



K. SMART ASSOCIATES LIMITED
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August 2, 2006

File No. 03-048

Jim Harmer
Drainage Superintendent
Township of East Zorra-Tavistock
Box 100
Hickson ON N0J 1L0

COPY

RE: STRAUSS DRAINAGE CONCERNS

Dear Jim:

As requested, I attended on site on July 25, 2006 and made a review of the catchbasin inlets to the Tavistock Drain 1987 in the area of Rudy Avenue, Holley Avenue and Henry Vogt Avenue. The purpose of this review was to determine/confirm any reserve capacity in the Tavistock Drain 1987. The request to determine any unused capacity was as a result of a letter submitted by Mr. M. Strauss to the Municipality on June 1, 2006.

My field review involved inspecting each catchbasin that is known to exist and that could admit water to the Tavistock Drain 1987. The review started at the rear of the Strauss property and proceeded upstream. I reviewed a total of 20 catchbasin inlets. As a result of my review I feel that the flow being admitted by the total of the catchbasins in a heavy runoff situation is 9 cubic feet per second (cfs). (Some inlets do not admit much if any water while others would allow more than the average.) With an allowance of 1 cubic feet per second for connections from houses, the total calculated flow in the portion of drain from the Strauss lot southerly would be in the magnitude of 10 cfs.

The Branch A drain if flowing without head would contribute 14.2 cfs. The limiting section of drain downstream of the Strauss property is the section from the junction with the Branch A Drain downstream for a length of 240 metres \pm . The capacity in this section is 25 cfs. With the addition of the 10 cfs and the 14.2 cfs, the total is 24.2 cfs.

This indicates that a further 0.8 cubic feet per second of runoff could be admitted to the drain. This would allow the catchbasin at the rear of the Strauss lot to have either a 6" connection rather than a 4" connection, or would allow such catchbasin to be removed and replaced with a 4" hickenbottom with a 6" lead to the drain.

The additional reserve capacity as noted in this letter is as a result of an actual field inspection of all basins. The previous calculations were based on the general knowledge of the catchbasins that existed and an inspection of only a few catchbasins that were believed to be high.

All flow calculations are based on storm drainage waters only and do not consider the possibility that sanitary flows could be in the storm drain.

I would recommend that any new connection be made using a "wye" to improve the efficiency of the connection.

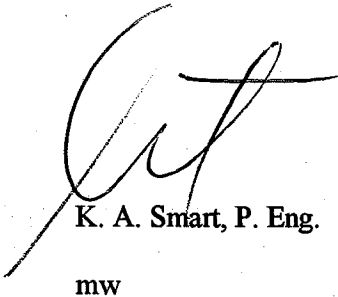
A further assumption that I made in this calculation is that minimal top waters enter the manhole at the junction of the Branch A and Main Drain. Although staff have advised that this assumption is correct, I would recommend that a manhole grate rather than a catchbasin grate exist on this catchbasin.

While doing this analysis it became evident that the limiting section in this Tavistock Drain 1987 is the section from Sta. 900 to 1+139 (239 metres) where the 750mm pipe is at 0.22% grade. This is the interval where the calculated reserve is 0.8 cfs. Downstream of Sta. 900 where the grade increases to 0.51%, an added reserve of 10 cfs is available.

I trust this is the information requested. If there are any questions, please contact the undersigned.

Our invoice for services rendered is being submitted under separate cover.

Yours truly,



K. A. Smart, P. Eng.
mw

Council Resolution from September 20, 2006 Meeting

Resolved that Council defer action on the Strauss catchbasin concern as setout in the letter from K. Smart Engineering dated August 2, 2006 until it is determined whether the possible change would still be required following additional analysis from the Master Drainage Plan and results and finalization of the Bender Drain petition;
And further that this matter be further reviewed and considered as other projects and works are undertaken and examined.