



December 11, 2024

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

**Re: Site Plan Review  
55 Constitution Boulevard  
Site Plan Application**

Dear Mr. Rondeau:

BETA Group, Inc. is pleased to provide engineering peer review services for the proposed project entitled “**55 Constitution Boulevard**” located in Franklin, MA. This letter is provided to outline our findings, comments, and recommendations.

## **Basis of Review**

The following documents were received by BETA and form the basis of the review:

- Application for Approval of a Site Plan, dated October 2024, including the following attachments:
  - Form P
  - Certificate of Ownership
  - General site description
  - Certified Abutters List
- Plans (29 sheets) entitled: **Plans to accompany Permit Documents, for 55 Constitution Boulevard** dated October 17, 2024, prepared by Beals Associates, Inc. of Boston, MA.
- Traffic Impact and Access Study (TIAS), prepared by Greenman–Pedersen Inc., Boston, MA dated August 2024.
- **Stormwater Management Report** dated October 17, 2024 prepared by Beals Associates, Inc. of Boston, MA. dated October 17, 2024.
- **Operation and Maintenance Manual** dated October 17, 2024 prepared for NBPIV Constitution II, LLC by Beals Associates, Inc. of Boston, MA.

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

- **Massachusetts Wetlands Protection Act 310 CMR 10.00** effective October 24, 2014
- **Massachusetts Stormwater Handbook** effective January 2, 2008 by MassDEP
- **Stormwater Management Chapter 153 From the Code of the Town of Franklin**, Adopted May 2, 2007
- **Wetlands Protection Chapter 181 From the Code of the Town of Franklin**, dated August 20, 1997
- **Town of Franklin Best Development Practices Guidebook**, dated February 2021

## 1.0 SITE AND PROJECT DESCRIPTION

The project site includes one parcel, Lot 313-059, with a total area of 15.61 acres located at 55 Constitution boulevard in the Town of Franklin (the "Site"). The Site is located within the Industrial zoning district. Lots along Constitution Boulevard adjacent to the site are also within this district, however the first parcel on Constitution Boulevard is occupied by the Franklin Fire Department. The 2 lots along King Street adjacent to the fire station are in the General Residential Zone. These 2 parcels do abut the site, however only one is occupied currently. The lots along the rear property line are also in the General Residential zone however, the direct abutter along the entirety of the rear property line is an Assisted Living facility. The Site is not located within the Water Resource District.

The existing Site has a 70,125 sq. ft. 3-story Office Manufacturing building with 1,074 paved parking spaces, including 14 accessible spaces. There are 2 driveway openings from Constitution Boulevard into the site from the roadway located at each end of the building, although only the first one provides access to both sides of Constitution Boulevard, which is a divided roadway. There are also several loading docks at the rear of the building.

Topography at the Site is generally directed west away from Constitution Boulevard towards the rear of the parcel. There is a vegetated wetlands area flagged behind the building and an isolated vegetated wetlands at the northwest corner of the parcel behind the residence at 648 King Street. The paved area directly behind the building is supported by a 9-10' high concrete retaining wall adjacent to the flagging. Behind the paved parking, the site is heavily wooded with a minimum buffer width of 134' from the pavement to the property line. At the southwest corner of the site, there is a stormwater basin that accepts runoff from several sites on this side of Constitution Boulevard. 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 Woodbridge fine sandy loam with a Hydrologic Soil Group (HSG) rating of C/D (low infiltration potential) and Ridgebury fine sandy loam with an HSG of D (very low infiltration potential).

The project proposes to demolish the existing site features and construct two Warehouse Buildings. Warehouse Building A will be in the area of the existing office building and will have a footprint of 124,875 sq. ft. Building B will be in the northeast corner of the parcel. It will have a footprint of 60,300 sq. ft. and be setback 122.5' from the rear property line. Reduced parking will be provided along the outside of the two warehouse buildings with loading docks located at the rear of Building A and the southerly end of Building B. Based upon their orientation, none of the loading docks will be visible from Constitution Boulevard. Access to the Site will be through the two existing curb cuts. Each will be modified slightly to improve the curb radius and widen the throat to accommodate the anticipated truck traffic. Stormwater management is proposed via two new subsurface infiltration structures. The current runoff pattern through the site towards the existing basin at the southerly end of the site will be maintained.

## 2.0 WAIVERS

The Applicant has requested several waivers from §300-11: Stormwater Management. Refer to Section 9.0 below for a discussion of these waivers.

## 3.0 SITE VISIT

BETA visited the Site on December 4, 2024. Observed conditions were generally consistent with the existing conditions plan except as noted below and throughout this report.

SV1. Evaluate if the existing dilapidated building located near the "A" series wetlands can be removed and demolished to enhance the wetland buffer zone and reduce overall impervious area.

#### **4.0 TOWN OF FRANKLIN ZONING REQUIREMENTS**

The project is subject to the Town of Franklin zoning regulations outlined under Chapter 185. Review comments related to the zoning bylaw are provided in the following sections.

The project proposes a Warehouse uses and is located within the Industrial (I) zoning district. Warehouse uses are permitted by right in this district.

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

The project will comply with dimensional requirements for frontage, lot width, front yard, side yard, building height, building coverage, and maximum impervious coverage.

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

Refer to Traffic Assessment section below.

##### **INDUSTRIAL DISTRICT PERFORMANCE CONTROLS (§185-22)**

The project is located within an Industrial District and therefore must conform to these requirements.

- Z1. Provide data quantifying anticipated sound, noise, vibrations, odor, and flashing to determine conformity with these requirements (§185-22.A).

##### **EARTH REMOVAL (§185-23)**

The project is anticipated to require significant earth disturbance and may require further permitting under this section. The Stormwater Management Report identifies a net fill of 3,350 ± Sq. Ft. for the project.

- Z2. Indicate if significant earth removal is anticipated. As the proposed earthwork requires a net fill, excavated material should be re-used on-site to the extent practicable. A Special Permit may be required if earth removal is significant.

##### **SIDEWALKS (§185-28) AND CURBING (§185-29)**

The project is not located within a Commercial I, Commercial II, or Business zone and thus new sidewalks are not required along street frontage. Existing sidewalks are not present along the western side of Constitution Boulevard, but midblock crosswalks are present at each existing driveway entrance to connect to the sidewalk along the eastern side of the roadway. Sidewalks are proposed along each driveway entrance to connect to these midblock crosswalks. Sidewalks, pedestrian walkways, and crosswalks are present throughout the Site to provide access to building entrances.

Proposed curbing includes precast concrete curb around all parking areas and driveways.

- Z3. BETA recommends that the Town consider upgrades to each midblock crosswalk to comply with ADA/MAAB requirements, including detectable warning panels and pedestrian crossing signs when doing next scheduled roadway work.

##### **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. The submission is in compliance with this section except as noted below:

- Z4. Provide note on the landscaping plan noting that all plantings shall come from the Best Development Practices Guidebook (§185-31.C.(3).(k)).

### **LANDSCAPING AND SCREENING (§185-35)**

Refer to Landscape and Grading section below.

## **5.0 TRAFFIC IMPACT AND ASSESSMENT**

The Applicant provided a Traffic Impact and Access Study (TIAS) for the proposed warehouse development. The TIAS was conducted in accordance with MassDOT *Transportation Impact Assessment Guidelines* and current industry standards and practices.

### **GENERAL TRAFFIC COMMENTS**

- T1. Please clarify why the Synchro analysis reports provided in the Appendix do include a pedestrian phase for all the scenarios analyzed at the King Street/Constitution Boulevard intersection.
- T2. Confirm that the King Street/Constitution Boulevard traffic signal is not currently coordinated with the adjacent locations along King Street.

### **TRIP GENERATION**

The use of Land Use Code (LUC) 150 (Warehouse) for the estimation of expected new trips to be generated by the proposed development is appropriate.

### **TRIP DISTRIBUTION**

The proposed distribution of new trips provided in the TIAS is appropriate.

### **SITE ACCESS AND CIRCULATION**

Access to the Site is proposed via two new driveway entrances (north and south) located along Constitution Boulevard. The new driveway entrances are located partially within the footprint of existing entrances to be replaced. These entrances provide access to various internal driveways, parking areas, and loading areas throughout the Site. The northern driveway entrance and its connecting driveway is designed with heavy duty pavement to accommodate trucks and it the most direct route to the loading areas.

Stop signs are provided at each driveway entrance to control turns onto Constitution Boulevard.

Turning Exhibits have been provided demonstrating that the driveways can accommodate a WB-67 semi-trailer. Turnaround areas are provided in the rear of the Site which have been sized for these vehicles.

- T3. Confirm that the proposed configuration has been reviewed by the Town Fire Department.
- T4. Include turning exhibit for WB-67 semi-trailer exiting the Site. A right-turn onto the southbound lane of Constitution Boulevard may not be possible due to the existing median.
- T5. Include turning exhibits illustrating a WB-67 can back into the designate spaces, as well as their path when the exit the space.
- T6. Note that Turning Analysis sheets label both buildings as Building A.
- T7. Confirm legal right to reconstruct the northern driveway entrance, which is located within an electric easement. BETA notes that proposed grading and landscaping will be conducted very close to existing electric equipment.

**PARKING AND LOADING**

Required parking is defined by §185-21.B of the Town Zoning Bylaw. The proposed development includes Warehouse uses. Required parking is calculated as follows:

Use Designation	Criteria	Building Area	Required Parking
Building A Office	1 space per 250 SF of floor area	24,975 Sq. Ft. (20% of Floor Area)	25 Spaces
Building A Warehouse	1 space per 1,000 SF of floor area	99,900 Sq. Ft. (80% of Floor Area)	100 Spaces
Building B Office	1 space per 250 SF of floor area	12,060 Sq. Ft. (20% of Floor Area)	13 Spaces
Building B Warehouse	1 space per 1,000 SF of floor area	48,240 Sq. Ft. (80% of Floor Area)	49 Spaces
Total			186 Spaces

The project proposes 311 total parking spaces. Approximately 135 of these spaces are located near to Building A and 176 spaces are located near to Building B. For each building, four (4) spaces are designed to be accessible and two (2) spaces are designed to be van accessible, in accordance with 521 CMR 23.2.1.

All maneuvering aisles are at least 24 feet wide; parking spaces are 9 feet wide and 19 feet long.

Six (6) tractor trailer parking spaces are located to the rear of Building A. These spaces are designed to be 12' wide and 55' long.

Twenty-four (24) loading docks are proposed for Building A and seven (7) loading docks are proposed for Building B. Loading docks are 14' wide and 60' long.

- T8. The provided parking greatly exceeds that which is required by the bylaw. BETA recommends that the Applicant confirm that all proposed spaces are needed. Excess spaces could be removed to reduce impervious area and impacts to wetland resource areas.
- T9. Clarify if the locations marked as “egress” on the Site plans also designate building entrances. Parking spaces must be located within 300 feet of the building entrance (§185-21.C(6)).
- T10. Evaluate if a building entrance could be provided in front of the accessible parking spaces for Building B. Per 521 CMR 23.3.1, accessible parking should be located on the shortest accessible route of travel to the building entrance. If an additional entrance not feasible, we recommended relocating the accessible spaces to be along either the east or west side of the building.

**6.0 SIGNAGE AND LIGHTING**

The project proposes various signs including accessible parking signs with potential van accessible designation, stop signs, pedestrian crossing signs, and fire station signs. MUTCD references are provided for each. A potential freestanding sign is also labeled on the plans near the northern driveway entrance.

A photometric plan has been provided indicating forty (40) new wall or pole mounted luminaires around the building perimeter and throughout the parking areas.

The Illuminating Engineers Society of North America (IESNA) recommends the following illuminance for parking lots:

Level	Horizontal Illuminance (Min)	Vertical Illuminance (Min.)	Uniformity Ratio (Max/Min)
Basic Maintained Illuminance	0.2	0.1	20/1
Enhanced Security Illuminance	0.5	0.25	15/1

Luminance within the parking lot is generally consistent with the above table and the photometric plan does not indicate any light spillage beyond the property lines.

- SL1. Provide cutsheet for proposed luminaires.
- SL2. There is some minor light spillage onto Constitution Boulevard at each of the entrances. It is restricted to the immediate area around the entrance. BETA recommends that the applicant request a waiver.

## 7.0 UTILITIES

Proposed utilities depicted on the plans include domestic water, fire service, sanitary sewer, electric service, gas service, and telecommunications. The majority of existing utilities on the Site will be removed and capped. Interconnection for all utilities will be provided via existing connections to services along Constitution Boulevard.

Domestic water and fire service is proposed via new 10" DICL water pipe with 4" and 8" DICL connections to each building. Five (5) new fire hydrants are also proposed throughout the Site. Sanitary sewer service is proposed via new 8" PVC pipe as well as several new sewer manholes. Building connections will be 6" PVC. The new water and sanitary sewer services will also connect to existing services which continue north onto the Fire Department property.

Natural gas, electric, and telecommunications services are proposed via a new underground connections to be coordinated with the utility providers. Two new electric manholes, two new transformers (1 per building) and a new telecom manhole are proposed.

- U1. Indicate if a new easement is proposed for conveyance of sanitary sewer and water across the Site and whether the existing easement will be dissolved.
- U2. Confirm the purpose of the northwest water service and sanitary sewer connections leading to the Fire Department property.
- U3. Confirm legal right to connect to existing sanitary sewer within utility easement to the south.

## 8.0 LANDSCAPE TREATMENT & GRADING

The project proposes numerous deciduous tree and shrub plantings throughout the project area. New trees are generally proposed along driveways, around parking areas, or within landscaping islands.

Per §185-21.C.(5), the project is required to provide 1 tree per 10 parking spaces. For 311 spaces, 32 trees are required. The landscaping plan includes 79 trees throughout the parking lots to satisfy this requirement.

The project includes outdoor parking for 10 or more cars and loading docks and is thus required to provide screening in accordance with §185-35. Residential uses and districts are present to the rear of the Site (#648 & 656 King Street). Portions of the Site are anticipated to be adequately screened by existing

vegetation to remain; however, proposed tree clearing near Building B will greatly reduce the length of the vegetated area. Only five isolated trees are proposed in this area.

Disturbed areas are proposed to be restored with 12" loam and seed with lawn mix. Landscape islands will be provided with 6" of mulch instead.

The project includes moderate regrading throughout the project area, particular along the western limits of the Site. Grading appears to be primarily fill, though excavation will be required to install stormwater controls and building foundations. The steepest proposed slopes appear to have a grade of 2H:1V. An erosion control blanket is proposed at such slopes.

- LA1. Provide required screening for the loading docks and parking areas associated with Building B. Based on BETA's site observations, the residential buildings at #648 and #656 King Street are readily visible from the existing Site, and proposed tree clearing will further reduce the vegetated area (§185-35.A).
- LA2. Provide information on seed mixes; use of native seeding is encouraged especially in areas which are not required to be a fine lawn and in proximity to wetland resource areas.
- LA3. Verify that proposed tree plantings near the eastern side of Building B will not impact proposed drainage lines and other utilities.
- LA4. Provide contour labels for proposed grading between the eastern parking area and Constitution Boulevard to clarify design intent. Recommend extending limit of work to the existing 347' contour and providing spot grades to ensure that this area will properly drain to the parking area.
- LA5. Provide spot grade(s) at the northern driveway entrance to confirm how the Site will interact with Constitution Boulevard and whether any off-site stormwater runoff will be able to flow onto the Site.
- LA6. Provide spot grades along the top of the existing retaining wall to confirm that its height is suitable for the proposed grading.

## **9.0 STORMWATER MANAGEMENT**

The proposed development will encompass the entire site. As outlined in the Hydro-CAD analysis, the development will result in an increase in overall impervious surfaces on site of approximately 1.1 acres from 9.51 to 10.61 acres. In accordance with the bylaws, the site will be considered new development and should be designed in accordance with the requirements of the bylaws.

The proposed stormwater management design consists of a subsurface infiltration system and a subsurface detention system, both located to the rear of Building A. Stormwater runoff will be conveyed to each system via a new closed drainage system consisting of catch basins, drainage manholes, and water quality units. The catchment for the infiltration system generally includes only stormwater runoff from the eastern and southern parking areas. The catchment for the detention system generally includes roof runoff from Buildings A and B. Stormwater runoff from all other areas of the Site will bypass these systems, but water quality units are proposed for treatment. All stormwater runoff, including overflow from the subsurface systems, will be discharged through two existing outfalls into the SB Series wetlands located on the southwestern corner of the Site.

An existing drainage line is present on the Site which conveys stormwater runoff from the Fire Department property to the aforementioned outfalls. This drainage line will be removed and replaced with a new storm drain which circumvents Building B and discharges to the existing outfall location.

**GENERAL**

- SW1. Clarify how the offsite catchment from the Fire Department was determined. All offsite stormwater runoff must be accounted for to ensure the drainage trunkline is adequately sized.
- SW2. BETA recommends a grate or similar measure at the outfalls to prohibit access by pedestrians and wildlife.
- SW3. Review design of drainage pipes SD 153, SD 127, SD 132, SD 9, SD 12, and SD 202. Calculations show that these pipes are designed with a full flow capacity less than their design discharge. Clarify the location of pipe span EX-RCP-4, which also has inadequate capacity. BETA acknowledges that the system has been designed based on the hydraulic grade line but recommends that pipes be sloped as needed to maintain design velocities greater than 2.5 ft/sec.
- SW4. Confirm that the proposed subsurface infiltration system is designed to handle the anticipated loads associated with the tractor trailer parking.
- SW5. Provide watershed areas for impervious surfaces tributary to catch basins to document that this tributary area is less than ¼ acre and the deep sump hooded basin will provide the treatment assumed.
- SW6. The Stormwater Management Report narrative indicates that there is an existing stormwater pond on the southwest corner of the property that controls a majority of the stormwater from the 55 Constitution and Fire Department properties. BETA presumes this refers to the “SB” series wetlands. Provide additional information on this pond, including time of construction and the party(ies) responsible for maintenance. (See SW24 below)
- SW7. The Stormwater Management Report narrative and HydroCAD model indicate the presence of an existing subsurface infiltration system, assumed to be west of the existing building in a lawn area near the parking lots. Evaluate if this system can be retained for stormwater management. If not, indicate proposed disposition on the plans and the approximate limit of disturbance.

**STORMWATER MANAGEMENT REGULATIONS (CHAPTER 153)**

The project proposes to disturb land in excess of one acre within the Town of Franklin. It is therefore subject to the Stormwater Management Regulations. The project is also required to comply with the Town of Franklin Best Development Practices Guidebook (BDPG). Compliance with these regulations is outlined below and throughout the following sections.

- SW8. Provide a minimum of 2 test pits for the subsurface detention system to establish soil conditions and Estimated Seasonal High Groundwater for the design of the system (§153-15.A(6)).
- SW9. Indicate if a new easement is proposed to convey stormwater runoff from the Fire Department property to the outfall and indicate if the existing easement will be dissolved (§153-15.A(11)). Note that an easement must be 20’ minimum in width per §300-11.A.6.

**SUBDIVISION REGULATIONS - STORMWATER MANAGEMENT REGULATIONS (§300-11)**

Additional requirements for stormwater management are outlined in §300-11 of the Town of Franklin Subdivision Regulations. The Applicant has requested several waivers from these regulations.

- SW10. BETA defers to the Town regarding the waiver from §300-11.B.2 to allow use of ductile iron and HDPE drainage pipe instead of reinforced concrete pipe. BETA notes that HDPE drainage pipe will be used to replace the existing RCP used for the trunkline connecting to the Fire Department property.

### **BEST DEVELOPMENT PRACTICES GUIDEBOOK**

The project is required to comply with the requirements of the Town of Franklin 2021 Best Development Practices Guidebook (BDPG).

- SW11. Indicate if proposed seed mix and plantings will reflect native vegetation, particularly near woodland areas and wetlands (BDPG Page 7).
- SW12. Remove proposed silt fence, hay bale barriers, and straw bales from the erosion control plan and notes. These devices are not permitted in the Town of Franklin (BDPG Page 13).
- SW13. Confirm that landscaping plan has been designed in accordance with the planting bed and seeding guidelines outlined on Page 15.
- SW14. Verify that all proposed plant species are included in the Best Development Practices Guidebook. Species not in the guidebook require approval from the Conservation Committee (BDPG Page 18).

### **MASSDEP STORMWATER STANDARDS**

The project is subject to the Wetlands Protection Act and Town regulation §153-14.A and therefore must comply with the Massachusetts Stormwater Standards as outlined by MassDEP. Compliance with these standards is outlined below:

#### **LOW IMPACT DEVELOPMENT (LID) TECHNIQUES**

Proposed LID measures include

- No disturbance to any wetland resource area.

**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 does not propose any new outfalls but will retain and utilize two existing outfalls that discharge directly to the “SB” series wetlands on the southwestern portion of the Site. Large stones are present at each outfall to mitigate erosion potential.

- SW15. Provide additional erosion controls at the northernmost outfall. BETA observed a 1 ft – 2 ft gap between the edge of the flared end section and the stones used for outlet protection.
- SW16. Clarify proposed disposition of the southernmost outfall at the SB series wetlands. Some sheets state that the outfall will be protected and maintained, while others suggest it will be removed. If the outfall is removed, BETA recommends the existing stones associated with this outfall be removed as well to enhance wetland functionality.

**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 to mitigate increases to runoff rates with the use of a subsurface infiltration system and subsurface detention system. Calculations indicate a decrease in peak discharge rate to all points of analysis. A net decrease in runoff volume is proposed for POA #2 and POA #3; however, a net increase in runoff volume is proposed for POA #1.

- SW17. Revise stormwater management design such that the stormwater runoff volume does not increase from pre- to post-development conditions as required under the bylaw). BETA notes that the project discharges to an existing detention basin which is identified as the “SB” series wetlands. The discharge from this basin flows across the 15 & 20 Liberty Way sites as it flows into Dix Brook.

SW18. Review routing for post-development subcatchment 4S. The watershed plan identifies two areas of the Site as 4S: the northern and western paved areas which are routed correctly, and the eastern grass/woods area which appears to be routed incorrectly. Based on the grading plans, this eastern area will be graded to the eastern parking area and should share a similar routing to subcatchment 3S.

SW19. Review time of concentration for post-development subcatchment 8S. The post-development TC of 10.5 minutes is greater than the pre-development  $T_c$  of 8.9 minutes (for pre-development subcatchment 4S). As no changes are proposed to this area that would improve hydrology, the post-development  $T_c$  should be no greater than the pre-development  $T_c$ .

**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 Woodbridge fine sandy loam with a Hydrologic Soil Group (HSG) rating of C/D (low infiltration potential) and Ridgebury fine sandy loam with an HSG of D (very low infiltration potential). Test pits conducted at the Site indicate that subsurface soils in the area of infiltration (TP 4 and TP 5) are generally sandy loam or loamy sand and a Rawls Rate of 1.02 in/hr has been utilized in design of the subsurface infiltration system. Groundwater was detected in TP #5 at a depth of 38" below grade, corresponding to an estimated seasonal high groundwater elevation of 336.3'.

Groundwater recharge is proposed via one new subsurface infiltration systems. The project is expected to provide a recharge volume in excess of what is required for the net increase in impervious area.

Calculations have been provided indicating all SCMs will drawdown within 72 hours.

SW20. The exfiltration rate used in the analysis of the infiltration system is 1.02 in/hr which is the Rawl's Rate for a sandy loam. Test pit no. 5 describes the underlying C horizon soils as a Loamy Sand. Based upon the NRCS classification of this area as Ridgebury and since the evaluations contained no data relative to density, BETA recommends that an infiltration test be conducted to verify actual exfiltration rates.

SW21. The infiltration system performance chart on sheet C300 should be corrected. The peak discharge is always limited to 0.07 cfs which is the calculated exfiltration rate.

SW22. Clarify the formula used in the provided mounding analysis. The analysis should show the anticipated depth of the groundwater mound beneath the basin.

SW23. No test pits have been conducted in the footprint of the subsurface detention system. While this system is not designed for infiltration, groundwater elevation should be confirmed to determine if issues such as groundwater intrusion could occur. Subsurface conditions should also be verified to confirm constructability.

SW24. Revise the provided test pit map to more clearly show locations of each test pit. The test pit symbology and labels are in greyscale.

SW25. Review the number of chambers used for Infiltration System 1. The plan view depicts 80 chambers, but the hydroCAD model lists 90 chambers. In addition, the overall dimensions of the system should be identified on the plans to verify the storage volumes quoted

**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 (TSS).*

The project is also subject to §153-16 of the Town of Franklin Stormwater Management Regulations which stipulates treatment requirements for new development and redevelopment project. The project will not retain the volume of runoff equivalent to 1.0" x the total impervious surface area (§153-16.B.1(a)) and therefore must remove 90% of the average annual load of TSS and 60% of the average annual load of total phosphorus (§153-16.B.1(b)). The treatment requirements are reduced to 80% TSS and 50% TP for redevelopment Sites.

The project includes the following treatment trains:

Treatment Train	SCM 1	SCM 2	SCM 3	TSS Removal %
A	Deep Sump Catch Basin	Water Quality Unit (WQU 1)	Subsurface Infiltration System	>90%
B	Deep Sump Catch Basin	Water Quality Unit (WQU 2)	Jellyfish Filter (PMF 1)	>90%
C	Subsurface Detention System	None	None	0%

The project has been designed to provide at least 90% TSS removal and at least 77% total phosphorus removal for treated impervious areas. Although a subsurface infiltration system is proposed, the majority of the Site's stormwater runoff will be treated by water quality units which have been sized to treat the required 1-inch water quality flow rate.

The proposed treatment trains A and B, as designed, will meet the Town of Franklin treatment requirements outlined above. No treatment has been provided for Treatment Train C, which includes the building roofs.

Per Standard 5, the project is required to provide at least 44% TSS removal as pretreatment prior to discharge to an infiltration SCM. Pretreatment is provided via deep sump catch basins and water quality units.

A Long Term Pollution Prevention Plan is included in the O&M Plan.

SW26. In accordance with the Stormwater Standards, the roof qualifies as an impervious surface and therefore is subject to the treatment requirements of the standards. Since it is directly connected to the distribution system it will be exempt from pretreatment but not the treatment requirements. The design must incorporate treatment for this runoff in accordance with the bylaws and the stormwater standards.

SW27. Provide calculations using the EPA Region 1 BMP performance extrapolation tool or similar (§153-16.B.1(b))

SW28. Since the proposed proprietary separators are all in line, in accordance with the requirements of the handbook, the manufacturer should provide the calculations and specifications necessary to document the TSS Removal rate quoted.

SW29. Based upon EPA studies and findings, documented efficiency of proprietary separators ranges from 40-45%. BETA recommends that a TSS Removal rate of 44% be used for these units. Third

party confirmation of the efficiency of the “Jellyfish” treatment unit should be provided to document the treatment efficiency quoted.

**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 site is considered a LUHPPL and is thus required to comply with this standard. Refer to Standard 4 above for compliance with additional treatment requirements for LUHPPLs (see standard 4). Deep sump catch basins, proprietary separators, and subsurface structures are considered recommended SCMs for use in LUHPPLs.

SW30. Provide Source Control and Pollution Prevention Plan.

SW31. Indicate means of emergency shut-off or containment prior to discharge to an infiltration SCM.

**CRITICAL AREAS (STANDARD NUMBER 6):** *Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas.*

The project is not located in a critical area – **standard not applicable.**

**REDEVELOPMENT (STANDARD NUMBER 7):** *Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable.*

The project does not qualify as a redevelopment – **standard 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, a Notice of Intent will be required to file with EPA including development of a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP was not provided with the submission; the checklist indicates a SWPPP will be issued prior to land disturbance. Erosion control measures are depicted on the plans including silt sock and silt fence, stabilized construction entrance, erosion control blanket, inlet protection, designated soil stockpile locations, concrete washout areas, and filter bags. Additional erosion and sedimentation control measures are discussed in the Stormwater Management Report.

SW32. The applicant is reminded that in accordance with the bylaws, a Soil Erosion and Sediment Control plan and Stormwater Management plan must be approved by the DPW prior to the start of construction.

SW33. Provide criteria for permanent or temporary restoration of disturbed areas including how soon after disturbance these measures will be implemented.

SW34. Provide seed mix for permanent stabilization.

SW35. Clarify location of temporary sediment basins identified in the construction details.

SW36. Provide measures to protect open excavations for subsurface structures during construction.

SW37. Provide description of construction and stockpile and/or excess materials removed from the site expected to be stored on site and required plan with description of controls (§153-12.L).

**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 Manual was provided with the Stormwater Management Report.*

- SW38. Update the O&M Plan to include a list of easements and the purpose of each (§153-18.B.4).
- SW39. Provide signature of owner on the O&M Plan (§153-18.B.5).
- SW40. Include requirement that the owner(s) of the stormwater management system must notify the Director of the DPW of changes in ownership or assignment of financial responsibility (§153-18.D.1).
- SW41. Include requirement that the maintenance schedule in the maintenance agreement may be amended to achieve the purposes of the bylaw by mutual agreement of the Director of the DPW and the responsible parties (§153-18.D.2).
- SW42. Clarify means of how future property owners will be notified of the presence of the stormwater management system and the requirement for proper operation and maintenance. Section 0 of the O&M Plan indicates that they will be notified, but not how they will be notified or who is responsible for notification.
- SW43. Depict approximate location of proposed inspection ports for subsurface systems in plan view.
- SW44. Recommend relocating snow storage location "2." Snow stored in this area may overtop the curb resulting in snowmelt towards the wetland resource area. This area will also obstruct maintenance of the subsurface system.
- SW45. Include Long Term Pollution Prevention measures for spill prevention / response and maintenance of lawns, gardens, and other landscaped areas.

**ILLICIT DISCHARGES (STANDARD NUMBER 10):** *All illicit discharges to the stormwater management system are prohibited.* A signed Illicit Discharge Compliance Statement was provided with the submission.

## **10.0 WETLAND RESOURCE AREAS**

Wetland resources areas, confirmed by others, shown on the site include:

- Bordering vegetated wetlands & associated buffer zones
- Isolated vegetated wetlands & associated buffer zones

No work is proposed within the wetlands. Work in the wetland buffer zones includes portions of the parking lots and driveways, grading, utilities, construction of the subsurface infiltration system, and tree clearing.

Stormwater management improvements are proposed to mitigate increases in peak rate of runoff, promote groundwater recharge, and provide water quality treatment of stormwater runoff from the site (see above).

Erosion controls are shown on the plans to contain sedimentation for the work area (See Standard 8 above).

## **11.0 SUMMARY**

Based on our review of the Project documents and plans, the Applicant is required to provide additional information to the Planning Board to demonstrate compliance with the MassDEP Stormwater Management Standards, the Town of Franklin regulations, and generally accepted engineering practices.

BETA has specifically noted the following key issues regarding the project:

- Some additional information is required to comply with zoning requirements.

- Numerous easements are present on the Site for which the applicant should demonstrate the legal right to conduct work within.
- The project has insufficient screening from abutting residential uses.
- Multiple waivers have been requested from §300-11 which should be reviewed by the Town.
- The stormwater management system proposes a net increase in stormwater runoff volume, which could impact wetland resource areas and increase the risk of flooding. Several hydroCAD modelling issues were also identified.
- The proposed infiltration system is located within an area mapped as HSG C/D which could impact long-term system functionality.
- Treatment of stormwater runoff has not been provided for the building roofs, representing a significant quantity of impervious area.
- The Site is a LUHPPL, but a source control and pollution prevention plan has not been provided.
- Additional information is required to complete the Erosion and Sedimentation control plan and the Operation and Maintenance Plan.

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

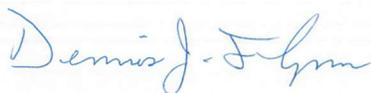
Very truly yours,  
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