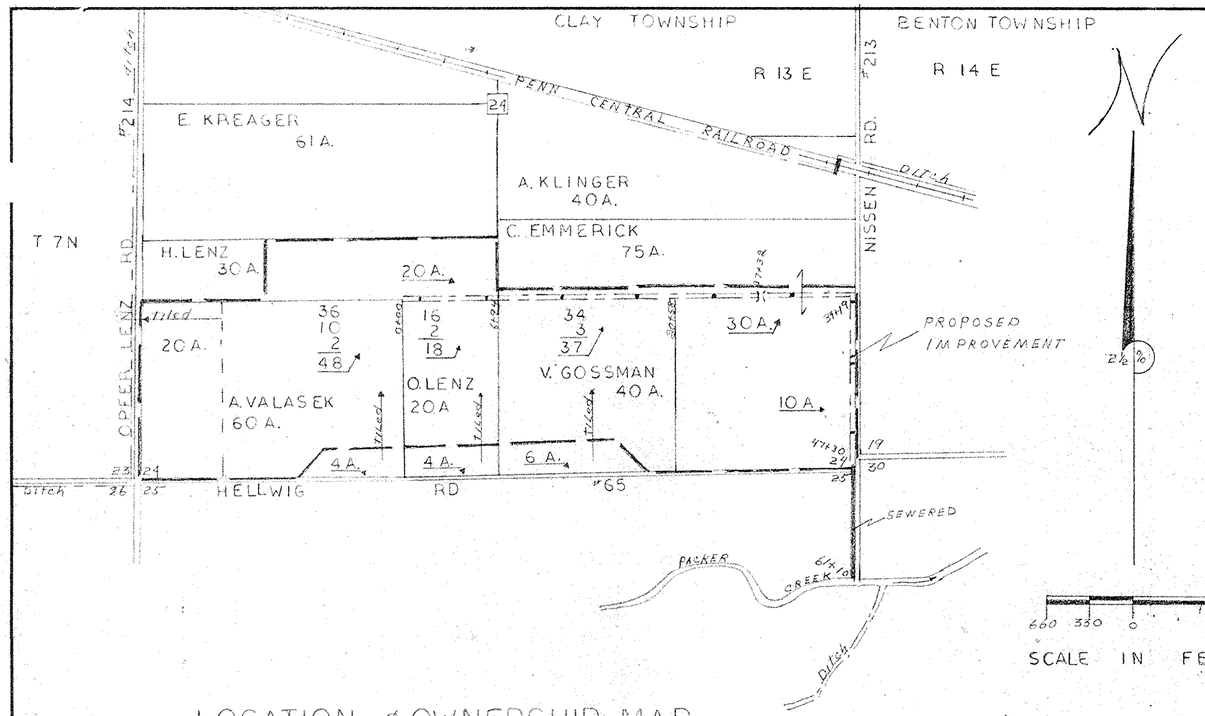
Valasek Ditch #18 **FILE #18**



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.

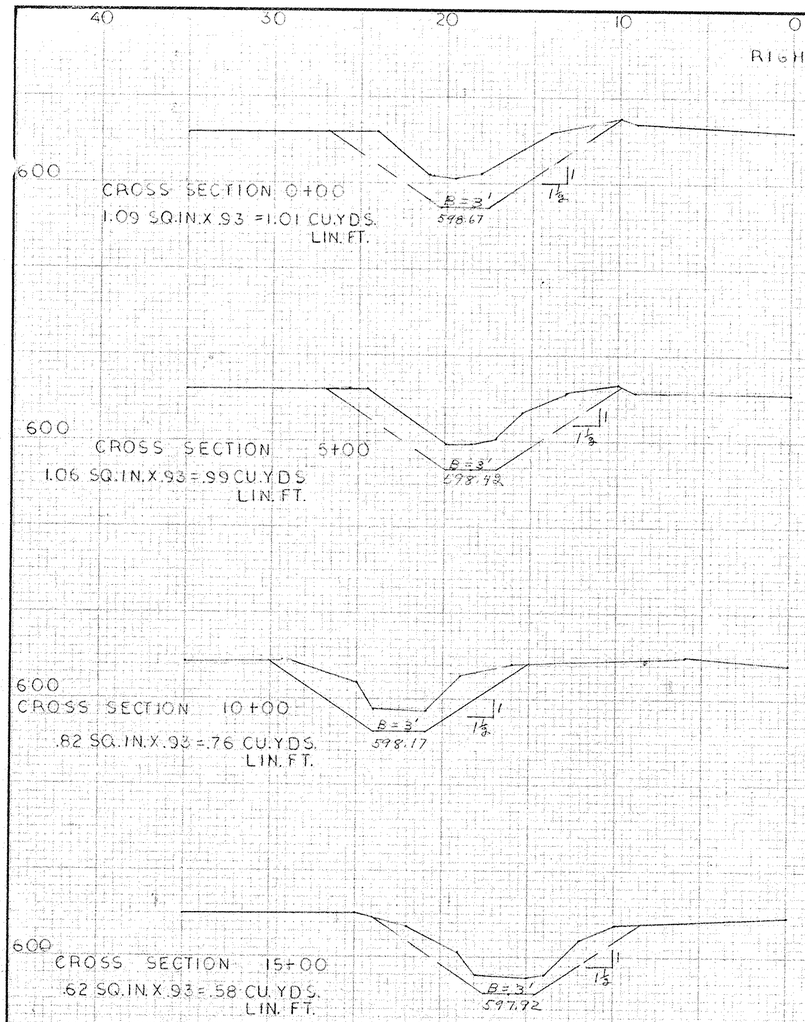
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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	

U.S. GOVERNMENT PRINTING OFFICE: 1965 O—792-928

SCS-313 (9-64)


A. VALASEK RIGHT SIDE
H. LENTZ LEFT SIDE
O. LENTZ RIGHT SIDE
H. LENTZ LEFT SIDE
V. GOSSMAN RIGHT SIDE
T.B.M. STA. 0+00 FLOW LINE OF 8" FROM WEST OR THE NORTH MAIN
M.S.L. ELEV. 600.31
STA. 0+00 INSTALL EROSION CONTROL STRUCTURE
STA. 6+89 INSTALL CONTROL STRUCTURES NORTH & SOUTH SIDES
BM#1 STA. 14+11 TOP OF SPIKE IN N. SIDE OF 30" OAK TREE S. SIDE OF DITCH.
M.S.L. ELEV. 602.29
STA 20+58 INSTALL CONTROL STRUCTURE
PROPERTY LINE
AVERAGE GROUND
Hydraulic Gradient
"C" Curve
EXISTING DITCH BOTTOM
PROPOSED GRADE
0.05 %
0+00
5+00
10+00
15+00
20+00
600
ELEVATIONS IN FEET (MEAN SEA LEVEL DATUM)
C. EMMERICK LEFT SIDE
C. EMMERICK RIGHT SIDE
NISSEN ROAD LEFT SIDE
C. EMMERICK RIGHT SIDE
BM#2 STA. 21+30 SPIKE IN N. SIDE HICKORY TREE S. SIDE OF DITCH
M.S.L. ELEV. 601.50
STA. 27+32 FARM BRIDGE TO BE REMOVED
BM#3 STA. 34+53 SPIKE IN W. SIDE OF UTILITY POLE E. SIDE OF NISSEN RD.
M.S.L. ELEV. 601.71
STA. 41+17 INSTALL CONTROL STRUCTURE
STA. 31+00 CONTROL STRUCTURE TO BE INSTALLED IN THIS AREA AFTER CONSTRUCTION
NISSEN ROAD
Design "C" Curve
20+00
25+00
30+00
35+00
40+00
45+00
BM#4 STA. 46+38 SPIKE IN E. SIDE POWER POLE WITH BRACE POLE
M.S.L. ELEV. 602.64
NISSEN ROAD LEFT SIDE
DICKMAN RIGHT SIDE
HELLWIG RD.
BM#5 X ON N.E. CORNER OF CONCRETE RAIL BASE OF RD. BRIDGE
M.S.L. ELEV. 600.96
TOP R/C
END OF PIPE IN GOOD CONDITION
TAIL WATER 596.00
45+00
50+00
60+00
VALASEK GROUP DITCH #46
DITCH IMPROVEMENT
CLAY TOWNSHIP
OTTAWA COUNTY, OHIO.
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Designed Donald Apsey 4/69
Drawn Donald Apsey 4/69
Traced
Checked
Approved by
Title
Sheet No. 2 of 3
Drawing No. 34-01-83-69-11
FORM SCS-316 (NOV. 1966)



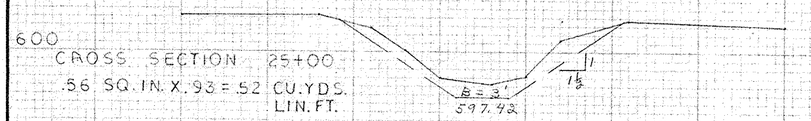
CROSS SECTION 0+00
1.09 SQ.IN.X.93 =1.01 CU.YDS.
LIN. FT.

CROSS SECTION 5+00
1.06 SQ.IN.X.93=.99 CU.YDS
LIN. FT.

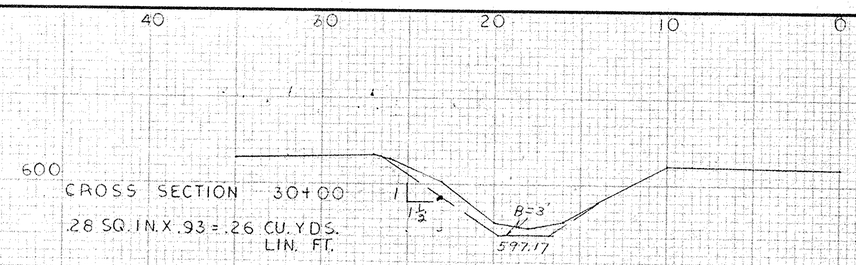
CROSS SECTION 10+00
.82 SQ.IN.X.93=.76 CU.YDS.
LIN. FT.

CROSS SECTION 15+00
.62 SQ.IN.X.93=.58 CU.YDS.
LIN. FT.

CROSS SECTION 20+00
.72 SQ.IN.X.93 =.67 CU.YDS
LIN.FT.



CROSS SECTION 25+00
.56 SQ.IN.X.93 =.52 CU.YDS.
LIN. FT.



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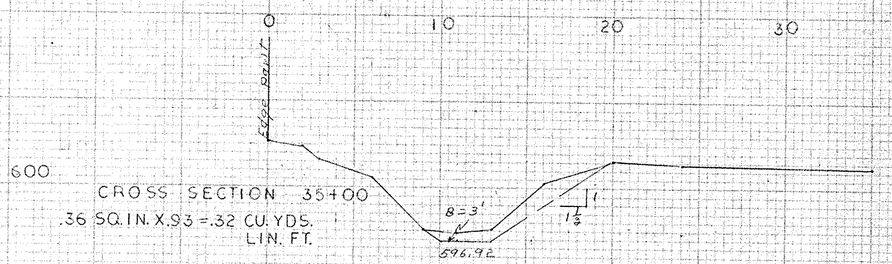
.28 SQ.IN.X.93 = .26 CU.YDS.
LIN. FT.



CROSS SECTION 35+00
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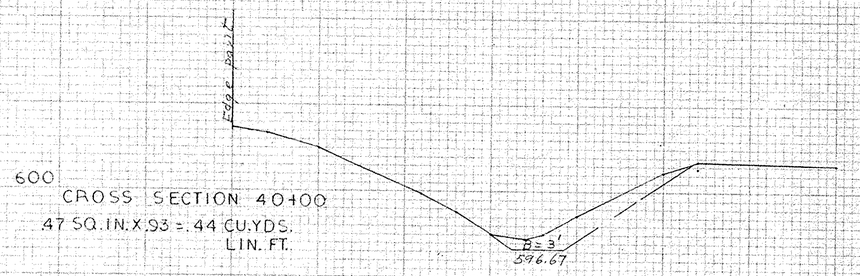
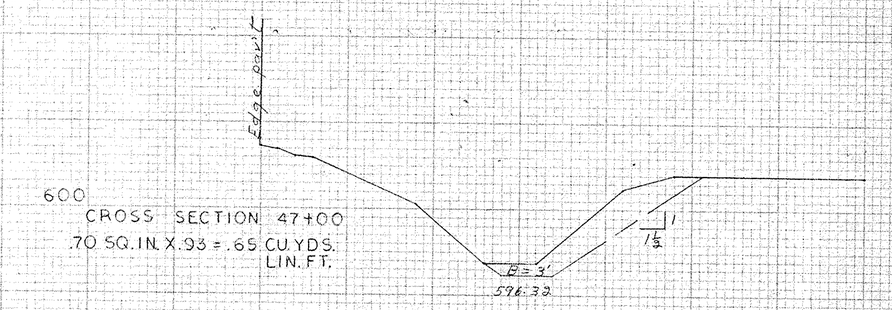
LIN. FT.



CROSS SECTION 40+00
.47 SQ.IN.X.93 = .44 CU.YDS.
LIN. FT.



CROSS SECTION 47+00
.70 SQ.IN.X.93 = .65 CU.YDS.
LIN. FT.

YARDAGE

STATION	SQ. INS.	CU.YDS. LIN. FT.	AVE. CU.YDS.	DISTANCE	YARDS
0+00	1.09	1.01			
			1.00	500	500
5+00	1.06	.99			
			.88	500	440
10+00	.82	.76			
			.67	500	335
15+00	.62	.58			
			.63	500	315
20+00	.72	.67			
			.60	500	300
25+00	.56	.52			
			.39	500	195
30+00	.28	.26			
			.29	500	145
35+00	.36	.32			
			.38	500	190
40+00	.47	.44			
			.55	700	385
47+00	.70	.65			
			.65	30	20
47+30	.70	.65			

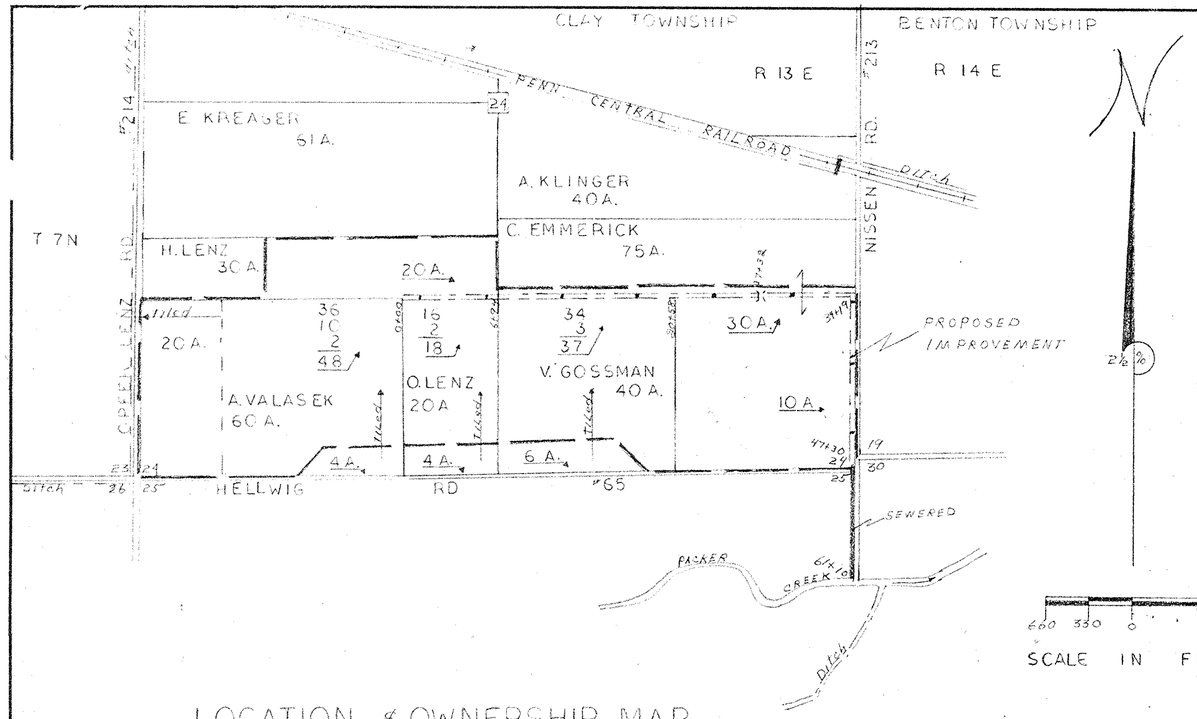
TOTAL YARDS 2,825

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

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

	Date		
Designed Donald apfer	4/69	Approved by Raphael K. Rouse	
Drawn Donald apfer	4/69	Title Asst. Engr.	
Traced		Title	
Checked L. K. Rouse	5/69	Sheet No. 3 of 3	Drawing No. 34-01-83-69-11

Valasek Ditch #18 **FILE #18**



LOCATION & OWNERSHIP MAP

LEGEND

PROPOSED IMPROVEMENT
HIGHWAYS
PROPERTY LINE
SECTION CENTER
SECTION CORNER
WATERSHED
ACRES OWNED
ACRES BENEFITED
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

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 2825 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 _____
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. 0+00 TO STA 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 *

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'

*Note: Full pipe flow gives headwater elevation at 47+80 of 597.67. Inlet control conditions gives headwater of 598.60, therefore, inlet conditions control and 598.60 is used in hydraulic gradient

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

U.S. GOVERNMENT PRINTING OFFICE: 1965 O—792-928

SCS-313 (9-64)

A. VALASEK RIGHT SIDE

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

H. LENTZ LEFT SIDE
O. LENTZ RIGHT SIDE

STA. 0+00
INSTALL EROSION
CONTROL STRUCTURE

STA. 6+89
INSTALL CONTROL
STRUCTURES
NORTH & SOUTH SIDES

H. LENTZ LEFT SIDE
V. GOSSMAN RIGHT SIDE

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

STA 20+58
INSTALL CONTROL
STRUCTURE

ELEVATIONS IN FEET
(MEAN SEA LEVEL DATUM)

C. EMMERICK LEFT SIDE
C. EMMERICK RIGHT SIDE

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

STA. 27+32
FARM BRIDGE TO
BE REMOVED

STA. 31+00
CONTROL STRUCTURE TO
BE INSTALLED IN THIS
AREA AFTER CONSTRUCTION

NISSEN ROAD
C. EMMERICK

BM#3 STA. 34+55
SPIKE IN W. SIDE OF
UTILITY POLE E. SIDE
OF NISSEN RD.
M.S.L. ELEV. 601.71

LEFT SIDE
RIGHT SIDE

STA. 41+17
INSTALL CONTROL
STRUCTURE

BM#4 STA. 46+38
SPIKE IN E. SIDE
POWER POLE
WITH BRACE POLE
M.S.L. ELEV. 602.64

NISSEN ROAD LEFT SIDE
DICKMAN RIGHT SIDE

BM#5 X ON N.E. CORNER
OF CONCRETE RAIL
BASE OF RD. BRIDGE
M.S.L. ELEV. 600.96

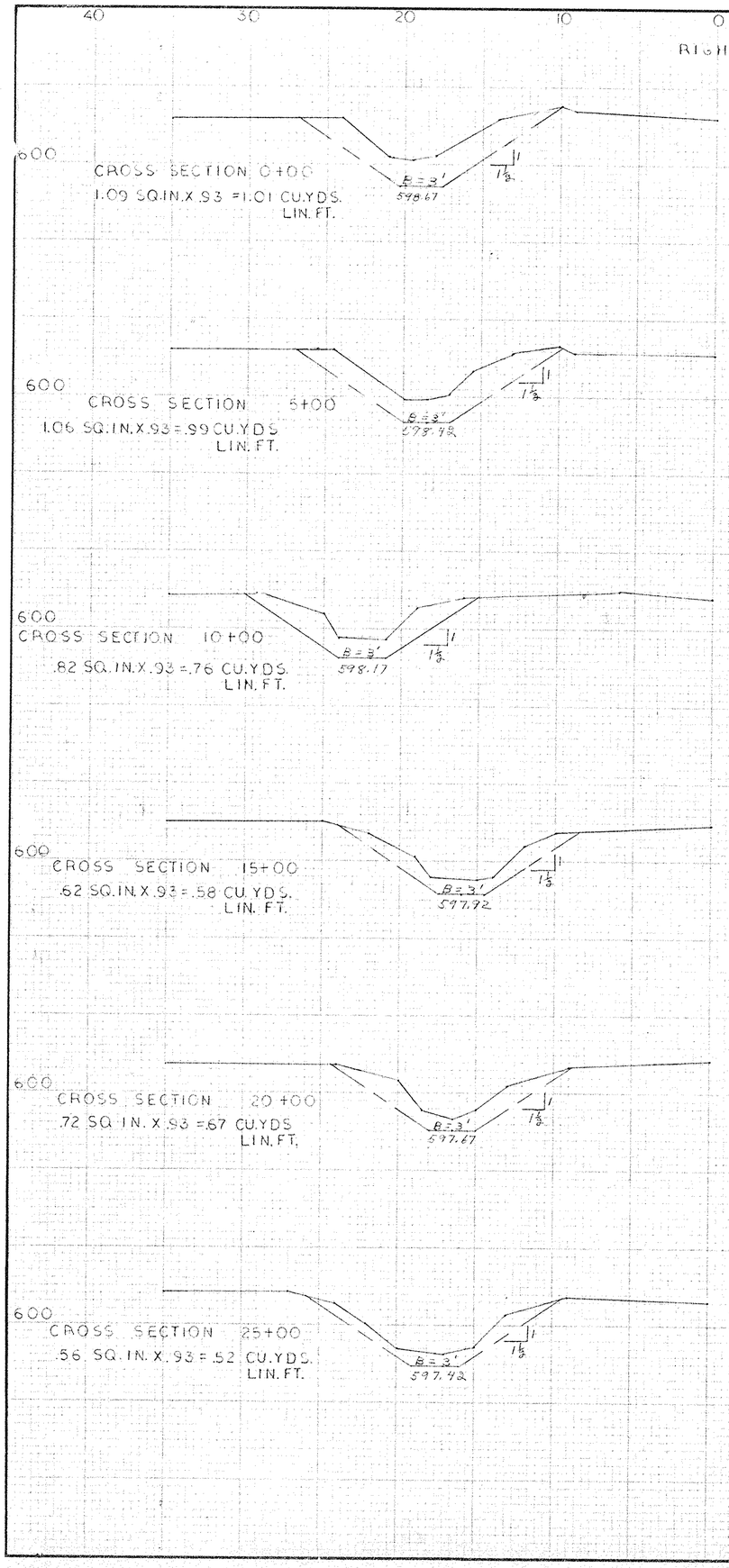
END OF PIPE IN
GOOD CONDITION
TAIL WATER 596.00

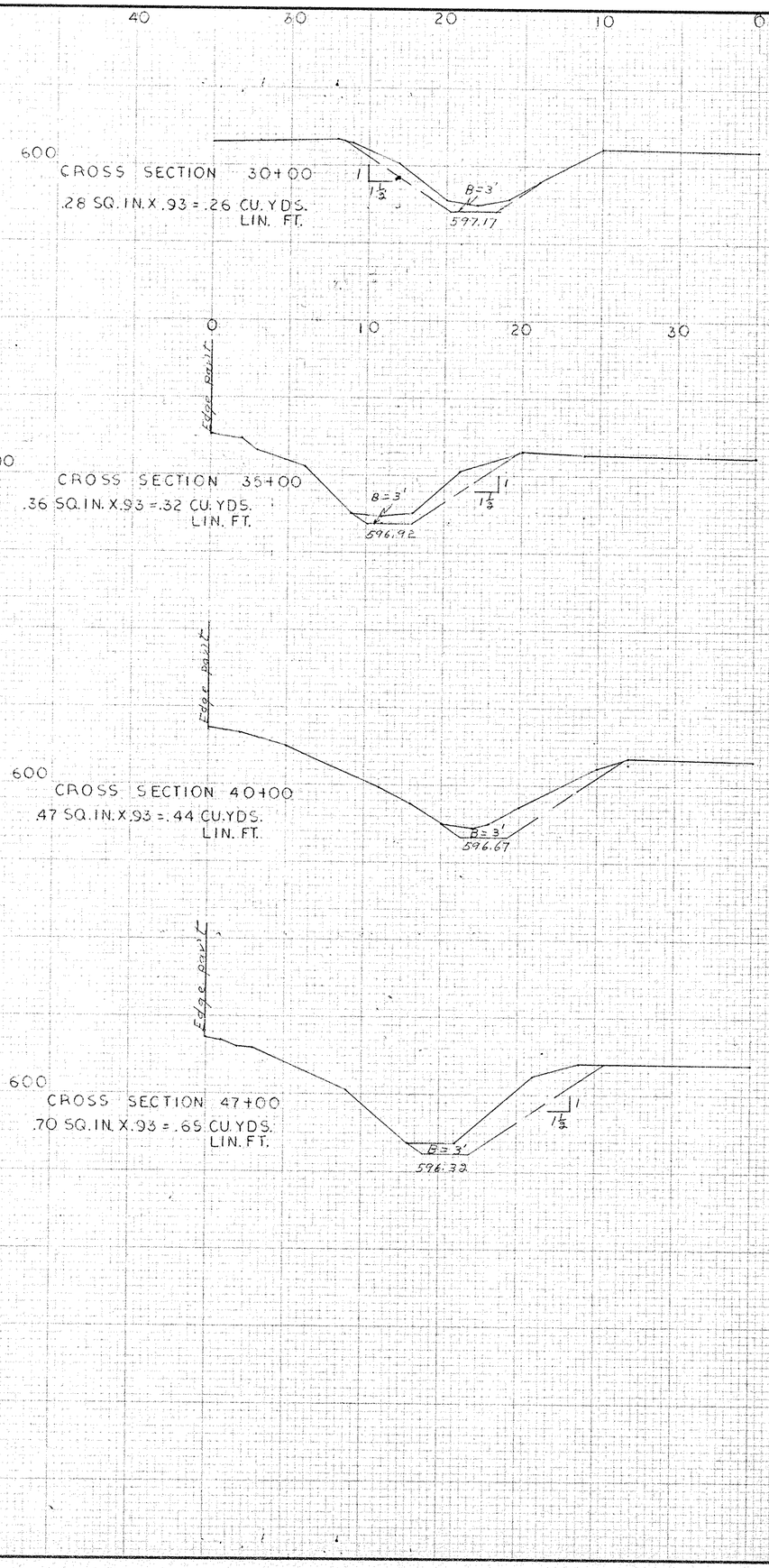
VALASEK GROUP DITCH #46
DITCH IMPROVEMENT
CLAY TOWNSHIP
OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

	Date		
Designed	4/69	Approved by	
Drawn	4/69	Title	
Traced		Title	
Checked		Sheet No. 2 of 3	Drawing No. 34-01-83-69-11

FORM SCS-316 (NOV. 1965)





YARDAGE

STATION	SQ. INS.	CU.YDS. LIN. FT.	AVE. CU.YDS.	DISTANCE	YARDS
0+00	1.09	1.01			
			1.00	500	500
5+00	1.06	.99			
			.88	500	440
10+00	.82	.76			
			.67	500	335
15+00	.62	.58			
			.63	500	315
20+00	.72	.67			
			.60	500	300
25+00	.56	.52			
			.39	500	195
30+00	.28	.26			
			.29	500	145
35+00	.36	.32			
			.38	500	190
40+00	.47	.44			
			.55	700	385
47+00	.70	.65			
			.65	30	20
47+30	.70	.65			

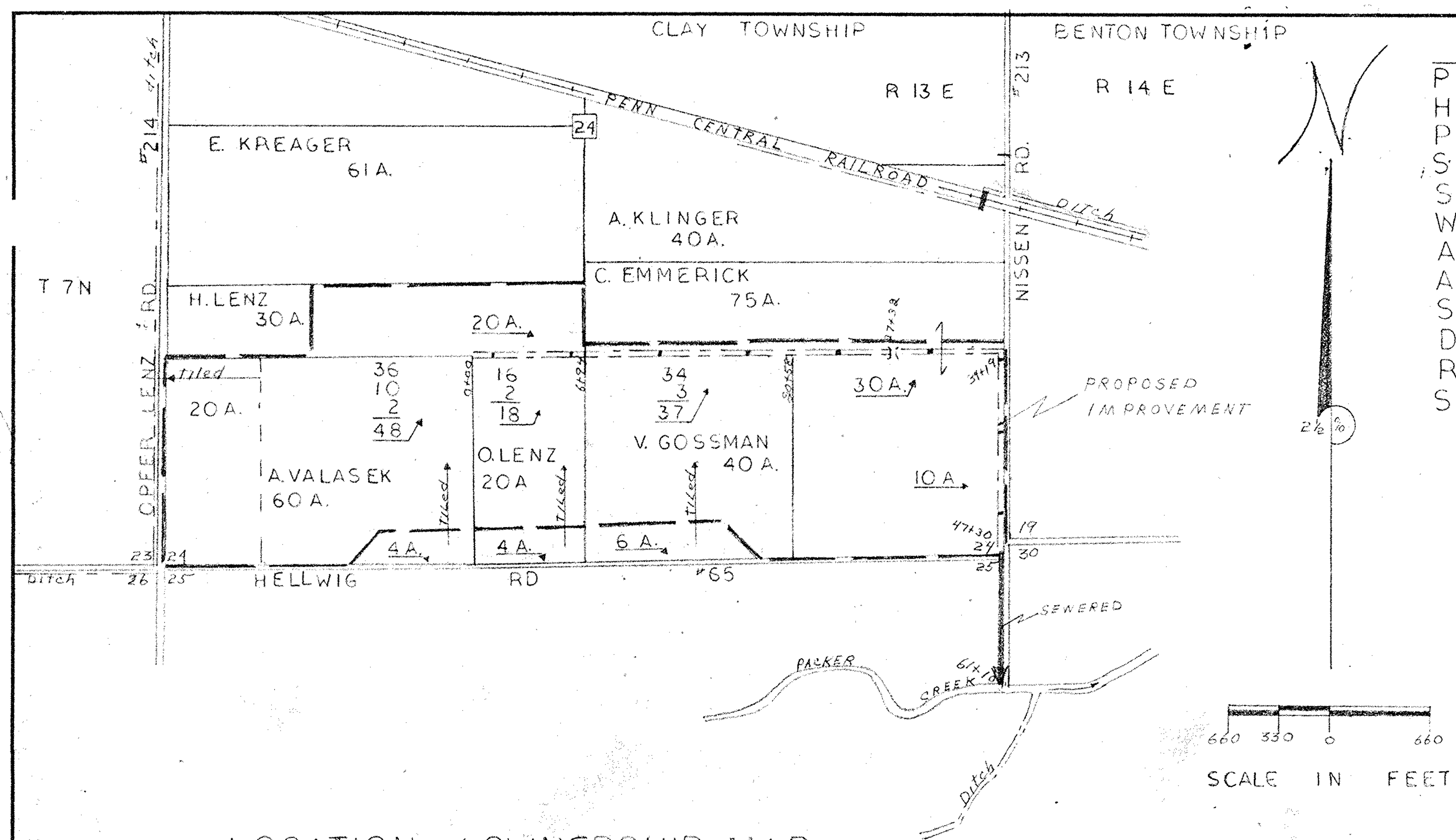
TOTAL YARDS 2,825

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

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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

Valasek Ditch #18 (duplicate)



LOCATION & OWNERSHIP MAP

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 CHISELLED 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

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 ______

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.	0+00
	TO STA	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. F.T.	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 597.97. Inlet control conditions 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 G. Papcun — 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.

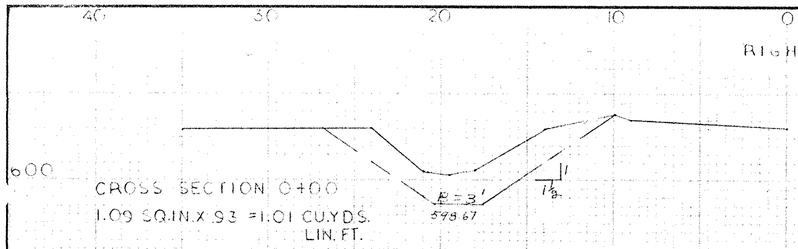
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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

U.S. GOVERNMENT PRINTING OFFICE: 1965 OF—792-928

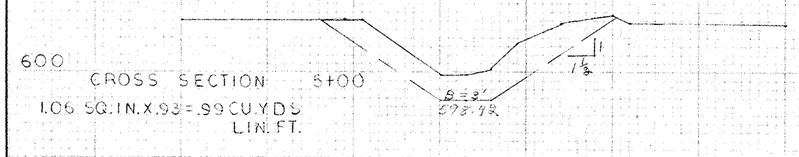
SCS-313 (9-64)


A. VALASEK RIGHT SIDE
H. LENTZ LEFT SIDE
O. LENTZ RIGHT SIDE
H. LENTZ LEFT SIDE
V. GOSSMAN RIGHT SIDE
T.B.M. STA. 0+00
FLOW LINE OF 8"
FROM WEST OR
THE NORTH MAIN
M.S.L. ELEV. 600.31
STA. 0+00
INSTALL EROSION
CONTROL STRUCTURE
STA. 6+89
INSTALL CONTROL
STRUCTURES
NORTH & SOUTH SIDES
BM#1 STA. 14+11
TOP OF SPIKE IN N.
SIDE OF 30" OAK TREE
S. SIDE OF DITCH.
M.S.L. ELEV. 602.29
STA. 20+58
INSTALL CONTROL
STRUCTURE
AVERAGE GROUND
EXISTING DITCH BOTTOM
PROPOSED GRADE
0.05 %
0+00
5+00
10+00
15+00
20+00
C. EMMERICK LEFT SIDE
C. EMMERICK RIGHT SIDE
NISSEN ROAD LEFT SIDE
C. EMMERICK RIGHT SIDE
BM#2 STA. 21+30
SPIKE IN N. SIDE
HICKORY TREES.
SIDE OF DITCH
M.S.L. ELEV. 601.50
STA. 27+32
FARM BRIDGE TO
BE REMOVED
BM#3 STA. 34+93
SPIKE IN W. SIDE OF
UTILITY POLE E. SIDE
OF NISSEN RD.
M.S.L. ELEV. 601.71
STA. 41+17
INSTALL CONTROL
STRUCTURE
STA. 31+00
CONTROL STRUCTURE TO
BE INSTALLED IN THIS
AREA AFTER CONSTRUCTION
NISSEN ROAD
ELEVATIONS IN FEET
(MEAN SEA LEVEL DATUM)
20+00
25+00
30+00
35+00
40+00
45+00
NISSEN ROAD LEFT SIDE
DICKMAN RIGHT SIDE
BM#4 STA. 46+38
SPIKE IN E. SIDE
POWER POLE
WITH BRACE POLE
M.S.L. ELEV. 602.64
HELLWIG RD.
BM#5 X ON N.E. CORNER
OF CONCRETE RAIL
BASE OF RD. BRIDGE
M.S.L. ELEV. 600.96
TOP R/C
END OF PIPE IN
GOOD CONDITION
TAIL WATER 596.00
45+00
50+00
60+00
VALASEK GROUP DITCH #46
DITCH IMPROVEMENT
CLAY TOWNSHIP
OTTAWA COUNTY, OHIO.
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Designed Donald Opfer 4/69
Drawn Donald Opfer 4/69
Traced
Checked
Approved by
Sheet No. 2 of 3
Drawing No. 34-01-83-69-11
FORM SCS-316 (NOV. 1966)



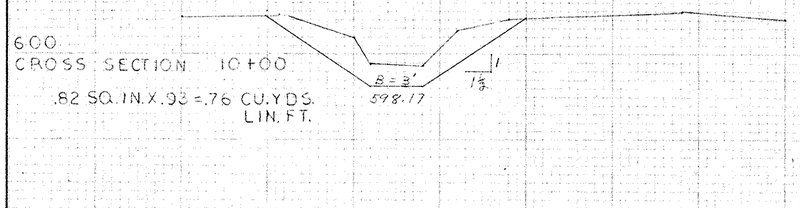
CROSS SECTION 0+00

1.09 SQ.IN.X.93 =1.01 CU.YDS.
LIN. FT.



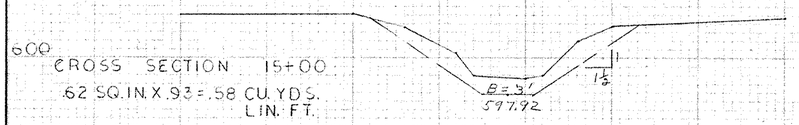
CROSS SECTION 5+00

1.06 SQ.IN.X.93=.99 CU.YDS.
LIN. FT.



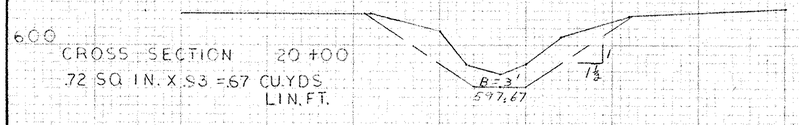
CROSS SECTION 10+00

.82 SQ.IN.X.93 =.76 CU.YDS.
LIN. FT.



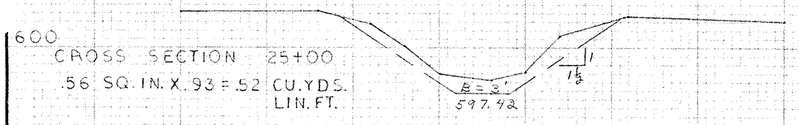
CROSS SECTION 15+00

.62 SQ.IN.X.93 =.58 CU.YDS.
LIN. FT.



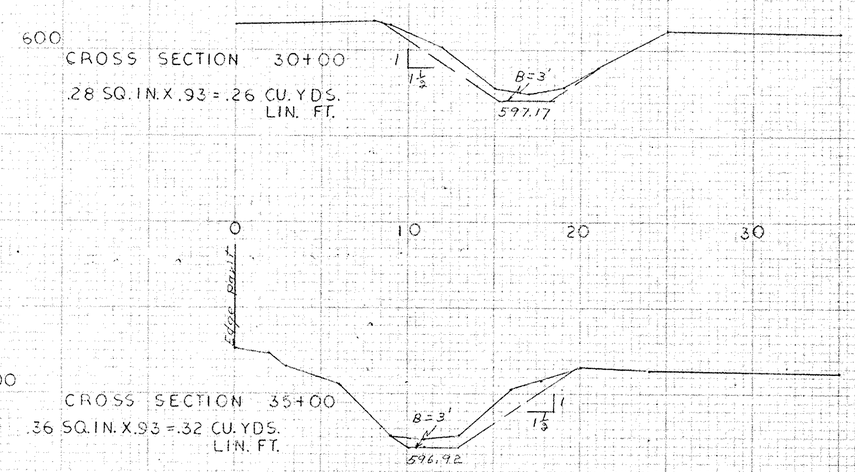
CROSS SECTION 20+00

.72 SQ.IN.X.93 =.67 CU.YDS.
LIN.FT.



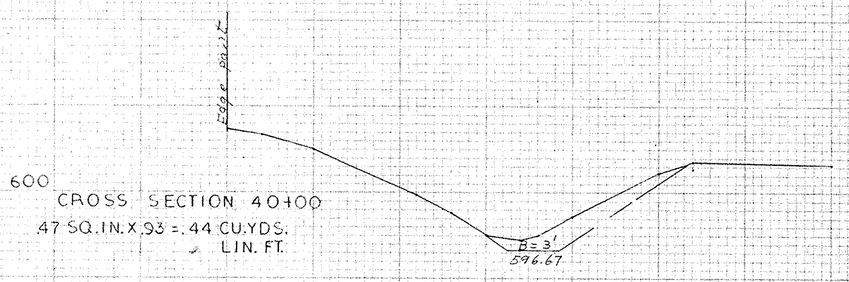
CROSS SECTION 25+00

.56 SQ.IN.X.93 = .52 CU.YDS.
LIN. FT.



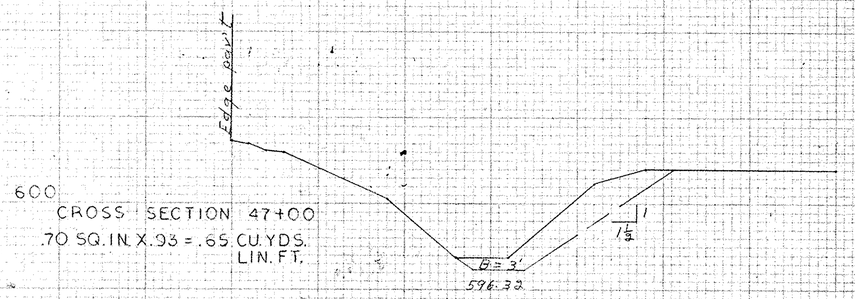
CROSS SECTION 30+00

.28 SQ.IN.X.93 = .26 CU.YDS.
LIN. FT.



CROSS SECTION 35+00

.36 SQ.IN.X.93 =.32 CU.YDS.
LIN. FT.



CROSS SECTION 40+00

.47 SQ.IN.X.93 =.44 CU.YDS.
LIN. FT.

CROSS SECTION 47+00

.70 SQ.IN.X.93 = .65 CU.YDS.
LIN. FT.

YARDAGE

STATION	SQ.INS.	CU.YDS. LIN. FT.	AVE. CU.YDS.	DISTANCE	YARDS
0+00	1.09	1.01			
			1.00	500	500
5+00	1.06	.99			
			.88	500	440
10+00	.82	.76			
			.67	500	335
15+00	.62	.58			
			.63	500	315
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VALASEK GROUP DITCH
DITCH IMPROVEMENT
CLAY TOWNSHIP
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SOIL CONSERVATION SERVICE

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

FORM SCS - 315 (NOV. 1966)