

LEGEND

PROPOSED IMPROVEMENT	=====
HIGHWAYS	=====
PROPERTY LINE	-----
SECTION CENTER	-----
SECTION CORNER	+
WATERSHED	-----
ACRES OWNED	OO A.
ACRES BENEFITED	OOA →
DITCHES	-----

SUPPORTING DATA

DRAINAGE AREA	167 ACRES
DESIGN COEFFICIENT	Q ₆ CURVE
LAND USE	GENERAL CROPS
SOIL TYPE	TOLEDO SILTY CLAY
LAND SLOPE	0-2 %
TYPE DRAINAGE	SURFACE & TILE

BENCH MARK DESCRIPTIONS

BM-1	STA. 0+00 TOP OF IRON PIN IN CONCRETE MARKER POST LOCATED IN S.E. CORNER OF INTERSECTION OF SALEM CARROLL TOUSSAINT PORTAGE RD.	M.S.L. ELEV. 591.06
BM-2	STA. 16+35 TOP OF SPIKE IN W. SIDE OF POWER POLE WITH GUY WIRE	M.S.L. ELEV. 591.37
BM-3	STA. 26+62 TOP OF RAIL ROAD SPIKE IN POWER POLE LOCATED IN N.W. CORNER OF INTERSECTION OF BEIER RD AND TOUSSAINT PORTAGE RD.	M.S.L. ELEV. 592.16
BM-4	STA. 39+56 TOP OF E. END OF 12' C.M.P. E. SIDE OF TOUSSAINT PORTAGE RD.	M.S.L. ELEV. 587.61
BM-5	STA. 52+51 SPIKE IN W. SIDE OF POWER POLE E. SIDE OF TOUSSAINT PORTAGE RD.	M.S.L. ELEV. 591.12
BM-6	X CHISELED IN CENTER OF HEADWALL OF STRUCTURE ON D. THIERWECHTER FARM	M.S.L. ELEV. 586.29
BM-7	STA. 65+00 TOP OF X IN S. END OF W. HEADWALL OF CULVERT	M.S.L. ELEV. 584.62

HYDRAULIC CALCULATIONS

HEADLOSS IN CULVERT $H = \frac{V^2}{2g} (1 + KE + KPL)$

STATION	16+46	26+19	32+15	32+98	47+59	49+53	63+29
DRAINAGE AREA (AC)	45	90	95	100	120	137	167
Q ₆ FLOW C.F.S.	7.5	15	16	17	20	23	28
DIAMETER IN.	24"	36"	48"	36	36	36	36
TYPE "N"	R/C	R/C	C.M.P.	R/C	R/C	R/C	R/C
LENGTH FT.	16'	40'	5'	24'	24'	24'	24'
X. SEC. AREA SQ.FT.	3.14	7.07	12.57	7.07	7.07	7.07	7.07
KP	.012	.0072	.018	.0072	.0072	.0072	.0072
KPL	.24	.29	.09	.17	.17	.17	.17
KE	.50	.50	.50	.50	.50	.50	.50
VELOCITY F.P.S.	2.4	2.1	1.3	2.4	2.8	3.3	4.0
HEADLOSS	.15	.13	.04	.15	.20	.28	.42

CONSTRUCTION DATA

STATION	% GRADE	BOTTOM WIDTH	SIDE SLOPES	CUBIC YARDS	AVERAGE DEPTH
65+00	0.25	3'	1 1/2:1	211	4.5'
54+00	0.05	3'	1 1/2:1	3483	5.5
				3,694	

LOCATION & OWNERSHIP MAP

SPECIFICATIONS

- EXCAVATION**
 A. Bottom Width: The bottom width shall be THREE (3) feet between sta. 0+00 and sta. 65+00.
 B. Bank Slopes: The ditch bank slopes are to be constructed to at least 1 1/2 foot horizontal to 1 foot vertical.
 C. Alignment: The centerline of the improvement shall be approximately the centerline of the existing ditch unless otherwise indicated on plan.
 D. Total excavation: The total excavation consists of 3,694 cubic yards of earth over 6,500 linear feet of ditch. (the plan).
 E. Excess Yardage: No extra compensation will be paid for such excavation in excess of yardage herein estimated. This estimate was made from cross-sections of the proposed ditch. The contractor should view the proposed work to his own satisfaction.
- CLEARING**
 All trees and/or brush which would interfere with the excavation operation must be cleared from the ditch right-of-way ahead of the construction operations. Stumps on the berm should be removed or cut as low as cutting tools permit. Cleared debris should be disposed of by burning or removed from the right-of-way.
- BERM WIDTHS**
 Unless otherwise noted the berms will have the following minimum widths: four (4) feet wide for ditches up to four (4) foot depth; six (6) feet wide for four to six foot depth; and ten (10) foot wide for ditches over six feet in depth.
- SPOIL BANKS**
 Excavated material should be deposited and spread along the field side of the ditch, as determined, except where used for levees, and in overflow areas with timber or brush cover. Slope of the spoil after spreading should be at least 3:1 on the channel side and at least 4:1 on the field side. The height of the spoil should not exceed one foot above average ground level. Openings shall be provided for surface water to enter the ditch.
- TILE OUTLETS**
 Landowners shall protect their tile outlets with a section of continuous rigid pipe and flap-gates or grid to exclude rodents. For details of construction see your Soil Conservation Technician.
- SURFACE WATER OUTLETS**
 Whenever a lateral or a surface ditch enters the main ditch at a higher elevation protection from erosion should be provided by: drop structures, pipe drops, other suitable structure or grassed waterway. For assistance on outlets see your Soil Conservation Technician.
- DITCH BANK SEEDING**
 The ditch banks will be seeded, immediately after each day's work, to tall fescue (Kentucky 31 or Alta) at the rate of 25 lbs. per acre. A minimum of 500 lbs. of 10-10-10 fertilizer or equivalent will be applied. 2 acres of ditch bank seeding will be required.
- CULVERTS**
 Existing culverts will be cleaned and the invert (Flow line) lowered to correspond to the proposed ditch grade as indicated on the plan.

Station <u>16+46</u>	Station <u>26+19</u>	Station <u>32+15</u>	Station <u>32+98</u>
REMOVE OR REPLACE WITH 24" R/C	REPLACE WITH 36" R/C	CLEAN	REPLACE WITH 36" R/C
Station <u>47+59</u>	Station <u>49+53</u>	Station <u>63+29</u>	
REPLACE WITH 36" R/C	INSTALL 36" R/C	REPLACE WITH 36" R/C	

CHANNEL FLOW $V = \frac{1.486}{N} R^{2/3} S^{1/2}$

MAXIMUM VELOCITY 5 F.P.S.

REACH	STA. TO STA.	0+00 TO 54+00	54+00 TO 65+00
DRAINAGE AREA AC		137	167
Q ₆ FLOW C.F.S.		23	28
"N"		.04	.04
SLOPE FT/FT.		.0005	.0025
S 1/2		.0224	.0500
Q/S 1/2 = KD		1027	560
KD VALUE USED		1079	604
SIDE SLOPE		1 1/2:1	1 1/2:1
BOTTOM WIDTH		3'	3'
DEPTH		2.9	2.2
AREA SQ. FT.		21.33	13.86
VELOCITY F.P.S.		1.1	2.02

INDEX TO SMALL PARCELS

SECTION	PARCEL	PROPERTY OWNERS	ACRES
30	A	JOSE VALDEZ	1
29-31	B	OTTAWA COUNTY	.50
29-30-19	C	CARROLL TOWNSHIP	9

NOTICE TO LANDOWNERS OR CONTRACTORS

PRIOR TO START OF CONSTRUCTION THE OWNER OF THE PIPELINE OR OTHER TRANSMISSION LINE MUST BE NOTIFIED OF THE PENDING CONSTRUCTION, GIVING THE DATE AND TIME SUCH CONSTRUCTION IS SCHEDULED TO BEGIN. THE PROPERTY OWNER OR THE CONTRACTOR IS RESPONSIBLE FOR GIVING THIS NOTICE.

THIS DITCH PLAN HAS BEEN APPROVED BY

John G. Pappas
 OTTAWA COUNTY ENGINEER
 DATE 1/2/69

LOCATION - E. 1/2 OF E. 1/2 OF SECTION 29
 E. 1/2 OF S. E. 1/4 OF S. E. 1/4 OF SECTION 19
 R. 15 E. T. 7 N. CARROLL TOWNSHIP
 OTTAWA COUNTY, OHIO.

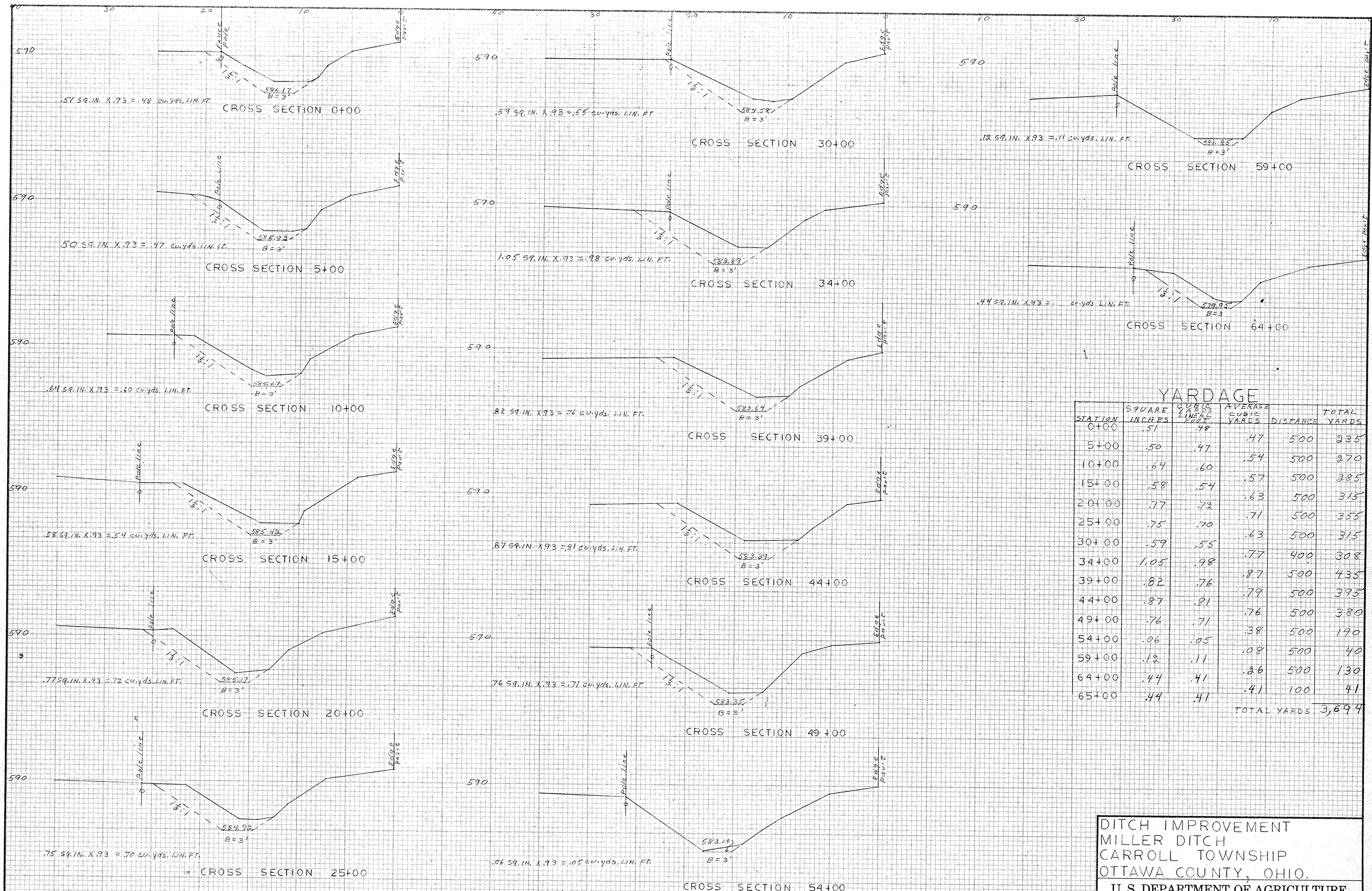
SURVEYED - 9-24-68
 D. OPFER
 E. CAMPBELL
 D. SOMMER

REFERENCE - FIELD NOTES ON FILE IN OTTAWA SOIL & WATER CONSERVATION OFFICE 149 CHURCH STREET, OAK HARBOR OHIO.

JOB CLASS IV GROUP # 38

DITCH IMPROVEMENT
 MILLER DITCH
 CARROLL TOWNSHIP
 OTTAWA COUNTY OHIO
 U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

Designed <u>Donald Opfer</u>	Date <u>10/68</u>	Approved <u>John G. Pappas</u>	Title <u>Soil Conservation Engineer</u>
Drawn <u>Donald Opfer</u>	Scale <u>1/8" = 1'</u>	Traced	Title
Checked <u>R.K. Rowe</u>	Date <u>1/2/69</u>	Sheet No. <u>1</u>	Drawing No. <u>34-01-83-68-10</u>



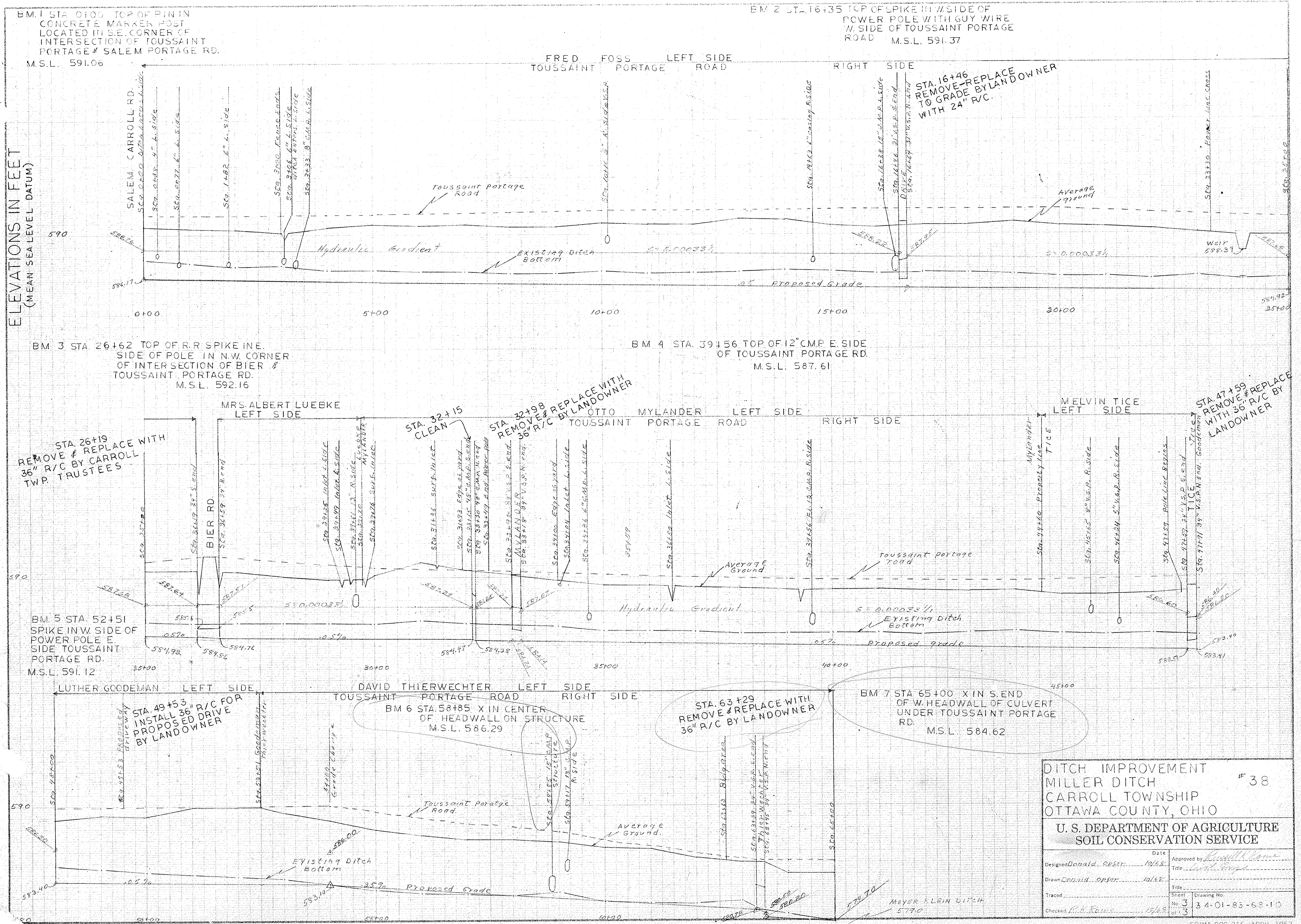
YARDAGE

STATION	SQUARE INCHES	CUBIC FEET	AVERAGE CUBIC YARDS	DISTANCE	TOTAL YARDS
0+00	.51	.48	.47	500	235
5+00	.50	.47	.54	500	270
10+00	.64	.60	.57	500	285
15+00	.58	.54	.63	500	315
20+00	.77	.72	.71	500	355
25+00	.75	.70	.63	500	315
30+00	.59	.55	.77	400	308
34+00	1.05	.98	.87	500	435
39+00	.82	.76	.79	500	395
44+00	.87	.81	.76	500	380
49+00	.76	.71	.38	500	190
54+00	.44	.41	.08	500	40
59+00	.44	.41	.26	500	130
65+00	.44	.41	.41	100	41
				TOTAL YARDS	3,694

DITCH IMPROVEMENT
MILLER DITCH
CARROLL TOWNSHIP
OTTAWA COUNTY, OHIO.
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed <i>Donald S. Piser</i> 10/28	Date	Approved by <i>James H. Brown</i>
Drawn <i>Donald S. Piser</i> 10/28		Title <i>Ditch Improv.</i>
Traced		Title
Checked <i>R. K. Rowe</i> 11/2		Sheet No. <i>2</i>
		Drawing No. <i>34-01-83-68-10</i>

ELEVATIONS IN FEET
(MEAN SEA LEVEL DATUM)



DITCH IMPROVEMENT # 38
MILLER DITCH
CARROLL TOWNSHIP
OTTAWA COUNTY, OHIO

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed <i>Donald. Oesper</i>	Date <i>10/68</i>	Approved by <i>Richard K. Rome</i>
Drawn <i>Donald. Oesper</i>	Title <i>Ditch Imp.</i>	
Traced	Title	
Checked <i>R. K. Rome</i>	Sheet No. <i>3</i>	Drawing No. <i>34-01-83-68-10</i>

FORM SCS-316 (APRIL 1963)