



VM CONSULTING ENGINEERS, LLC
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February 11, 2022

Ms. Angela Gile
Winn Development Company Limited Partnership, Project Director
One Washington Mall, Suite 500
Boston, MA 02108
agile@winnco.com

Re: 1 Elm Place, Swampscott, MA

Dear Angela,

On behalf of the Town of Swampscott, VM Consulting Engineers (VMCE) performed a peer review of the sewer, water and stormwater infrastructure proposed by Winn Development Company Limited Partnership (Developer) in the "Elm Place" civil plans and engineering design documents, submitted to the Town of Swampscott October 1, 2021.

This peer review is based on a review of, *Elm Place, Comprehensive Permit Preliminary Site Plan, 1 Elm Place, Swampscott, "Grading and Drainage Plan," Sheet C-4, "Utilities Plan," Sheet C-5, Received by Town Clerk 10/01/21, and Stormwater Report In Support of Comprehensive Permit Filing for Winn Development, January 2021*. A number of our comments reflect the need for additional information as the design is currently in a preliminary state. Our comments are as follows:

Sewer

1. 1 Elm Place will add 66 gpm (peak flow) to the sewer. *66 gpm is based on 168 proposed bedrooms at Elm Place, 110 gpd/bedroom and a peaking factor of 5.5.*

The 8-inch sewer in Essex Avenue currently receives flow from approximately 300 existing parcels, 14,000 linear feet of sewer and the Swampscott High School. Based on wastewater flow estimates, the existing 8-inch sewer is at capacity. Therefore, the existing 8-inch sewer in Essex Avenue cannot accommodate an additional 66 gpm of wastewater peak flow from 1 Elm Place. Further discussion between the Town and the Developer is required to determine necessary sewer infrastructure upgrades to accommodate the additional flow.



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To facilitate the discussion, we recommend that the Developer conduct a closed-circuit television (CCTV) inspection of the existing 8-inch sewer in Essex Street from the intersection of Burpee Road 600-feet southwest to Burrill Street, and the existing sewer in Burrill Street 500-feet south to the intersection of Columbia Street. Footage from the inspection shall be delivered to the Town for their review.

2. Provide sewer inverts.
3. Provide sewer profile. Provide existing and proposed sewer inverts. Include slope of proposed sewer service. Show intersecting utilities and physical obstructions in the sewer profile. Provide stationing.
4. All sewer infrastructure shall adhere to Town's standards. Provide details and technical specifications for sewer infrastructure, including sewer manhole, pipe trench construction, sewer services, sewer cleanout.
5. Use manholes instead of cleanouts in the public way.
6. Provide a maintenance plan for sewer cleanouts including identification of the party responsible for operation and maintenance of the sewer cleanouts.
7. Provide detail to show how proposed 8-inch sewer service will be cored into the sewer manhole in Pitman Road.
8. Provide existing and proposed inverts in the Pitman Road sewer manhole.
9. Confirm that the sewer manhole in Pitman Road can receive an 8-inch sewer service without compromising the structural integrity of the manhole.
10. Provide detail for proposed three-way connection of the discharge from the oil/grease separators / catch basins to the new 8-inch sewer service.
11. Provide proposed wastewater flow from the oil/grease separator.
12. Provide size and material of sewer south tying directly into 8-inch VC over 5-inch VC flowing south in Pitman Road (Oil/Grease Separator Sewer Tie-in, no proposed manhole, no sewer slope and/or profile, no detail of this sewer tie-in).
13. Proposed sewer should intersect existing sewer with a smooth transition (wye instead of a tee) to reduce turbulence and potential corrosion in the manholes.



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Water

1. Provide drinking water demand for 1 Elm Place.
2. All water infrastructure shall adhere to the Town's standards. Provide details and technical specifications on water main design including trench, hydrant, gate valve, water service, bends, push-on and mechanical joint restraints, thrust blocks.
3. Provide stationing.
4. Water service length should be minimized. In the proposed design, the service for 1 Elm Place is tapped off the water main in Essex Street. This creates an undesirable parallel water main in Pitman Road, until the service enters the building approximately 60 feet down Pitman Road. The service for 1 Elm Place should either enter the building on Essex Street, or the service connection should be moved onto Pitman Road and the Pitman Road main upgraded from 6-inch to 8-inch to the location of the new service.
5. Fire hydrants must be in the public way and hydrant lateral lengths should be minimized. Therefore, the proposed hydrant should be fed from Elm Place, not Essex Street. In order to accommodate the new hydrant, the existing 2-inch water main in Elm Place should be upgraded to 8-inch.
6. Cut into existing water main instead of using tapping sleeve and valves.
7. Show proposed bends in water main.
8. Water main must use field-lok gasket push-on joint restraints. All mechanical joints must be restrained with Mega-lugs.
9. Provide detail of connection into 8-inch main in Essex Street. Include elevations and intersecting utilities.
10. Provide detail for cutting and capping existing water services in Pitman Road and Essex Street. Services must be shut off at the corporation and inspected by the Town.



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Stormwater

1. Table 1B.1 – Site Criteria for Infiltration Basins of the Chapter 2 of the Massachusetts Stormwater Handbook states, “One soil sample for every 5,000 feet of basin area is recommended, with a minimum of three samples for each infiltration basin. Samples should be taken in the actual location of the proposed infiltration basin so that any localized soil conditions are detected.” None of the borings were performed where the proposed stormwater treatment unit is sited. Please clarify.
2. Provide the seasonal high groundwater elevation at the site.
3. The borings were performed in August, 2020. Seasonal groundwater levels are typically low in August. Is there any groundwater data available from the spring season?
4. Provide details of the Stormtech chambers with inverts. Show groundwater elevation.
5. The function of the Stormtech chambers depends on the elevation of the weir in the manhole proposed at the southeast corner of the Stormtech system. Will this weir be in a standard drain manhole or a non-standard drainage structure? How will the weir be constructed? Please provide a detail and specification for this manhole/structure. Show the weir and orifice elevations, and inverts in the detail.
6. Describe the purpose of the orifice in the drainage manhole/structure at the southeast corner of the Stormtech system.
7. The south invert into the 6-foot drain manhole is 27.9, which is lower than the manifold elevation of 28.40. The 20-feet of HDPE drainage pipe feeding this south invert will not fully drain; it will always contain about 6-inches of water. Please clarify.
8. Is there a hydraulic grade line calculation for the drainage in the 40S catchment area?



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9. Provide a detail for the 6-foot drainage manhole. Show the five inverts into the manhole. Also, please show that there will be sufficient space between the pipes to maintain the structural integrity of the manhole.
10. Provide details and technical specifications for drainage infrastructure including trench construction, drain manhole and catch basin.
11. 15-inch drain from Stormceptor will be buried below parking garage in the building. Provide information on how the owner will access the pipe for service, and confirm that the pipe will have sufficient cover for traffic load.
12. Create smooth flow transitions in the stormwater system (wyes), instead of 90-degree pipe intersections at manholes (tees).
13. In the Standard 3: Recharge section of the Elm Place Stormwater Report, a drawdown time of 116 hours is given. It could be that 116 hours is a typo, as it looks like drawdown time was calculated to be 10.3 hours. Please clarify.
14. Provide more information on the decision to not include the groundwater depth found in boring B-8 in the stormwater design calculations. The Stormwater Report states, “the observation of groundwater was performed immediately following drilling utilizing the wet rotary method due to time constraints and may not be valid.”
15. Is there any stormwater treatment proposed for the 60S catchment area?

General

1. Provide pavement repair detail and provide specifications.

Please let us know if you have any questions or require clarification.

Sincerely,

Eileen M. Cahill
Eileen M. Cahill, P.E.

cc. Marzie Galazka, Swampscott Director of Community and Economic Development
Gino Cresta, Jr., Swampscott Director of Public Works
Victoria Masone, VMCE