

# ***PVI Site Design***

18 Glendale Road, Norwood, MA - 339.206.1030  
Master Planning - Civil Engineering - Land Entitlements

## **Holden Planning Board**

### **Town of Holden**

1196 Main Street  
Holden, MA 01520

January 29, 2021

## **RE: Jefferson Mill Redevelopment – DPW Comments**

Dear Board Members,

We are in receipt of the review letter prepared by the Holden DPW for the referenced project. After review of the letter, we have incorporated the comments into the new site plans prepared by our office. Below is a copy of the original comments with our responses in **BOLD** below as applicable. New drawings and other supporting information noted below are enclosed with this letter.

### **Comments:**

1. The 2012 Stormwater Management Report did not include any watershed maps, did not include the concrete slab removal, and contained stormwater calculations from 2005. The applicant shall submit a revised stormwater report with the most current Massachusetts Department of Environmental Protection Stormwater standards stamped by a Massachusetts registered Engineer. The Stormwater report shall include the most recent design of the site incorporating the removal of the concrete slab spanning the channel. Pre-construction and post-construction watershed maps shall be provided which will help document the project meets the requirements of a re-development, showing calculations of the impervious area before and after construction, and other details, including but not limited to, drainage utilities, BMPs, treatment units, design points, flow paths with time of concentrations, impervious/pervious areas, and watershed delineation areas.

***A new stormwater report has been generated by this office and enclosed with this letter. Cover types (i.e. Impervious and Pervious areas) are included in the HydroCAD calculations in the appendix of the report.***

2. The stormwater management plan references three stormceptors, the site plans reference two stormceptors and the Operation and Maintenance reference two stormceptors. The applicant shall clarify how many stormceptors are proposed and their locations.

***The new site plans clarify the locations and sizing requirements of the water quality units. The previous design included a water quality unit within landscaped areas of the property and was not necessary. This has been removed from the drawings.***

3. The applicant shall provide documentation that the proposed stormceptor size is adequate to handle the runoff produced during the 100-yr storm. The plan details indicate a model number, but no size is mentioned. A technical sheet was provided in the report but did not appear to demonstrate the capacity is sufficient for the site.

***The stormwater report provides flow data for the project. Sizing requirements for the water quality units is included on the plans. Please note, the treatment flow requirements are based on 1" of runoff.***

**Site Plan:**

4. Updated Site plans shall be submitted to incorporate the concrete slab removal, including, but not limited to, the effects of the ground surface below the slab and the proposed concrete walk spanning the channel.

***The slab is no longer proposed to be removed, and site plans revised to reflect this.***

5. Site plans shall include distance and bearings of the existing property lines.

***The bearings and distances are shown on the existing conditions plan of the site plans that were submitted.***

6. The elevation on the groundwater recharge system detail shall be revised to show actual elevation of the bottom of chamber. The details show an elevation of 178.00 at the bottom of the chamber.

***Upon our review, it was determined that the recharge system was not required to meet the stormwater management standards. In addition, construction of the proposed drainage pipe and recharge through the proposed retaining wall was not practicable. Moving the recharge system on the top side of the wall, directly below the parking area is not advisable as it creates hydraulic pressure behind the wall system. Existing pavement in this area currently flows overland to Main Street. In the proposed conditions, pavement area will be reduced and thereby reduce runoff to Main Street. Please refer to the stormwater report for more details.***

7. Soil testing in the area of the recharge system shall be conducted to confirm the groundwater elevation. The detail of the recharge system shall be revised to ensure that the bottom of the chambers maintains the required offset to groundwater as required in the Massachusetts Stormwater Handbook.

***See response to #6.***

8. Silt sacks shall be installed in all catch basins during the construction. Plans shall show a detail of the silt sacks.

***A silt sack detail has been added to the plan. Refer to the Site Preparation Plan for locations.***

9. The proposed stormceptor located between buildings 3 and 5, shall be placed to capture all the impervious runoff prior to discharging. Currently the proposed stormceptor unit is located up stream of catch basin (rim elevation (762.90) and the reported roof drain and catch basin.

***The downstream catch basin captures runoff from landscaped areas and not paved areas that may include typical pollutants designed to be treated by water quality units. Adding roof drains and runoff from landscaped areas into a Water Quality Unit is not recommended as it contributes to reduced treatment capacity of the unit and resuspension of captured sediment.***

***Walkways between Buildings 3 and 5 are proposed to be porous pavers. In addition, the area is not subject to vehicular traffic that contribute hydrocarbons and other pollutants to the drainage system that require treatment prior to discharge. For this reason, the Water Quality Unit remains proposed at the end of the existing driveway.***

10. It appears the applicant is proposing a snow storage area abutting the channel. The applicant shall find another appropriate snow storage as far from the channel as possible.

***This snow storage area has been removed from the plan. While some incidental snow accumulation from plowing may occur here, the management team will direct the plowing company not to stockpile snow in this area.***

11. Applicant shall provide details on handicap ramps and handicap parking areas in compliance with the latest ADA standards.

***ADA curb cut details have been added to the drawings.***

12. Fire Lanes shall be shown on the plans. It is also recommended that the applicant receive comments and suggestions from the Holden Fire Department regarding the fire safety and access for the site plan.

***A meeting with Holden Fire Department was held on January 19, 2021 to review the plan. While no specific access was requested at that time, the Fire Department may present additional requests during review of the building systems. The applicant will continue to work with the Fire Department at that time to ensure adequate access and fire safety for the development.***

13. The applicant shall obtain a Street Entry Permit approval from MassDOT prior to any construction activities within the Right of Way along Main St. and submit a copy of the approved permit to the Town.

***The applicant will file for all necessary MassDOT access permits and approvals prior to work within the Right-of-Way. All proposed work within the Right-of-Way is tied to work on Building 3 which will be the second phase of construction.***

#### **Concrete Slab Removal**

14. The Concrete Slab Removal Plan shall be revised to reflect the absence of the logs at the spillway.

15. The DPW recommends that the applicant notify and request comments from the Office of Dam Safety (ODS) regarding the previously removed logs that were damming back Mill Pond.
16. As stated in the DRC letter, dated December 15, 2017 ODS requested the applicant submit a dam safety application to ODS and advised that no work be conducted in the dam area until ODS has issued a negative determination or a permit. The Town has not been provided any responses to the letter, a negative determination, or an approved Dam Safety Permit.

***The applicant is no longer proposing to remove the concrete slab. We will be applying for a modification to the DCR permit as applicable.***

**Traffic Analysis:**

17. The existing Traffic Report contains traffic data collected in 2005, which is now approximately 15 years old. An updated Traffic Analysis shall be developed based on the most recent traffic data prepared by a qualified traffic engineering firm.

**A supplemental traffic review was obtained by the applicant, prepared by Howard Stein Hudson dated October 9, 2019. A copy of this report is enclosed with this letter. The letter states "that the Project impact estimated in 2005 is still accurate and slightly higher than currently expected during the critical peak commuting hours."**

18. The original sight distance calculations were based on 30 mph. The calculations should be revised based on the 85th percentile of the actual speeds in the area of the project. A sight distance plan shall be developed showing the required sight easements and distance clearly identified on the plans. The applicant shall provide information and calculations for the required distances.

***Refer to the technical memo prepared by Howard Stein Hudson dated February 4, 2020 regarding the site distance. A copy is enclosed with this letter.***

**Water & Sewer:**

19. It is unclear what existing water mains are being maintained and what are being abandoned on the site. Please make it clear on the utility site plan. Most notable are the numerous different sized water mains shown on the northeast side of the site under and around building three. No active water mains should be located under buildings. Additionally, no hydrant shall be serviced with a lateral less than 6" in diameter. It is unclear which hydrants are going to be maintained and which ones are going to be discontinued.

***The new site plans include a Site Preparation Plan which clearly delineate the extent of utility lines to be removed or abandoned in place. Refer to the Utility Plan for new water connections.***

20. If any sections of existing water mains are to be maintained in place, they shall be pressure tested in accordance with Town Standards. Additionally, they shall be located using underground location technology, so the as-built plans are accurate.

***The plan no longer calls for reuse of any existing water service pipes for the mill complex. New taps are proposed to existing mains from Main Street and Village Way.***

21. No tapping sleeves for connections of mains 6" or larger will be allowed. All connections of mains 6" and larger shall be made with cut in tees.

***Acknowledged. The new drawings reflect this requirement.***

22. Hydrant locations shall be approved by the Fire Department

***Acknowledged. A meeting with Holden Fire was held on January 19, 2021. It was determined that final hydrant locations are to be determined based on the new building sprinkler system design. The applicant will revisit the hydrant locations with the Fire Department at that time.***

23. The domestic water meters shall be sized appropriately for the demand of the building. Backup documentation for their sizing shall be provided. Be advised that the monthly charge for water and sewer services are based on the size of the domestic water meter installed.

***This note has been added to the drawings. Final meter sizing will be performed by the applicants plumbing engineer prior to construction and submit with building permit documents.***

24. There will be a yearly sprinkler charge assessed each January for each fire sprinkler connection to the Town's System. Currently, for a 6" fire service the yearly fee is \$710.00. See Chapter 9.2 of the Town Bylaws for any changes to the fees.

***Acknowledged. Final fire service will be sized by the applicants Fire Protection / Sprinkler design engineer and included with Building Permit documents.***

25. The appropriate testable backflow device shall be installed on each sprinkler connection, inside at the riser.

***The backflow device shall be specified by the plumbing engineer or sprinkler contractor and included with Building Permit documents.***

26. The gate valve to isolate the water main into Village Way appears to be buried somewhere making it unable to isolate the street. This valve should be located by the developer, its operation verified by the Holden Water & Sewer Division and a proper valve box installed by the Developer prior to work commencing.

***Acknowledged. A note has been added to the Site Preparation Plan.***

27. There is no sewer lateral shown for building number 3.

***A sewer lateral has been added to the site plans for Building 3.***

28. Any existing sewer maintained as part of this project shall be CCTV inspected for structural integrity and infiltration/inflow (I/I). Any issues discovered as part of the investigation shall be corrected by the developer.

***The project now proposes to create new sewer laterals out to the Village Way sewer.***

29. There are two sewer laterals shown for building number 5, one on the northwest side and one to a manhole on the northeast side between building 3 and 5, please explain why there are two services to this building.

***The new sewer lateral to the northwest is a new connection for domestic waste from the units above the garage. The connection to the north east only includes flow from the floor drains within the garage. The sewer services were separated to minimize the flow to the pump station needed to service Building 3.***

30. Please provide plan and profile view for all sewer lines, both existing and proposed within the site.

***Additional detail has been added to the site drawings to better demonstrate design intent. Profiles can be provided as a condition of approval and as part of the Building Permit documents.***

31. The developer is required to conduct a capacity analysis for the Town sewer mains and pump station(s) affected by the proposed project. The analysis shall examine the sewer system from the time it leaves the building to the location where it discharges into the Department of Conservation and Recreation's Rutland/Holden Trunk Sewer Line, which includes the Jefferson Sewer Pump Station.

***PVI Site Design is in receipt of record sewer plans and pump station evaluations performed by the Town of Holden and Weston & Sampson. Based on our review, the system (gravity distribution system, pumping stations, and force main) each has adequate capacity for the proposed development. We will provide the detailed calculations supporting this conclusion in a separate document by Friday February 5<sup>th</sup>.***

The Developer is required to provide documentation of all recorded rights to connect into existing private utilities within Village Way. This includes both the water and sewer mains.

***See summary letter prepared by Bennett & Forts dated January 8, 2021 that address easement and access rights on Village Way. The letter concludes that the applicant has appropriate rights of access and utility connections.***

32. The current Town of Holden standard notes shall be added to the plans

***This information has been added to the plans.***

33. The current Town of Holden standard details shall be added to the plans and replace the existing details.

***PVI reached out to the engineering department to obtain construction details. No details were available to include on the drawings. Notes have been added to PVI's details to require the contractor to meet all Town of Holden construction standards.***

we trust that the above responses and attached revised documents adequately address the comments. If you need any additional information, please feel free to contact our office.

Thank you.

**PVI Site Design, LLC**



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Principal  
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339-206-1030

Copy: Tim Adler  
Enclosures: As noted



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TO:	Keith Beardsley, Heath Properties	DATE:	October 9, 2019
FROM:	Brian J. Beisel	HSH PROJECT NO.:	Project #: 2019239
SUBJECT:	1665 Main Street, Holden Jefferson Mill		

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Howard Stein Hudson (HSH) has completed a review of two previous traffic documents for the redevelopment of the Jefferson Mill site located at 1665 Main Street in Holden, Massachusetts. The Project that was analyzed in both of these documents included 47 residential units with approximately 100 parking spaces.

The documents include the Technical Memorandum dated February 10, 2005 that included a complete transportation impact study for the Project. This included an existing conditions evaluation, trip generation analysis, sight distance analysis, and traffic operations analysis. In addition, a letter dated June 27, 2005 was also reviewed. This letter included an on-site parking inventory, as well as additional sight distance analysis for a second driveway providing access to parking on site.

## Current Proposed Project

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As previously proposed, the current Project consists of the redevelopment of the existing vacant buildings to include 47 residential units. The Project includes 86 parking spaces. These parking spaces include 67 spaces located within Building #5, 12 parking spaces along the Main Site Driveway (Village Way), and 7 spaces located off a secondary access on the south end of the site.

## Previous Analysis Comparison

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HSH has conducted an updated analysis of the impact of the Project. This includes updated trip generation analysis, parking demand analysis, and sight distance analysis.

### TRIP GENERATION

The trip generation analysis conducted in 2005 was based on the then current 7<sup>th</sup> Edition of Institute of Transportation Engineers' (ITE) Trip Generation Manual. This Manual continues to be the engineering standard for determining trip generation estimates but has been updated since 2005 and is currently on the 10<sup>th</sup> Edition.

Modifications to the Manual between the 7<sup>th</sup> and 10<sup>th</sup> edition include peak hour reductions to the trip generation rates per multifamily housing unit. Therefore, based on the current edition, 47 residential units are expected to generate approximately 344 daily trips (compared to 338),





approximately 22 weekday AM peak hour trips (compared to 28), and approximately 27 weekday PM peak hour trips (compared to 32). These trip generation totals show that the Project impact estimated in 2005 is still accurate and slightly higher than currently expected during the critical peak commuting hours.

## **PARKING DEMAND**

The proposed Project currently includes less parking spaces than previously approved. Similar to the ITE Trip Generation Manual, ITE also publishes a Parking Generation Manual (currently the 5<sup>th</sup> Edition). The overnight parking demand rate, when residential demand is highest, for multifamily residential is 1.57 spaces per unit. Based on this, the expected overnight parking demand of the Project is approximately 72 spaces. Therefore, the reduced number of 86 parking spaces is expected to more than meet the expected demand.

## **SIGHT DISTANCE ANALYSIS**

The 2005 documents analyzed the sight distance at the Main Site Driveway on the north side of the site and the Secondary Site Driveway on the south side of the site. The Main Site Driveway available sight distance met, but not did not exceed, the required Stopping Sight Distance for motorists approaching from the south. This is an existing driveway that currently provides access and egress to the Village Way Townhomes. The vegetation between Building #5 and Main Street could be trimmed back in order to lengthen the sight distance at this intersection. The Secondary Site Driveway (providing access to just 7 spaces) did not have any sight distance deficiencies.



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TO:	Barry P. Winer	DATE:	February 24, 2020
FROM:	Brian Beisel, PTP Michael Littmen, P.E.	HSH PROJECT NO.:	2019239.00
SUBJECT:	Sight Distance Technical Memorandum Jefferson Mill		

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Howard Stein Hudson (HSH) has prepared this technical memorandum to evaluate the sight distance for the Jefferson Mill development (the “Project”) located at 1665 Main Street in Holden, Massachusetts (the “Site”). The Project is proposing to utilize the existing Village Way/Mill Pond Place, as the primary site driveway (the “Site Driveway”). The Town of Holden requested the sight distance calculations be based on the observed speeds along Main Street. Two sight distance measurements have been evaluated; The Stopping Sight Distance (SSD) and the The Intersection Sight Distance (ISD). Both sight distance calculations are based on the AASHTO publication *A Policy on Geometric Design of Highways and Streets*, 6<sup>th</sup> Edition (the “Green Book”).

## Vehicle Speed Data Collection

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The vehicular speed along Main Street is a critical component necessary to calculate sight distance. Automated traffic recorder (ATR) data was used to collect speed data, along with volume data and class data, on Thursday February 20, 2020. The weather was partly cloudy and the roadway was dry, ideal for measuring baseline speeds along the roadway. The sight distance calculations use the 85<sup>th</sup> percentile speed along the roadway. The 85<sup>th</sup> percentile speed along Main Street was observed as 41 mph in the northbound direction and 48 mph in the southbound direction. The ATR data is provided as an **Attachment**.

## Stopping Sight Distance

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SSD is the distance needed for an approaching motorist to perceive an obstruction ahead and be able to stop prior to reaching the obstruction. The minimum SSD at an intersection is a requirement necessary to determine the safety of an intersection as outlined in the Green Book which states, “The provision of stopping sight distance at all locations along each highway or street, including intersection approaches, is fundamental to intersection operation.”

SSD calculations also take into consideration grade changes along the approaching roadway. The SSD increases on a downgrade and decreases for an upgrade. The Site Driveway intersects Main Street at a low point therefore both approaches along Main Street have downgrades. The northbound



approach has a downgrade of approximately 4 percent and the southbound approach has a downgrade of approximately 3 percent.

The SSD measurements were taken from the approaching travel lanes to 10 feet off of the edge of the travel way on the Site Driveway. There was found to be approximately 440 feet of available sight distance as motorists approach in the northbound direction and approximately 650 feet of sight distance as motorists approach in the southbound direction. Both of the approach sight distances are greater than the minimum SSD required. The critical values in the SSD calculation is summarized in **Table 1** and the calculations are provided as an **Attachment**.

*Table 1. Stopping Sight Distance Summary*

	Northbound	Southbound
85 <sup>th</sup> Percentile Speed (mph)	41	48
SSD Minimum	316	394
Grade	4% downgrade	3% downgrade
SSD Required (feet)	335	420
SSD Available (feet)	440	650
<b>SSD Satisfied?</b>	<b>YES</b>	<b>YES</b>

## Conclusion

As shown, the SSD is satisfied in both directions. However in order to ensure that sight distance is maximized to the greatest extent possible during all seasons, HSH recommends that the vegetation to the south of the driveway be trimmed and maintained to allow for optimal sight lines.

# Speed Report

Job 569\_C72\_HSH\_ATR  
 Area Jefferson, MA  
 Location Route 122A (Main Street), south of Village Way  
 Dir Northbound  
 Thursday, February 20, 2020

**BOSTON**  
**TRAFFIC DATA**  
 PO BOX 1723, Framingham, MA 01701  
 Office: 978-746-1259  
 DataRequest@BostonTrafficData.com  
 www.BostonTrafficData.com

Time	Total	Speed Bins (mph)															
		0 5	5 10	10 15	15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 75	75 80
0000	42	0	0	0	1	1	2	14	13	10	1	0	0	0	0	0	0
0100	26	0	0	0	1	0	2	4	14	3	2	0	0	0	0	0	0
0200	16	0	0	0	0	0	0	2	7	6	1	0	0	0	0	0	0
0300	11	0	0	0	0	0	0	1	8	2	0	0	0	0	0	0	0
0400	18	0	0	0	1	0	0	1	8	6	1	1	0	0	0	0	0
0500	33	0	0	0	1	1	0	4	23	4	0	0	0	0	0	0	0
0600	109	0	0	0	1	1	2	8	52	40	5	0	0	0	0	0	0
0700	149	0	0	0	0	2	1	11	77	54	4	0	0	0	0	0	0
0800	211	0	0	0	2	4	4	19	119	58	5	0	0	0	0	0	0
0900	247	0	0	0	0	5	3	30	142	63	4	0	0	0	0	0	0
1000	288	0	0	0	4	11	5	36	172	55	4	1	0	0	0	0	0
1100	346	0	0	0	2	2	9	60	180	86	7	0	0	0	0	0	0
1200	378	0	0	1	2	4	4	34	250	81	2	0	0	0	0	0	0
1300	398	0	0	0	0	3	3	49	250	90	3	0	0	0	0	0	0
1400	487	0	0	0	2	11	13	76	274	102	8	1	0	0	0	0	0
1500	628	0	0	0	0	5	4	115	391	106	7	0	0	0	0	0	0
1600	720	0	0	1	3	3	18	83	434	174	4	0	0	0	0	0	0
1700	771	0	0	0	2	7	8	126	498	128	2	0	0	0	0	0	0
1800	595	0	0	0	5	15	21	128	346	78	2	0	0	0	0	0	0
1900	390	0	0	0	5	6	15	69	234	60	1	0	0	0	0	0	0
2000	303	0	0	0	3	5	3	50	197	42	3	0	0	0	0	0	0
2100	245	0	0	0	2	2	3	62	145	31	0	0	0	0	0	0	0
2200	167	0	0	0	2	7	0	23	91	39	5	0	0	0	0	0	0
2300	74	0	0	0	0	0	4	11	41	16	2	0	0	0	0	0	0
<b>Total</b>	<b>6652</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>39</b>	<b>95</b>	<b>124</b>	<b>1016</b>	<b>3966</b>	<b>1334</b>	<b>73</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

100.00%   0.00%   0.00%   0.03%   0.59%   1.43%   1.86%   15.27%   59.62%   20.05%   1.10%   0.05%   0.00%   0.00%   0.00%   0.00%   0.00%

Maximum = 52.7 mph, Minimum = 14.7 mph, Mean = 37.3 mph  
 85% Speed = 40.66 mph, 95% Speed = 42.50 mph, Median = 37.64 mph  
 10 mph Pace = 33 - 43, Number in Pace = 5876 (88.33%)  
 Variance = 15.74, Standard Deviation = 3.97 mph

# Speed Report

Job 569\_C72\_HSH\_ATR  
 Area Jefferson, MA  
 Location Route 122A (Main Street), south of Village Way  
 Dir Southbound  
 Thursday, February 20, 2020

**BOSTON**  
**TRAFFIC DATA**  
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 Office: 978-746-1259  
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Time	Total	Speed Bins (mph)																	
		0 5	5 10	10 15	15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 75	75 80		
0000	9	0	0	0	0	0	1	0	0	3	5	0	0	0	0	0	0		
0100	9	0	0	0	0	1	0	0	4	1	2	1	0	0	0	0	0		
0200	11	0	0	0	0	0	0	0	0	2	2	4	3	0	0	0	0		
0300	30	0	0	0	0	1	0	0	4	10	8	7	0	0	0	0	0		
0400	106	0	0	0	0	2	3	0	6	35	43	13	4	0	0	0	0		
0500	334	0	0	0	0	2	1	2	55	153	106	12	3	0	0	0	0		
0600	618	0	0	1	2	5	3	1	48	283	230	43	2	0	0	0	0		
0700	673	0	0	0	1	14	10	14	96	302	206	30	0	0	0	0	0		
0800	637	0	0	0	1	7	3	7	79	319	194	22	4	1	0	0	0		
0900	477	0	0	0	2	10	8	6	87	191	146	25	2	0	0	0	0		
1000	417	0	0	2	4	4	6	8	72	194	110	15	1	1	0	0	0		
1100	452	0	0	1	1	3	4	6	72	207	133	24	1	0	0	0	0		
1200	406	0	0	0	3	15	4	9	77	190	94	12	1	1	0	0	0		
1300	360	0	0	0	1	3	2	5	51	181	91	23	3	0	0	0	0		
1400	341	0	0	0	2	3	1	6	57	141	114	15	2	0	0	0	0		
1500	381	0	0	0	2	3	3	9	54	176	113	20	1	0	0	0	0		
1600	356	0	0	1	3	5	5	5	42	177	92	23	3	0	0	0	0		
1700	353	0	0	0	1	1	6	9	62	174	88	11	1	0	0	0	0		
1800	256	0	0	0	1	8	1	5	61	119	50	10	1	0	0	0	0		
1900	173	0	0	0	2	4	0	4	42	79	32	9	1	0	0	0	0		
2000	125	0	0	0	2	3	2	1	20	58	34	5	0	0	0	0	0		
2100	101	0	0	0	1	2	1	3	14	41	27	11	1	0	0	0	0		
2200	72	0	0	0	0	2	0	0	7	28	25	7	2	1	0	0	0		
2300	43	0	0	0	0	0	0	0	6	11	13	5	6	2	0	0	0		
Total	6740	0	0	5	29	98	64	100	1016	3075	1958	347	42	6	0	0	0		

100.00% 0.00% 0.00% 0.07% 0.43% 1.45% 0.95% 1.48% 15.07% 45.62% 29.05% 5.15% 0.62% 0.09% 0.00% 0.00% 0.00%

Maximum = 61.5 mph, Minimum = 10.5 mph, Mean = 43.1 mph  
 85% Speed = 47.65 mph, 95% Speed = 50.44 mph, Median = 43.45 mph  
 10 mph Pace = 38 - 48, Number in Pace = 5222 (77.48%)  
 Variance = 28.29, Standard Deviation = 5.32 mph

**Table 3-1. Stopping Sight Distance on Level Roadways**

Metric					U.S. Customary				
Design Speed (km/h)	Brake Reaction Distance (m)	Braking Distance on Level (m)	Stopping Sight Distance		Design Speed (mph)	Brake Reaction Distance (ft)	Braking Distance on Level (ft)	Stopping Sight Distance	
			Calculated (m)	Design (m)				Calculated (ft)	Design (ft)
20	13.9	4.6	18.5	20	15	55.1	21.6	76.7	80
30	20.9	10.3	31.2	35	20	73.5	38.4	111.9	115
40	27.8	18.4	46.2	50	25	91.9	60.0	151.9	155
50	34.8	28.7	63.5	65	30	110.3	86.4	196.7	200
60	41.7	41.3	83.0	85	35	128.6	117.6	246.2	250
70	48.7	56.2	104.9	105	40	147.0	153.6	300.6	305
80	55.6	73.4	129.0	130	45	165.4	194.4	359.8	360
90	62.6	92.9	155.5	160	50	183.8	240.0	423.8	425
100	69.5	114.7	184.2	185	55	202.1	290.3	492.4	495
110	76.5	138.8	215.3	220	60	220.5	345.5	566.0	570
120	83.4	165.2	248.6	250	65	238.9	405.5	644.4	645
130	90.4	193.8	284.2	285	70	257.3	470.3	727.6	730
					75	275.6	539.9	815.5	820
					80	294.0	614.3	908.3	910

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 3.4 m/s<sup>2</sup> [11.2 ft/s<sup>2</sup>] used to determine calculated sight distance.

### Design Values

The stopping sight distance is the sum of the distance traversed during the brake reaction time and the distance to brake the vehicle to a stop. The computed distances for various speeds at the assumed conditions on level roadways are shown in Table 3-1 and were developed from the following equation:

Metric	U.S. Customary
$SSD = 0.278Vt + 0.039\frac{V^2}{a}$ <p>where:</p> <p>SSD = stopping sight distance, m</p> <p>V = design speed, km/h</p> <p>t = brake reaction time, 2.5 s</p> <p>a = deceleration rate, m/s<sup>2</sup></p>	$SSD = 1.47Vt + 1.075\frac{V^2}{a}$ <p>where:</p> <p>SSD = stopping sight distance, ft</p> <p>V = design speed, mph</p> <p>t = brake reaction time, 2.5 s</p> <p>a = deceleration rate, ft/s<sup>2</sup></p>

(3-2)

Stopping sight distances exceeding those shown in Table 3-1 should be used as the basis for design wherever practical. Use of longer stopping sight distances increases the margin for error for all drivers and, in particular, for those who operate at or near the design speed during wet pavement conditions. New pavements should have initially, and should retain, friction coefficients consistent with the deceleration rates used to develop Table 3-1.

Jefferson Mill  
Sight Distance Calculations

Howard Stein Hudson  
2019239.00

Equations Used:

$$SSD = 1.47ut + \frac{u^2}{30\left(\frac{a}{32.2} \pm G\right)}$$

Inputs:

		Direction		Units
		Northbound	Southbound	
Speed	u	41	48	mph
Break Reaction Time (AASHTO Recommended)	t	2.5	2.5	seconds
Deceleration Rate (AASHTO Recommended)	a	11.2	11.2	ft/second^2
Roadway Grade	G	-0.04	-0.03	ft/ft

Final Results:

		Direction	
		Northbound	Southbound
Stopping Sight Distance	SSD	335	420

**BENNETT  
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January 8, 2021

Town of Holden  
Planning & Development Office  
1196 Main Street  
Holden, MA 01520

Re:    Utility Ownership  
      Jefferson Lofts

Dear Sir/Madam:

As part of the Site Plan Review Special Permit for the renovation of the mill complex at 1665 Main Street, the Department of Public works requested documentation to determine the ownership of the existing utility infrastructure within Village Way per item 32 of the information request letter. This letter is written in response to said request and will proceed by tracing the ownership history of the mill complex and utility easements to answer the question posed.

The Holden Woods Limited Partnership ("Holden Woods") acquired title to the mill complex and undeveloped land behind it by deed dated October 6, 1987 and recorded in the Worcester District Registry of Deeds in Book 10860, Page 105. Holden Woods then sought to develop the land behind the Mill into condominiums. It recorded a Master Deed dated August 24, 1988 in Book 11610, Page 30 and created the Mill Pond Place Condominium ("Condo"). Section 2.3 of the Master Deed described the land granted to the Condo in Exhibit A, being the 6.083-acre Parcel shown in Plan Book 606, Plan 42 and non-exclusive easement rights to park on Easement D and use the 24' wide access Easement for utilities, subject to certain easements and right reserved by Holden Woods.

Section 2.3 reserved to the Holden Woods, now ("Sponsor"), four easement rights: the non-exclusive right in common to park vehicles on Easement D, the non-exclusive right to use the 24' wide Access Easement including the installation of utilities, the non-exclusive right to pass for public safety purposes over a driveway to be constructed connecting Hilltop Ave and the 24' Wide Access Easement, and the right to grant additional easements for access and utilities over Easement A, collectively ("Access & Utility Easements").



Section 2.4 of the Master Deed stated that it is the intention of the Sponsor to remove the land, buildings, and improvements other than Phase 1 on the Plan from the Condo and to retain ownership thereof. The Sponsor filed a Certificate of Removal in Book 11609, Page 389 to effectuate said removal. At this point, the land in Phase 1 as shown on the plan and the non-exclusive parking and utility easements were owned by the Condo subject to the Sponsor's development rights, and the land shown as Easement A and Commercial Condominium Area, along with easements retained by the Sponsor, were owned by the Holden Woods ("Premises").

On June 28, 1991, Holden Woods was foreclosed upon, see foreclosure deed of Howmac, Inc. recorded in Book 13539, Page 86. On March 27, 1992, Howmac, Inc. conveyed the Premises to Paul G. Roiff, Trustee of the Mill Pond Realty Trust by deed recorded in Book 14092, Page 190. The rights in the Condo were conveyed to Paul G. Roiff, Trustee of the Mill Pond Realty Trust by deed recorded Book 14092, Page 195. Separately, the Holden Woods Limited Partnership, conveyed the rights reserved to it in the original Master Deed including the Access & Utility easements to Paul G. Roiff, Trustee of the Mill Pond Realty Trust by deed recorded in Book 14092, Page 209. At this point, Paul G. Roiff, Trustee of the Mill Pond Realty Trust owned all of the ownership interest in the Premises, the Condo, the Access & Utility Easements, collectively ("Land").

Having full ownership of the Land, the Mill Pond Realty Trust filed an amended and restated Master Deed dated October 2, 1992 in Book 14630, Page 83. This Master Deed described the Condo as the perpetual right and easement to use the land marked as Easement A on the plan. It specifically reserved ownership of the Access & Utility easements and the balance of the Land to Mill Pond Realty Trust. The Master Deed was amended on December 18, 1992 in Book 14817, Pages 225 which updated the description of the Condo be the perpetual right and easement to maintain the condo on Easement A, a perpetual non-exclusive right to use the 24' wide Access Easement for access to Easements A and D, and a perpetual non-exclusive easement on Easement C for the purposes of utilities to service the Condominium Easement. The balance of the Land and the Access & Utility Easements remained owned by the Mill Pond Realty Trust. This description has present legal effect and is attached for reference. On December 14, 2019, Paul G. Roiff, Trustee of the Mill Pond Realty Trust, conveyed the Land to Jefferson Lofts, LLC, who is the present owner of the Land.

Based on the foregoing, it is our opinion that Jefferson Lofts, LLC, owns an interest in the existing utility infrastructure in Village Way. The Condo has the right to non-exclusive use of the 24' wide Access Easement for access to Easement A and for the installation of Utilities but not parking. The Condo also has the right to non-exclusive easement over Easement C for utilities to service the Condominium Easement. Therefore, Jefferson Lofts has the legal right to access and use the existing utility infrastructure in a non-exclusive manner.

Very truly yours,

BENNETT & FORTS, P.C.

By \_\_\_\_\_  
Matthew J. Peloquin

MJP  
Enclosures