

Ref: 8678

August 24, 2020

Ms. Karen Sherman
Town Planner
Town of Holliston
703 Washington Street
Holliston, MA 01746

Re: Traffic Engineering Peer Review
Proposed Geoffrey Park Residential Community – Indian Ridge Road South
Holliston, Massachusetts

Dear Karen:

Vanasse & Associates, Inc. (VAI) has completed a review of the materials submitted on behalf of Indian Ridge Realty Trust (the “Applicant”) in support of the proposed Geoffrey Park residential community that is to be located off Indian Ridge Road South in Holliston, Massachusetts (hereafter referred to as the “Project”). The Project has been submitted to the Town for consideration of the issuance of a Comprehensive Permit under the provisions of M.G.L. c.40B, §§ 20 through 23. Our review focused on the following specific areas as they relate to the Project: i) vehicle and pedestrian access and circulation; ii) Massachusetts Department of Transportation (MassDOT) design standards; iii) Town Zoning requirements as they relate to access, parking and circulation; and iv) accepted Traffic Engineering and Transportation Planning practices. The Applicant has submitted the following supporting materials which are the subject of this review:

1. *Site Development Plan of Land, A 40B Comprehensive Permit Project, “Geoffrey Park”, Holliston, Massachusetts*; GLM Engineering Consultant, Inc. (GLM); February 29, 2020, last revised July 10, 2020 (the “Site Plans”); and
2. *Traffic Impact & Access Study*, Proposed Geoffrey Park, Indian Ridge Road South, Holliston, Massachusetts; Green International Affiliates, Inc.; July 2020 (the “July 2020 TIAS”).

In addition, VAI reviewed the site locus in order to validate the existing conditions context of the Project and the study area that was assessed in the July 2020 TIAS, and to observe factors that could impact the design and location of the access to the Project site and potential off-site improvements.

Based on our review of the July 2020 TIAS and the accompanying Site Plan, we have determined that the materials were prepared in a professional manner and following the applicable standards of care. That being said, the Applicant should address the following comments that were identified as a part of our review, a detailed summary of which is attached:

July 2020 TIAS

- T1: A letter should be provided by the Professional Engineer attesting to their oversight in preparing the document and providing their Massachusetts Professional Engineer Registration number and discipline.
- T2: The study area should be expanded to include the intersections of Cedar Street at Turner Road and Ashland Street at Turner Road as all Project-related traffic will travel through one of these intersections to access the Project site. We note that traffic volumes are provided for both of these intersections on the figures in the July 2020 TIAS.
- T3: The data collection effort and establishment of the seasonal adjustment were completed in accordance with standard Traffic Engineering and Transportation Planning practices; however, the traffic count data needs to be adjusted following the guidance issued by MassDOT for Transportation Impact Assessments (TIAs) conducted during the COVID-19 pandemic and the Governor's phased "Reopening Massachusetts" strategy.¹ We would suggest that the Applicant's engineer obtain historic traffic count data for a location proximate to the study area and compare July 2020 traffic count data to historic traffic counts for July in order to develop an appropriate adjustment factor.
- T4: The traffic count data was performed during the July 4th week, with the turning movement counts (TMCs) performed on July 1st (not July 8th as referenced in the July 2020 TIAS). Traffic data is not usually collected during holiday periods as traffic volumes and trip patterns are not typical of conditions that exist during the majority of the year. Updated traffic volume and travel speed data should be collected or adjustments made to the data that was collected with back-up calculations provided to substantiate the adjustments.
- T5: The traffic count data and speed measurements should be provided for all locations. The automatic traffic recorder (ATR) counts were not provided in the Appendix of the July 2020 TIAS.
- T6: A 48-hour ATR should be performed on Turner Road in the vicinity of Indian Ridge Road on two consecutive weekdays that should include the collection of vehicle travel speed data to be used in evaluating sight distances at the Turner Road/Indian Ridge Road South intersection.
- T7: The motor vehicle crash analysis should be updated to use reconciled crash data for the most recent 5-year period as available from MassDOT (2013 through 2017) and expanded to include the additional study area intersections.
- T8: The Applicant's engineer should confirm that there are no roadway improvements by others that are planned to occur within or proximate to the study area that would impact traffic volumes or travel patterns within the study area.
- T9: The trip-distribution pattern for the Project should be reviewed and revised. The existing traffic pattern indicates that approximately 60 percent of the trips associated with the Project will be oriented to/from Route 126, with 45 percent of these trips using Elliot Street to/from the east and the remaining 15 percent (of the 60 percent) using Ashland Street.

¹Guidance on Traffic Count Data; MassDOT; revised April 2020.



- T10: The traffic operations analysis should be revised to address the comments provided as a part of this review concerning the COVID-19 traffic volume adjustment, expansion of the study area and refinement of the trip distribution pattern. In addition, the peak-hour factors that are used in the analysis should be based on the measured values and not the default value of 0.92.
- T11: The location of the sight distance measurements that are presented in Table 7 should be clarified as the access to the Project is proposed to be an extension of Indian Ridge Road South and will not create an “intersection” for the purpose of sight distance measurements. Also, the paragraph preceding the sight distance table mentions speed measurements and posted speed limits along Cedar Street. Sight distance measurements should be provided for the following intersections based on the measured 85th percentile vehicle travel speed on the major roadway or the posted speed limit, whichever is higher:
- Turner Road/Indian Ridge Road South
 - Cedar Street/Turner Road
 - Ashland Street/Turner Road
- T12: The recommendations presented in the July 2020 TIAS should be reviewed, revised and expanded as necessary based on the additional analyses and refinements that have been suggested as a part of this review. The recommendations that were provided should reflect the Site Plans and the context of the Project as it relates to Indian Ridge Road South with regard to pedestrian safety and opportunities to implement traffic calming measures to reduce travel speeds.

Site Plans

- S1: A truck turning analysis should be performed using the AutoTurn® software package for the Holliston Fire Department design vehicle and a single-unit truck (SU-30 design vehicle). The turning analysis should demonstrate that the design vehicles can access and circulate within the Project site in an unimpeded manner. The fire truck turning analysis should confirm that all elements of the design vehicle are retained within the traveled-way and do not overhang the curbline.
- S2: Internal to the Project site, circulating roads should be a minimum of 24-feet in width for two-way travel or as required to accommodate fire truck turning maneuvers. The Site Plans currently reflect a 20-foot wide roadway with 1-foot wide Cape Cod berm or 6-inch wide vertical curb, which does not comply with MassDOT standards for residential access to aggregations of residential units of 10 or more dwelling units.² We also note that the existing portion of Indian Ridge Road South to which the Project site roadway will connect provides a 24-foot wide traveled-way. The proposed roadway width can be reduced to 20-feet where wetland impacts need to be minimized.
- S3: A leveling area should be provided approaching the STOP-sign at Sta. 16+25 RT within the Project site. The Site Plans indicate a downgrade of 9.35 percent which decreases to 4.00 percent approaching the subject STOP-sign. These grades should be reviewed as it may be difficult for vehicles to stop on this downgrade with snow or ice on the roadway. We also note that a house is proposed to be located directly opposite the intersection.

²The 2006 *Massachusetts Highway Department Project Development & Design Guide* recommends that a two-lane driveway (24-feet in width) be provided for aggregations of residential use of around ten dwelling units or greater.



- S4: A note should be added stating: “All Signs and pavement markings to be installed within the Project site shall conform to the applicable specifications of the *Manual on Uniform Traffic Control Devices* (MUTCD).³”
- S5: The sight triangle should be shown for the internal roadway intersection within the Project site and a note should be added stating: “Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-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.”
- S6: Driveways to individual residential units should be a minimum of 21-feet long measured between the garage door and the far edge of the sidewalk (edge closest to the residence) where a sidewalk is provided, and 23-feet measured between the garage door and the edge of the traveled-way in locations without a sidewalk.⁴

Written responses to our comments should be provided so that we may continue our review of the Project on behalf of the Town.

This concludes our review of the materials that have been submitted to date in support of the Project. If you should have any questions regarding our review, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.



Jeffrey S. Dirk, P.E., PTOE, FITE
Partner

Professional Engineer in CT, MA, ME, NH, RI and VA

JSD/jsd

Attachment

³*Manual on Uniform Traffic Control Devices* (MUTCD); Federal Highway Administration; Washington, DC; 2009.

⁴NCHRP Report 659, *Guide for the Geometric Design of Driveways*; Transportation Research Board of the National Academies; Washington, D.C.; 2010.



**TRAFFIC ENGINEERING PEER REVIEW
GEOFFREY PARK RESIDENTIAL COMMUNITY
INDIAN RIDGE ROAD SOUTH
HOLLISTON, MASSACHUSETTS
AUGUST 24, 2020**

The following details Vanasse & Associates, Inc.'s (VAI's) review of the materials submitted in support of the proposed Geoffrey Park residential community that is to be located off Indian Ridge Road south in Holliston, Massachusetts (hereafter referred to as the "Project"). Our comments are indicated in *italicized* text, with those requiring responses or additional information ***bolded***.

PROJECT DESCRIPTION

The Project will entail the construction of a 24-unit residential community that will be comprised of 20 detached single-family homes and two (2) duplex buildings containing two (2) units each. The Project site encompasses approximately 12.67± acres of land that is bounded by areas of open and wooded space to the north; Indian Ridge Road South and residential properties to the south; residential properties and areas of open and wooded space to the east; and Indian Ridge Road and residential properties to the east. The Project site currently consists of areas of open and wooded space.

Access to the Project site will be provided by way of an extension of Indian Ridge Road South by removing the existing cul-de-sac. Off-street parking will be provided for minimum of two (2) vehicles per unit in individual driveways.

JULY 2020 TRAFFIC IMPACT AND ACCESS STUDY

General

Comment: *The July 2020 Traffic Impact and Access Study (the "July 2020 TIAS") was prepared in a professional manner and following the applicable standards of care; however, the study was not stamped or signed by the Professional Engineer in responsible charge for preparing the document.*

Comment T1: ***A letter should be provided by the Professional Engineer attesting to their oversight in preparing the document and providing their Massachusetts Professional Engineer Registration number and discipline.***

Existing Conditions

Study Area

The study area that was assessed in the July 2020 TIAS consisted of Cedar Street, Ashland Street, Indian Ridge Road South and the following intersections:

1. Cedar Street at Ashland Street
2. Cedar Street at Elliot Street
3. Indian Ridge Road South at Turner Road



**TRAFFIC ENGINEERING PEER REVIEW
GEOFFREY PARK RESIDENTIAL COMMUNITY
INDIAN RIDGE ROAD SOUTH
HOLLISTON, MASSACHUSETTS
AUGUST 24, 2020**

Comment T2: The study area should be expanded to include the intersections of Cedar Street at Turner Road and Ashland Street at Turner Road as all Project-related traffic will travel through one of these intersections to access the Project site. We note that traffic volumes are provided for both of these intersections on the figures in the July 2020 TIAS.

Traffic Volumes and Data Collection

Traffic volume data was collected by means of: i) automatic traffic recorder (ATR) counts conducted along Cedar Street on Wednesday, July 8, 2020 through Thursday, July 9, 2020; and ii) manual turning movement counts (TMCs) and vehicle classification counts conducted on Wednesday, July 8, 2020, during the weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods. A review of seasonal adjustment data available from MassDOT indicated that traffic volume conditions within the study area during the month of July are representative of above average conditions and, as such, the raw traffic count data was not adjusted downward to average-month conditions in order to provide conservative (above-average) traffic volumes from which to assess the impact of the Project on the transportation infrastructure. Vehicle travel speeds were also collected along Cedar Street in conjunction with the ATR counts.

Comment T3: The data collection effort and establishment of the seasonal adjustment were completed in accordance with standard Traffic Engineering and Transportation Planning practices; however, the traffic count data needs to be adjusted following the guidance issued by MassDOT for Transportation Impact Assessments (TIAs) conducted during the COVID-19 pandemic and the Governor's phased "Reopening Massachusetts" strategy.⁵ We would suggest that the Applicant's engineer obtain historic traffic count data for a location proximate to the study area and compare July 2020 traffic count data to historic traffic counts for July in order to develop an appropriate adjustment factor.

Comment T4: The traffic count data was performed during the July 4th week, with the TMCs performed on July 1st (not July 8th as referenced in the July 2020 TIAS). Traffic data is not usually collected during holiday periods as traffic volumes and trip patterns are not typical of conditions that exist during the majority of the year. Updated traffic volume and travel speed data should be collected or adjustments made to the data that was collected with back-up calculations provided to substantiate the adjustments.

Comment T5: The traffic count data and speed measurements should be provided for all locations. The ATR counts were not provided in the Appendix of the July 2020 TIAS.

Comment T6: A 48-hour ATR should be performed on Turner Road in the vicinity of Indian Ridge Road on two consecutive weekdays that should include the collection of vehicle travel speed data to be used in evaluating sight distances at the Turner Road/Indian Ridge Road South intersection.

⁵Guidance on Traffic Count Data; MassDOT; revised April 2020.



**TRAFFIC ENGINEERING PEER REVIEW
GEOFFREY PARK RESIDENTIAL COMMUNITY
INDIAN RIDGE ROAD SOUTH
HOLLISTON, MASSACHUSETTS
AUGUST 24, 2020**

Pedestrian and Bicycle Facilities

A description of pedestrian facilities within the study area was provided as a part of the July 2020 TIAS. As described therein, sidewalks are provided as follows: Ashland Street - along the north side; Elliot Street – along the north side east of Cedar Street and along both sides to the west; Turner Road – along the south side between Cedar Street and a point approximately 200 west of Indian Ridge Road South. Sidewalks are not provided along Indian Ridge Road South or Cedar Street.

Formal bicycle facilities were not identified within the study area and the study area roadways do not provide sufficient width to accommodate bicycle travel in a shared traveled-way configuration.⁶

Public Transportation

A description of public transportation services within the study area was provided as a part of the July 2020 TIAS. As described therein, the Town is a member of the MetroWest Regional Transit Authority (MWRTA). The MWRTA provides fixed-route bus services within Holliston by way of Route 6, which travels along Concord Street (Route 126) from the Blandin Hub in Framingham and includes a stop at the Holliston Public Library. In addition, the Holliston Senior Center, in partnership with the MWRTA, provides door-to-door transportation for medical appointments, shopping and other local errands Monday through Friday by way of the senior shuttle.

Motor Vehicle Crash Summary

Motor vehicle crash information was obtained for the study area from MassDOT for the three-year period 2017 through 2019, inclusive. Based on a review of the MassDOT data, the study area intersections were reported to have experienced an average of one (1) or fewer reported motor vehicle crash per year over the three-year review period and were identified to have a motor vehicle crash rate (i.e., average number of motor vehicle crashes per million vehicles traveling through the intersection) that was below the MassDOT statewide and Highway Division District 5 average crash rates for similar intersections.

Comment : *A review of the MassDOT statewide High Crash Location List indicated that there are no high crash locations within the study area.*

Comment T7: *The motor vehicle crash analysis should be updated to use reconciled crash data for the most recent 5-year period as available from MassDOT (2013 through 2017) and expanded to include the additional study area intersections.*

⁶A minimum combined travel lane and paved shoulder width of 14-feet is required to support bicycle travel in a shared traveled-way condition.



**TRAFFIC ENGINEERING PEER REVIEW
GEOFFREY PARK RESIDENTIAL COMMUNITY
INDIAN RIDGE ROAD SOUTH
HOLLISTON, MASSACHUSETTS
AUGUST 24, 2020**

Future Conditions

No-Build Conditions

Traffic volumes within the study area were projected to 2027, which represents a 7-year planning horizon from the existing conditions base year (2020) consistent with MassDOT guidelines. The future condition traffic volume projections were developed by: i) applying a background traffic growth rate to the 2020 Existing traffic volumes; and ii) adding traffic associated with specific development projects by others that may increase traffic volumes within the study area beyond that accounted for by the background traffic growth rate.

A review of historic traffic volume data available from MassDOT was undertaken in order to determine traffic growth trends. Based on this review, a background traffic growth rate of 1.0 percent per year was established to reflect the expected growth in traffic that will occur within the 7-year time horizon of the July 2020 TIAS.

In addition, the Town of Holliston was consulted in order to determine if there were any planned developments by others that are expected to be complete with 7-year planning horizon that may result in an increase in traffic that would exceed the general background traffic growth rate. Based on this discussion, no projects were identified for inclusion in the future condition traffic volumes.

Comment: We are in agreement with the methodology that was used to develop the future No-Build condition traffic volume projections, including the background traffic growth rate (1.0 percent per year) and inclusion of the identified specific development projects by others (none identified).

Comment T8: The Applicant's engineer should confirm that there are no roadway improvements by others that are planned to occur within or proximate to the study area that would impact traffic volumes or travel patterns within the study area.

Build Conditions

The traffic characteristics of the Project were developed by the Applicant's engineer using trip-generation statistics published by the Institute of Transportation Engineers (ITE)⁷ for similar land uses as those proposed. ITE Land Use Code (LUC) 210, *Single-Family Detached Housing*, was used to establish the traffic characteristics of the Project.

The table below summarizes the traffic volumes developed by the Applicant's engineer for the Project.

⁷*Trip Generation*, 10th Edition; Institute of Transportation Engineers; Washington, DC; 2017.



**TRAFFIC ENGINEERING PEER REVIEW
GEOFFREY PARK RESIDENTIAL COMMUNITY
INDIAN RIDGE ROAD SOUTH
HOLLISTON, MASSACHUSETTS
AUGUST 24, 2020**

**GEOFFREY PARK
TRIP GENERATION SUMMARY**

Time Period	Vehicle Trips ^a		
	Entering	Exiting	Total
<i>Average Weekday:</i>	115	115	230
<i>Weekday Morning Peak-Hour:</i>	4	14	18
<i>Weekday Evening Peak-Hour:</i>	15	9	24

^aBased on ITE LUC 210, *Single-Family Detached Housing*.

Traffic volumes associated with the Project were assigned onto the study area roadway network based on a review of existing traffic patterns within the study area. Based on this methodology, trips associated with the Project were assigned as follows:

- Elliot Street to/from the East: 25%
- Elliot Street to/from the West: 25%
- Ashland Street to/from the East: 15%
- Ashland Street to/from the West: 25%
- Cedar Street to/from the North: 5%
- Cedar Street to/from the South: 5%

Comment: *We are in general agreement with the methodology that was used to develop the anticipated traffic characteristics of the Project and the trip distribution pattern. In accordance with the trip-generation guidance provided by the ITE,⁸ the Applicant's engineer should have used the fitted-curve equations vs. the average trip rates to establish the traffic volumes attributable to the Project given that there are more than 20 data points available and a fitted-curve equation is provided. That being said, the difference in traffic volumes during the peak hours is less than 5 vehicles, or fewer than one (1) additional vehicle every 12 minutes, and would not materially impact the measured impact of the Project on the transportation infrastructure.*

Comment T9: *The trip-distribution pattern for the Project should be reviewed and revised. The existing traffic pattern indicates that approximately 60 percent of the trips associated with the Project will be oriented to/from Route 126, with 45 percent of these trips using Elliot Street to/from the east and the remaining 15 percent (of the 60 percent) using Ashland Street.*

⁸*Trip Generation Handbook*, 3rd Edition, Institute of Transportation Engineers; Washington DC; September 2017.



**TRAFFIC ENGINEERING PEER REVIEW
GEOFFREY PARK RESIDENTIAL COMMUNITY
INDIAN RIDGE ROAD SOUTH
HOLLISTON, MASSACHUSETTS
AUGUST 24, 2020**

Traffic Operations Analysis

In order to assess the potential impact of the Project on the transportation infrastructure, a detailed traffic operations analysis was performed for the study area intersections and the Project site driveway under 2020 Existing, 2027 No-Build and 2027 Build conditions. In brief, traffic operations are described by six “levels of service” which are defined by letter grades from “A” through “F”, with a level-of-service (LOS) “A” representing the best operating conditions (average motorist delays of less than 10 seconds and little or no apparent vehicle queuing) and a LOS “F” representing constrained operating conditions (average motorist delays of 50 to 80 seconds or more and often with apparent vehicle queuing). A LOS of “E” is representative of an intersection or traffic movement that is operating at its design capacity, with a LOS of “D” typically representing the limit of acceptable traffic operations.

Based on this analysis, it was concluded that the Project will not result in a significant increase in motorist delays or vehicle queuing over existing or anticipated future conditions without the Project (i.e., No-Build conditions) with all movements predicted to operate at LOS A with negligible vehicle queuing.

Comment T10: The traffic operations analysis should be revised to address the comments provided as a part of this review concerning the COVID-19 traffic volume adjustment, expansion of the study area and refinement of the trip distribution pattern. In addition, the peak-hour factors that are used in the analysis should be based on the measured values and not the default value of 0.92.

Sight Distance

The Applicant’s engineer provided sight distance measurements for the Project site roadway intersection with Indian Ridge Road South following American Association of State Highway and Transportation Officials (AASHTO)⁹ standards. Measured values were compared to the AASHTO recommended distances for a 25 mph and 30 mph approach speed. Comparing the measured sight lines to the recommended minimum distances for safe operation, the Applicant’s engineer concluded that the available lines of sight will meet or exceed the recommended values for safe operation.

Comment T11: The location of the sight distance measurements that are presented in Table 7 should be clarified as the access to the Project is proposed to be an extension of Indian Ridge Road South and will not create an “intersection” for the purpose of sight distance measurements. Also, the paragraph preceding the sight distance table mentions speed measurements and posted speed limits along Cedar Street. Sight distance measurements should be provided for the following intersections based on the measured 85th percentile vehicle travel speed on the major roadway or the posted speed limit, whichever is higher:

- ***Turner Road/Indian Ridge Road South***
- ***Cedar Street/Turner Road***
- ***Ashland Street/Turner Road***

⁹A Policy on Geometric Design of Highway and Streets, 6th Edition; American Association of State Highway and Transportation Officials (AASHTO); Washington D.C.; 2011.



**TRAFFIC ENGINEERING PEER REVIEW
GEOFFREY PARK RESIDENTIAL COMMUNITY
INDIAN RIDGE ROAD SOUTH
HOLLISTON, MASSACHUSETTS
AUGUST 24, 2020**

Recommendations

As a part of the July 2020 TIAS, the following recommendations were offered:

- Landscaping should be designed so as not to obstruct sight lines
- Roadside vegetation should be selectively cleared and trimmed to improve sight lines
- Pavement markings and STOP bars should be provided at the site access driveways

Comment T12: The recommendations should be reviewed, revised and expanded as necessary based on the additional analyses and refinements that have been suggested as a part of this review. The recommendations that were provided should reflect the Site Plans and the context of the Project as it relates to Indian Ridge Road South with regard to pedestrian safety and opportunities to implement traffic calming measures to reduce travel speeds.

SITE PLANS

The following comments are offered with respect to our review of the *Site Development Plan of Land* prepared by GLM Engineering Consultant, Inc. (GLM) and dated February 29, 2020, last revised July 10, 2020 (hereafter referred to as the “Site Plan”).

- S1:** *A truck turning analysis should be performed using the AutoTurn® software package for the Holliston Fire Department design vehicle and a single-unit truck (SU-30 design vehicle). The turning analysis should demonstrate that the design vehicles can access and circulate within the Project site in an unimpeded manner. The fire truck turning analysis should confirm that all elements of the design vehicle are retained within the traveled-way and do not overhang the curbline.*
- S2:** *Internal to the Project site, circulating roads should be a minimum of 24-feet in width for two-way travel or as required to accommodate fire truck turning maneuvers. The Site Plans currently reflect a 20-foot wide roadway with 1-foot wide Cape Cod berm or 6-inch wide vertical curb, which does not comply with MassDOT standards for residential access to aggregations of residential units of 10 or more dwelling units.¹⁰ We also note that the existing portion of Indian Ridge Road South to which the Project site roadway will connect provides a 24-foot wide traveled-way. The proposed roadway width can be reduced to 20-feet where wetland impacts need to be minimized.*
- S3:** *A leveling area should be provided approaching the STOP-sign at Sta. 16+25 RT within the Project site. The Site Plans indicate a downgrade of 9.35 percent which decreases to 4.00 percent approaching the subject STOP-sign. These grades should be reviewed as it may*

¹⁰The 2006 Massachusetts Highway Department Project Development & Design Guide recommends that a two-lane driveway (24-feet in width) be provided for aggregations of residential use of around ten dwelling units or greater.



**TRAFFIC ENGINEERING PEER REVIEW
GEOFFREY PARK RESIDENTIAL COMMUNITY
INDIAN RIDGE ROAD SOUTH
HOLLISTON, MASSACHUSETTS
AUGUST 24, 2020**

be difficult for vehicles to stop on this downgrade with snow or ice on the roadway. We also note that a house is proposed to be located directly opposite the intersection.

- S4:** *A note should be added stating: “All Signs and pavement markings to be installed within the Project site shall conform to the applicable specifications of the Manual on Uniform Traffic Control Devices (MUTCD).¹¹”*
- S5:** *The sight triangle should be shown for the internal roadway intersection within the Project site and a note should be added stating: “Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-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.”*
- S6:** *Driveways to individual residential units should be a minimum of 21-feet long measured between the garage door and the far edge of the sidewalk (edge closest to the residence) where a sidewalk is provided, and 23-feet measured between the garage door and the edge of the traveled-way in locations without a sidewalk.¹²*

PARKING

Off-street parking will be provided for minimum of two (2) vehicles per unit in individual driveways which is consistent with the requirements of Section V-C, OFF-STREET PARKING, of the Town of Holliston Zoning By-Laws for a residential use.¹³

¹¹Manual on Uniform Traffic Control Devices (MUTCD); Federal Highway Administration; Washington, DC; 2009.

¹²NCHRP Report 659, *Guide for the Geometric Design of Driveways*; Transportation Research Board of the National Academies; Washington, D.C.; 2010.

¹³For residential developments, two (2) parking spaces for each dwelling unit therein are required, except one parking space for each dwelling unit having fewer than two rooms which are used or usable as bedrooms.

