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Acton Survey & Engineering, Inc.

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March 6, 2007

Board of Selectmen
472 Main Street
Acton, MA 01720

Re: Bravo – 288 Main Street
Site Plan Special Permit 7/11/06-409
6270

Dear Board Members:

As the result of discussions with the Town Engineer additional subsurface explorations were made along the east and front property lines of Mr. Bravo's residence. The location and depth of the explorations were impacted by the size of the excavator used and frozen ground and snow cover.



A small track mounted excavator was used to negate the need for tree removal and possible destruction of driveway pavement which could increase the potential of products of erosion being transported to Main Street.

Groundwater was encountered at shallow depth in exploration 37-3, which appears to be an anomaly when compared to levels encountered in the other explorations. Instead of determining why groundwater was encountered at three feet in this area, we decided to eliminate recharge being provided by the driveway trench and provide additional facilities for the storage and recharge of runoff in the front yard.

The trench along the driveway is to remain as it will intercept runoff from adjacent properties decreasing the flow of runoff onto the driveway and will serve to store and recharge runoff from rainfall events occurring during periods of the year when groundwater levels are low [deeper below the ground surface].

The trench will also serve to protect the driveway pavement from frost action.

The excavator could only dig to depths of 56 and 79 inches in the area of the site near the free standing garage. As it was deemed that wedge boulders at the bottom of exploration 37-1 were the cause of shallow depths being reached exploration 37-2 was made to ascertain the correct depth to refusal [bedrock]. Excavation 37-2 achieved a depth of 79 inches.



The depth to groundwater in exploration 37-2 was determined to be 67 inches and it was determined that recharge from the trench adjacent to the garage retaining wall would not be considered as providing recharge and storage, but rather only serve to collect and transport runoff and protect the garage from infiltration.

To compensate for the lack of storage and recharge in the garage trench, the recharge works provided by the patio on the East side of the garage was revised to include a

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shallow chamber system. The bottom of the patio recharge system is near the surface of the existing ground.

The stormwater collection, storage and recharge system serving the residences remains as originally proposed.

We must reiterate that runoff presently flows down the existing driveway and onto Main Street and includes off site flows from properties to the West. The proposed system will decrease the flow from the site onto Main Street under all storm conditions.

If prior to the continued public hearing the Engineering Department should desire to meet with me to discuss and review the calculations, I will make every reasonable attempt to make myself available.

Very truly yours,
Mark T. Donohoe, PE

For:
Acton Survey & Engineering, Inc.

cc: Edward Bravo

