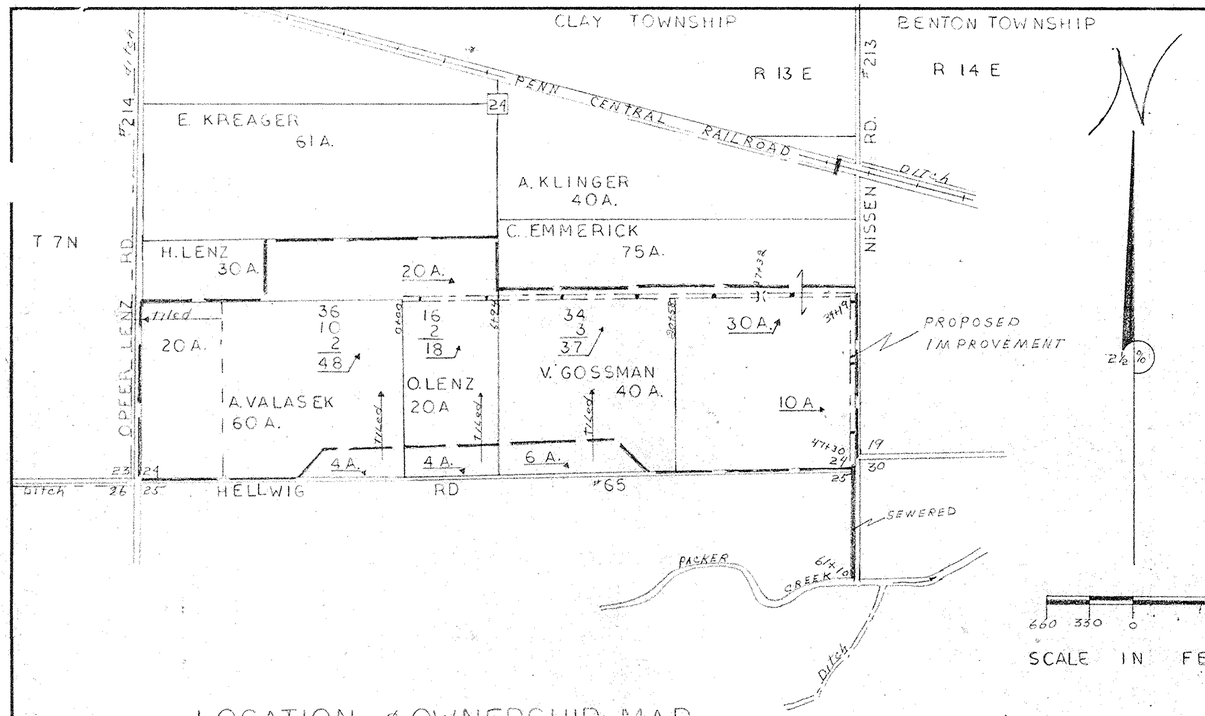
Valasek Ditch #18 **FILE #18**



SCALE IN FEET

660 330 0 660

LEGEND

PROPOSED IMPROVEMENT	
HIGHWAYS	
PROPERTY LINE	
SECTION CENTER	
SECTION CORNER	
WATERSHED	
ACRES OWNED	00 A.
ACRES BENEFITED	00 A.
STREAMS	
DITCHES	
RAILROAD	
SEWERS	

BENCH MARK DESCRIPTIONS

T.B.M. STA. 0+00 FLOW LINE OF 8" FROM WEST OR NORTH MAIN OF THREE ENTERING DITCH.
M.S.L. ELEV. 600.31

BM #1 TOP OF SPIKE IN NORTH SIDE OF 30" OAK TREE SOUTH SIDE OF DITCH.
STA. 14+11 M.S.L. ELEV. 602.29

BM #2 STA. 21+30
TOP OF SPIKE IN NORTH SIDE OF HICKORY TREE SOUTH SIDE OF DITCH.
M.S.L. ELEV. 601.50

BM #3 STA. 34+53
TOP OF SPIKE IN WEST SIDE OF UTILITY POLE EAST SIDE OF NISSEN ROAD.
M.S.L. ELEV. 601.71

BM #4 STA. 46+38
TOP OF SPIKE IN EAST SIDE OF POWER POLE WITH BRACE POLE ON WEST SIDE OF NISSEN ROAD.
M.S.L. ELEV. 602.64

BM #5 STA 61+10
X CHISELED ON TOP OF RAIL BASE AT NORTH EAST CORNER OF BRIDGE OVER PACKER CREEK.
M.S.L ELEV. 600.96

INDEX TO SMALL PARCELS

SECTION	PARCEL	PROPERTY OWNERS	ACRES
24	A	OTTAWA COUNTY	0.90

LOCATION & OWNERSHIP MAP

SPECIFICATIONS

I. EXCAVATION:
A. Bottom Width: The bottom width shall be THREE (3) feet between sta. 0+00 and sta. 47+30.
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 the plan.
D. Total Excavation: The total excavation consists of 2,825 cubic yards of earth over 4,730 lineal feet of ditch.
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.

II. 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.

III. 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 depth for ditches over six feet in depth.

IV. SPOIL BANKS:
Excavated material should be deposited and spread along one and/or both sides 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.

V. 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.

VI. SURFACE WATER OUTLETS:
Wherever 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.

VII. 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. 1.5 acres of ditch bank seeding will be required.

VIII. Existing culverts will be cleaned and the inverts (flow line) lowered to correspond to the proposed ditch grade as indicated on the plan.

Station 27+32 R.R. TIE BRIDGE TO BE REMOVED

Station 47+30 CLEAN ENTRANCE

Station _____

Station _____

IX: ALL OF THE ABOVE SPECIFICATIONS ARE TO BE COMPLETED BEFORE PERFORMANCE IS CERTIFIED.

HYDRAULIC CALCULATIONS

CHANNEL FLOW
MAXIMUM VELOCITY 5 F.P.S. $V = \frac{1.486}{N} R^{2/3} S^{1/2}$

REACH		STA. TO STA	0+00	47+30
DRAINAGE AREA	AC.		166	
Q_c FLOW	C.F.S.		18	
N			.04	
SLOPE	FT./FT.		.0005	
S 1/2			.0224	
Q / S1/2 = KD			804	
KD VALUE USED			854	
SIDE SLOPE	FT.		1 1/2 : 1	
BOTTOM WIDTH	FT.		3'	
DEPTH OF FLOW	FT.		2.6	
AREA	SQ. FT.		17.94	
VELOCITY	F.P.S.		1.00	

Full Flow except as noted.

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

STATION		47+30	47+80
DRAINAGE AREA	AC.	166	248
Q_c FLOW	C.F.S.	18	25
DIAMETER	IN.	36"	36"
TYPE		C.M.P	R/C
N		.025	.013
LENGTH	FT.	50	1330
X SEC. AREA	SQ. FT.	7.07	7.07
KP		.027	.0072
KPL		1.35	9.58
KE		0.50	0.5
VELOCITY	F.P.S.	2.54	3.54
HEAD LOSS	FT.	0.5	1.87 *

Note: Full pipe flow gives headwater elevation as 47+80 of 597.87. Inlet Control condition's gives headwater of 598.60, therefore, Inlet conditions control and 598.60 is used in hydraulic gradient

CONSTRUCTION DATA

STATION	% GRADE	BOTTOM WIDTH	SIDE SLOPE	CUBIC YARDS	AVERAGE DEPTH
47+30	0.05	3'	1 1/2 : 1	2,825	4.5'

SUPPORTING DATA

DRAINAGE AREA	ACRES
DESIGN COEFFICIENT	Q CURVE
LANDUSE	SPECIAL & GENERAL CROPS
SOIL TYPE	TOLEDO SILTY CLAY LOAM
LAND SLOPE	0-2 %
TYPE DRAINAGE	SURFACE & TILE

THIS DITCH PLAN HAS BEEN APPROVED BY:

John H. Pagcum — 6/10/69
OTTAWA COUNTY ENGINEER — DATE

LOCATION – S.W. 1/4 AND S.E. 1/4 OF SEC. 24 T-7N R-13 E CLAY TOWNSHIP OTTAWA COUNTY, OHIO.

SURVEYED – D. SOMMER, E. CAMPBELL, D. OPFER, A. VALASEK — 4/9/69

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

JOB CLASS II GROUP #46

VALASEK GROUP DITCH
DITCH IMPROVEMENT
CLAY TOWNSHIP
OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed Donald Opfer 4/69		Approved by Russell K. Rowe	Date
Drawn Donald Opfer 4/69		Title Civil Engr.	
Traced		Title	
Checked R. K. Rowe 5/69	Sheet No. 1 of 3	Drawing No. 34-01-83-69-11	

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