge of the parking as a screen. In addition, the stormwater feature along this edge has been converted to a bio retention basin which will be planted in accordance with the standards and provide some additional visual relief. Comment addressed

S2. **BETA3. The proposed grading identified on the planting plan behind the buildings is different than the Civil Design Plans and should be corrected to match.**

BETA4: Plans now match, comment addressed

STORMWATER MANAGEMENT

Stormwater management for the proposed site development will be achieved through a proposed Infiltration basin that will be located along the westerly edge of the parcel parallel with the back building. Runoff from the parking lot will be graded through a gap in the vertical granite curbing. A shallow basin will be provided at the rear of the buildings and connected to the infiltration basin through an 8" HDPE culvert. Pretreatment will be provided by a sediment forebay. A small portion of the driveway will flow back towards Washington street. The following comments are provided as a guide for the designer to document compliance.

GENERAL

SW1. The site qualifies as a redevelopment and the untreated runoff back towards Washington Street should be shown to comply with this standard.

BETA2: Documentation for compliance with Standard 4 is not shown. Comment remains.

LDG: The total and impervious area directing runoff onto Washington Street under proposed conditions is less than under existing conditions. The proposed design will be an improvement over existing conditions which discharge untreated onto Washington Street from a larger impervious area than is proposed.

BETA3: BETA agrees that flow onto Washington Street will be reduced. However, a redevelopment checklist should be provided.

LDG3: A redevelopment section has been added to each standard in the stormwater report.

BETA4: Comment addressed; redevelopment standards referenced in the stormwater report.

SW2. The site is in a critical area. In addition, the soils have a high permeability rate. Accordingly, the pretreatment into the basin needs to be 44% to comply with the standards. The sediment forebay will only provide 25%, which is not sufficient. Additional pretreatment is required for the paved areas and the roof runoff that flows over the pavement into the forebay.

BETA2: Comment remains. Pretreatment provided does not comply with the standards.

LDG: The sediment forebay has been replaced with a Bioretention Basin and Vegetated Filter strip, to provide 90% TSS removal.

BETA3: *The bioretention basin will provide the pretreatment necessary for the infiltration basin provided it has been designed in accordance with the Handbook. BETA has the following comments relative to the bioretention basin design.*

- a. *In accordance with Volume 2 Chapter 2 of the standards, the maximum ponding depth should be between 6-8". Adjust the spillway design elevation accordingly.*
LDG3: *The spillway elevations have been revised accordingly*
- b. *The storage in the media should not be included as part of the impoundment capabilities of the basin in the hydro cad analysis.*
LDG3: *The soil media storage has been revised have 0% void space.*
- c. *Exfiltration from the basin can be considered in the design.*
LDG3: *Exfiltration is used in the stormwater model as shown in the Proposed HydroCAD Report*
- d. *Not all the watershed area identified as P2A in the Hydrocad calculations flows into the infiltration basin. Separate out that portion east of the basin that will bypass the basin.*
LDG3: *The stormwater design in this area has been revised to include a Sediment Forebay and a Bioretention Basin. Additional topographic information has been added to the plans based on a field survey which shows this area, now designated as P2b will direct flow to the revised Bioretention Basin.*
- e. *The entire watershed into the infiltration basin does not come solely from the bioretention basin. This watershed should be analyzed separately from the overland flow into the infiltration basin.*
LDG3: *The watershed areas and stormwater model have been revised accordingly, based upon the revised design.*
- f. *The water quality volume into the bioretention basin should be based upon all the impervious surfaces tributary, including the roof. Otherwise collect the roof runoff separately and pipe it directly into the infiltration basin as allowed in the handbook.*
LDG3: *The water quality calculations in the stormwater report have been revised to include all impervious areas.*
- g. *A planting scheme for the bioretention basin in accordance with the requirements of the handbook is required.*
LDG3: *A Bioretention Planting Detail has been added to the plans.*

BETA4: *The design as revised has addressed each of the technical comments associated with the Hydrocad analysis of the 2 bioretention basins. It is important to note that the planting scheme and media depth in the basins is critical to the treatment provided. Based upon the Planting detail provided, BETA has the following*

1. *In accordance with Volume 2, Chapter 2, to provide Nitrogen removal, the planting media depth should be increased to 30" where it will meet the treatment requirements of the by law. Since the basin will be exfiltrating the gravel base is not required. This layer should be replaced by the media and the design elevation for the spillway crest be raised to 293.55 to account for the storage loss in the gravel.*
2. *A planting detail has been provided for Basin 1 only. A detail is required for Basin 2.*

3. ***The density of the shrubs provided in Basin 1 is only 1/160 sq. ft. In accordance with Volume 2 Chapter 2 of the handbook, this should be closer to 1/50 sq. ft.***
4. ***BETA recommends that the final planting schedule for each basin be provided to the Planning Board for Review and Approval prior to endorsement. Final plant layout should be provided at the start of construction.***

SW3. The roof runoff as proposed will run onto the ground. The easterly building will flow overland to the basin. However, the roof runoff from the westerly building will be directed away from the basin towards the rear of the lot. It may qualify under the LID definition and should be discussed in the stormwater report.

BETA2: The revised site design has eliminated this issue. No further comments.

LDG: No response.

BETA3: The issues associated with the original design have been reactivated in the revised drainage design. The roof runoff as proposed will run onto the ground. Along the front of the buildings, the roof runoff will flow onto the parking lot pavement and through the proposed treatment train. However, at the rear of the building no treatment is being provided. A stormwater BMP is needed to treat this flow.

LDG3: A Bioretention Basin has been added to this area (designated as Bioretention Basin -2) to provide treatment and is included in the Hydrocad model. The stormwater report has been revised accordingly.

BETA4: Comment addressed. Additional BMP has been provided and all runoff in this direction will be treated in accordance with the standards. However, it does appear that the basin configuration could be revised to avoid the grading required for the spillway discharge channel as currently designed. BETA recommends that the design engineer revise the layout of the basin to avoid this grading and maintain the existing vegetation along the property line.

SW4. The proposed infiltration basin will be used to meet the requirements of both Standards 2 Peak Rate attenuation and 3 Recharge. Since the bottom of the basin as proposed is less than 4' above groundwater, a mounding analysis will be required.

BETA2: The input data in the mounding analysis is incorrect. Document how the saturated thickness of the aquifer is 288.55'. The percolation rate should be the Rawls rate as required in the Storm Water Standards.

LDG: The saturated thickness of 288.55' comes from the elevation at which redoximorphic features were observed during soil testing and represent the estimated seasonal high groundwater elevation for which the infiltration basin was designed. The percolation rate is the Rawls rate converted from inches per hour to feet per hour.

BETA3: BETA recommends that the design engineer review the software guidance for the groundwater mounding analysis. Specifically:

1. *The elevation of redoximorphic features does not represent the Initial Saturated Thickness of the underlying aquifer. BETA recommends that the design engineer conduct some research at the Board of Health to see if there are any wells in the area to help determine the actual aquifer thickness.*

LDG3: The saturated thickness was conservatively estimated to be 10 feet for the purposes of mounding.

2. *Hydraulic Conductivity is normally 5-10x greater than the vertical percolation rate. BETA recommends that the design engineer research typical values based upon soil types.*

LDG3: The calculations have been revised accordingly.

3. *24 hours represents a far greater volume than what exfiltrates as determined by HYDRO-CAD and should be adjusted.*

LDG3: The duration in the calculations have been revised to be 3 days

BETA4: The input value for the recharge rate is incorrect and the saturated thickness is conservatively too low. However, a quick check by BETA shows that the mounding height remains below 2.0' and the basin complies with the standards. No further comments.

SW5. As previously noted, the site development will be subject to the EPA Construction General Permit and a Notice of Intent will need to be filed with the EPA and a Storm Water Pollution Prevention Plan prepared. The applicant is reminded to file and obtain a permit from the Town of Franklin DPW for the same also.

BETA2: No further discussion required.

SW6. The proposed infiltration basin has not been designed in accordance with the requirements of the standards. Specifically,

- b. The grading at the emergency spillway is shown incorrectly on the plan. The spillway is depicted at crest elevation 293.0 not 292.0 as shown in the calculations and the plan. In addition, the spillway is shown below grade on the plans since it does not extend to the elevation 292 contour.

LDG: A detail has been added for clarity.

BETA3: Provide the additional topography necessary to show that the discharge from the weir will continue down gradient to the discharge swale identified on the plans.

LDG3: Additional topographic information has been added to the plans based on a field survey which shows that the outlet of the revised Bioretention Basin will discharge down gradient.

BETA4: comment addressed.

MASSDEP STORMWATER STANDARDS

The project is subject to the Massachusetts Stormwater Standards as outlined by MassDEP. Compliance with these standards is outlined below:

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 project proposes one new outfall from the infiltration basin. The site plan does not

show the existing conditions far enough beyond the site to show what the impact of the outfall may be on abutting parcels.

SW7. A portion of the roof on the rear building will bypass the proposed infiltration basin. Show what treatment process will be used for this proposed impervious surface, and that it meets the standards as designed.

LDG: *This impervious area consists of proposed building roof which does not require treatment.*

BETA3: *The runoff from the roof is exempt from pretreatment only and that is only if it is piped directly into the BMP. Once this runoff contacts the ground it is subject to all the requirements of the Standards like any other impervious surface. Comment remains.*

LDG3: *The infiltration basin is no longer included in the design and has been removed from the plans*

BETA4: *The proposed grading has been modified to direct all the roof runoff to the stormwater BMP. No further comments.*

POST-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 net increase in impervious area and minor changes to site hydrology. Stormwater runoff will be mitigated via a new subsurface infiltration system. Calculations indicate a decrease in peak discharge rate and runoff volume to all watersheds.*

SW8.

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 that soil on site is predominantly Merrimac fine sandy loam with HSG A (high infiltration).*

Recharge is proposed via a proposed infiltration basin which will capture runoff from the eastern parking lot area. The project will provide groundwater recharge in excess of what is required.

SW9. The runoff from the parking lot will flow overland from the gap in the granite curbing to the sediment forebay. The plans should demonstrate that this design will not result in increased erosion on the slopes down into the forebay from the flow.

LDG: *The parking lot flow is designed to enter the bioretention basin over grassed level area in accordance with the Massachusetts Stormwater Handbook.*

BETA3: *In accordance with Volume 2, Chapter 2 of the Handbook, to receive TSS removal credit the filter strip should be "as wide as the area draining to the strip." That is not the case in this design. BETA recommends that the designer consider the use of a sediment forebay in lieu of the filter strip. Based upon the impervious area within the watershed tributary to this point the forebay needs only 145.4 cubic feet of storage to qualify.*

LDG3: *A sediment forebay has been added to the plans in place of the vegetated filter strip as a means to provide pretreatment for the Bioretention Basin.*

BETA4: *Comment addressed.*

TOTAL SUSPENDED SOLIDS (STANDARD NUMBER 4): *For new development, stormwater management systems must be designed to remove 80% (90% per Town Bylaw) of the annual load of Total Suspended*

Solids (TSS). The project includes treatment of the proposed impervious surfaces on site using a bioretention basin in series with an infiltration basin.

The project is required to treat the 1.0-inch water quality volume (See Standard 6). The static storage provided in the 2 basins is certainly sufficient to meet the intent of the standards and by laws, however this is dependent upon the design of the pretreatment required by the handbook.

SW10. The pretreatment provided by the sediment forebay is not sufficient to meet the standards. In accordance with Volume 2, Chapter 1 of the standards, the pretreatment required would be 44% TSS Removal for a basin in a critical area and with highly permeable soils.

LDG: *The sediment forebay has been replaced with a Bioretention Basin and Vegetated Filter strip, to provide 90% TSS removal in accordance with the Massachusetts Stormwater Handbook.*

BETA3: *See SW9 above.*

LDG3: *A sediment forebay has been added to the plans in place of the vegetated filter strip as a means to provide pretreatment for the Bioretention Basin. The Bioretention Basin provides 90% TSS removal in conjunction with the sediment forebay in accordance with the Massachusetts Stormwater Handbook.*

BETA4: *Comment addressed.*

SW11. The MASS DEP TSS Removal sheet shown in the report is incorrect. In accordance with the standards, the pretreatment is a requirement to achieve the 80% TSS removal rate for the infiltration basin. Accordingly, you cannot count the removal achieved by the pretreatment in the totals.

LDG: *The sediment forebay has been replaced with a Bioretention Basin and Vegetated Filter strip, to provide 90% TSS removal in accordance with the Massachusetts Stormwater Handbook.*

BETA3: *See SW9 above.*

LDG3: *A sediment forebay has been added to the plans in place of the vegetated filter strip as a means to provide pretreatment for the Bioretention Basin. The Bioretention Basin provides 90% TSS removal in conjunction with the sediment forebay in accordance with the Massachusetts Stormwater Handbook.*

BETA4: *Comment addressed.*

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. Site does not qualify as 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 is located within a Zone II*

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Wellhead Protection Area which is a critical area. Bioretention basins are considered recommended uses for a Zone II.

REDEVELOPMENT (STANDARD NUMBER 7): *Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. The project is partially a redevelopment. However, the design does not use the credits associated with the redevelopment.*

CONSTRUCTION PERIOD EROSION AND SEDIMENT CONTROLS (STANDARD NUMBER 8): *Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.*

The project will disturb an area greater than one acre of land; therefore, a Notice of Intent with EPA and a Stormwater Pollution Prevention Plan (SWPPP) is required. The project proposes the use of erosion control barrier (straw wattle), catch basin inlet protection, and stabilized construction entrance.

SW13. The applicant is reminded that a Stormwater permit from the DPW is required prior to the start of construction.

LDG: *A stormwater permit from the DPW will be submitted for final review of DPW as necessary after the Planning Board approval.*

BETA3: *No response required.*

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 Long-Term Operation and Maintenance (O&M) Plan has been provided.

Illicit Discharges (Standard Number 10): *All illicit discharges to the stormwater management systems are prohibited.*

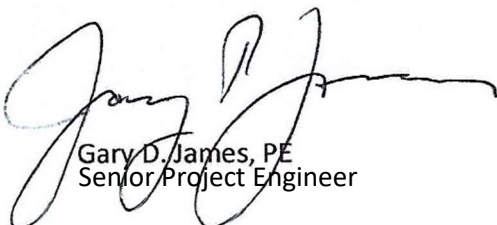
SUMMARY

The plans have been revised in response to the prior review and the comments received from the Planning Board at the last hearing. The site will meet the stormwater standards, however, there remain a few minor issues with the stormwater design to be resolved. In consideration that the minor outstanding issues will not measurably alter the proposed design, BETA defers to the preference of the Board include addressing them as a condition of approval.

If we can be of any further assistance regarding this matter, please contact us at our office.

Very truly yours,

BETA Group, Inc.



Gary D. James, PE
Senior Project Engineer



Mr. Gregory Rondeau, Chairman
January 19, 2023
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cc: Amy Love, Town Planner