



**K. SMART ASSOCIATES LIMITED**  
CONSULTING ENGINEERS AND PLANNERS

85 McIntyre Drive  
Kitchener, Ontario  
N2R 1H6  
Tel: (519) 748-1199  
Fax: (519) 748-6100

653025 Doggit Road  
R.R. #2, Englehart, Ontario  
POJ 1H0  
Tel: (705) 544-2750  
Fax: (705) 544-2750

283 Larch Street  
Sudbury, Ontario  
P3B 1M2  
Tel: (705) 674-1082  
Fax: (705) 674-2332

1845 Hwy 613 North  
R.R. #1, Devlin, Ontario  
POW 1C0  
Tel: (807) 486-0287  
Fax: (807) 486-3428

June 11, 2003

File No. 03-060

Jim Harmer  
Township of East Zorra-Tavistock  
Box 100  
Hickson ON  
NOJ 1L0

**RE: 17 BEACHLER AVENUE**

Dear Jim:

Our investigation of the storm service into house Number 17 on Beachler Avenue is now complete. We have reviewed our as-built drawings and we have reviewed the survey notes and this along with our test of flushing the fire hydrant has provided us with enough information to finalize our report.

We had determined from the survey and from the as-built drawings that the service line is either running flat or with very little grade on it, which might allow for backwater flows from the main line. In order to establish whether or not this is true, we had the County flush the fire hydrant closest to the house on the corner of Queen and Beachler.

On our first test with the County, we watched the outlet of the sump pump and noticed that within minutes of opening the fire hydrant, the sump pump turned on and ran. However, it did not stay on or run again after it had drained down the initial water level in the sump pump pit. From this we could not determine if the flushing of the fire hydrant had any influence on the sump pump. The initial water level could have triggered the pump without the flushing. That, plus the fact that the County had other hydrants open and the water pressure was not as high as it could be, led us to do another test in greater detail.

In the second test, we again had the County flush the fire hydrant on Queen and Beachler but before they started, we had entered the house and manually ran the sump pump to lower the initial water level in the pit. We noticed at that time that the subdrain was not directly connected into the pit. We then took a measurement from the floor to the water level and marked the time. The County started flushing the water into the main line and we continued to measure the water level. Along with the measuring of the water level, we put green dye into the main storm sewer to see if it would back up into the sump pump pit. After 45 minutes of constant flushing, the sump pump had not run once and the green dye had not entered the pit. The water level had raised approximately 4". It would take an increase of 6" in total before the water level would trigger the sump pump to turn on. We calculated an approximate increase in water level at ½" every 5 minutes.

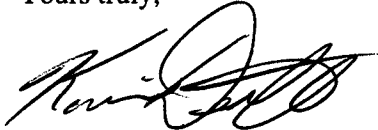
From the second test, it is our opinion that the sump pump does not run because of flushing of the fire hydrants. This would indicate that there is a grade from the house to the main line.

Although the indicated proved that the water did not back flow from the flushing of the fire hydrants, we would suggest that the owner look at doing the following:

1. Put in a backwater check valve at their expense and have it done in a manner that will leave it accessible for future maintenance.
2. Provide a piped outlet for their sump pump into the rear yard catchbasin. This would help eliminate the problem of always having a wet area in the backyard due to the on surface discharge.

If you have any questions, please contact the undersigned.

Yours truly,



Kevin Death, CET

mw