

CITY OF NEWTON
Department of Public Works
ENGINEERING DIVISION

MEMORANDUM

To: Council Rick Lipof, Land Use Committee Chairman

From: John Daghlian, Associate City Engineer

Re: Special Permit – 148 Pine Street

Date: March 30, 2020

CC: Barney Heath, Director of Planning
Jennifer Caira, Deputy Director of Planning
Neil Cronin, Chief Planner
Lou Taverna, PE City Engineer
Nadia Khan, Committee Clerk
Katie Whewell, Sr. Planner

In reference to the above site, I have the following comments for a plan entitled:

*Proposed Conditions Plan
148 Pine Street
Newton, MA
Prepared by: Verne T. Porter Jr., PLS
Dated: December 5, 2019*

Executive Summary:

This permit entails the demolition of an existing single-family home and the construction of three detached single-family units on an 18,235 square foot [0.41 acre] lot. The property has about 85-feet of frontage along Pine Street and has a shared common driveway with # 146 Pine Street that provides access to the rear of the site and garages. The topography varies from a high elevation at Pine Street at 57-feet and slopes steeply down the driveway to a low area at elevation 46-feet. Existing from the driveway is somewhat dangerous as there is an evergreen bush juxtaposed to the driveway apron on the east side which limits safe sight distance. Since this property is directly across the

Burr School students walk along this property, I would request that this bush be removed for safety concerns of all pedestrians.



View looking East existing the existing/ proposed driveway location



View looking North towards Burr School

The property has an existing wooden retaining wall that runs the entire length of the westerly property line and needs attention.



Existing wooden retaining wall along western property line

Portions of the wall will be removed, and a new wall is proposed; however, the material, drainage from behind the wall, and construction system has not been specified. Walls over 3-feet in height need a safety fence along its alignment. I recommend that the wall placement be setback 1-2 feet for ease of construction and future maintenance.

On site soil testing and investigation was performed on August 21st which revealed that the site has a high ground water elevation which was encountered between 2- 2.3' below the ground surface. I have a concern for dewatering during excavation of the foundations and installation of various utilities. The engineer of record has not addressed this issue. Associate with the high ground-water issue is waterproofing the proposed basements of the new dwellings. Additionally, the soils encountered are peat (a very organic soil having poor bearing capacity) the engineer of record and the architects need to ensure that proper foundations are designed to minimize any settlement. The proposed manhole and catch basin will need a spread footing beneath the precast units to minimize settlement.

The design includes a stormwater collection and infiltration system for runoff from the roofs and driveways. House unit #1 has the roof runoff connected to infiltration system that will be in the front yard. This system is less than 10-feet from the property lines therefore impervious barriers have been incorporated in the design surrounding the system. Units #2 & 3 have the roof runoff connected to the collection system that will direct the water to a pump chamber which will discharge flow to a proposed underground infiltration system. The applicant needs to add a standby generator to power the pumps that discharge water to the chambers as this is not a gravity system.

Design calculations for the pump chamber is needed for evaluation. The pump system will need backup power to ensure the pumps work during rainstorm events and if electric power is interrupted. There is a discrepancy in the drainage report specifically on page 2 of the Operations & Maintenance plan it references "*the major components associated with maintenance needs are the proposed leaching dry-wells and rain garden that will handle the runoff from the proposed roofs and paved driveway/parking areas.*" The revised plans do not have a "rain garden" it has an underground infiltration system comprising of 60 Cultec chambers. Calculations are needed that demonstrates that the chambers will completely drain within 72 hours as required by DEP. The drainage report although complete did have minor errors that need correction before being approved; there are early warnings for early flow that require earlier time spans, this needs to be corrected.

Sheet L1.1 shows an area for temporary construction parking area, the entrance to this area is directly over an existing City Sewer Easement, there is a concern that vehicles traversing over the sewer pipe may damage the pipe. It is recommended that the entrance be relocated to avoid cross over the existing pipes.

The Operations and Maintenance plan should be corrected by removal of the reference to "rain gardens" once this is updated it will be acceptable, and it needs to be recorded at the Middlesex Registry of Deeds and proof or the recording is required.

The site plan shows a 10-foot wide City sanitary sewer main traversing the site in a west to east orientation, however it appears that the pipe is outside the actual easement. Prior to any construction a Closed Circuit Television [CCTV] inspection with a tracer unit shall be performed & witnessed by the Engineering Division, to accurately delineate the pipe on the ground. Copies of the video inspection shall be provided to the City Engineer.

Construction Management:

1. A construction management plan is needed for this project. At a minimum, it must address the following: staging site for construction equipment, construction materials, parking of construction worker's vehicles, phasing of the project with anticipated completion dates and milestones, safety precautions, emergency

contact personnel of contractor. It shall also address any anticipated dewatering during construction, site safety & stability, and impact to abutting properties.

2. Stabilized driveway entrances are needed during construction which will provide a tire wash and mud removal to ensure City streets are kept clean.

ON PLAN
Detail
Sheet #
3 of 6

Drainage:

1. Elevations of the bottom of the rain garden is needed. N/A
2. Detailed profile of the proposed drainage system is needed, specifically rim and invert elevations from the proposed catch basin to the pump chamber and then discharge pipe to the rain garden and finally at the overflow weir. All elev. ON PLAN
3. It is imperative to note that the ownership, operation, and maintenance of the proposed drainage system and all appurtenances including but not limited to the drywells, catch basins, and pipes are the sole responsibility of the property owner(s).
4. Minor warnings were encountered with the hydrography on page 12 of the Hydrocad software output, this needs attention.

Environmental:

1. Has a 21E investigation & report been performed on the site, if so copies of the report should be submitted the Newton Board of Health and the Engineering Division.
2. Are there any existing underground oil or fuel tanks, are they to be removed, if they have been evidence should be submitted to the Newton Fire Department, and Newton Board of Health.

Sewer:

1. The existing water & sewer services to the building shall be cut and capped at the main and be completely removed from the main and the site then properly back filled. The Engineering Division must inspect this work; failure to having this work inspected may result in the delay of issuance of the Utility Connection Permit.

Note
8 & 9

2. With the exception of natural gas service(s), all utility trenches with the right of way shall be backfilled with Control Density Fill (CDF) Excavatable Type I-E, detail is available in the City of Newton Construction Standards Detail Book.
3. All new sewer service shall be pressure tested and videotaped after final installation is complete. The sewer service will NOT be accepted until the two methods stated above is completed. All testing MUST be witnessed by a representative of the Engineering Division. A Certificate of Occupancy will not be recommended until this test is completed and a written report is received by the City Engineer. ***This note must be added to the final approved plans.***
4. All sewer manholes shall be vacuum tested in accordance to the City's Construction Standards & Specifications. The sewer service will NOT be accepted until the manhole(s) pass the testing requirements. All testing MUST be witnessed by a representative of the Engineering Division. A Certificate of Occupancy will not be recommended until this test is completed and a written report is received by the City Engineer.

Noted
Already
on plan

See
Note 13
Already
on plan

Water:

1. All water connections shall be chlorinated & pressure tested in accordance to AWWA and the City of Newton Construction Standards and Specifications prior to opening the connection to existing pipes.
2. Approval of the final configuration of the water service(s) shall be determined by the Utilities Division, the engineer of record should submit a plan to the Director of Utilities for approval

General:

1. All trench excavation contractors shall comply with Massachusetts General Laws Chapter 82A, Trench Excavation Safety Requirements, to protect the general public from unauthorized access to unattended trenches. Trench Excavation Permit required. This applies to all trenches on public and private property. ***This note shall be incorporated onto the plans***
2. All tree removal shall comply with the City's Tree Ordinance.
3. The contractor is responsible for contacting the Engineering Division and scheduling an appointment 48 hours prior to the date when the utilities will be made available for an inspection of water services, sewer service, and drainage

Already
on plan
#18

Note 2
Already
on plan

system installation. The utility is question shall be fully exposed for the inspector to view; backfilling shall only take place when the City's Inspector has given their approval. *This note should be incorporated onto the plans*

4. The applicant will have to apply for Street Opening, Sidewalk Crossing, and Utilities Connecting permits with the Department of Public Works prior to any construction. *This note must be incorporated onto the site plan.*

Revised
Note 3

5. The applicant will have to apply for a Building Permits with the Department of Inspectional Service prior to any construction.

6. Prior to Occupancy Permit being issued, an As-Built Plan shall be submitted to the Engineering Division in both digital format and in hard copy. The plan should show all utilities and final grades, any easements and final grading, improvements and limits of restoration work. The plan shall also include profiles of the various new utilities, indicating rim & invert elevations, slopes of pipes, pipe material, and swing ties from permanent building corners. ***This note must be incorporated onto the final contract plans.***

Note 1
Already
on plan

7. All site work including trench restoration must being completed before a Certificate of Occupancy is issued. *This note must be incorporated onto the site plan.*

Note 1
Already on
plan

8. The contractor of record shall contact the Newton Police Department 48 hours in advanced and arrange for Police detail to help residents & commuters navigate around the construction activity.

9. If any changes from the original approved design plan that are required due to unforeseen site conditions, the engineer of record shall submit a revised design & stamped and submitted for review and approval prior to continuing construction.

Note: If the plans are updated it is the responsibility of the Applicant to provide all City Departments [Conservation Commission, ISD, and Engineering] involved in the permitting and approval process with complete and consistent plans.

If you have any questions or concerns please feel free to contact me @ 617-796-1023.