

November 6, 2025

Planning & Zoning Department  
Town of Bellingham  
10 Mechanic Street  
Bellingham, MA 02019

Attn: Robert Lussier, Director of Planning & Engineering

Subject: Transportation Consulting Services  
Proposed Retail Development, 190-198 Hartford Avenue  
Bellingham MA

Dear Rob:

MDM Transportation Consultants, Inc. (MDM) is pleased to provide you with the following initial transportation review comments for the above-referenced project. These comments have been prepared based on field review of the site and review of the documents identified below. To facilitate response by Applicant, review items requiring response are noted in ***Bold Italic***.

MDM finds that the Transportation Impact Study (TIS) has been prepared in general conformance with industry standards and reasonably quantifies existing/baseline traffic and safety conditions for the primary study intersections along Hartford Avenue serving the Site. Supplemental analysis of proposed access improvements to reflect conversion of Cedar Hill Road to two-way operation including specific design considerations; analysis and design considerations assuming MassDOT improvements are in place to ensure proper accommodation of the site in design plans that are being finalized for Hartford Avenue improvements; supplemental AutoTurn modeling; and updated analysis to reflect current ITE trip rates and average season traffic data.

#### **Documents Reviewed**

MDM has reviewed the following documents to gain an understanding of the project and determine if industry standards have been applied in determining the potential impacts of the project. The following relevant documents were reviewed:

- *Transportation Impact Study, Proposed Retail Development, 190/194/198 Hartford Avenue (Route 126), Bellingham, Massachusetts, prepared by Bowman Consulting Group, Ltd. dated June 2025.*
- *Transportation Impact Study Addendum, Proposed Retail Development, 190/194/198 Hartford Avenue (Route 126), Bellingham, Massachusetts, prepared by Bowman Consulting Group, Ltd. dated September 2025.*
- *Site Development Plans, Retail Development, 190/194/198 Hartford Avenue, Bellingham, Massachusetts, prepared by Bohler February 5, 2025 as updated through September 25, 2025.*
- Vehicle turn exhibits Ex04, Ex05 and EX06 prepared by Bohler Engineering as updated through September 25, 2025.
- *Site Development Plan – Site Plan Sheet C-301, Retail Development, 190/194/198 Hartford Avenue, Bellingham, Massachusetts, prepared by Bohler Engineering as updated through November 4, 2025*
- *Future MassDOT Expansion Exhibit, Sheet Ex-01 prepared by Bohler Engineering dated November 4, 2025*

## **Proposed Development**

The proposed site development is currently an 0.56-acre parcel consisting of three vacant single-family houses located Hartford Avenue (Route 126) and Cedar Hill Road. As presented in the TIS and associated Site Plan set, the project consists of constructing a 10,000-sf retail development supported by 41 parking spaces, including three accessible spaces and two electric vehicles charging spaces. Access to the Site is proposed via a right-in/right-out driveway on Hartford Avenue and a full access driveway along Cedar Hill Road. Conversion of the Cedar Hill Road to accommodate two-way traffic between Hartford Avenue and the Site driveway is proposed by the Applicant to support the development with design elements that restrict access to the adjacent neighborhood to prevent potential cut-through traffic.

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## Traffic Impact Study Comments

### Existing Conditions

1. *Study Area:* Study locations include Hartford Avenue at Cedar Hill Road and North Main Street signalized intersection and the proposed Site Drive intersections.

*MDM concurs that the site driveways and the Hartford Avenue/Cedar Hill Road/North Main Street intersection represent appropriate primary study locations in context with the likely traffic impacts of the Project.*

2. *Traffic Volumes:* Traffic volumes for study locations were conducted in March 2025 for the weekday AM and PM peak hours. MassDOT seasonal correction factors indicate March is an above-average month; however, no downward adjustment (reduction) in volumes was applied to present a conservative analysis condition.

*MDM has independently reviewed MassDOT permanent count station data that is local to the project area for seasonal fluctuations; MassDOT local permanent count station data indicate that March is approximately 4 percent below average travel months. The Applicant should review MassDOT permanent count station data for the area and update the analysis to reflect average season conditions.*

3. *Safety Analysis: Crash Data.* The TIS presents relevant crash data for the signalized study intersection of Hartford Avenue at Cedar Hill Road and North Main Street for the latest five-year period available 2017-2021.

*MDM concurs with the intersection and methodology used in the safety analysis provided; MDM conducted a review of the MassDOT crash portal data for the more recent years 2022 to 2024 which indicates the annual number of reported crashes remains relatively consistent to the documented 2017-2021 period; crashes are related to lengthy queues from the signalized intersection and numerous closely spaces commercial driveways along this portion of Hartford Avenue.*

*Restriction of movements at the Site to right-in/right-out is appropriate to reduce potential for left-turn vehicle conflicts along Hartford Avenue. As discussed in more detail under Comment 9 the design of the driveway will need to factor in the planned widening of Hartford Avenue which will include a shared-use path along the site frontage that will significantly reduce the depth of the driveway, effectively eliminating the proposed island feature altogether. MDM therefore advises that Applicant coordinate the driveway design with*

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*ongoing planned improvements along Hartford Avenue that we understand are nearing completion of the design process.*

4. *Driveway Sight Lines:* The TIS indicates that applicable AASHTO sight line criteria are met or exceeded at site driveways based on posted and design turning speeds along Route 126 and Cedar Hill Road.

*Sight lines at the proposed driveway locations exceed applicable criteria for the posted speed limit based on review by MDM. Field observations and review of the Road Safety Audit conducted for Hartford Avenue in 2014, travel speeds along Hartford Avenue significantly exceed the posted speed limit; Applicant should therefore confirm that sight line criteria based on the 85<sup>th</sup> percentile travel speeds are met along Hartford Avenue. Applicant should also confirm that site plan features including snow storage areas, signs and landscaping will not impeded sight lines under the future widening of Hartford Avenue.*

*The Site Design Plan should clearly indicate intersection sight triangles and include a note citing that "Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.0-feet in height. Snow windrows located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed."*

#### Future Conditions

5. *Traffic Growth:* Future traffic volumes are projected in the TIS to a 7-year horizon using 0.05 percent annualized growth at the direction of CTPS and traffic associated with several approved area developments including an industrial development and a 3,500 sf bank development.

*MassDOT permanent count station data for the area confirms an annualized growth rate of approximately 0.3 percent, supporting Applicant use of an annual 0.5 percent growth rate. The TIS documents a 0.05 percent growth rate; however, this appears to be a typographical error as the traffic volume networks appear to correctly adjust volumes based on the 0.5 percent annualized rate.*

6. *Trip Generation:* Trip estimates for the Project are based on characteristics published by the Institute of Transportation Engineers (ITE) in *Trip Generation* 11<sup>th</sup> Edition for Land Use Code (LUC) 822 – Strip Retail Plaza <40k. New trip generation is estimated to range from 23 to 66 vehicle-trips for peak operating hours using this methodology. A pass-by trip credit of 30% was taken consistent with ITE recommended practices and guidelines.

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*MDM concurs that the application of ITE trip rates and the methodology used in the TIS to estimate trip generation present a reasonable basis of estimating peak hour trip characteristics of the proposed use for a small retail plaza – a use that typically includes sale of dry-goods and that may also contain small office uses. However, trip generation should be updated to reflect the most current ITE Trip Generation, 12<sup>th</sup> Edition trip rates which are higher for the AM peak hours.*

*Since specific retail tenant(s) have not been identified, we note that any change in land use category such as drive-in bank, restaurant, coffee/donut shop and others as defined by the Institute of Transportation Engineers Trip Generation are expressly different and often higher traffic generators than general retail uses that would require Applicant to re-evaluate impacts for review and approval by the Town.*

7. *Trip Distribution:* Regional trip patterns for Site traffic presented in the TIS are based on existing area travel patterns.

*MDM concurs that trip distribution calculations presented in the TIS Addendum appear to be reasonable based on existing trip patterns and planned conversion of Cedar Hill Road to two-way operation from Hartford Avenue to the site driveway and proposed right-in/right-out operation of the Hartford Avenue driveway.*

8. *Operations Analysis:*

(a) Operational analyses are presented in the TIS follow generally accepted traffic engineering practices and protocols, noting however that until planned capacity enhancements are implemented by MassDOT (currently under design by others) there will be capacity constraints at the Hartford Avenue signalized intersection with Cedar Hill Road during peak periods. Specific movements subject to long delays and queues include the Hartford Avenue westbound left-turn lane and Hartford Avenue eastbound through/right-turn lane. The impact of additional site trips will be modest at the intersection. Future year analysis as presented in the originally submitted TIS does not reflect planned capacity improvements by MassDOT and also do not account for conversion of the Cedar Hill Road to two-way traffic from Hartford Avenue to the Site driveway.

*Operational analysis to reflect the updated access/egress and the proposed lane reassessments at the signal should be provided for review. The analysis should include required traffic signal timing/phasing adjustments with two-way Cedar Hill Road operation. We note that*

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*conversion of the northbound left-turn lane to a shared left/through lane would not align properly with Cedar Hill Road and may cause conflicts based on existing signal phasing that should be considered.*

*We also advise that Applicant should provide an operational analysis assuming planned MassDOT improvements are in place. A review of the proposed lane reassessments at the signalized Hartford Avenue at Cedar Hill Road intersection indicates that it may be desirable to provide an exclusive left-turn lane on Hartford Avenue in the eastbound direction to shadow the proposed dual left-turn lanes in the westbound direction. Unless a separate eastbound left-turn lane is provided onto Cedar Hill Road, eastbound left-turning vehicles would have very limited sight line to through traffic due to its alignment with the dual left-turn lanes. The intersection would benefit from a design similar to the eastbound approach to Rawson Road which should be considered in consultation with designer of the MassDOT improvements so that adjustments to planned improvements can be made.*

#### 9. Site Access/Cedar Hill Road Modifications:

*The proposed site plan provides access/egress to the site via a right-in/right-out driveway along Hartford Avenue and full access driveway along Cedar Hill Road. This will require conversion of the Cedar Hill Road to two-way operation from Hartford Avenue to the Site driveway. Specific issues to be addressed by Applicant are as follows:*

- *Conversion of Cedar Hill Road to two-way operation would require the northbound North Main Street left-turn lane to a shared left/through lane which would require adjustment (widening) of Cedar Hill Road for proper lane alignment and/or rephasing of the signal.*
- *The Applicant should identify signs indicating that Cedar Hill Road is not a through way into the Cedar Hill Road neighborhood.*
- *Design considerations for Cedar Hill Road and the eastbound lane arrangements should be made assuming planned improvements by MassDOT are in place; an exclusive eastbound left-turn lane and/or signal phasing adjustments may be required to address sight line restrictions caused by the proposed dual-left westbound lane alignment.*
- *Operational analyses for future Build conditions should be provided per Comment 8 to confirm adequate operations may be achieved with and without the MassDOT improvements in place.*

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- *As discussed with Fire Department, Planning, Police and Public Works in an Applicant working session, the Cedar Hill Road design should include a mountable island feature to prevent through traffic into the Cedar Hill Road neighborhood; as currently shown, this design feature is flush scored concrete. A suggested design would include mountable granite curbing with 3-inch height and concrete surface that facilitates emergency apparatus travel but provides a positive physical deterrent to passenger vehicles. Refer to attached typical detail for reference which may be modified to replace scored/textured concrete with a smooth concrete surface.*

10. *Site Circulation:* The TIS Addendum provided AutoTurn® for a ladder truck and service and delivery vehicles to access and circulate within the Site.

- (a) A review of the AutoTurn® for the Town's fire apparatus (ladder truck) as shown in Exhibit EX-04 indicates that the fire truck would enter the site only using the Hartford Avenue driveway as right-turns. Alternative access via Cedar Hill Road should be tested as well to ensure that the site can accommodate these vehicles as a potentially shorter/less constrained route to the site in lieu of having to make left-turns on Hartford Avenue. MDM defers to the fire department on acceptability of swept paths which require the full extent/width of the driveways.*
- (b) Modeling of service and delivery vehicles (EX-05/ EX-06) indicate that delivery truck and trash truck vehicles entering from Hartford Avenue will require the majority of driveway width to maneuver which presents a concern for impact to exiting vehicles. The Applicant should either restrict service vehicles to non-business hours, direct these vehicles to use Cedar Hill Road, restrict the Hartford Avenue driveway to "Enter Only" or modify driveway geometry to properly accommodate swept paths to avoid encroachment into the exit lane.*
- (c) AutoTurn modeling for the Hartford Avenue driveway should be provided assuming completion of MassDOT to ensure that ample maneuvering area is available with no encroachment into the opposing (exiting) driveway lane. If such encroachment occurs, Applicant should confirm alternative service route or modification of driveway circulation patterns would be available to avoid vehicle lane encroachments including but not limited to conversion of the driveway to one-way entry and/or conversion of on-site circulation to one-way.*

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## General Site Plan Comments

MDM is in receipt of Site Development Plans dated July 1, 2025, and serves as the basis for recommended modifications cited below.

### 11. General Site Plan Comments (Transportation):

- (a) *The site sidewalk system has been extended to provide a connection to the existing sidewalk network on Cedar Hill Road which MDM concurs is a reasonable accommodation for pedestrians under current roadway conditions. MassDOT improvements will provide a shared use path along the site frontage to which the Applicant may wish to provide a more direct pedestrian pathway to the retail building; site plans should identify a potentially more direct connection to the store or at least confirm that such a connection is not precluded in the future.*
- (b) *The Site Design Plan should clearly indicate intersection sight triangles and include a note citing that "Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.0-feet in height. Snow windrows located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed." As per Comment 4, Applicant should also confirm that site plan features including snow storage areas, signs and landscaping will not impeded sight lines under the future widening of Hartford Avenue.*
- (c) *Modification of the Hartford Avenue driveway to accommodate service vehicle sweeps per Comment 10(b) and 10(c) may be necessary unless alternative routing is identified.*
- (d) *The Future MassDOT Expansion exhibit indicates potential conversion of the circulation aisle within the site to one-way (clockwise) under future conditions if necessary. MDM generally concurs that this design may reduce conflicts at the driveway that may occur once MassDOT improvements are built; curbline adjustments to the aisle adjacent to the driveway may be appropriate to reduce effective width of the aisle to a traditional one-way width are recommended but subject to future submittal to Town if the MassDOT improvements are built.*

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MDM appreciates the opportunity to provide Transportation Planning & Engineering Services to the Town of Bellingham and looks forward to discussing our findings at the upcoming Planning Board hearing. If you have any questions or concerns, please feel free to contact this office.

Sincerely,

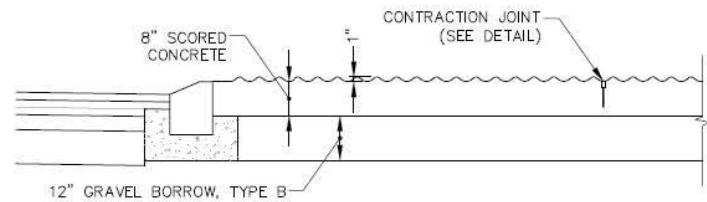
A handwritten signature in blue ink that reads "Robert J. Michaud".

Robert J. Michaud, P.E.

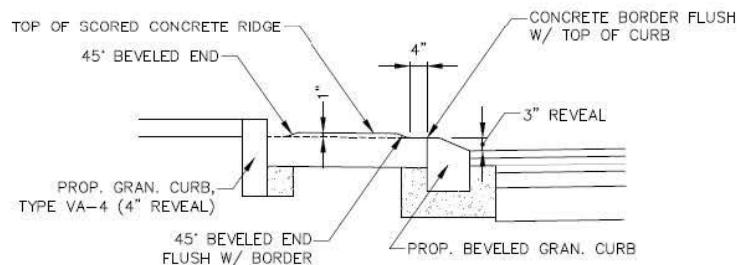
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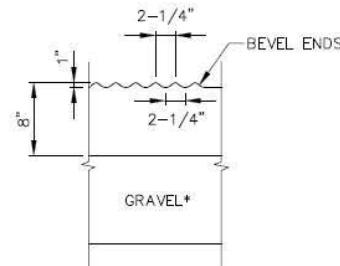
# Concrete Island Detail Example (Can be replaced by non-scored concrete)



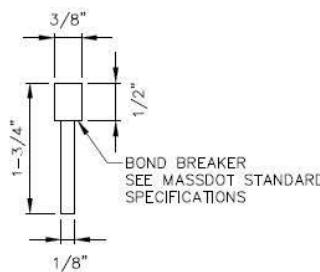
SECTION B-B



SECTION A-A



CORRUGATION DETAIL



CONTRACTION JOINT DETAIL

NOTES:

1. CONTRACTION JOINTS ARE TO BE SPACED AT A MAXIMUM OF 25' APART.
2. THE JOINTS ARE TO BE SAWN AND LOCATED IN THE DEPRESSIONS OF THE CORRUGATIONS. REFER TO SECTION B-B AND CONTRACTION JOINT DETAIL.
3. END OF CORRUGATION RIDGES TO BE BEVELED AT 45°.
4. SEE MASSDOT STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS FOR DESCRIPTION OF MATERIALS AND CONSTRUCTION METHODS.
5. SCORED CEMENT CONCRETE SHALL BE 5,000 PSI, 3/4", 705 LB/C.Y.

DETAIL FOR RASIED/SCORED CONCRETE. Island

MASSDOT STD. DWG. E105.2.0  
NOT TO SCALE