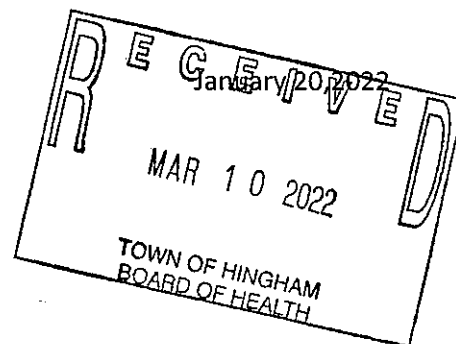


Dewatering Plan
For
220 Summer Street



Purpose: the purpose of this plan is to present the means and methods necessary to dewater the existing foundation hole at the above noted address and maintain water levels in the foundation excavation below the proposed footing elevations for a sufficient time to allow the foundation to be erected and the proposed drainage system to be installed which will divert the flows from Summer Street around the foundation area. In addition, it is important that the dewatering methodology will not result in any significant increase in flows to the north which could potentially impact the abutting lot to the north.

Project Description: the proposed development of the lot will ultimately be a 4-bedroom single-family dwelling with a 3-car garage. Driveway access will come from Kilby Street.

Originally, the existing lot was approximately 5-7' lower than Summer Street and was dominated by a subsurface drain down the middle of the lot which directed both runoff and groundwater north towards Route 3A. Primary flows through the drain were flows from beneath the masonry retaining wall along Summer Street which are a combination of groundwater and runoff from the Summer & Kilby Street intersection.

Construction on the site was started in summer of 2021 and involved excavating and setting grades for the foundation. In conducting this excavation, the subdrain was removed and a channel was dug from the foundation area up to the stonewall along Summer Street. based upon the proposed foundation grades, the excavation was levelled at approximately elevation 37.0±. When construction was halted by the Planning board, the heavy rainfall we experienced this summer filled the foundation hole on several occasions. Without an outlet, water levels in the excavation reached the top of the embankment at elevation 38.5 ± near the former cart path. Because the excavation has been exposed for such a longer period than originally anticipated, the infiltrative capacity of the stone fill that was installed in the bottom of the excavation has diminished over time. Presently it appears that water levels are being maintained at approximately elevation 37.3 even during periods outside the periods of increased rainfall. At this elevation, the depth in the excavation is approximately 4". Ultimately, the plan is to install a 6" drain line from Summer Street to the existing discharge point at the northerly property line. The intent of this plan is to provide a means to dewater the excavation and maintain water levels low enough to allow the foundation to be erected until the drain line is completed and the flow no longer represents any further potential damage to the dwelling.

Proposed improvements: The proposed basement slab will be set at elevation 39.5. In order to set the top of the slab at this elevation, the bottom of the proposed footing will be set at elevation 38.17. based

upon this elevation, 14" of 1-1/2" aggregate will be required to be set in the excavation to raise the grade from its current 37.0 to elevation 38.17. In order to maintain water levels in the foundation excavation area low enough to allow the construction to move forward we will provide a means for the water coming from Summer Street to continue to flow around the excavation without causing any surge in flow conditions to the north which could impact the abutter. In order to perform this task, we are proposing to install a leaching pit on the northeast corner of the foundation on the opposite side of the old cart path. Test pits conducted in this area indicated that ESHGW are at elevation 35.3±. The bottom of the pit would be set at this grade which would allow any water entering the pit to infiltrate through the sand on this portion of the lot. A plan is attached which shows the proposed leaching pit along with a detail. The foundation excavation will be connected to this pit via an excavated channel set level at elevation 37.0. A 12" check dam will be set in the channel to help minimize sediment transport from the foundation area into the pit. A diversion channel around the foundation will be maintained until the footing has been poured and stripped. Once completed, the foundation drain shall be installed just outside the footing as shown on the plan detail and connected with the lower portion of the drainage system. with this system in place and functioning, the diversion channel can be filled with aggregate in order to maintain a hydraulic connection with the leaching pit. Once this is completed, a connection between the flow from summer street to the northerly edge of the parcel will be available to keep groundwater levels on the site in check until the drainage system is completed. Once the system is completed, the channel from Summer Street can be filled, and the leaching pit removed.

