

February 22, 2022

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

**Re: 230 East Central Street (Taj Estates of Franklin II)
Site Plan Peer Review**

Dear Mr. Rondeau:

BETA Group, Inc. is pleased to provide continuing engineering peer review services for the proposed project entitled "Taj Estates of Franklin II," located at 230 East Central Street in Franklin, Massachusetts. This letter is provided to outline findings, comments, and recommendations.

The proposed development has been modified significantly from the original submission. Specifically:

- The structure was reduced in size, and all activity in the sewer easement at the rear of the parcel has been eliminated.
- 15 parking spaces are now proposed within a garage space provided on the ground floor at the rear of the building
- The applicant is now meeting the Bylaw parking requirements of 1.5 spaces per unit, and the waiver is no longer required.
- A new waiver is being requested to provide 7 compact parking spaces.
- The outfall from the stormwater system, which was discharging towards the residential abutter to the east, has been eliminated.

Based on these changes, we will discontinue the comments from the original peer review letter which are no longer applicable. In addition, the applicant has also submitted a Traffic Analysis of the Site. Peer review of that submission will be addressed by a separate letter.

Guerriere & Halnon's response to our comments from the February 15th review are italicized. The most recent BETA comments are prefaced with "BETA2:" and highlighted in yellow

BASIS OF REVIEW

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

- Plans (12 sheets) entitled: *Taj Estates of Franklin II Site Plan & Special Permit* dated November 11, 2021, revised 02/17/22, prepared by Guerriere & Halnon, Inc. of Franklin, MA.
- Stormwater Report, dated November 11, 2021, revised January 28, 2022 prepared by Guerriere & Halnon, Inc.
- Application for Approval of a Site Plan and Special Permit, including:
 - Cover Letter
 - Application Form
 - Certificate of Ownership
 - Quitclaim Deed
 - Certified Abutters List

- Memorandum in Support of Application for Special Permit, dated November 11, 2021, prepared by Richard R. Cornetta, Jr., Esquire.

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 (#285-069) with a total area of approximately 1.005 acres located at 230 East Central Street in the Town of Franklin (the "Site"). The Site is located within the Commercial I Zoning District. Lots to the east and west of the Site are also within the Commercial I district, lots to the north of the parcel are within the Commercial II district, and lots to the south are within the Single-Family IV district. The area abutting the Site to the west is an undeveloped private road, connecting East Central Street to Hill Ave. A sewer easement associated with an 8" sewer line crosses latitudinally along the southernmost portion of the Site. Most of the Site is also within the Water Resource District.

The existing Site includes a single-family, two-story, 1,030 sq. ft. residence. Associated site features include a backyard shed, a paved driveway connected to East Central Street, and yard areas. The southern portion of the Site is predominantly woodlands. Existing utility services (water, sewer, gas) are provided via connections to the mains beneath East Central Street. A sidewalk is present along East Central Street, and a fire hydrant is in front of the Site within the street's Right-Of-Way.

Topography at the Site is generally directed to the east, though the Site is largely flat and localized depressions are present throughout the Site. The southwestern portion of the Site includes slightly steeper slopes (6H:1V). Much of the Site is within a Zone II Wellhead Protection Area. No wetland resources areas are known to exist on the Site. 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 Sudbury Fine Sandy Loam with a Hydrologic Soil Group (HSG) rating of B (medium infiltration potential), Hollis-Rock outcrop-Charlton complex which varies to either HSG B or D, and Urban Land with no assigned HSG rating.

The project proposes to construct a 13,784± sq. ft. mixed use development consisting of office/commercial space and thirty-one 1-bedroom and 2 2-bedroom residential units. The project will include demolition of the existing residence and removal of the driveway, shed and utility services. The project will also include clearing most of the Site's woodlands. Associated site features include a paved parking area along the eastern and southern portions of the Site, a paved driveway connecting the parking areas to East central Street, a sidewalk along the eastern side of the new building which will connect to the East Central Street sidewalk, landscaping areas, a white 6' PVC fence along the easterly and southerly property line, dumpsters, bollards, lighting, a transformer, and utilities (fire service, domestic water,

electric, gas). Stormwater management is proposed via a closed drainage systems consisting of catch basin, manholes, and roof leaders which will convey runoff to a new subsurface infiltration system.

FINDINGS, COMMENTS, AND RECOMMENDATIONS

GENERAL

- G1. There is a proposed 10' cut within the Hill Ave right of way at the southwest corner of the building. There are no test pits in this area to document depth to bedrock. BETA recommends that the applicant conduct some soil observations in this area to determine depth to bedrock and determine whether blasting and/or hammering will be needed to provide the grades as shown. **BETA: Test pits have not been conducted within the Hill Avenue right-of-way in the area of the proposed cuts. Comment remains.**

GH: Test pits will be performed prior to construction. The Town will be notified about the findings and if required blasting or hammering is required, the appropriate permits will be submitted at that time.

BETA 2: Beta recommends that the test pits be conducted at the start of construction, they can take place at the same time as the test pits for the infiltration system. See Comment SW7.

- G2. Because of the elevation differential, several of the existing dwellings located west of Hill Ave towards the rear of the building are located up to 40' higher than the proposed site. Accordingly, they will be looking at the roof line of the proposed building and any utilities that will be located on the roof. These utilities should be identified and screened from view and any noise potential from this equipment should also be identified and screened also.

BETA: The applicant's representative has indicated at the hearings that there will not be any utilities on the roof; however, there are no notes indicating this on the plans. Renderings have been provided and the Board has commented that the rendering should be expanded to show the relationship of the abutting dwellings to the proposed structure.

GH: the following note has been added to Sheet 4. See note 5, "No utility components shall be installed on the building roof or around the exterior of the building"

BETA2: The note has been added. A cross section showing the relationship of the abutters to the proposed structure has also been added. No further comment.

ZONING

The Site is located within the Commercial I (CI) Zoning District. The proposed uses include a multi-use building with office and apartments. According to the Town of Franklin Use Regulations Schedule Parts II and the proposed uses are regulated as follows:

- Multifamily or apartments uses: Authorized under special permit from the Planning Board.
- Office: Authorized by Right. Additional restrictions are required depending on office classification and their location in the building

- Z1. Clarify what types of offices are proposed and their location in the building. Medical, dental, or professional offices require a Special Permit from the Board of Appeals if the proposed project results in an increase in estimated water consumption of more than 15,000 gallons per day. In

addition, Clerical, or administrative offices are not allowed on the sidewalk level in multi-story developments.

BETA: The proposed office location and area is now shown on the plans; however, the proposed use has not been established.

GH: The proposed commercial space has not been designated at this time. However, parking spaces have been incorporated in accordance with the Zoning Bylaws §185-21(B0(3)(b) Parking, Loading and Driveway Requirements.

BETA2: BETA will defer this issue to the Board relative to compliance with the Zoning By Laws

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. Document the lot area within the Water Resource District and show that the total impervious coverage on this portion of the lot is less than the allowed 80% maximum impervious coverage.

BETA: Impervious coverage is shown on sheet 4 and complies with the Bylaws. Comment resolved.

SCH2. Show the setback from the proposed building to the Single-Family IV zone

GH: Added as requested

BETA2: No further comment

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 24' +/- wide driveway connected to East Central Street at the northern lot line. The driveway connects to a paved parking area located along the eastern and southern sides of the building. A sidewalk is proposed which will connect to the East Central Street sidewalk and run adjacent to the eastern and southern sides of the building.

As part of the proposed work, an existing curb cut will be removed. The proposed driveway entrance is approximately 35 ft east of the existing driveway.

The proposed parking lot will provide a total of 53 parking spaces, three of which have been designed to be accessible spaces. 46 of the proposed parking spaces are 9' wide and 19' long, with 24' min. access aisles. 7 of the spaces will be compact car spaces. A waiver for the compact spaces is required.

For the proposed number of parking spaces, 3 spaces must be accessible, 1 of which must be van accessible. The 3 proposed accessible spaces will satisfy this requirement.

P1. Revise the Parking Requirements table shown on sheet 4 of 12 to identify the total spaces required in accordance with the by-law.

BETA: Table revised. Comment resolved.

- P2. Show space width on Sheet 4 for accessible spaces and revise at least one handicapped parking sign to include required “van” designation.

BETA: Provide space and access width dimensions. Only 1 HP accessible space needs to be van designated. Move the northern-most space south to the space (as shown on sheet 7 of 12) in line with the proposed sign. Based on scaled dimensions, it appears that there is an additional 10’ of pavement width which could be used to reduce impervious cover on the lot.

GH: Space and access width with dimensions have been added to the plans (See Sheet 4 of 12) and signage has been adjusted per BETA’s comment. The potential reduction was considered. However, no further adjustments to impervious have been made.

BETA2: No further comment required. Issue addressed

- P3. Provide HP accessible crosswalk across driveway.

BETA: MassDOT detail provided. Comment resolved

- P4. In accordance with §185-21, C. (1). No off-street parking shall be located within 10 feet of a street right of way. At the rear of the building, the parking area is located within 10’ of the Hill Avenue right of way.

BETA: Although unimproved, the Hill Avenue right-of-way still exists. BETA recommends that the applicant request the waiver or correct the spaces.

GH: A waiver request has been added. See Sheet 1

BETA2: Waiver request added. Issue resolved.

- P5. In accordance with §185-21, C. (4). Loading areas and parking areas for 10 or more cars shall provide screening in accordance with §185-35. A 6’ high white PVC fence is proposed for the easterly and southerly edge of the parking lot which will satisfy this requirement for these areas. However, no screening has been provided for the westerly edge of the parking area behind the building adjacent to Hill Ave.

BETA: There is no screening provided along the Hill Avenue right-of-way. Comment remains.

GH: There is existing vegetation and a significant embankment within Hill Ave that provides a natural screening to abutters. No further action taken.

BETA2: If no screening is to be provided than in BETA’s opinion, a waiver is required.

- P6. 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. No trees are identified in the Landscaping Plan to satisfy this requirement.

BETA: Issue resolved on east side of the lot. See comment P5.

GH: See response for comment P5.

BETA2: See response for comment P5 above.

- P7. Show sufficient information on East Central Street, including existing driveway openings as required to document compliance with §185-21, C. (7) including sight distances at entrance.

BETA: Site distances are noted on sheet 4 of 12; however, plan coverage should be expanded to include adjacent driveway openings on abutting lots.

GH: Driveways were added

BETA2: Driveways added, Issue resolved

SIDEWALKS (§185-28)

An existing 6' wide sidewalk is present along East Central Street. The walkway from the building will connect with this sidewalk and a portion of the walkway will be removed and replaced to allow the existing driveway opening to be closed, the new driveway opening and the relocation of the existing hydrant at the front of the lot.

- SI1. Provide detail for the reconstructed sidewalk adjacent to parking spaces and designate proposed curb type, if applicable.

BETA: MassDOT detail provided. Comment resolved.

CURBING (§185-29)

The project proposes vertical concrete curbing along the perimeter of the proposed parking area and vertical granite curbing within the East Central Street right of way at the entrance.

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.

- SP1. Materials required for design review as provided in §185-31.2. Design Review Commission should be provided. (§185-31.1.C(3)(q)). **BETA: Comment remains.**

GH: Applicant has a scheduled hearing with the Design Review Commission on February 22, 2022

BETA2: No further comment

- SP2. Provide data quantifying on-site generation of noise and odors (§185-31.1.C(3)(r)).

BETA: Except for the transformer at the front of the building, the applicant has indicated at the hearings that no other utilities will be mounted outside the building.

GH: the following note has been added to Sheet 4. See note 5, "No utility components shall be installed on the building roof or around the exterior of the building"

BETA2: The note has been added. No further comment.

- SP3. Provide sight line information at the proposed entrance (§185-31.1.C(3)(t)).

BETA: Site distance noted. Comment resolved.

- SP4. 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. As shown on sheet 8 of 12, there is some significant light spillage onto the Hill Avenue Right of Way beyond the site's property line. Either request a waiver from this section of the by law or reduce the lighting along this face of the building to limit the glare to the property line.

BETA: Light spillage remains beyond the property line at the southwest corner of the building that extends beyond the right-of-way up to the adjacent residential parcel. BETA recommends that the two (2) wall-mounted lights at the southwest corner of the building be modified to eliminate this spillage.

GH: The lighting has been adjusted

BETA2: Lighting adjusted no further comments

SCREENING (§185-35)

The project proposes outdoor parking for 10 or more cars which must be screened in accordance with this section. The applicant proposes to use a 6' high white PVC fence to meet this requirement.

SC1. Provide screening for that section of the parking area at the southwest corner of the lot in accordance with this section.

BETA: Comment remains.

GH: There is existing vegetation and a significant embankment within Hill Ave that provides a natural screening to abutters. No further action taken.

BETA2: If no screening is to be provided than in BETA's opinion, a waiver is required.

UTILITIES

The project proposes to bring new utility connections from East Central Street into the front of the proposed building for domestic water and fire suppression from the existing 12" CLDI water main in East Central Street. A gas service is also proposed to enter the front of the building from the main beneath the sidewalk. The existing overhead service to the house will be maintained to serve the proposed building. A secondary electric service will be come from a proposed transformer at the westerly corner of the lot along east central street. The proposed sewer connection will be brought from the rear of the building and tie into the existing 8" sewer main in the easement along the rear property line.

U1. It is assumed that the existing overhead service to the house will be maintained, however no note is identified to verify this. Please note whether this service will be removed or maintained.

BETA: Note added to Sheet 3, issue resolved.

STORMWATER MANAGEMENT

Stormwater management for the proposed site development will be achieved through a proposed Infiltration Chamber system (172 Chambers) beneath the parking lot along the east side of the proposed building. Runoff from the proposed paved surfaces on site will be collected by 3 catch basins located along the easterly edge of the parking area. The entirety of the existing lot currently flows primarily west to east across the lot. Although there is a localized depression east of the existing driveway that directs runoff away from the abutting dwelling to the east towards the rear of the lot, there is no specific point source discharge emanating from the lot at the present. Excess runoff from the parcel flows east through the forested area at the rear of the lot onto the abutting parcel in no distinct pattern.

GENERAL

SW1. The outfall from the proposed subsurface infiltration structure is a proposed overflow weir which will be located at the southeast corner of the lot just outside the existing sewer easement. In

accordance with the calculations, discharge from this outfall will only occur at the peak of the 100-year frequency event. This outfall represents a point source discharge that is not currently present and there is no easement that would allow this point source to flow across the abutting parcel. BETA recommends that this outfall be eliminated altogether, and the subsurface system increased in size as necessary to capture the entirety of the event or maintain the flooding within the limits of the parking lot surface

BETA: Outfall eliminated. Comment resolved.

SW2. The total rainfall for a 100-year frequency event should be 7.0 inches in 24 hours as espoused by DEP. As an aside, it should be noted that the stormwater standards are scheduled to be updated this month. In that revision, the new NOAA 14 plus rainfall will be adopted. The new total for a 100-year frequency event will be between 8.5-9”.

BETA: 100 Year rainfall adjusted in calculations. Comment resolved.

SW3. As noted earlier, the Hollis-Rock outcrop-Charlton Complex can be either HSG B or D depending upon the soil descriptions. I would recommend that you conduct some additional soil testing in this area to confirm the soil profile and classification in this area. There is a significant difference in runoff rates and volumes between HSG B vs D.

BETA: BETA concurs with the use of HSG B for the Hollis-Charlton complex soils. Comment resolved.

MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS:

Based upon the additional grading required in the Hill Ave right of way, the proposed development will disturb an area greater than one acre; therefore, the project is subject to Chapter 153: Stormwater Management of the Town of Franklin Bylaws. Compliance with the MassDEP Stormwater Management Standards is outlined in the following sections.

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 untreated stormwater discharges to wetlands – **complies with standard.**

SW3A: The proposed catch basin inside the garage is governed by the plumbing code and should be replaced by floor drains. This flow is designated as a non-surface water related flow, and in accordance with the Standards, cannot be discharged to a stormwater treatment system. Accordingly, and as noted in the plumbing code, the flow can be directed into the municipal sewer system after the MDC Gas Trap.

GH: On Sheet 6, the catch basin in the garage area has been removed, the connection to the storm has been eliminated, and a call out has been added indicating that the new sewer service line is to be connected to the parking area floor drain system. From this point, the sewer line will then connect to the gas & oil separator prior to connection to the proposed 6” building sewer service. Connection will be made with wye.

BETA2: issue resolved, 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 an increase in overall impervious area via an expanded parking lot. The provided calculations indicate a decrease in post-development peak discharge rates and total runoff volumes compared to pre-development. All of the runoff from the proposed impervious surfaces on site will be directed through the proposed infiltration structure. Except for the peak of the 100-year frequency event, all of the runoff generated on site is contained within the proposed infiltration structure.

SW4. Revise the flow path for existing conditions. In accordance with DEP Guidelines for TR-55 the maximum sheet flow length allowed is 50'.

BETA: Comment resolved.

SW5. The Tc calculation should document maximum time not maximum distance. If you look at the flow from the northeast corner of the lot south you will find that the slopes and cover conditions will result in a greater Tc than used.

BETA: Comment resolved.

SW6. Review aerial imagery of the area outside the site to get a better perspective on land use patterns within the watershed. This will allow you to more specifically determine the CN value for these areas rather than using a generic CN value for 0.5-acre house lots.

BETA: Comment 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.*

The soil testing on site determined that the soils near the proposed infiltration structure are a Class I soil with a Rawl's Rate of 2.4" / hour. In addition, the observation test pits indicated that groundwater levels in the area were sufficiently deep to allow the bottom of the proposed infiltration structure to be maintained greater than 4' above maximum groundwater. As noted above, all the runoff from the proposed impervious surfaces on site will be directed through the infiltration structure.

SW7. The 2 test pits (#4 & #6) utilized for the design of the infiltration structure are located between the structure and the building. In accordance with the standards, 2 observation test holes shall be conducted on site in the location of the infiltration structure.

BETA: Test holes should be conducted directly in the area of the proposed infiltration structure.

GH: Test pits will be performed prior to construction. Any deviations from current test pit data that would result in any modifications to the underground stormwater drainage system will be addressed at that time. We do not anticipate any major changes to the system design.

BETA2: BETA recommends that this be a condition of approval.

80% TSS Removal (Standard Number 4): *For new development, stormwater management systems must be designed to remove 80% of the annual load of Total Suspended Solids.*

The project proposes one single treatment trains for the impervious surfaces on site. Both the roof runoff and the runoff from the other impervious surfaces are directed through the Infiltration structure. The roof runoff is exempt from pretreatment and thus will receive the 80% TSS removal rate associated with the infiltration structure. All the remaining impervious surfaces on site will be collected by a series of deep

sump catch basins with hoods and directed through a “*Separator Row*”. The combination of the catch basins and the separator row will provide the 44% pretreatment requirement prior to discharge into the infiltration structure.

SW8. The total TSS Removal rate provided by the treatment train is 80%, which includes the pretreatment requirement. In accordance with the standards, this is a single train which meets the 80% TSS Removal requirement. You are not allowed to count the pretreatment as a separate process.

BETA: TSS calculations modified. Comment resolved.

Higher Potential Pollutant Loads (Standard Number 5): *Stormwater discharges from Land Uses with Higher Potential Pollutant Loads require the use of specific stormwater management BMPs.*

The project is not a Land Use with Higher Potential Pollutant Load (LUHPPL).

Critical Areas (Standard Number 6): *Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas.*

The project does not propose discharges to critical areas.

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

SW9. As noted in the text, the proposed development of the site will result in a significant increase in impervious surface areas above the existing conditions. Accordingly, the benefits of the redevelopment cannot be isolated from the proposed increases and all the standards must be met fully.

BETA: No additional comment required.

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 more than one acre of land; therefore, a Notice of Intent with EPA and a Stormwater Pollution Prevention Plan (SWPPP) are required. The project proposes the use of erosion control barrier (12” mulch log), catch basin inlet protection, and stabilized construction entrance.

SW10. Revise Construction Period Pollution Prevention Plan (Appendix 7) Section E Construction Plans, 1.d.: hay bales and filter fabric are not permitted for use in the Town of Franklin, nor are they proposed on the plans cited.

BETA: Notes have been revised. Comment 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 Long-Term Operation and Maintenance (O&M) Plan has been provided.

SW11. Per the MA Stormwater Handbook, provide the following:

- a. Provide a sample inspection form to be used by the owners.

BETA: Comment remains.

GH: A "Post Construction Inspection Report" was provided in the Supplemental Attachments, Appendix 11" of the Stormwater Report. Additional "Infiltration Chambers Inspection and Maintenance Log" forms were also provided.

BETA2: The Appendix is not specifically noted in the O & M plan. The Long-Term Operation and Maintenance Plan should be a stand-alone document. Therefore, Appendix 11 should be directly incorporated into the plan and referenced. Along with the sample Inspection Form and a plan of the BMPs.

SW12. Incorporate Cul-Tec Separator Row maintenance requirements into this document.

BETA: Include manufacturer's information as an appendix.

GH: A "Cul-Tec Operations and Maintenance Guide" was provided in the Supplemental Attachments, Appendix 11" of the Stormwater Report.

BETA2: See response above

SW13. Correct the Number on the Appendix labels for the O & M Plan and the Construction period pollution prevention plan.

BETA: Label corrected. Comment resolved.

SW14. **In conjunction with the Cul-tec system, BETA recommends that the manifold be eliminated and the inlet into the system be restricted to the separator row only. In addition, the inlet pipe should be increased in size to a 36" diameter culvert which will match the height of the chambers.**

GH: The Stormwater management system design is in conformance with current stormwater management system standards as well as the manufacturers requirements. Therefore, no further action taken.

BETA2: BETA recommends that the manifold invert be raised to Elevation 278.95. This would provide an additional 12" of sediment storage in the separator row and further protect the long-term viability of the system.

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

SW15. Provide signed illicit discharge compliance statement.

BETA: Signed statement provided. Comment resolved.

Mr. Gregory Rondeau, Chairman

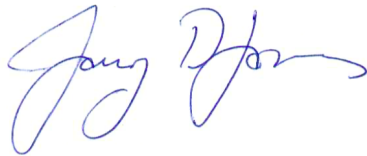
February 22, 2022

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

Very truly yours,

BETA Group, Inc.

A handwritten signature in blue ink, appearing to read "Gary D. James". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Gary D. James, P.E.

Senior Project Engineer

cc: Amy Love, Town Planner



February 14, 2022

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

Re: Proposed Mixed Use Development
230 East Central Street
Traffic Peer Review

Dear Mr. Rondeau:

BETA Group, Inc. (BETA) conducted a review of traffic related items provided by the applicant for the proposed project entitled TAJ Estates of Franklin II – 230 East Central Street (Route 140) located in Franklin, Massachusetts. This letter is provided to outline findings, comments, and recommendations.

BASIS OF REVIEW

BETA received the following items:

- Traffic Impact Assessment (TIA), dated January 19, 2022, prepared by Vanasse & Associates, Inc., Andover, MA
- Plans (12 sheets) entitled: Taj Estates of Franklin II Site Plan & Special Permit dated November 11, 2021, revised 01/28/22, prepared by Guerriere & Halnon, Inc. of Franklin, MA.

PROJECT DESCRIPTION

The project site includes one parcel with a total area of approximately 1.005 acres located at 230 East Central Street in the Town of Franklin (the "Site"). The Site is located within the Commercial I Zoning District. Lots to the east and west of the Site are also within the Commercial I district, lots to the north of the parcel are within the Commercial II district, and lots to the south are within the Single-Family IV district. The area abutting the Site to the west is an undeveloped private road, connecting East Central Street to Hill Ave.

The TIA assessed the impact of a three-story building with 35 multifamily residential units and 900 square feet of office space on the ground floor. Subsequent to the study, a revised site plan was provided which consists of a mixed-use development with 825 square feet of commercial, thirty-one one-bedroom and two two-bedroom residential units. The change in commercial square feet and residential units is negligible related to traffic.

Access to the site will be provided via one new two-way driveway that will intersect the south side of East Central Street (Route 140) approximately 10 feet from the existing driveway which will be closed.

The project will include 53 total parking spaces.

FINDINGS, COMMENTS AND RECOMMENDATIONS

The study area includes the following intersections in the vicinity of the site:

- East Central Street (Route 140) at King Street/Chestnut Street (signalized)
- East Central Street (Route 140) at Horace Mann Plaza/CVS driveway (signalized)
- East Central Street (Route 140) at Site driveway

The study area was found to be adequate, and the study methodology follows MassDOT Transportation Impact Assessment (TIA) guidelines.

Manual turning movement counts (TMCs) were collected on Tuesday, March 5, 2020, from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. These time periods were chosen because they are representative of the peak generator times of the proposed development and roadways. The data collection dates occurred prior to the decrease in traffic patterns related to COVID-19. BETA concurs with the traffic data collection time periods.

- T1. Typically, traffic volume data is collected via automatic traffic recorder (ATR) on the roadway(s) adjacent to a proposed site. Clarify if that data was collected and provide if available.

Historical permanent count station data from I-495 were reviewed to determine the need for seasonal adjustment. Traffic volumes in March were found to be below average-month conditions, therefore, the volumes were increased by 7 percent. The adjustment information referenced 2017 data.

- T2. Confirm that the 2017 counting station data is the most recent available to determine the seasonal adjustment.

The 2020 traffic volumes were adjusted to 2022 by applying a 1 percent per year growth rate which BETA finds acceptable.

Crash data were obtained from the MassDOT database for the most recent five-year period from 2015 to 2019. The highest crash rate, quantified as crashes per million entering vehicles, for the signalized intersections was found to be 0.56 MEV which is lower than both the 0.89 MEV district average and 0.78 MEV statewide average crash rates for signalized intersections. The unsignalized intersection of Route 140 at the existing 230 East Central Street experienced a crash rate of 0.25 MEV over the five-year period. This is lower than both the 0.61 MEV district average and 0.57 MEV statewide average crash rates for unsignalized intersections.

- T3. It is noted that the crashes at the existing site driveway are significantly below the statewide and district averages. Has the crash data for the site intersection been more closely analyzed to determine if any safety improvements could be incorporated at the driveway to create a safer intersection?

The proponent found that based on the Highway Safety Improvement Program (HSIP) eligible database, none of the study area intersections were found to be HSIP clusters. BETA reviewed the database and verified that no HSIP clusters were within the study area.

Background development-related traffic growth that may increase traffic within the study area was identified. The Chestnut Senior Village and the Central Square Mixed-Use Development proposed at 340 East Central Street were identified as new developments. The Chestnut Senior Village trips were considered as part of the overall background traffic growth and the Central Square Mixed-Use Development trips were directly applied to the future volumes. BETA finds this approach acceptable.

- T4. Provide the backup data for the Central Square Mixed-Use Development trips applied to the future conditions for reference.

MassDOT permanent count station data indicated that traffic volumes have fluctuated over a 10-year period with an overall average traffic growth rate of 0.57 percent growth rate. No-Build traffic volumes were determined by applying a 1 percent per year growth rate over a seven-year period to 2029 to account for traffic growth, the Chestnut Senior Village, and other unforeseen developments. This growth rate is consistent with studies prepared for recent developments in Franklin.

The project-generated traffic volumes were determined by utilizing trip-generation statistics published by the Institute of Transportation Engineers (ITE) for Land Use Code (LUC) 220 Multifamily Housing (Low-Rise), and 712 Small Office Building. The land uses are appropriate.

The project site is estimated to generate a total of 315 new trips on an average weekday with 36 (9 entering, 27 exiting) during the weekday morning peak hour, and 38 (23 entering, 15 exiting) during the weekday afternoon peak hour.

The new trips were distributed based on Journey-to-Work data and then refined by existing traffic patterns. The provided distributions are acceptable and consistent with the Central Square Mixed-Use Development.

Traffic operations analysis was performed with Synchro software based on the Highway Capacity Manual methodologies. The Project was not found to change most of overall Level of Service (LOS) when compared to the No-Build conditions. However, the intersection of East Central Street at King Street/Chestnut St would degrade from a LOS E to LOS F during the weekend evening. The No-Build LOS E would operate with a delay very close to a LOS F, but this development puts the delay into the LOS F category.

Traffic signal timing adjustments were included for the intersection of East Central Street at King Street/Chestnut St to improve the Build signal operations. These adjustments would improve the intersection operations during the Build weekday evening peak from LOS F to LOS E. However, these are not anticipated to be included as part of the proponent's off-site mitigation.

- T5. Provide the weekday morning Build w/Mitigation data sheets that are missing from the Appendix for review.
- T6. Off-site mitigation was not included by the proponent. BETA recommends that the proponent provide funds to perform a traffic monitoring program post-development which will determine the timing improvements needed to the study area traffic signals.

Vehicle speeds were measured via ATR along East Central Street on January 4 and 5, 2022. The posted speed limit on East Central Street is 40 miles per hour (mph). The 85th percentile speeds were measured at 34 mph, which are acceptable for a posted 40 mph roadway.

The available stopping sight distance (SSD) at the site driveway was measured and found to exceed the minimum required SSD based on the 40-mph posted speed limit.

SITE PLAN

- T7. Revise leader arrow to point directly to the HC parking sign.
- T8. Has consideration been given to providing an accessible parking space within the garage area? It is unclear on the plans what type of access, other than a stairwell, is provided within the garage.

Mr. Gregory Rondeau, Chairman

February 14, 2022

Page 4 of 4

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

Very truly yours,

BETA Group, Inc.



Jaklyn Centracchio, PE, PTOE
Project Manager

cc: Amy Love, Town Planner

Job No: 4830 - 80

Town of Franklin

355 East Central Street
Franklin, Massachusetts 02038-1352



Phone: (508) 520-4907
www.franklinma.gov

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

MEMORANDUM

DATE: February 24, 2022
TO: Franklin Planning Board
FROM: Department of Planning and Community Development
RE: 230 East Central St – Taj Estates
Special Permit & Site Plan

The DPCD has reviewed the above referenced Site Plan Modification application for the Monday, February 28, 2022 Planning Board meeting and offers the following commentary:

General:

1. The site is located at 230 East Central St in the Commercial I Zoning District.
2. The applicant is proposing to construct a three story building with 41 residential units and a 825 sq/ft commercial area. Multi-Family requires a Special Permit in the Commercial I Zoning District, under 185 Attachment 7, 6.1.

DPCD Comments:

1. Applicant has reduced the amount of residential units from 35 to 33 units, removing 2 more units. As the graph below details the units per area, it is still the largest proposed project in the area.
2. Applicant has provided 51 parking spaces, however only 44 meet the zoning requirements.
 - a. The Applicant will require a waiver for parking, since 7 spaces do not meet the required width per §185-21.C(9)(a)
3. At the rear of the building, there are 2 parking spaces within 10' of the right-a-way.
 - a. The Applicant will require a waiver for these parking spaces, per §185-21.C(1).
4. The Building and parking area is at 78.8% impervious as 80% is permitted.
5. Applicant is to provide documentation on the ownership of Hill Avenue. The question is who owns the street and is the applicant allowed to work in the right away.

DPCD reviewed the most recent Site Plan and Special Permit applications before the Planning Board that are located within the DC and CI zoning districts and areas around these zones, and have developed the table below summarizing the related parking requirements.

Project	Address	Zoning District	Parking Required	Parking Provided	Units per sq/ft area
257 Residential units	Dean Ave	GRV	514 spaces	463 spaces	3,961
*13 Residential units and 2 Commercial spaces	72-94 East Central St	C1	21 spaces	28 spaces	3,854
3 Residential units and 1 Commercial space	14 Ruggles St	C1	10 spaces	7 spaces	2,994
12 Residential units and 2 Commercial spaces	70 East Central St	DC	20 spaces	32 spaces	2,277
28 Units/ 5,000 sq/ft Retail	40 Alpine Row	DC	48 spaces	78 spaces	1,915
**105 Residential Units	330 East Central St	CII	204 spaces	156 spaces	1,716

*Project denied because building was too large for the site

**ZBA granted a variance to allow 105 units

Current Project

<i>33 Residential Units and 1 Commercial space</i>	<i>230 East Central St</i>	<i>CI</i>	<i>52 spaces</i>	<i>53 spaces</i>	<i>1,326</i>
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TOWN OF FRANKLIN

DEPARTMENT OF PUBLIC WORKS

Franklin Municipal Building

257 Fisher Street

Franklin, MA 02038-3026

February 23, 2022

Mr. Greg Rondeau, Chairman
Members of the Franklin Planning Board
355 East Central Street
Franklin, MA 02038

RE: Site Plan and Special Permit – 230 East Central St, Taj Estates of Franklin II

Dear Mr. Chairman and Members:

We have reviewed the revised materials for the subject project and while the applicant has addressed previous comments, we offer the following:

1. Based on the traffic report recommendations, operation of the traffic signal at King St and East Central St should be analyzed and an updated signal timing plan implemented after construction of the apartments.

Should you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Michael Maglio, P.E.
Town Engineer



Guerriere & Halnon, Inc.

ENGINEERING & LAND SURVEYING

Job No.: **F-4478**

- Reply To: **Franklin Office:**
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- Milford Office:**
 333 West Street
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 Phone: (508) 473-6630
 Fax: (508) 473-8243
- Whitinsville Office:**
 1029 Providence Road
 Whitinsville, MA 01588-2121
 Phone: (508) 234-6834
 Fax: (508) 234-6723

www.gandhengineering.com

Date: February 18, 2022

To: Franklin Planning Board
 355 E Central Street
 Franklin, MA 02038
 Attn: Amy Love

RE:
230 East Central Street, Franklin

Via	Mail	<input type="checkbox"/> Certified #	<input type="checkbox"/> Express	Courier X
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For:	<input type="checkbox"/> Your Use	<input type="checkbox"/> As Requested	<input checked="" type="checkbox"/> Review	<input type="checkbox"/> Approval
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Copies	Date	
12		11 x 17 Plan Sets
4		24 x 36 Plan Sets
16		Response letters (BETA)

Comments

CC: _____ Sincerely, **Amanda Cavaliere**

If enclosures are not as noted, kindly notify us at once.



Guerriere & Halnon, Inc.

ENGINEERING & LAND SURVEYING

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Est. 1972

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F-4478

February 18, 2022

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

RE: *Comments from BETA Group Inc.: Taj Estates of Franklin II, 230 East Central Street, Franklin, MA*

Dear Members of the Board:

On behalf of our client Taj Estates of Franklin II, Guerriere & Halnon, Inc. has prepared the following information to address the comments contained in the letter from BETA Group, Inc. dated February 15, 2022

BETA Group's findings, comments and recommendations are shown in *italics* followed by our response in **bold**.

GENERAL

G1. There is a proposed 10' cut within the Hill Ave right of way at the southwest corner of the building. There are no test pits in this area to document depth to bedrock. BETA recommends that the applicant conduct some soil observations in this area to determine depth to bedrock and determine whether blasting and/or hammering will be needed to provide the grades as shown.

BETA: Test pits have not been conducted within the Hill Avenue right-of-way in the area of the proposed cuts. Comment remains.

GH: Test pits will be performed prior to construction. The Town will be notified about the findings and if required blasting or hammering is required, the appropriate permits will be submitted at that time.

G2. Because of the elevation differential, several of the existing dwellings located west of Hill Ave towards the rear of the building are located up to 40' higher than the proposed site. Accordingly, they will be looking at the roof line of the proposed building and any utilities that will be located on the roof. These utilities should be identified and screened from view and any noise potential from this equipment should also be identified and screened also.

BETA: The applicant's representative has indicated at the hearings that there will not be any utilities on the roof; however, there are no notes indicating this on the plans. Renderings have been provided and the Board has commented that the rendering should be expanded to show the relationship of the abutting dwellings to the proposed structure.

GH: The following note has been added to Sheet 4. See note 5, "No utility components shall be installed on the building roof or around the exterior of the building."

ZONING

Z1. Clarify what types of offices are proposed and their location in the building. Medical, dental, or professional offices require a Special Permit from the Board of Appeals if the proposed project results in an increase in estimated water consumption of more than 15,000 gallons per day. In addition, Clerical, or administrative offices are not allowed on the sidewalk level in multi-story developments.

BETA: The proposed office location and area is now shown on the plans; however, the proposed use has not been established.

GH: The proposed commercial space has not been designated at this time. However, parking spaces have been incorporated in accordance with the Zoning Bylaws §185-21(B)(3)(b) Parking, Loading and Driveway Requirements.

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

SCH2. Show the setback from the proposed building to the Single-Family IV zone

GH: Added as requested. See Sheet 4.

PARKING, LOADING AND DRIVEWAY REQUIREMENTS (§185-21) Access to the Site is proposed

P2. Show space width on Sheet 4 for accessible spaces and revise at least one handicapped parking sign to include required "van" designation.

BETA: Provide space and access width dimensions. Only 1 HP accessible space needs to be van designated. Move the northern-most space south to the space (as shown on sheet 7 of 12) in line with the proposed sign. Based on scaled dimensions, it appears that there is an additional 10' of pavement width which could be used to reduce impervious cover on the lot.

GH: Space and access width with dimensions have been added to the plans (See Sheet 4 of 12) and signage has been adjusted per BETAs comment. The potential reduction was considered. However, no further adjustments to impervious have been made at this time.

P4. In accordance with §185-21, C. (1). No off-street parking shall be located within 10 feet of a street right of way. At the rear of the building, the parking area is located within 10' of the Hill Avenue right of way.

BETA: Although unimproved, the Hill Avenue right-of-way still exists. BETA recommends that the applicant request the waiver or correct the spaces.

GH: A waiver request has been added. See Sheet 1.

P5. In accordance with §185-21, C. (4). Loading areas and parking areas for 10 or more cars shall provide screening in accordance with §185-35. A 6' high white PVC fence is proposed for the easterly and southerly edge of the parking lot which will satisfy this requirement for these areas.

However, no screening has been provided for the westerly edge of the parking area behind the building adjacent to Hill Ave.

BETA: There is no screening provided along the Hill Avenue right-of-way. Comment remains.

GH: There is existing vegetation and a significant embankment within Hill Ave that provides a natural screening to abutters. No further action taken.

P6. 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. No trees are identified in the Landscaping Plan to satisfy this requirement.

BETA: Issue resolved on east side of the lot. See comment P5.

GH: See response for comment P5.

P7. Show sufficient information on East Central Street, including existing driveway openings as required to document compliance with §185-21, C. (7) including sight distances at entrance.

BETA: Site distances are noted on sheet 4 of 12; however, plan coverage should be expanded to include adjacent driveway openings on abutting lots.

GH: Driveways were added.

SITE PLAN AND DESIGN REVIEW (§185-31)

SP1. Materials required for design review as provided in §185-31.2. Design Review Commission should be provided. (§185-31.1.C(3)(q)).

BETA: Comment remains.

GH: Applicant has a scheduled meeting with the Design Review Commission on February 22, 2022.

SP2. Provide data quantifying on-site generation of noise and odors (§185-31.1.C(3)(r)).

BETA: Except for the transformer at the front of the building, the applicant has indicated at the hearings that no other utilities will be mounted outside the building.

GH: The following note has been added to Sheet 4. See note 5, "No utility components shall be

installed on the building roof or around the exterior of the building.”

SP4. 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. As shown on sheet 8 of 12, there is some significant light spillage onto the Hill Avenue Right of Way beyond the site's property line. Either request a waiver from this section of the by law or reduce the lighting along this face of the building to limit the glare to the property line.

BETA: Light spillage remains beyond the property line at the southwest corner of the building that extends beyond the right-of-way up to the adjacent residential parcel. BETA recommends that the two (2) wall-mounted lights at the southwest corner of the building be modified to eliminate this spillage.

GH: The lighting has been adjusted.

SCREENING (§185-35)

SC1. Provide screening for that section of the parking area at the southwest corner of the lot in accordance with this section.

BETA: Comment remains.

GH: There is existing vegetation and a significant embankment within Hill Ave that provides a natural screening to abutters. No further action taken.

MASSACHUSETTS STORMWATER MANAGEMENT STANDARDS:

SW3A: The proposed catch basin inside the garage is governed by the plumbing code and should be replaced by floor drains. This flow is designated as a non-surface water related flow, and in accordance with the Standards, cannot be discharged to a stormwater treatment system. Accordingly, and as noted in the plumbing code, the flow can be directed into the municipal sewer system after the MDC Gas Trap.

GH: On Sheet 6, the catch basin in the garage area has been removed, the connection to the storm has been eliminated, and a call out has been added indicating that the new sewer service line is to be connected to the parking area floor drain system. From this point, the sewer line will then connect to the gas & oil separator prior to connection to the proposed 6" building sewer service. Connection will be made with a wye.

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 an increase in overall impervious area via an expanded parking lot. The provided calculations indicate a decrease in post-development peak discharge rates and total runoff volumes compared to pre-development. All of the runoff from the proposed impervious surfaces on site will be directed through the proposed infiltration structure. Except for the peak of the 100-year frequency event, all of the runoff generated on site is contained within the proposed infiltration structure.

SW7. The 2 test pits (#4 & #6) utilized for the design of the infiltration structure are located between the structure and the building. In accordance with the standards, 2 observation test holes shall be conducted on site in the location of the infiltration structure.

BETA: Test holes should be conducted directly in the area of the proposed infiltration structure.

GH: Test pits will be performed prior to construction. Any deviations from current test pit data that would result in any modifications to the underground stormwater drainage system will be addressed at that time. We do not anticipate any major changes to the system design.

SW11. Per the MA Stormwater Handbook, provide the following:

- a. Provide a sample inspection form to be used by the owners.

BETA: Comment remains.

GH: A "Post Construction Inspection Report" was provided in the "Supplemental Attachments, Appendix 11" of the Stormwater Report. Additional "Infiltration Chambers Inspection and Maintenance Log" forms were also provided.

SW12. Incorporate Cul-Tec Separator Row maintenance requirements into this document.

BETA: Include manufacturer's information as an appendix.


GH: A "Cultec Separator Row Operations and Maintenance Guide" was provided in the "Supplemental Attachments, Appendix 11" of the Stormwater Report.

SW14. In conjunction with the Cul-tec system, BETA recommends that the manifold be eliminated and the inlet into the system be restricted to the separator row only. In addition, the inlet pipe should be increased in size to a 36" diameter culvert which will match the height of the chambers.

GH: The stormwater management system design is in conformance with current stormwater management system standards as well as the manufacturers requirements. Therefore, no further action taken.

We believe these responses have addressed the concerns expressed by BETA Group from their review letter. Should you have any further questions or concerns, please contact our office.

Sincerely,
Guerriere & Halnon, Inc.


Amanda Cavaliere
Franklin Office Manager

Enclosures



CULTEC Separator™ Row Water Quality System



Operation & Maintenance Guide for CULTEC Stormwater Management Systems

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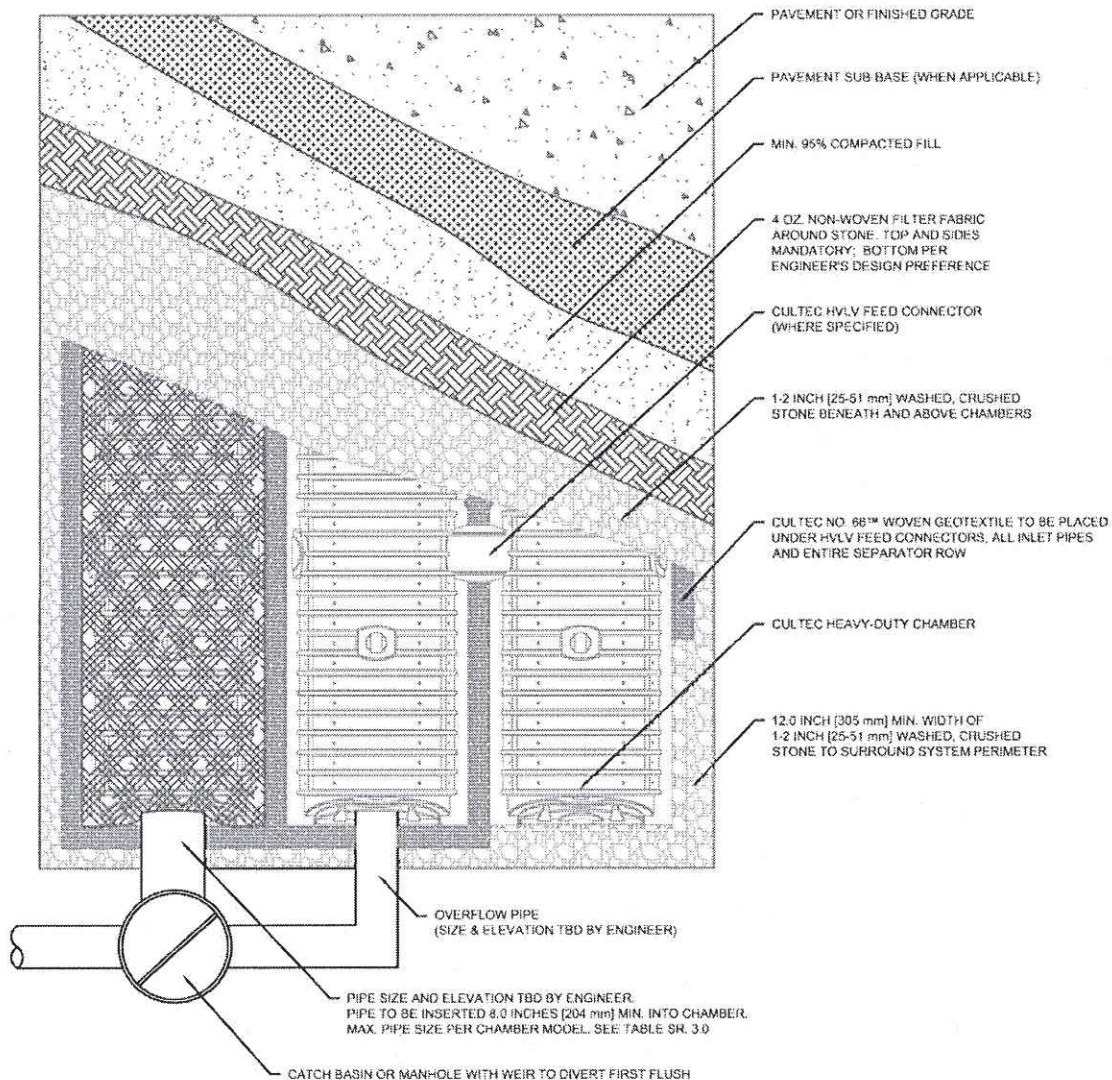
Doc ID: CULG046 03-16
March 2016

Introduction

CULTEC's Separator™ Row is an inexpensive means of removing Total Suspended Solids from the CULTEC chamber system, as well as providing easier access for inspection and maintenance. The Separator Row is designed to capture the First Flush of a rain event and is typically included as part of the "Treatment Train" for water quality.

The CULTEC Separator Row is a row of CULTEC Contactor or Recharger Chambers that are surrounded on all sides by filter fabric. Two layers of CULTEC No. 66 Woven Geotextile are placed between the clean foundation stone and the chamber feet. The chambers are then completely wrapped with CULTEC No. 410 non-woven geotextile. This configuration is designed to trap any sediment and/or debris that may pass through the upstream water-quality structures and into the chamber system.

A manhole is typically located adjacent to the separator row for ease of inspection and maintenance. This manhole is placed upstream of the system and can include a high-flow bypass pipe to pass peak-flows onto adjacent rows of chambers. The upstream manhole is designed with a sump to trap heavier sediment and allow for proper cleaning of the Separator Row. A JetVac process with a high pressure water nozzle is introduced down the Separator Row via the access manhole to clean all sediment and debris from the Separator Row. Captured pollutants are flushed into the sumped access manhole for vacuuming, and the process is repeated until the Separator Row is completely free of sediment and debris.





Design

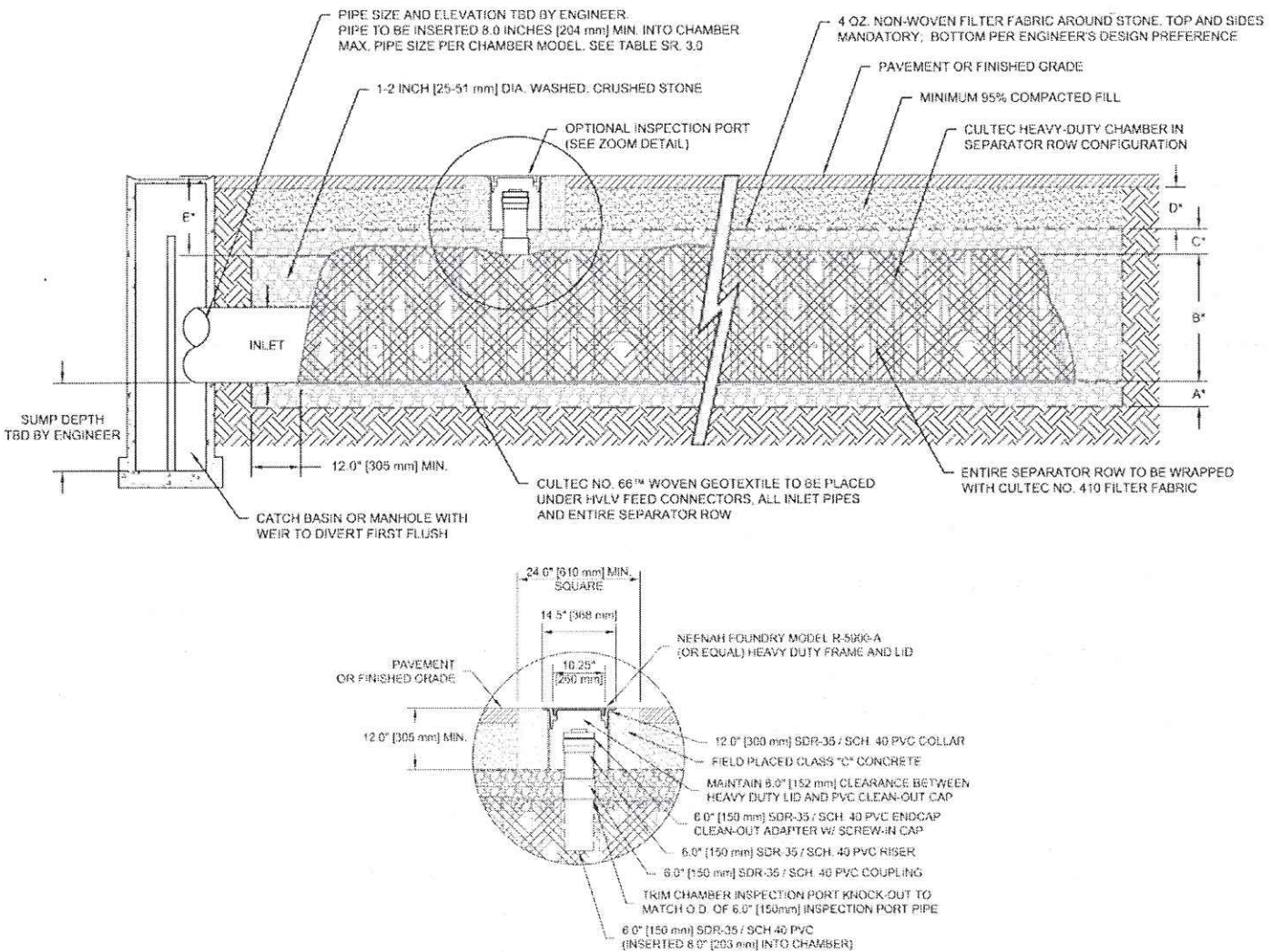
There is no single design to achieve a high level of water quality. The CULTEC Separator Row should be designed as part of an overall best management practices water quality system. Pre-treatment devices such as sump catch basins, inlet baffles and proprietary oil-grit separators and filter systems can all be incorporated upstream of the CULTEC Separator Row. Sumped access/diversion manholes should be installed directly upstream of the Separator Row.

The following is a list of recommended design practices to ensure proper maintenance for the life of the system:

- Install sumped access/diversion manholes, including a minimum 24" (600 mm) sump, directly upstream of the Separator Row.

- Include a high-flow bypass pipe to divert peak flows that exceed the capacity of the Separator Row to adjacent rows.
- Connect the access manhole to the Separator Row with the largest diameter pipe allowable based on the CULTEC chamber model used.
- Maintain a minimum distance between the access manhole and the Separator Row to promote efficient maintenance.
- Include at least one inspection port per Separator Row for periodic inspection.

Note: Typical JetVac maintenance reels have a maximum of 400 feet (121.9 m) of available hose. Consider this when designing the length of the CULTEC Separator Rows.



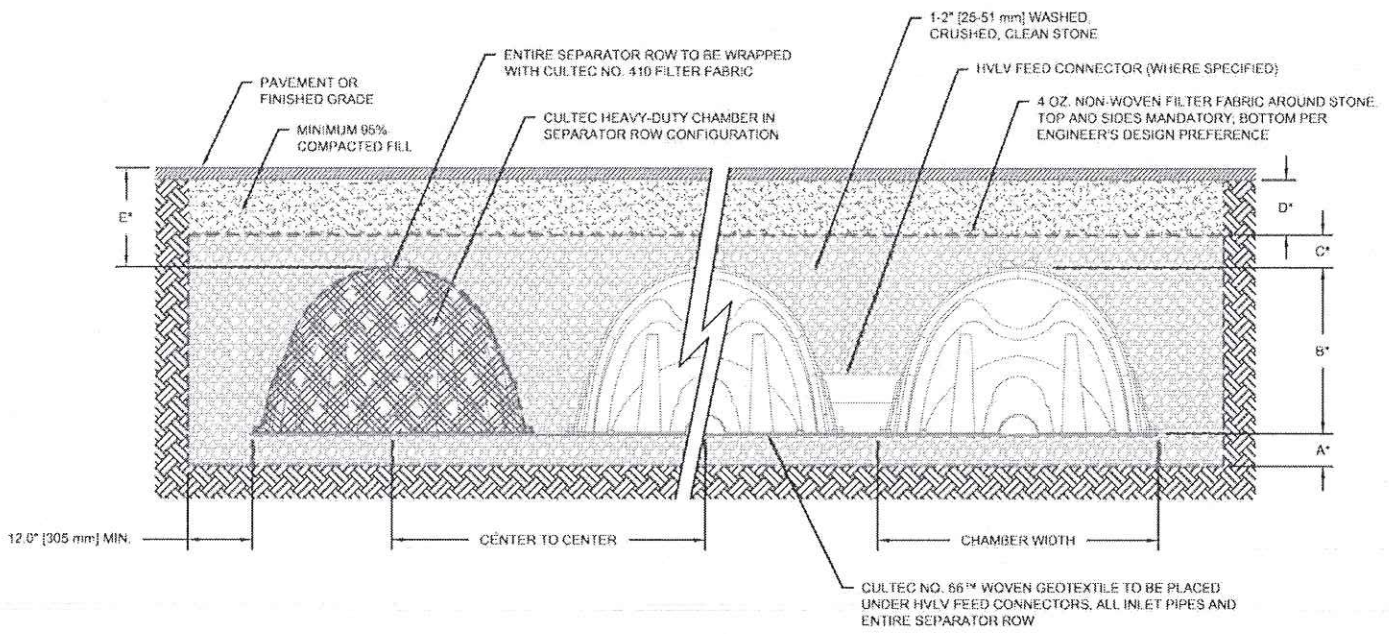


Table SR/3.0

Description	Contactor 100HD	Recharger 150XLHD	Recharger 280HD	Recharger 330XLHD	Recharger 902HD
A Min. depth of stone base	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm	9" 229 mm
B Chamber height	12.5" 318 mm	18.5" 470 mm	26.5" 673 mm	30.5" 775 mm	48" 1219 mm
C Min. depth of stone required above units for traffic applications	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm	12" 305 mm
D Min. depth required of 95% compacted fill for paved traffic application	8" 203 mm	8" 203 mm	8" 203 mm	10" 254 mm	12" 305 mm
E Max. depth of cover allowed above crown of chamber	12' 3.65 m	12' 3.65 m	12' 3.65 m	12' 3.65 m	8.5' 2.59 m
Max. allowable pipe size into chamber end wall/end cap	10" 250 mm	12" 300 mm	18" 450 mm	24" 600 mm	24" 600 mm

Inspection and Maintenance

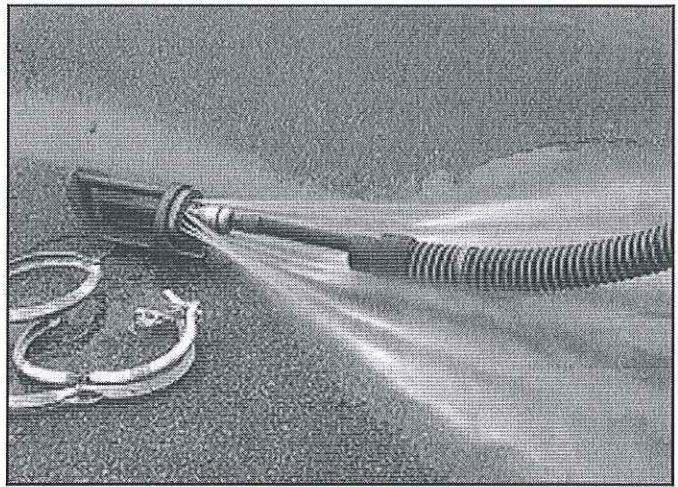
CULTEC recommends inspection of the Separator Row to be performed every six months for the first year of service. Future inspection frequency can be adjusted based upon previous inspection observations. However annual inspections are recommended. Inspection of the Separator Row can be achieved via an inspection port riser installed during construction. This inspection port riser will connect the top of the Separator Row chambers to finished grade with a removable lid. Alternatively the Separator Row may be inspected via the manhole(s) located at the end(s) of the Separator Row. However this method of inspection requires confined space entry. If entry into the manhole is required, all local and OSHA rules for confined space entries must be strictly followed.

To inspect:

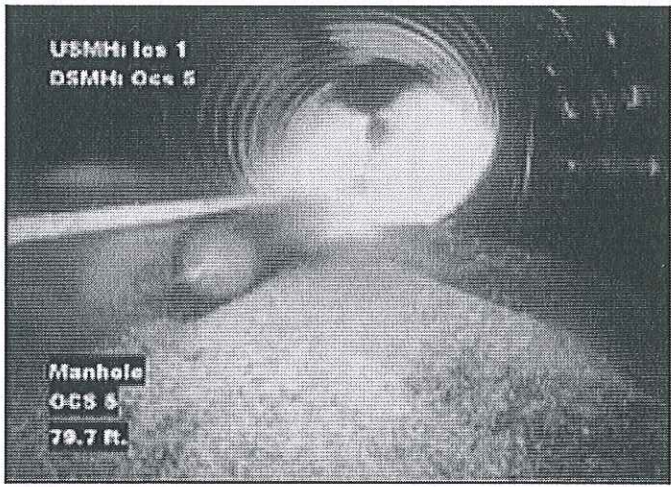
- Remove the inspection port lid from the floor box frame.

- Remove the riser pipe cap.
- With a flashlight and stadia rod, measure the depth of sediment.
- Record results in a maintenance log.
- When depth of sediment exceeds 3" (76 mm), use the JetVac procedure described below.

The JetVac process utilizes a high pressure water nozzle controlled from the surface. The high pressure nozzle is introduced down the Separator Row via the access manhole(s). The high pressure water cleans all sediment and debris from the Separator Row as the nozzle is retrieved. Captured pollutants are flushed into the sumped access manhole for vacuuming. This process is repeated until the Separator Row is completely free of sediment and debris. A small diameter culvert cleaning nozzle is recommended for this procedure.



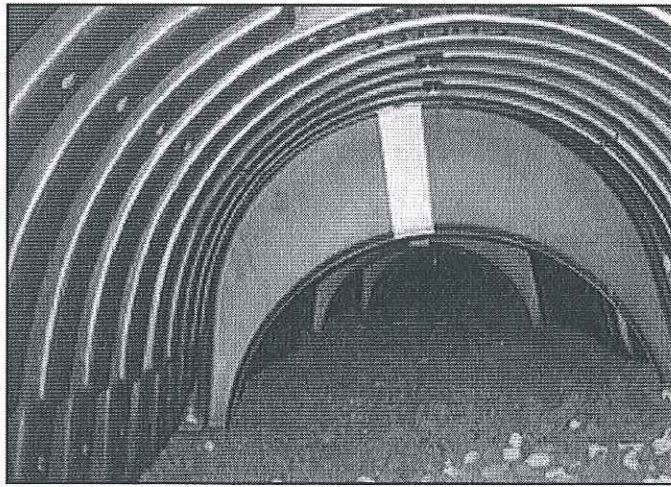
High pressure water nozzle



Cleaning Separator Row and pipes with high pressure water nozzle



SEPARATOR ROW: Separator Row prior to cleaning



ADJACENT ROW: When the Separator Row is working properly, the adjacent rows will not show signs of sediment.

Inspection and Maintenance Record

Date	Mode of Access	Frequency	Depth of Sediment	Actions	Expenses	Inspector	Notes
Ex.	Inspection Port	Semi-annually	2"	Measure sediment depth with stadia rod. Visually inspect	\$100	DPG	Depth of Sediment was measured via Northeast Inspection Port Adjacent to MH-1. Sediment depth was found to be 2". No further action required at this time.
Ex.	Access Manhole	Annually					



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CULG046 03-16

Post Construction Inspection Report
230 East Central Street
Franklin, Massachusetts

INSPECTION DATE:						
Person Inspecting		Weather			Other Personnel Present	
		Clear				
Item	N/A*	sat.**	NMR***	CAM**	MCA*	Comments:
Pavement Swept						
Catch Basins						
LAWN INLET						
CB #1						
CB #2						
CB #3						
Manholes						
DMH #1						
DMH #2						
DMH #3						
DMH #4						
DMH #5						
OUTLET STRUCTURE						
Infiltration Chambers						
Inspection Port 1						
Inspection Port 2						
Inspection Port 3						
Inspection Port 4						
Inspection Port 5						
Inspection Port 6						
Inspection Port 7						
Inspection Port 8						
NMR*** normal maintenance requested						
N/A* not applicable at the time of inspection						
CAM** corrective action - minor						
sat** satisfactory conditions as compliant						
MCA* Major corrective action						