July 8, 2022

Town of Billerica
Planning Board
365 Boston Road
Billerica, Massachusetts 01821

Attn.: Ms. Erika Oliver Jerram, Director of Planning and Community Development

Re: **101 Billerica Ave - Peer Review - Planning**

Dear Ms. Jerram:

BETA Group, Inc. has received a copy of documents submitted for the project entitled: **101 Billerica Ave Building 2 Billerica, MA**. This letter is provided to outline BETA's findings, comments, and recommendations.

Basis of Review

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

- Response to BETA Planning Comments letter dated June 28, 2022, from by Kelly Engineering Group, Inc.
- Response to BETA Stormwater Comments letter dated June 28, 2022, from by Kelly Engineering Group
- Response to DPW Comments letter dated June 28, 2022, from by Kelly Engineering Group, Inc.
- Response to Traffic Comments memo dated June 24, 2022, from MDM Transportation Consultants, Inc.
- Site Plan and Plans to accompany SWPPP (10 sheets) entitled ***Site Development Plans for 101 Billerica Ave., Building 2 Billerica MA***, dated May 6, 2022, revised June 28, 2022, prepared by Kelly Engineering Group, Inc., Braintree, MA
- Landscape Plans (1 sheet) entitled ***Site Development Plans for 101 Billerica Ave., Building 2 Billerica MA***, dated May 6, 2022, revised June 22, 2022, prepared by Kelly Engineering Group, Inc., Braintree, MA
- Photometric Plan entitled ***101 Billerica Ave., Building 2 Billerica MA***, including Luminaire cut sheets, dated April 26, 2022, revised June 24, 2022, prepared by U.S. Architectural Lighting & Sun Valley Lighting, Palmdale, CA
- ***Stormwater Management Report for 101 Billerica Ave., Building 2 Billerica MA***, dated May 6, 2022, with Addendum dated June 28, 2022, Operation and Maintenance Plan, and soil boring logs, prepared by Kelly Engineering Group, Inc.
- **SWPPP Plans**, dated June 28, 2022, prepared by Kelly Engineering Group Inc.

Compiled Review Letter Key

BETA reviewed this project previously and provided review comments in a letter to the Planning Board dated December 17, 2021 (*original comments in italics*). Kelly Engineering Group (KEG) and MDM Transportation Consultants (MDM) provided responses (responses in standard text). BETA's comments on the status of each are provided in this letter (***status in bold italics***).

Introduction

The 5.54± acre project site is located on the east side of Billerica Ave. Billerica, MA. The parcel is currently developed with a two two-story building (40,869 sq. ft. footprint), paved parking areas, utilities, and stormwater management system.

The site is within the Industrial Zoning District. There are mapped wetland resource areas in the northwest portion of the site as well as off-site along the north and south property lines. The property is not in proximity to FEMA mapped 100-year flood zone, stormwater critical areas, estimated habitats of rare wildlife or priority habitats of rare species. Green Engineering Map 46 shows the flood area extended onto the west side of the site. NRCS soil maps indicate the presence of Urban land with no hydrologic soil group rating (HSGR).

The proposed work is within 100' of the FEMA 100-year Flood Zone and within the limits of Green Engineering Floodplain. The proposed work is also partially within the buffer zone of wetland resource areas, and therefore will require obtaining an Order of Conditions from the Billerica Conservation Commission. Stormwater management systems are subject to the MassDEP Stormwater Management Standards and the Billerica Stormwater Management Bylaw and Regulations.

The Applicant proposes to remove existing buildings and pavements to construct a 51,200± SF building with a 19,122± sq. ft. mezzanine and associated parking areas and utilities, additional landscaping, and installation of new stormwater management features.

SITE VISIT

BETA conducted a site visit on 6/3/2022 to assess existing conditions. Field conditions were found to be generally in accordance with the existing conditions plan. Comments associated with this site visit are as follows and as noted throughout this report.

SV1. *Indicate proposed treatment of existing sign located at the proposed Billerica Ave site entrance denoting a T-shaped intersection ahead.* MDM: It is recommended that the existing Intersection Warning Sign (W2-2) to the south of the Business Park driveway be relocated to the north of the proposed truck driveway. The final sign location will be identified in consultation with the DPW. The location of the Intersection Warning Sign located to the north of the Business Park driveway can remain unchanged. ***BETA2: BETA considers this approach acceptable. Issue resolved.***

ZONING

The project parcel is within the Industrial (I) Zoning District. The Notice of Intent narrative indicates that the property will be redeveloped into a manufacturing building which is a use allowed by right.

Portions of the Site are within the Flood Plain Overlay District due to the presence of the green engineering flood plain (GEFP). All uses permitted by right in the underlying district are permitted in this district. Work proposed in the flood plain includes a small area of tree clearing and paving at the site entrance.

Z1. *Clearly state the proposed building use on the plans to verify conformance with the bylaw.* KEG: The proposed use of Light Manufacturing has been added to the plans. ***BETA2: Plan revised – issue resolved***

Z2. *Indicate location of the GEFP on the plans, adjusted to reflect actual surveyed topography.* KEG: Location of the Green Environmental Floodplain line and its associated 100' buffer has been added to the plans. The Green Flood elevation has been converted to NAVD datum. Green Flood Maps show elevation 120 (NGVD). NAVD Datum is 119.17. ***BETA2: Plan revised – issue resolved***

SITE PLAN APPROVAL (§6)

The project has been submitted for site Plan approval and is required to comply with this section of the Bylaw.

CONTENTS

SP1. *Revise site plan to include the signature, stamp, and seal of the professional engineer responsible for preparing the plan (§6.E.4.b.).* KEG: Signature and stamp are provided on the site plans. **BETA2: Plan revised – issue resolved**

SP2. *Provide profile for proposed drainage system (§6.E.4.p.).* KEG: Rim, invert, pipe sizes, and slopes are all shown on the Sewer and Drainage Plans. There is sufficient information shown to construct. A cross section of the proposed subsurface recharge system is shown. A majority of the existing trunk lines are proposed to remain. A waiver has been requested from the Stormwater Regulations through the Board of Health for this requirement in those regulations. To the extent relief is needed from this section it is respectfully requested. ***BETA2: BETA defers to the Town*.**

SP3. *Indicate bulb type for proposed luminaires (§6.E.4.q.).* KEG: Proposed lighting are full LEDs. **BETA2: Information provided – issue resolved**

SP4. *Indicate if new rubbish collection areas are proposed (§6.E.4.s.).* KEG: A compactor is proposed adjacent to the loading docks. If needed a dumpster will be placed in the loading dock area adjacent to the compactor and screened enclosure will be provided. ***BETA2: Information provided – issue resolved***

SP5. *Provide description of the hours of operation of the proposed use (§6.E.4,ff).* CAMBER: Given the building is proposed to be constructed on a speculative basis a specific tenant has not been identified. The nature of advanced manufacturing is shift based and operational hours have not been committed so as not to limit prospective tenants. The building is located in an office park with no direct residential neighbors. ***BETA2: Comment noted. BETA defers to the Town*.**

REVIEW CRITERIA

BUILDINGS, STRUCTURES, AND SITE CHARACTER (1): See all comments provided herein.

TRAFFIC (2): See Traffic Assessment Review.

PARKING, LOADING AND LIGHTING (3): See Parking and Loading and Lighting sections.

STORMWATER AND SITE DRAINAGE (4): See review letter for stormwater, floodplain and wetlands for Conservation Commission and Board of Health under separate cover.

UTILITIES (5): See Utilities section.

TOWN SERVICES (6): BETA defers to the Town of Billerica.

VEGETATION AND LANDSCAPING (7): See Landscape Treatment section.

WETLANDS (8): See review letter for stormwater, floodplain and wetlands for Conservation Commission and Board of Health under separate cover.

DIMENSIONAL REGULATIONS

The parcel meets the requirements for lot area, frontage, front yard from Billerica Ave, side yard, rear yard, lot coverage, building height, and green space.

Required front yard is not provided from the unnamed road to the south of the Site. The applicant has noted that this is an industrial road and thus only a 40' front yard need be provided. However, §7.L, Note 4, stipulates that this reduced width front yard may only be used for landscaping, pedestrian walkways, and curb cut access driveways only. The proposed parking area is not permitted within this front yard.

Refer to the Landscaping section below for findings related to green strips.

D1. *Revise front yard from the unnamed roadway to the south to meet the requirements of §7.L, Note 4. BETA notes that the existing Site and nearby properties along this roadway also include parking areas within the front yard.* KEG: Upon further review the easement does not meet the definition of Industrial Road per the definition of the By Law. The other parcels in the park do not rely on the easement for any for any frontage requirements and are created through ANR process. This yard has been considered a side and subject to the green strip setbacks. A waiver has been requested for the portions which do not comply. We note that most of the setbacks along the easement are existing non- conforming and the project proposes to increase the setback. **BETA2: BETA defers to the Town.**

TRAFFIC ASSESSMENT REVIEW

BETA reviewed the *Traffic Impact and Assessment Study* (TIAS) prepared by MDM Transportation Consultants, Inc. dated April 2022 and found it to have been conducted in accordance with the MassDOT *Transportation Impact Assessment Guidelines* and current standards and professional practices.

The proposed Project consists of redeveloping an existing approximate 5.5 acre parcel to include a 71,000 sf manufacturing building. The existing site is also comprised of an 82,000 sf office building, and is part of the larger approximate 450,000 sf BT Business Center, which is located in both Billerica and Tewskbury. Access to the site is provided by the existing site driveway along Billerica Avenue. The Project intends to construct a second, truck-only, driveway just south of the existing driveway.

STUDY AREA

The TIAS assessed the following study area intersections:

- Billerica Avenue at 101 Billerica Avenue (BT 37 Business Center)

BETA finds this study area to be appropriate.

TRAFFIC VOLUME

The summary of existing roadway conditions is appropriate. The TIA assessed traffic volume data was collected in September 2019. Automatic Traffic Recorder (ATR) were conducted along Billerica Avenue and Turning Movement Counts (TMC) were collected at study area intersection on a typical weekday, between 7:00-9:00AM and 4:00-6:00PM. The ATR data collection took place north of the site driveway and revealed an Average Daily Traffic (ADT) volume of approximately 13,570 vehicles per day.

BETA finds the data collection to be appropriate. However, we note that additional ATR and TMC data was collected on February 10, 2022. This collection shows an ADT of approximately 6,500 vehicles per day, with the TMC collection showing similar reduced volumes. *The assessment utilizing the higher, more conservative, 2019 volumes is appropriate.*

CRASH HISTORY

The MassDOT Crash Database was evaluated for Billerica Avenue in the vicinity of the Site and at the existing Business Center Driveway. The assessment found zero reported crashes in recent years (2017-2021). BETA finds this assessment to be appropriate.

EXISTING TRIP GENERATION

The assessment noted that the September 2019 collection occurred while the Business Center Complex was not fully occupied. The assessment juxtaposed the observed traffic volume entering and departing the Business Center Driveway in September 2019 and with projected traffic volume assuming a Full Business Center. The projected volume were estimated in accordance with the Institute of Transportation Engineers

(ITE) *Trip Generation Manual, 11th Edition* for Land Use Code (LUC) 710 "General Office" and LUC 760 "Research and Development." This found the existing volume observed were significantly lower (±30%) than the projected full (noted as "historical") center.

ALTERNATIVE TRANSPORTATION

The discussion of alternative transportation facilities (public transportation) is adequate. No credit was taken for the presence of transit. BETA finds this methodology to be conservative and acceptable.

SIGHT DISTANCE

The assessment summarized the available sight distance for the existing Business Center Driveway and the proposed truck only driveway. The assessment found the sight distance is adequate for both driveways. BETA finds the assessment to be acceptable.

T1. *Note that the existing roadway configuration includes Intersection Warning Signs (W2-2) in advance of the Business Center Driveway. Consider whether these signs should be relocated or altered in response to the new driveway configuration. The roadway also provides Thickly Settled 30mph warning signs. Consider whether these are applicable.* MDM: MDM recommends that the existing Intersection Warning Sign (W2-2) to the south of the Business Park driveway be relocated to the north of the proposed truck driveway. The final sign location will be identified in consultation with the DPW. The location of the Intersection Warning Sign located to the north of the Business Park driveway can remain unchanged.

According to Chapter 90 of the Massachusetts General Laws, a "thickly settled district" is an area in which houses, or buildings are, on average, less than 200 feet apart for a distance of one- quarter mile or more. Given the location of the "Thickly Settled" sign and 30 mph plaque at the driveway, the signs do not appear to be applicable for this Business Park. MDM does not know the history behind the signs and will defer to the DPW on if they should be removed or it is in reference to a business district within the area. ***BETA2: Discussion provided. BETA defers further comment and coordination to the Department of Public Works.***

T2. Consider installation of "Trucks Entering" or similar signage given the new land use. MDM: Given the limited number of trucks proposed as part of the project and adequate sight lines for the regulatory speed limit (35 mph), MDM does not recommend additional "Trucks Entering" signage at this time. ***BETA2: No further comment.***

BACKGROUND TRAFFIC GROWTH

Background traffic growth was approximated based on a growth rate of 0.5% compounded over a seven year design horizon. BETA finds this methodology to be acceptable and generally in accordance with industry standards.

In addition, the assessment applied traffic generated by three nearby developments including: 95 Billerica Avenue, 495 Woburn Street, and 101 Billerica Avenue.

T3. The methodology of applying nearby development trips is appropriate, though BETA notes that relevant "trip tracings for the vacancies of 101 Billerica Avenue" could not be found in the Appendix. These significantly increase the volume entering and exiting the 101 Billerica Avenue Site driveway for the No-Build Condition. In a subsequent section, these trips were then removed prior to assessing the Build condition. Provide relevant trip assignment or "trip tracing" maps in the Appendix for review. MDM: Trip Tracings for the fully occupied BT-37 Business Park are provided in the Attachments. The vacancy trips are based on industry standard rates for Land Use Code (LUC) 710 – General Office

Building applied to 217ksf and LUC 760 – Research and Development Center applied to 231ksf, and distribution patterns based existing travel patterns at the Business Park driveway. The trips associated with the Site (Lot 2) operating as an 82,000±sf office building was then removed from the No-Build networks and then adding development-specific traffic volumes to the 2029 No-Build conditions based on ITE LUC 140 – Manufacturing applied to 71,000 ±sf. ***BETA2: BETA reviewed the appended trip tracings and has no further comment.***

SITE TRIP GENERATION

The projected Site Trip Generation was estimated in accordance with the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* for Land Use Code (LUC) 140 "Manufacturing" based on a building size of 71,000 square feet. This found the proposed land use would generate approximately 48 trips in the weekday morning peak hour, 53 trips in the weekday evening peak hour, and 338 vehicles on a typical weekday. Of these trips, approximately two were projected to be trucks in both peak hours, with 32 total trips per day represented as trucks. BETA finds this exercise to have been conducted in accordance with industry standards.

The projected Manufacturing trips were juxtaposed with the projected trips associated with maintaining the 82,000 square foot office building. This found the Manufacturing use represents a reduction in overall trips by 77 (62%) in the weekday morning peak hour, 65 (55%) in the weekday evening peak hour, and 550 (62%) on a typical weekday. BETA finds the summary to be acceptable.

TRIP DISTRIBUTION AND ASSIGNMENT

The assessment distributed site trips with approximately 85% destined to/from the north (likely to Interstate 495) into Tewksbury and 15% destined to/from the south into Billerica. The proposed Site provides a dedicated truck only access for which all truck trips utilize. All other vehicle trips were distributed to the existing Business Center driveway. BETA finds the trip distribution to be reasonable given the land use and the proximity to the interstate highway.

To assess the Build condition traffic volume, the existing trips associated with the Office Land Use were removed from the No-Build network and the subsequent Manufacturing trips were added. This methodology is reasonable, though no sheets were provided in the Appendix to verify this process. **See comment T3.**

T4. *While not significant to the conclusions of the study, BETA notes that Figure 7 of the assessment should include two trucks utilizing the Proposed Truck Driveway in both peak hours. These were included in Figure 8.* MDM: Figure 7 has been revised to include the truck trips utilizing the Proposed Truck Driveway (see Attachments). ***BETA2: Figure revised. Issue resolved.***

T5. *Figure 7 and Figure 8 of the assessment suggest that vehicles could turn left exiting the proposed Truck Driveway. Review of Site Plans suggest this is not intended to be allowed.* MDM: The Truck Driveway is proposed to be restricted to right exiting movements only. The revised Figure 7 and Figure 8 are provided in the Attachments. ***BETA2: Figures revised. Issue resolved.***

CAPACITY ANALYSIS

Level of Service (LOS) capacity analysis was conducted for the Business Center Driveway at Billerica Avenue and the proposed truck driveway at Billerica Avenue for the existing, no-build, and build conditions during each peak hour. The analysis was conducted utilizing Synchro software. This exercise is in accordance with industry standards.

The assessment calibrated the analysis based on a Delay Study conducted in September 2019 in attempts to replicate existing delays and queues observed in the field. The calibrations suggest the two driveways operate

with LOS C or better in both peak hours under all scenarios. BETA assessed the network with no calibration, utilizing default values. This found the Business Center driveway operates with excessive delays (LOS F) and queues (greater than 20 vehicles) under the No-Build and Build peak hours. In general, the calibration exercise is an acceptable practice within the industry, but BETA has no explicit way to verify the legitimacy of the delay study and as such must accept what is presented as reasonable.

Regardless of calibration or no calibration, since the Build Condition includes removing the Office Land Use trips, and the Manufacturing land use represents a lower trip generation than the Office Use, the Build condition represents lower delays and queues (improved operating conditions) than the No-Build conditions.

T6. *BETA notes that the results presented in Table 7 and Table 8 of the Assessment do not match the Synchro analysis results sheets provided in the Appendix.* MDM: The delay results presented in the TIAS Table 7 and Table 8 are rounded to the nearest second and are consistent with the capacity analysis sheets provided. Traffic Assessment Recommendations. ***BETA2: BETA concurs that the tables round the delays for the existing and proposed STOP signs to the nearest second. It is noted that this occasionally results in conflicting Level of Service designation but doesn't significantly change the conclusions of the Study. It is further noted that the Southbound Left Turns are all reported in the table as LOS A with less than five seconds of delay, whereas the Synchro output suggests these left turns will experience delays more consistent with LOS B and LOS C delays in some conditions.***

TRAFFIC ASSESSMENT RECOMMENDATIONS

The assessment recommended several improvements to accommodate the proposed change in land use including the installation of a truck only driveway, changes to site circulation, maintenance of STOP sign and Stop Line markings for the Business Center driveway, and maintenance of adequate sight line triangles for both driveways. BETA generally supports these recommendations.

T7. *Clarify the need for the proposed Truck Only Driveway. It is generally expected that this is needed due to truck turn restrictions in accessing the existing Business Center Driveway.* MDM: The proposed truck only driveway would provide trucks direct access to/from the loading area in the rear of the Site, provide separation between the commercial truck activity and the main circulation area of the Business Park and Site (Lot 2), allow for standard aisle widths on-site, allow for an enhanced pedestrian environments near the main entranceway, and allow for enhanced landscaping and screening near the driveway to the Business Park and building entranceway. Furthermore, the driveway design will allow for a median island to enforce and physically restrict trucks to turn right onto Billerica Avenue. The driveway will also provide a secondary means of emergency access to the Site (Lot 2) and Business Park in general which currently does not have a secondary emergency access point. ***BETA2: The commentary provided satisfies the comment. BETA defers to the Board for any outstanding comment.***

T8. *Clarify why the proposed Truck Only Driveway needs to be "Truck Only." If this were made a general vehicle and truck access, how would this effect site circulation and flow at the existing Business Center Driveway?* MDM: The primary purpose of this driveway is to provide trucks direct access to/from the loading area in the rear of the Site and provide separation between the commercial truck activity and vehicular and pedestrian activity within the Business Park and Site (Lot 2). While the driveway has been designed and will operated as a truck only driveway a sensitivity analysis has been prepared assuming all the Site traffic with the exception of left turns out would use this secondary driveway (see Attachments). The analysis indicates that this driveway would operate well below capacity with any queuing associated with the Site being contained on-site and mainline traffic along Billerica Avenue will continue to operate unimpeded at LOS A or better during the peak hours with no impact

to the existing Business Center Driveway which will be located approximately 250 feet to the north. While classified as driveways and not public streets, the separation of the two driveways by 250 feet satisfies the recommended separation of public streets at a regulatory speed limit of 35 mph (see Attachments). ***BETA2: Commentary provided. BETA concurs with the Applicant's discussion. Recommend the Applicant coordinate with the Town regarding the future use of the proposed Truck Access driveway given the Site Plan includes signage restricting access to trucks only. Should the Board desire this driveway be open to all traffic, signage should be updated accordingly.***

TRAVEL DEMAND MANAGEMENT PROGRAM

The Assessment recommended a Travel Demand Management Program (TDM) which includes the following:

- Join Middlesex 3 Coalition
- Utilize the Workforce Transportation Program
- Appoint an Employee Transportation Coordinator
- Encourage Automatic Employee Payroll Transactions
- Schedule and promote off-peak commuting travel patterns
- Provide information related to area public transit
- Encourage transit fare subsidies
- Provide preferential parking for low-emission vehicles
- Provide preferential parking for carpools
- Provide Electric Vehicle Charging Stations
- Incorporate internal pedestrian infrastructure
- Provide on-site showers and lockers
- Provide bicycle storage facilities
- Provide on-site amenities that encourage staff to remain on-site

BETA generally supports the above measures.

T9. *The Site Plan should show the locations of proposed dedicated parking for Low Emissions Vehicles, Carpools, Electric Vehicles, Bike Racks/Bike Parking, and Pedestrian Infrastructure (including sidewalks, crosswalks, accessible ramps, and signage).* KEG: Bike Racks, sidewalks, crosswalks, & ramps are shown. 4 EV parking spaces are shown. 2 Carpool spaces are also shown. 2 Low Emission Vehicle spaces are shown. MDM: The locations of proposed dedicated parking for Low Emissions Vehicles, Carpools, Electric Vehicles, Bike Racks/Bike Parking, and Pedestrian Infrastructure (including sidewalks, crosswalks, accessible ramps, and signage) will be added to the final Site Plan. The project is proposed to include EV charging for 4 vehicles. ***BETA2: Comment resolved pending Town review of the final plans.***

TRUCK TURN ANALYSIS

The assessment provided sketches in the appendix for several truck turn analysis situations. This included vehicle moves for a typical fire truck circulating the site, as well as movements for a WB-67 articulated truck and WB-50 articulated truck entering the Truck Only Driveway.

T10. *The WB-67 turns only show the entering and exiting of the Site. Provide a diagram that shows the trucks can circulate the Site and access the relevant truck loading bays on the southern side of the building.* KEG: Supplemental AutoTURN® analysis diagrams are provided in the **Attachments** and show that the Site provides adequate maneuverability for the WB-67 design vehicle at the loading bays. ***BETA2: Turning sketches provided. These suggest the articulated trucks will encroach painted***

areas surrounding the island and outside edge of the driveway while entering and exiting. This appears that it would be worse for a truck parked in the first (northernmost) loading bay. Smaller trucks are expected to have fewer issues. Comment resolved.

T11. The Traffic Assessment defines the Site Plan provides four truck loading bays. Review of the Site Plan suggests there are six bays. MDM: The Site Plan is correct as there are intended to be six (6) truck loading bays provided. One bay is proposed to contain a compactor. ***BETA2: Response noted. BETA suggests placing the compactor in whichever loading bay is the most difficult to enter and exit without issues. Comment resolved.***

T12. AutoTurn analysis for the fire truck (sheet 1, sheet 3, and sheet 4) show the fire truck needs to travel over parking spaces and landscaped areas outside of the paved area. Clarify the need for these movements and obtain approval from the Fire Chief that these moves are acceptable. MDM: Revised Fire truck AutoTURN® analysis is provided in the Attachments. As shown, the Site provides adequate maneuverability for the ladder truck entering/exiting and traveling through the Site without impact to parking spaces or landscaped areas. The plan will be provided to the Fire Chief for review. ***BETA2: Truck turning plan has been revised. Comment resolved. BETA defers any further comment to the Fire Chief.***

PARKING

The Traffic Assessment did not evaluate parking demand. Estimating parking demand based on ITE's *Parking Generation Manual, 5th Edition* revealed a typical demand of 65 spaces for Land Use Code 140 – Manufacturing with a building size of 71,000 square feet.

The proposed Site includes one building with an Industrial Use. Required parking for this use is as follows:

Use	Area (SF) or Employee	Rate (Space / SF or Space / Employee)	Required Parking
Industrial	56,300 SF	1 / 800 SF	71
Industrial (Per Employee)	141	1 / 2 Employees	71
Total:			142

Parking is provided at all sides of the proposed building. A total of 256 parking spaces are provided. Eight of these spaces are designed as accessible with two designed as van accessible. Thirty of these spaces are designed as compact. Six loading spaces are provided on the south side of the proposed building.

Proposed parking spaces are designed to be 9' wide and 19' deep with min. 24' aisles. Compact parking spaces are 9' wide and 16' deep. Proposed loading spaces are 13' wide and 60' deep.

T13. Revise typical striping detail to show a 19' deep typical parking space. KEG: The striping detail has been revised. ***BETA2: Plan revised – issue resolved***

SITE ACCESS AND CIRCULATION

Site access is provided via one new entrance along Billerica Ave and two existing curb cuts along the industrial road. The entrance at Billerica Ave includes a right-turn only lane for site egress. Driveways extend from these entrances and circle around the entire perimeter of the proposed building, providing access to parking and loading areas.

The proposed building will provide a large loading dock area on the southern side of the building.

BETA finds the proposed use to be in accordance with land uses of the existing office park.

T14. *Revise standard bituminous pavement to include a 2" min. binder course (§8.B(8)).* KEG: The standard pavement detail has been revised to a 2-inch binder and 1-inch top course. ***BETA2: Plan revised – issue resolved***

T15. *Provide bollards to protect the proposed transformer.* KEG: Bollards have been provided. Final bollard configuration and size to be coordinated with utility provider. ***BETA2: Plan revised – issue resolved***

SIGNS AND LIGHTING

The submitted documents indicate several signs:

Sign Designation	Location
Unknown (x4)	Southwest Site Entrance
Accessible Parking Signs	Accessible Parking Spaces

Minimal information has been provided for proposed signage. Signs proposed at the new site entrance are anticipated to be traffic flow signs which will not require a permit.

A lighting plan has been provided showing location of 4 building mounted luminaires and 15 pole mounted luminaires.

L1. *Provide labels and details for all proposed signs.* KEG: Signs along the entrance are described in the Traffic Impact and Access Study. The signs have been labeled in the revised plans. ***BETA2: Plan revised – issue resolved***

L2. *Provide signs at proposed compact spaces indicating that they are for compact cars.* KEG: No response given. ***BETA2: Comment remains outstanding.***

L3. *Provide detail of luminaire.* KEG: Attached are Lighting Cut Sheets of the proposed luminaires. Actual luminaires are subject to availability. Lighting levels will be consistent with the approved plans. ***BETA2: Information provided – issue resolved***

L4. *Revise lighting plan such that significant illumination does not extend beyond the site boundary.* KEG: The Photometric Plan has been revised to reduce significant illumination beyond the boundary. One area at the new curb cut illuminates beyond the property line for safety as there is minimal street lighting here. ***BETA2: Plan revised – issue resolved.***

UTILITIES

The project plans indicate connections to public water, sanitary sewer, gas, and electric services. Public water and gas services will link to existing services beneath Billerica Avenue. Electric service will link to existing services along the industrial road. Sanitary sewer will connect to an existing sewer pump station located along Billerica Avenue to the southwest and will link to sewer manholes located beneath the industrial road to the north. The project will generally retain existing lines for sanitary sewer. Four new hydrants are proposed within the property for firefighting activities.

U1. *Clearly identify which utilities are existing and which are proposed on Sheet 6, including which existing utilities are to remain.* KEG: Existing and proposed utility layers have been clarified on Sheet 7. Existing utilities to be removed have been called out. Additionally, a Demolition has been added to the set. ***BETA2: Plan revised – issue resolved***

U2. *Provide detail for crossing of water and sewer lines. Clearly indicate which sanitary sewer lines are to be retained in areas where proposed water crosses existing sewer.* KEG: Water and sewer crossing detail has been added to the revised plans. ***BETA2: Detail provided – issue resolved***

U3. *Provide information on expected domestic water required.* KEG: The expected water demand is approximately 2,115± gallons per day based on title V sewer flow rates for 141 employees at 15 gpd for factory and industrial uses. The existing 2 story office building containing 81,738 s.f. water demand is approximately 6,130± gallons per day based on Title V flow rates for 75gpd/1,000 s.f. ***BETA2: Information provided – issue resolved***

U4. *Confirm that there is sufficient flow capacity and pressure to meet the fire services requirement.* KEG: Fire Protection Engineer will provide adequate fire protection. The proposed building is within a heavily developed area and contains an existing building on site. The applicant and design team are not aware of any pressure or capacity issues in the area. ***BETA2: Response provided. BETA anticipates further review by the Building Commissioner. Issue resolved.***

U5. *Review design of proposed underground electric line. Electric service appears to pass through a proposed drain manhole.* KEG: The underground electric has been revised to pass around the drain manhole. ***BETA2: Plan revised – issue resolved***

U6. *Provide information on rights granted by existing utility easements and confirm that proposed modifications to the area within the easements are permitted.* KEG: The applicant owns all of the parcels impacted by the relocation of the impacted easements. The easements allow for relocation. All easement documents and associated plans will be updated and recorded at the Registry of Deeds. ***BETA2: Information provided – issue resolved***

LANDSCAPE TREATMENT

The project proposes landscaping around the building perimeter, lot perimeter, and throughout the parking islands consisting of deciduous, evergreen, and ornamental trees and seeding. The project will retain vegetation within the wetland resource area and proposed removal of existing invasive species along the lot's frontage.

A Green Strip consisting of trees and seeding is proposed around approximately 65%-70% of the building perimeter. Green strip widths are generally 4' – 5' wide. The Applicant has requested a waiver from required green strip perimeter and width on the grounds that it is an existing nonconformity.

The project does not abut any residential districts or uses and thus extensive screening is not required. A green strip is provided around the majority of the lot perimeter with a typical width ranging from 10' – 15'. A waiver has been requested from providing the required 20' green strip width on the grounds that it is an existing nonconformity.

LA1. *BETA defers to the Town regarding the approval of the proposed waivers. BETA recommends the Applicant consider reconfiguring the parking lot to provide the required green strips, given that provided parking is in substantial excess of what is required.* KEG: As described at the Planning Board presentation, the parcel is subject to providing offsite parking per zoning requirements of adjacent parcels within the park, and therefore the parking provided is actually the bare minimum permissible. There are existing special permits governing this in multiple municipalities. The applicant has reduced the amount of parking required to the minimum allowed as a part of the revised plans. As a part of this redevelopment existing non-conforming green strips are substantially enhanced. ***BETA2: Information provided. BETA defers to the Town.***

LA2. *Provide shrubs for the building green strips. At least 8 shrubs per 50 feet of green strip are required (§7.G(2)). For the proposed building perimeter of 965 ft ±, the required number of shrubs is 116. For the proposed lot perimeter of 2,025 ft ±, the required number of shrubs is 324.* HTB: The project

proposes a minimum of 132 shrubs along the proposed bldg. facade which exceeds the required 116 shrubs. In addition, throughout the site the project proposes an additional quantity of shrubs which exceeds the required 324 shrubs. ***BETA2: Though shrub species are noted on the landscaping plan, no quantities are provided. Indicate location of proposed plantings*.**

LA3. *Relocate proposed tree at the southeast site entrance to avoid obstructing the proposed stop sign in the same area.* HTB: The proposed tree at the southeast site entrance shall be relocated to the other side of the driveway and be placed to the west of the 2 proposed understory trees to maintain clear site lines to traffic signs. ***BETA2: Plan revised – Issue resolved*.**

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

Very truly yours,
BETA Group, Inc.

Stephen Borgatti, PE, MENG
Project Engineer

Tyler de Ruiter, PE, PTOE
Senior Project Engineer

Philip F Paradis, Jr., PE,
Associate

O:\7400s\7452 - Billerica - Planning Board On-Call\10 - 101 Billerica Ave\Reports\2022-7-8 101 Billerica Ave Peer Review Update - Planning.docx