Horsley Witten Group
Sustainable Environmental Solutions
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March 17, 2016

Mr. Peter A. Manor
City Engineer
Amesbury Department of Public Works
39 South Hunt Road
Amesbury, MA 01913

Re: Response to comments
Mill 77 Redevelopment
77 Elm Street
Amesbury, MA

Dear Peter,

On behalf of applicant, the Horsley Witten Group, Inc. (HW) is pleased to provide the following response to the comments received from the Amesbury Department of Public Works (DPW).

1. *The DPW requests that the applicant attempt to minimize disturbances, to the extent possible, to existing ground surfaces adjacent to the construction area to reduce the likelihood of runoff into abutting wetlands and river during possible construction flooding events.*

   Response: The site design has been slightly revised to address the Planning Boards comments and will be submitted to the planning department. Site disturbance has been kept to the minimum extent practicable to construct the project and erosion controls are provided.

2. *The DPW recommends that the Board request the applicant to review the proposed location of the trash storage. The current proposed location of the trash storage area reduces the right of way with of Fruit Place to less than 18 feet wide just prior to the bend in Fruit Place. The minimized roadway width may make emergency vehicle travel for the fire department and DPW difficult along Fruit Place.*

   Response: The proposed dumpster area has been relocated and the retaining wall adjusted to improve emergency vehicle access.

3. *The applicant has specified vertical precast concrete curbing and bituminous asphalt berm for the proposed site. Has the applicant requested a waiver from the Planning Board's sloped and vertical granite curb requirements? DPW would request that sloped granite curbing be placed instead of bituminous asphalt berm within the right of way at a minimum for durability concerns.*

Response: All curbing has been changed to granite.

4. *The applicant should review all top and bottom of retaining wall elevations on the proposed plans for accuracy. In addition, any retaining wall to be constructed to a height greater than 4' shall be designed and stamped by a Massachusetts Licensed Professional Engineer.*

Response: Structural plans by Summit Engineering for the proposed retaining wall and is included in the revised plan set.

5. *The applicant did not provide detail on the type of retaining walls are proposed for the development. The Board should request that the applicant provide information about the type and style of wall that is proposed.*

Response: See response to comment # 4 above.

6. *The DPW would request that the Board have the applicant provide information on the proposed use and proposed sewer flow for the modifications.*

Response: We are providing the attached existing and proposed sewer flow calculations for your review. The existing building is currently vacant and the estimated flows are based upon assumptions of the most recent use. Proposed flows are presented as three different options as a final development layout has not been selected.

7. *If necessary, the applicant shall notify The City of Amesbury Water and Sewer Departments prior to installation of sewer and water line connections to the City's infrastructure.*

Response: As discussed at the site review meeting on September 29, 2015, the applicant will work closely with the DPW on the sewer and water line connections as well as the proposed hydrant location. To convey wastewater from the building to the municipal sewer system a 6-inch SDR 35 PVC building sewer service line proposed.

8. The applicant shall provide the Planning Board signature block on each plan sheet of the plan set.

Response: A signature block has been added to all the civil engineering sheets.

We are also providing the peak flow comparisons (Table 1) and the pipe sizing calculations for the existing Fruit Place and "Fruit Place Extension" drainage network as requested. As demonstrated in Table 1, the post development peak flows closely match the pre development flows, therefore, an increase in the existing drainage network capacity is not anticipated. As part of the Stormwater analysis a site visit was performed on March 14, 2016 to confirm the assumed conditions of the existing stormwater pipes and catch basin located on Fruit Place and "Fruit Place Extension" were correct. Inconsistencies were found between the pipe sizes indicated on the Existing Conditions survey plans and the field conditions. Pipe size and material for all structures were confirmed to be 12" HDPE. The

catchbasin and manhole structures included both block and brick structures. The existing conditions plan has been revised accordingly. Following the site visit, the contributing drainage subcatchments for each structure were delineated based upon the existing conditions survey plan, GIS data, aerial images, on site observations made during the March 14th visit and proposed improvements plans. Pipe sizing calculations were performed for the 25-yr storm event. Based upon the peak flows comparison and pipe sizing calculations, the existing Fruit Place and "Fruit Place Extension" drainage network has sufficient pipe capacity for both the current and improved site conditions. The pipe sizing calculations are attached with this letter.

Table 1: Peak Flow and Volume Comparisons
STUDY POINT 1

DESIGN STORM	PRE-DEVELOPMENT		POST-DEVELOPMENT		PERCENT REDUCTION	
	PEAK FLOW (CFS)	VOLUME (AF)	PEAK FLOW (CFS)	VOLUME (AF)	PEAK FLOW	VOLUME
2 YR	6.61	0.467	6.53	0.520	1%	-11%
10 YR	10.31	0.749	10.00	0.818	3%	-9%
25 YR	12.66	0.933	12.24	1.013	3%	-9%
100 YR	15.52	1.160	15.01	1.251	3%	-8%

We believe our response sufficiently addresses the DPW comments. Revised plans and Stormwater Analysis and Drainage Report will be provided to the Planning Board accordingly. We look forward to working with the City of Amesbury DPW as this project moves forward. If you have any additional questions and/or require further clarification, please contact me at (508) 833-6600 ext 155 or bkuchar@horsleywitten.com.

Sincerely,
HORSLEY WITTEN GROUP, INC.

Brian Kuchar, R.L.A., P.E., LEED A.P.
Senior Landscape Architect/Engineer

Attachments

cc: David Martin – Martin Development, LLC
Nick Cracknell - Keystone Planning & Design
Nipun Jain – City of Amesbury Planner

Mill 77 Redevelopment
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Amesbury, MA

EXISTING CONDITIONS

WASTEWATER DESIGN FLOW CALCULATION (BASED ON TITLE 5)

	AREA (SF)	DESIGN CRITERIA	DESIGN FLOW
Ground Floor Retail	8,296	50 gpd/1,000 s.f.	415
1st Floor Office	8296	75 gpd/1,000 s.f.	623
2nd Floor Office	7546	75 gpd/1,000 s.f.	566
		Design Flow	**1,604**

DEVELOPMENT OPTION 1

WASTEWATER DESIGN FLOW CALCULATION (BASED ON TITLE 5)

	AREA (SF)	DESIGN CRITERIA	DESIGN FLOW
Ground Floor Office	6761	75 gpd/1,000 s.f.	508
1st Floor Office	7162	75 gpd/1,000 s.f.	538
2nd Floor Office	6681	75 gpd/1,000 s.f.	502
		Design Flow	**1,548**

DEVELOPMENT OPTION 2

WASTEWATER DESIGN FLOW CALCULATION (BASED ON TITLE 5)

	AREA (SF)	DESIGN CRITERIA	DESIGN FLOW
Ground Floor Office	2926	75 gpd/1,000 s.f.	220
Ground Floor Retail	3835	50 gpd/1,000 s.f.	192
1st Floor Office	7162	75 gpd/1,000 s.f.	538
2nd Floor Office	6681	75 gpd/1,000 s.f.	502
		Design Flow	**1,452**

DEVELOPMENT OPTION 3

WASTEWATER DESIGN FLOW CALCULATION (BASED ON TITLE 5)

	AREA (SF)	DESIGN CRITERIA	DESIGN FLOW
Ground Floor Office	160	75 gpd/1,000 s.f.	12
Ground Floor Retail	1952	50 gpd/1,000 s.f.	98
1st Floor Office	7162	75 gpd/1,000 s.f.	538
2nd Floor Office	6681	75 gpd/1,000 s.f.	502
		Design Flow	**1,150**

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PIPE SIZING CALCULATIONS

From	To	A_i (sf) Imperv.	Ai (ac) Imperv.	A_p (sf) Perv.	A_p (ac) Perv.	Atotal (acres)	C_i	C_p	C_w weighted	Tc (min)	i (iph)	Q_{actual} (cfs)	L (ft)	Pipe Dia. (in.)	n	Pipe Slope (ft/ft)	$V_{capacity}$ (fps)	$Q_{capacity}$ (cfs)	Qactual from Chamber Outlet
PIPE RUN 1 - Fruit Place and "Fruit Place Extension"																			
CB1		11207.00	0.2573	3434.00	0.0788	0.2573	0.90	0.20	0.90	5.00	5.40	**1.25**							
	DMH 101												142.00	12	0.0130	0.1490	17.50	**13.75**	
DMH 101		0.00	0.0000	0.00	0.0000	0.2573	0.90	0.20	0.90	5.05	5.40	**1.69**							**0.44**
	CB2/DMH												52.58	12	0.0130	0.1490	17.50	**13.75**	
CB 300		7383.00	0.1695	0.00	0.0000	0.4268	0.90	0.20	0.90	5.06	5.40	**2.51**							
	CB2/DMH												8.00	12	0.0130	0.0100	4.53	**3.56**	
CB2/DMH		0.00	0.0000	0.00	0.0000	0.4268	0.90	0.20	0.90	5.13	5.40	**2.51**							
	CB 3												22.00	12	0.0130	0.0100	4.53	**3.56**	
CB 3		5760.00	0.1322	0.00	0.0000	0.5590	0.90	0.20	0.90	5.26	5.40	**3.16**							
	CB 300												35.36	12	0.0130	0.0600	11.11	**8.72**	
CB 300		1394.00	0.0320	330.00	0.0076	0.5986	0.90	0.20	0.89	5.42	5.40	**3.32**							
	CB 5												108.24	12	0.0130	0.0600	11.11	**8.72**	
CB5		22158.00	0.5087	1377.00	0.0316	1.1389	0.90	0.20	0.88	5.50	5.40	**5.86**							
	DMH												51.00	10	0.0130	0.0800	11.36	**6.19**	