

ENGINEER'S REPORT

WILLIAM CONNOR DRAIN

TOWNSHIP OF WILLIAMSBURG

1967

TO THE REEVE AND MEMBERS OF COUNCIL

TOWNSHIP OF WILLIAMSBURG

Gentlemen:

The following report is respectfully submitted under Section 3 of The Drainage Act, 1962-63, and deals with the proposed construction of the William Connor Drain.

This drainage scheme affects lands in Concession 8 of your township, and also, properties in Concessions 1 and 2 in the Township of Winchester. The total drainage area contains 417 acres, of which 168 acres are in the Township of Winchester.

The course of the old award ditch has been mainly followed. However, some branches had to be added to render the scheme more effective. The east part of the Village of Winchester Springs is affected because all the water from properties east of Highway No. 31 use the proposed work as an outlet by means of two tile outlets.

PLAN

A plan has been prepared showing the names of the owners written within the limits of their respective properties. The limits of the drainage area are shown outlined in yellow and the benefit area in red. The course and extent of the proposed work is shown by means of a heavy blue line, and turns and intersections with property lines have been referenced to the hub line.

PROFILE

During the course of our survey, wooden stakes and numbered markers, called "Stations", were driven in average ground bordering the drain at hundred foot intervals. Levels and soundings were then taken and their results plotted to the scales shown to form a profile of the work. The hub line, the present ditch bottom and the proposed new grade are as shown thereon by the solid irregular line, the broken irregular line, and the red regular line respectively. Cuts from the hub line to reach the new grade are as shown in feet and decimals of a foot along the top of the profile. The depth of earth required to be removed from the bottom of the drain is shown coloured yellow.

DESCRIPTION OF WORK

A new drain, 1,565 feet in length, will be constructed along the south side of the boundary road between the two townships. It will start at the lot line between the properties of Mr. William Thompson and Mr. G. Coughlar, some 66 feet east of the Orange Hall in the village of Winchester Springs. The 66 foot long section fronting Mr. Coughlar's most easterly lot will be cleaned only, to improve the outlet of the village drain pipe on the south side of the road. Eventually this pipe could be extended to the new ditch on Mr. Thompson's property, but I have not included this in my present report because this seems to be a job for the township road forces as it will not qualify for subsidy.

The new cut along the south side of the boundary road will be entirely off the 66 foot road allowance, and the present southerly road ditch will be filled and graded. The land east of the village is extremely flat, and, therefore, the land immediately north of the road is difficult to drain. In order to avoid the construction of another expensive section of drain along the other side of the road, I recommend that the land situated along the north side of the road be drained by means of three road culverts, to be located opposite Stations 1+40, 7+20 and 10+39, as marked on the accompanying plan as Culverts "A", "B" and "C". The drain along the south side has been designed sufficiently deep and large to take this extra water.

As far as the Main Drain is concerned on the Winchester side, considerable straightening will have to be done on the lower one-half mile of drain, especially between the Walker and Morrow properties on the Northwest 1/4 of Lot 6, Concession 1. Almost 600 feet of straight cut will be made leading up to the road bridge across the concession road between Concessions 1 and 2. The location of the new ditch has been laid out at the request and in agreement with both owners, so as to cut off areas of equal size from each property. Also, on the north side of the road several large loops will be cut off to improve the flow of the water.

Four branches are to be constructed under the scheme, and their locations are shown on the accompanying plan. The cost of these branches has been assessed against the owners of lands affected by their construction.

FARM BRIDGES

The construction of seven farm bridges are rendered necessary under this scheme. These bridges are to be built as high as the neighbouring banks, and constructed and maintained by their respective owners.

In the case of future maintenance, for each ten year interval between the date of construction and a subsequent maintenance scheme, the owner shall be allowed the equivalent of one-third of the farm bridge allowance as allowed by the Engineer at that time. This allowance shall not, however, be increased beyond one hundred percent of the normal payment, and shall not be paid unless the owner did construct a bridge of sufficient size for which an allowance is herein made, and has kept it in a proper state of repair. This is to be determined by the Engineer, and will apply only when a large enough maintenance program is being carried out to require the service of an Engineer, and when the cost thereof is spread over the entire scheme.

ROAD BRIDGES

Culvert "A" - I propose that a new 24 inch road culvert be constructed across the boundary road to provide an outlet for Branch "A". The northerly village drain pipe should be connected to run into this new road culvert. This will avoid the necessity of maintaining the large open road ditch in front of Mr. Irwin Holmes' house, which in my opinion, presently forms an undesirable condition.

Culvert "B" - At this location there is an existing pipe which should be lowered by at least 18 inches to grade. to run into the new road ditch along the south side of the road. A 24 inch culvert is recommended at this location.

Culvert "C" - This culvert is to perform the same function as Culvert "B", but is to be located further to the east, where at present there is no culvert.

Road Bridge "D" - Boundary Road between Williamsburg and Winchester Townships opposite Lot 30.

The present road bridge which carries the water from the main drain across the boundary road to the north will require replacement. This is a wooden structure with a span of $5\frac{1}{2}$ feet. Deepening under the bridge amounts to approximately 18 inches. If replaced, a structure with a cross-sectional area of at least 16 square feet is recommended.

Road Bridge "E" - Concession Road between Concessions 1 and 2, Winchester Township, opposite Lot 6.

This is a wooden bridge on concrete abutments, and seems adequate for the amount of water passing through. As some of the wooden stringers are broken or split, and over the years traffic tends to increase, replacement may well become urgent in the very near future. If such is the case I would recommend that the new structure be relocated some 12 feet further to the east, as this will improve the flow of the water in the creek. The new structure should have a cross-sectional area of not less than 25 square feet. Possibly the use of a pipe-arch culvert could be contemplated at this location.

No allowances have been made for work on road bridges as this work can be done more readily under The Highway Improvement Act, under which Act the Ontario Department of Highways pays a subsidy up to eighty percent of the cost of work approved by their department.

ALLOWANCES FOR LAND TAKEN

Wherever the drain is to be relocated off the 66 foot road allowance, allowances have been made to the owners affected as compensation for the strip of land taken.

LOW AREA-NORTHEAST 1/4 LOT 6, CONCESSION 1, WINCHESTER TWP.

I have studied the drainage problem on the northeast part of Mr. Walker's property in the First Concession, Township of Winchester, east of the sideroad between Lots 6 and 7. This area is very wet and waterlogged for a great part of the year. I would, however, not recommend draining this area to the west into the Connor Drain, but would like to recommend that the solution be found by opening up of the original drain to the north into Concession 2, thereby following the natural slope of the land. The work could be instigated by Mr. Walker either under Section 3 or Section 4 of The Drainage Act, 1962-63.

STRAIGHTENING ON MORROW PROPERTY-LOT 6, CON. 1, WINCHESTER TWP.

In the progress of our survey, straightening of the Main Drain between Station 29+92 and Station 41+89 was contemplated. This section is shown by means of a row of blue dots on the plan. I did not decide on this straightening

because of the lay of the land. The old curve would still have to be partially kept open to allow water from the southwest to enter, and in this way the owner would end up with two ditches instead of one. It would also add to the cost, which is already rather high due to the limited number of owners involved in the scheme, and the large amount of excavation necessary to give the ditch the required bottom slope towards the outlet, and also, due to the fact that two townships are involved. If the owner wishes to have this straightening carried out, then the extra cost will have to be added to his assessment as an improvement to his property.

ALLOWANCES FOR DAMAGES

Allowances for damages have been made as a result of the following considerations:

1. Many old fences are leaning over the drain, and it will be impossible for the contractor to carry out his work unless these fences are taken down. Removal and replacement of fences is included in the contract, but not the supplying of new material which will, now doubt, be necessary to reconstruct the fences.
2. Due to the drastic deepening, much subsoil will have to be deposited over the fields, which for many years will result in reduced crops, unless extra fertilizer is applied.
3. At certain locations along the drain, a large amount of heavy stumps will be extracted from the banks of the drain, and piled on the adjoining field to be burned by the owners.

In view of the above, I feel that under this scheme an allowance should be granted to those owners through whose property the drain will be constructed, and to the amounts shown opposite their names under Schedule "I".

FUTURE MAINTENANCE

Each township will be responsible for the maintenance of that portion of the main drain located in their municipality, and the cost of such maintenance shall be charged against all the owners affected in both townships, and in the same relative proportions as shown on the attached Schedules "A" and "B". The cost of maintenance on the Branches will be charged against the owners assessed for their construction and in the same relative proportions as shown on the attached Schedules of Assessment for these Branches.

ESTIMATE OF COST

11,746 cu.yds. Earth Excavation @ \$0.65 per cu.yd.	\$ 7,634.90
Allowances for Land Taken	163.50
Allowances for Farm Crossings	920.00
Allowances for Damages	648.24
Preparing & Printing By-Laws - Williamsburg Twp.	100.00
Court of Revision - Williamsburg Township	60.00
Clerk's Fees - Williamsburg Township	200.00
Preparing & Printing By-Laws - Winchester Twp.	100.00
Court of Revision - Winchester Twp.	60.00
Clerk;s Fees - Winchester Township	150.00
Engineering Fees - Reports, Plans, Specifications	1,300.00
Supervision & Inspections	<u>250.00</u>
Total Estimated Cost	\$11,586.64

This total estimated cost of \$11,586.64 has been appor-
tioned in the following manner:

Outlet Liability-Real Property-Williamsburg Twp.	\$2,925.49
Benefit Liability-Real Property-Williamsburg Twp.	3,626.28
Outlet Liability-Roads-Williamsburg Twp.	60.79
Benefit Liability-Roads-Williamsburg Twp.	181.28
Improvement=Roads-Williamsburg Twp.	275.06
Outlet Liability-Real Property-Winchester Twp.	1,942.02
Benefit Liability-Real Property-Winchester Twp.	1,945.31
Outlet Liability-Roads-Winchester Twp.	52.50
Benefit Liability-Roads-Winchester Twp.	181.28
Improvement-Roads-Winchester Twp.	275.06
Outlet Liability-Roads-Dept. of Highways	<u>121.57</u>
Total	\$11,586.64

Trusting that this report will meet with your approval,
Gentlemen,

We have the honour to be

Your obedient servant,

STIDWILL & ASSOCIATES LIMITED

Per *F. P. Stidwill*
C.E., O.L.S.

Cornwall, Ontario, August 4, 1967

SCHEDULE OF ASSESSMENT

SCHEDULE "A"

MAIN DRAIN

TOWNSHIP OF WILLIAMSBURG

* Urban Lands

Name of Owner	Con.	Lot or Part	Acres Drained	Outlet Liability	Benefit	Improvement
Wm. Thompson <i>X</i> <i>W. Westcott of prop.</i>	8	Pt. N $\frac{1}{2}$ Lot 31	47	\$502.94	\$589.35	
<i>Mrs. H. Bailey</i> <i>X</i>	8	S 3/4 Lot 31	14	166.88	214.10	
Allan Farrell <i>X</i>	8	*Pt. N $\frac{1}{2}$ Lot 31	0.9	27.74		
Cyril Wiseman <i>X</i>	8	*Pt. N $\frac{1}{2}$ Lot 31	0.12	22.10		
Lorne Ball <i>X</i>	8	*Pt. N $\frac{1}{2}$ Lot 31	0.18	23.92		
George Summers <i>X</i>	8	*Pt. N $\frac{1}{2}$ Lot 31	0.33	27.13		
James Harriman <i>X</i>	8	*Pt. N $\frac{1}{2}$ Lot 31	0.12	22.82		
Grant Coughler <i>X</i>	8	*Pt. N $\frac{1}{2}$ Lot 31	0.17	23.70		
<i>M.M.S.</i> Grant Coughler <i>Charles</i> <i>X</i>	8	*Pt. N $\frac{1}{2}$ Lot 31	0.22	24.75		
Orange Hall <i>Robert</i> <i>X</i>	8	*Pt. N $\frac{1}{2}$ Lot 31	0.32	26.91		
Theresa Coughler <i>X</i>	8	*Pt. N $\frac{1}{2}$ Lot 31	0.20	24.31		
Ken Kirkwood <i>X</i>	8	N $\frac{1}{2}$ -NW $\frac{1}{4}$ Lot 30. E $\frac{1}{2}$ -NW $\frac{1}{4}$ Lot 30	48	583.54	1,685.75	
Burrell Beckstead <i>Elmer</i> <i>X</i>	8	SW 1/4 Lot 30	9	121.57	340.44	
William Thompson	8	E 1/2 Lot 30	85	647.64	587.80	
Fred Weaver <i>X</i> <i>Wendy</i> <i>X</i> <i>AA</i>	8	S 2/3-N $\frac{1}{2}$ -Lot 29	34	432.13		
<i>Edna</i> <i>X</i> <i>McMillan</i> <i>X</i> <i>8</i> <i>Pt. E$\frac{1}{2}$ Lot 29</i>	8		5	48.63		
<i>44 W. 5th St. Chubbuck RR</i>						
<u>TOWNSHIP OF WILLIAMSBURG</u>						
Pt. Con. Rd. Allw. btwn. Cons. 7-8			0.5	12.16		
Pt. Boundary Road btwn. Williamsburg & Winchester			1.5	48.63	181.28	\$275.06

DEPARTMENT OF HIGHWAYS

Part of Highway No. 31

530 Fremont Rd.
TREM 13/19
Ottawa

SCHEDULE "B"

MAIN DRAIN

TOWNSHIP OF WINCHESTER

<u>*Urban Lands</u>	<u>Name of Owner</u>	<u>Con.</u>	<u>Lot or Part</u>	<u>Acres Drained</u>	<u>Outlet Liability</u>	<u>Benefit</u>	<u>Improvement</u>
	Ken Kirkwood	1	Pt. Lot 5	6	\$ 65.21	\$ 38.93	
	Ken Kirkwood Irwin Holmes	1	Pt. Lot 5 Pt. Lot 5	49	431.58	290.01	
	Carmen Morris	1	*Pt. Lot 5	0.23	24.97		
	Irwin Holmes	1	*Pt. Lot 5	0.15	23.26		
	Ken Kirkwood	1	*Pt. Lot 5	0.30	26.52		
	Irwin Holmes	1	*Pt. Lot 5	0.30	26.52		
	Irwin Holmes	1	*Pt. Lot 5	0.15	23.26		
	Gordon Morrow	1	Pt. Lot 5 Pt. Lot 6	94	718.93	905.17	
	Lloyd Walker	1	N 3/10 of E 3/4 Lot 6	15	93.94	150.25	
	Frank Nesbitt	2	Pt. Lot 6	1	4.42	15.57	
<u>TOWNSHIP OF WINCHESTER</u>							
	Pt. Con. Road Allw. btwn. Cons. 1-2			0.3	3.87		
	Pt. Boundary Road btwn. Winchester & Williamsburg			1.5	48.63	181.28	\$275.06

SCHEDULE "C"

BRANCH "A"

TOWNSHIP OF WINCHESTER

Name of Owner	Con.	Lot or Part	Acres Drained	Outlet Liability	Benefit
Ken Kirkwood	1	Pt. Lot 5	4	\$ 96.22	\$ 87.75
Irwin Holmes	1	Pt. E $\frac{1}{2}$ Lot 5	2	49.57	70.20

SCHEDULE "D"

BRANCH "B"

TOWNSHIP OF WINCHESTER

Name of Owner	Con.	Lot or Part	Acres Drained	Outlet Liability	Benefit
Irwin Holmes	1	Pt. E $\frac{1}{2}$ Lot 5	4	\$100.30	\$ 86.93
Gordon Morrow	1	Pt. Lots 5-6	2	50.15	76.06

SCHEDULE "E"

BRANCH "C"

TOWNSHIP OF WINCHESTER

Name of Owner	Con.	Lot or Part	Acres Drained	Outlet Liability	Benefit
Gordon Morrow	1	Pt. Lots 5-6	2	\$138.11	\$158.60
Irwin Holmes	1	Pt. E $\frac{1}{2}$ Lot 5	1	69.06	65.84

SCHEDULE "F"

BRANCH "D"

TOWNSHIP OF WILLIAMSBURG

Name of Owner	Con.	Lot or Part	Acres Drained	Outlet Liability	Benefit
William Thompson	8	E 1/2 Lot 30	11	\$142.33	\$162.43
Burrill Beckstead	8	SW 1/4 Lot 30	3	38.81	34.81
Ken Kirkwood	8	E $\frac{1}{2}$ -NW $\frac{1}{4}$ Lot 30	1	11.64	11.60

SCHEDULE "G"

ALLOWANCES FOR LAND TAKEN

TOWNSHIP OF WILLIAMSBURG

<u>Name of Owner</u>	<u>Con.</u>	<u>Lot or Part</u>	<u>Allowance</u>
William Thompson	8	Pt. N 1/4 Lot 31	\$97.50
Ken Kirkwood	8	NW 1/4 Lot 30	66.00

SCHEDULE "H"

FARM BRIDGES

TOWNSHIP OF WILLIAMSBURG

<u>Name of Owner</u>	<u>Con.</u>	<u>Lot or Part</u>	<u>Span</u>	<u>Allowance</u>
<u>MAIN DRAIN</u>				
Ken Kirkwood	8	NW 1/4 Lot 30 (Access Bridge)	3'	\$160.00
Ken Kirkwood	8	NW 1/4 Lot 30	3'	140.00
William Thompson	8	E 1/2 Lot 30	2'	100.00

TOWNSHIP OF WINCHESTER

<u>MAIN DRAIN</u>				
Gordon Morrow	1	Pt. 5-6 2 Bridges	4'	320.00
<u>BRANCH "B"</u>				
Gordon Morrow	1	Pt. 5-6	24"	100.00
<u>BRANCH "C"</u>				
Gordon Morrow	1	Pt. 5-6	24'	100.00