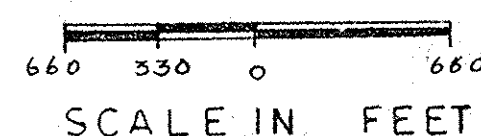


LOCATION & OWNERSHIP MAP



SPECIFICATIONS

- I. EXCAVATION:
  - A. Bottom Width: The bottom width shall be THREE (3) feet between sta. 0+00 and sta. 67+29. FOUR (4) feet between sta. 67+57 and sta. 72+15.
  - 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 4,690 cubic yards of earth over 7,215 lineal 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.
  - F. The contractor shall be given a right-of-way on each side of the ditch 50 feet from the bank of the ditch at all points.
- 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 shall be removed or cut as low as cutting tools permit. All stumps on the slopes shall be removed. 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 Service Technician.
- VI. 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 Service Tech.
- VII. DITCH BANK SEEDING: The ditch banks will be seeded, immediately after each day's work, to tall fescue (Kentucky 30 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. 3.5 acres of ditch bank seeding will be required.
- VIII. CULVERTS: Existing culverts will be cleaned and the inverts (flow line) lowered to correspond to the proposed ditch grade as indicated on the plan. If necessary, culverts will be enlarged to meet drainage demands.

Station 17+06 REMOVE	Station 28+53 CLEAN UNDERPIN OR 36" R/C	Station 33+28 REMOVE	Station 39+33 LOWER TO GRADE
Station 42+07 CLEAN	Station 52+81 CLEAN	Station 63+04 CLEAN	Station 67+29 CLEAN

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

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.

LEGEND

PROPOSED IMPROVEMENT	---
HIGHWAYS	====
PROPERTY LINE	----
WATERSHED	~~~~
SECTION CENTER	□
SECTION CORNER	+
ACRES OWNED	00 A.
ACRES BENEFITED	00 A.
STREAMS	~~~~~
RAILROAD	—+—+—+—
SEWERS	—•—•—•—

SUPPORTING DATA

DRAINAGE AREA	240 ACRES
DESIGN COEFFICIENT	0.6 CURVE
LAND USE	GENERAL # SPECIAL
SOIL TYPE	TOLEDO # FULTON
LAND SLOPE	0-2 %
TYPE DRAINAGE	SURFACE # TILE

INDEX TO SMALL PARCELS

SECTION	PARCEL	PROPERTY OWNERS	ACRES
27	A	JAMES KLOER	1.5
27	B	DONALD VOGELPOHEL	1.5
27	C	ROBERT VOGELPOHEL	3.5
34	D	DAVID FRIEDRICKSON	3.0
35	E	ELWOOD LAU	1.0
35	F	WILLIAM SCHMIDT	1.0
27, 34, 35	G	ALLEN TWP TRUSTEES	5
27	H	EDWARD MILLER	1

BENCH MARK DESCRIPTIONS

BM #1	TOP OF SPIKE IN S. SIDE OF ELECTRIC POLE N. SIDE OF CURTICE EAST ROAD.	STA-0+00	M.S.L. ELEV. 595.79
BM #2	TOP OF SPIKE IN SW. SIDE OF TELEPHONE POLE N. SIDE OF CURTICE EAST ROAD.	STA-8+85	M.S.L. ELEV. 594.22
BM #3	TOP OF SPIKE IN S.W. SIDE OF TELEPHONE POLE N. SIDE OF CURTICE EAST ROAD.	STA-19+50	M.S.L. ELEV. 592.81
BM #4	TOP OF SPIKE IN S.W. SIDE OF TELEPHONE POLE N. SIDE OF CURTICE EAST ROAD IN VOGELPOHL BLDG. AREA.	STA-29+55	M.S.L. ELEV. 592.70
BM #5	TOP OF E. END OF 42" R/C PIPE OF STOKLEY VAN CAMP DRIVE.	STA-39+55	M.S.L. ELEV. 591.16
BM #6	TOP OF CHISELED X ON CENTER OF W. HEAD-WALL OF 36" R/C PIPE HELLE BROS. YARD.	STA-42+07	M.S.L. ELEV. 590.66
BM #7	R.R. SPIKE IN N. SIDE OF POWER S.W. CORNER OF INTERSECTION OF CURTICE EAST AND MARTIN WILLISTON ROADS.	STA-52+85	M.S.L. ELEV. 590.65
BM #8	TOP OF SPIKE IN E. SIDE OF TELEPHONE POLE S. SIDE OF DITCH 10' W. OF DRIVE CULVERT.	STA-67+19	M.S.L. ELEV. 587.71
BM #9	TOP OF CHISELED X ON S.W. CORNER OF STEEL BRIDGE ON CONCRETE HEADWALL.	STA-74+20	M.S.L. ELEV. 587.72

THIS DITCH PLAN HAS BEEN APPROVED BY:  
*John G. Pappan*  
 OTTAWA COUNTY ENGINEER 3/20/70 DATE

HYDRAULIC CALCULATIONS

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

REACH	STA. TO STA.	0+00	28+53	39+33	42+07	43+77	54+93	63+28	67+29	72+15
DRAINAGE AREA AC		118	184	184	226	237	237	240	240	240
Qc FLOW CFS		13	19	19	23	24	24	25	25	25
N		.04	.04	.04	.04	.04	.04	.04	.04	.04
SLOPE FT. FT.		.0008	.0005	.0005	.0010	.0008	.0008	.0045	.0045	.0045
S 1/2		.0283	.0224	.0224	.0316	.0283	.0283	.0656	.0656	.0656
Q / S 1/2 = KD		459	849	849	729	842	842	366	391	391
KD VALUE USED		498	854	854	788	854	854	401	401	401
SIDE SLOPE FT.		1 1/2 : 1	1 1/2 : 1	1 1/2 : 1	1 1/2 : 1	1 1/2 : 1	1 1/2 : 1	1 1/2 : 1	1 1/2 : 1	1 1/2 : 1
BOTTOM WIDTH FT.		3	3	3	3	3	3	3	4	4
DEPTH FT.		2.0	2.5	2.6	2.5	2.6	2.6	12	18	18
AREA SQ. FT.		12.00	17.94	17.94	18.38	17.94	17.94	10.26	10.26	10.26
VELOCITY FPS		1.1	1.1	1.1	1.4	1.3	1.3	2.3	2.3	2.3

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

STATION	28+53	39+33	42+07	52+81	63+04	67+29
DRAINAGE AREA	118	184	184	226	237	237
Qc FLOW CFS	13	19	19	23	24	24
DIAMETER IN.	36	42	36	42	36	36
TYPE	R/C	R/C	R/C	R/C	C.M.P.	C.M.P.
N	.013	.013	.013	.013	.025	.025
LENGTH FT.	24	22	182	212	24	28
X, SEC. AREA SQ. FT.	7.07	9.62	7.07	9.62	7.07	7.07
KP	.0072	.0059	.0072	.0059	.027	.027
KPL	.17	1.30	1.31	1.25	.648	.756
KE	.50	.50	.50	.50	.90	.90
VELOCITY Q/A FPS	1.8	2.0	2.7	2.4	3.0	3.4
HEADLOSS FT.	.08	.10	.32	.25	.46	.45

Inlet Control HWD 0.53 0.53 0.66 0.66 0.82 0.82  
 HW 1.58 1.96 1.98 2.10 2.46 2.46

LOCATION - N 1/2 OF N.W. 1/4 # N. 1/2 OF N.E. 1/4 OF SEC. 34 N. 1/2 OF N.W. 1/4 OF SEC. 35 T-8N R-13 E. ALLEN TOWNSHIP OTTAWA COUNTY, OHIO.

SURVEYED - 6-27-69 D. OPFER E. CAMPBELL D. SOMMER D. SAYRE

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

JOB CLASS I GROUP #47

CURTICE EAST ROAD DITCH DITCH IMPROVEMENT ALLEN TOWNSHIP OTTAWA COUNTY, OHIO.

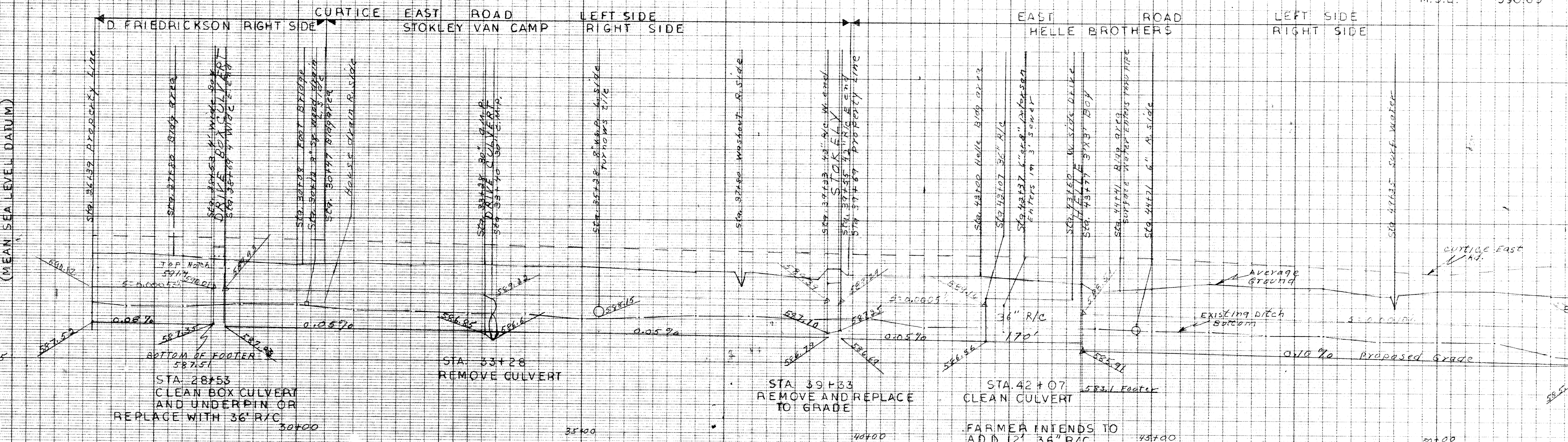
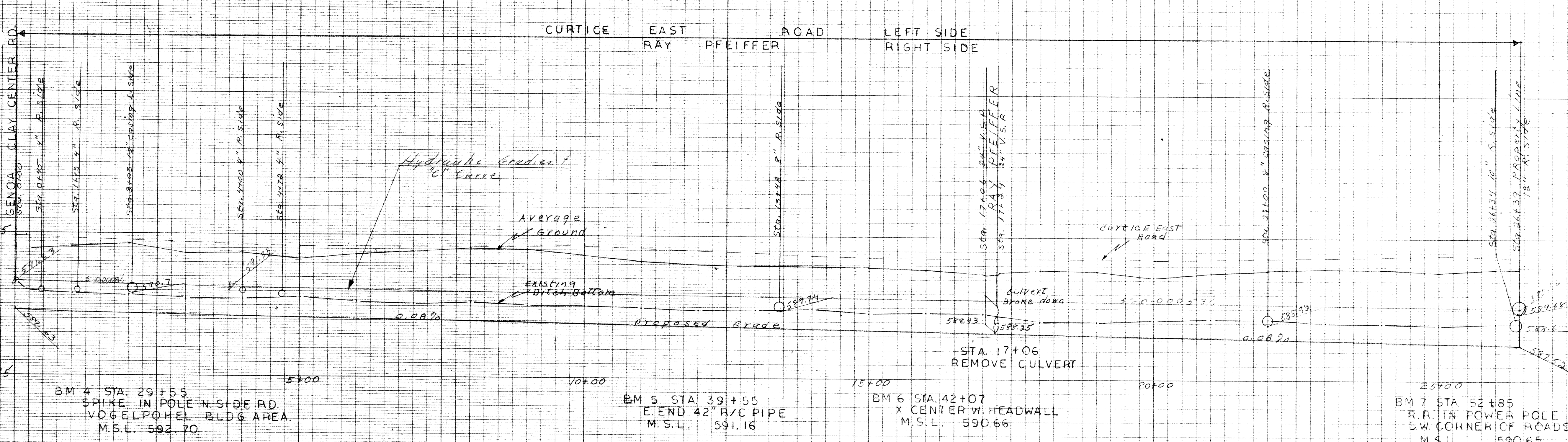
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

Date 4/70  
 Designed Donald Opfer  
 Drawn Donald Opfer  
 Checked [Signature]

Approved by [Signature]  
 Title [Signature]  
 Title [Signature]

Sheet No. 1 of 5 Drawing No. 34-01-83-70-4

BM 1 STA. 0+00 SPIKE IN POLE N. SIDE RD. M.S.L. 595.79  
 BM 2 STA. 8+85 SPIKE IN POLE N. SIDE RD. M.S.L. 594.22  
 BM 3 STA. 19+50 SPIKE IN POLE N. SIDE RD. M.S.L. 592+81



ELEVATIONS IN FEET  
(MEAN SEA LEVEL DATUM)

June 20th 04-14-32 for  
 KAREN TRAVEL 45' on 42" R/C  
 STA. 22 to 37+70 OK. 46A-31  
 Now  
 BM - STA. 37+75.5 - ING. WALK IN  
 P.R. #07208-173180 - N. side Road  
 between Haves & 24267 - 021309  
 Elev = 593.77'

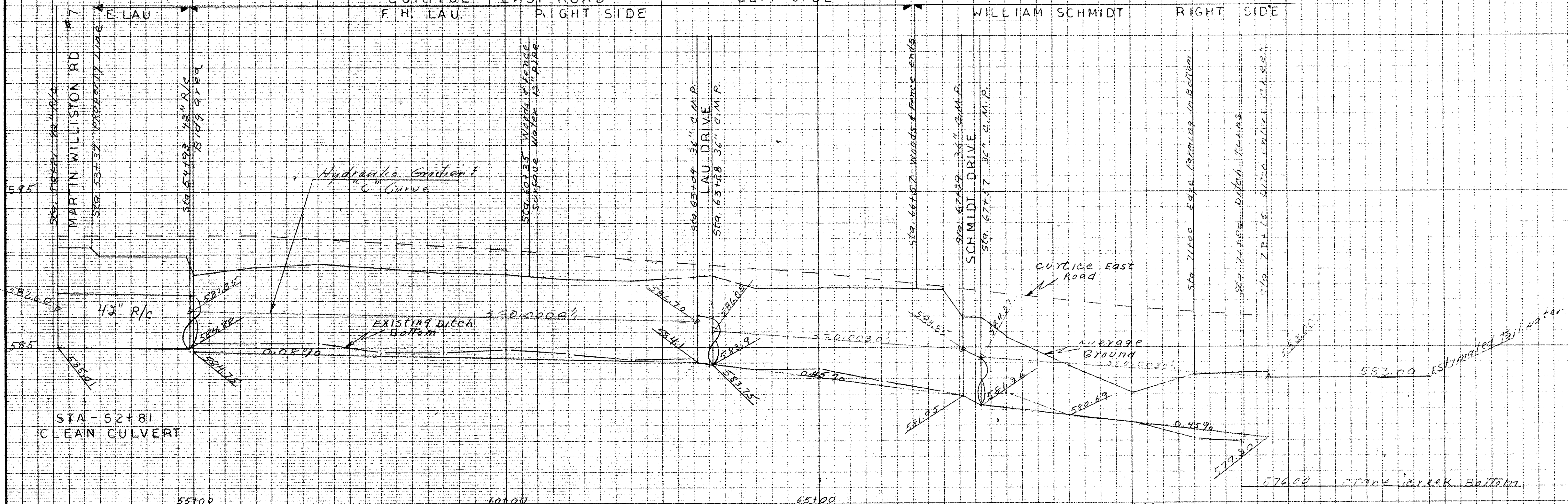
CURTICE EAST ROAD DITCH  
 DITCH IMPROVEMENT  
 ALLEN TOWNSHIP  
 OTTAWA COUNTY, OHIO.  
 U. S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE

Designed <u>Donald E. Geyer</u>	Date <u>11/69</u>	Approved by <u>[Signature]</u>
Drawn <u>Donald E. Geyer</u>	Title <u>1/69</u>	
Traced <u>[Signature]</u>	Title <u>[Signature]</u>	
Checked <u>[Signature]</u>	Sheet <u>2</u>	Drawing No. <u>34-01-83-70-4</u>
	of <u>5</u>	

BM 8 STA. 67+19  
 SPIKE IN POLE S. SIDE DITCH  
 10" W. DRIVE CULVERT.  
 M.S.L. 587.71

BM 9 STA. 74+20  
 X S.W. CORNER OF BRIDGE  
 M.S.L. 587.77

CURTICE EAST ROAD  
 F.H. LAU LEFT SIDE WILLIAM SCHMIDT RIGHT SIDE



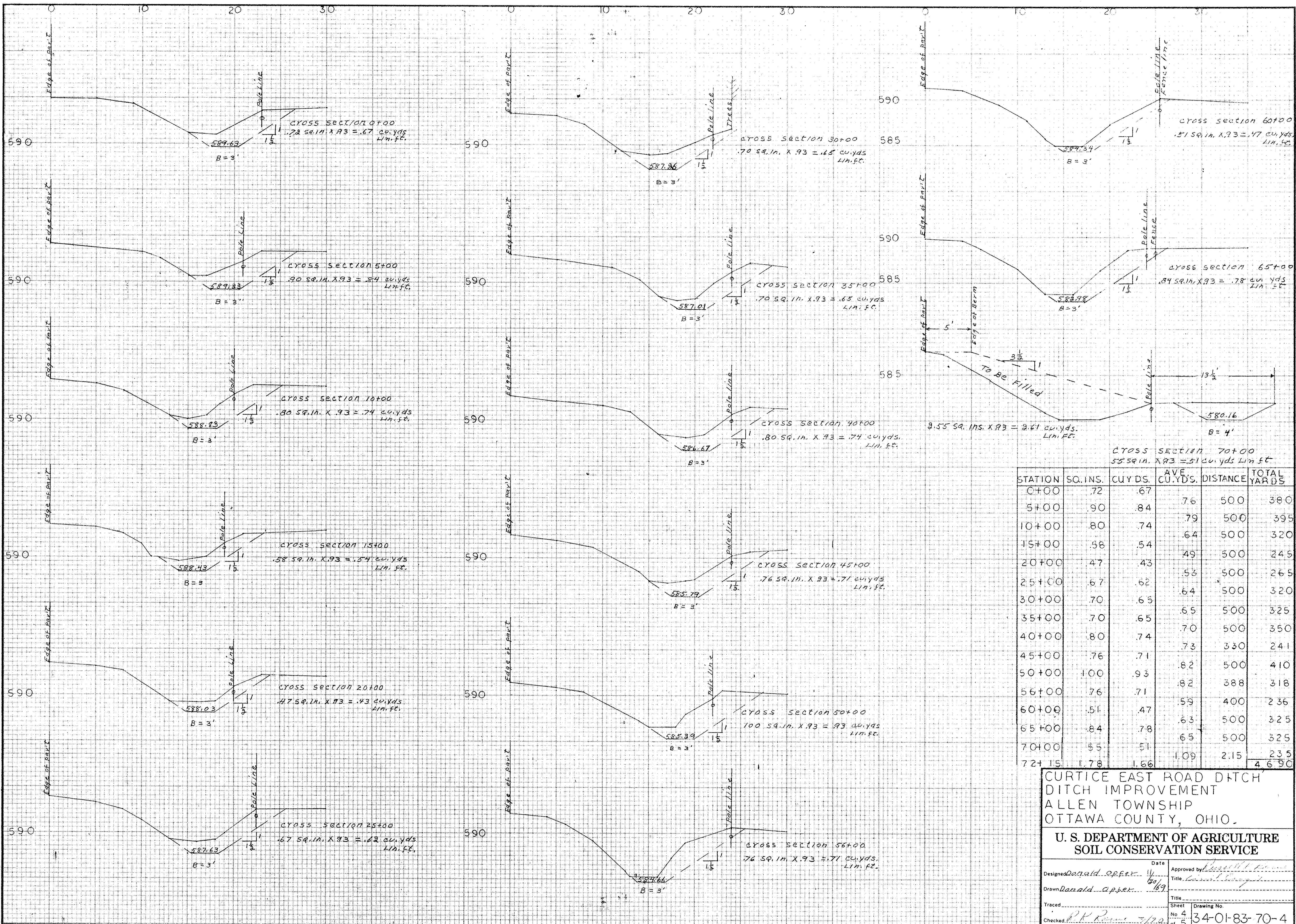
STA 67+57 SWING DITCH TO SOUTH APPROX.  
 15 FEET WITH 4' BOTTOM AND ALSO TO FILL  
 EXISTING DITCH WITH 5' RD BERM AND  
 3 1/2 TO 1 SLOPE  
 SEE CROSS SECTION 70+00

ELEVATIONS IN FEET  
 (MEAN SEA LEVEL DATUM)

CURTICE EAST ROAD DITCH  
 DITCH IMPROVEMENT  
 ALLEN TOWNSHIP  
 OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE

Designed <u>Donald G. Pifer</u>	Date <u>4/30/89</u>	Approved by <u>[Signature]</u>
Drawn <u>Donald G. Pifer</u>	Title <u>[Signature]</u>	
Traced _____	Title _____	
Checked <u>[Signature]</u>	Sheet No <u>3</u>	Drawing No. <u>34-01-83-70-4</u>
	of <u>5</u>	



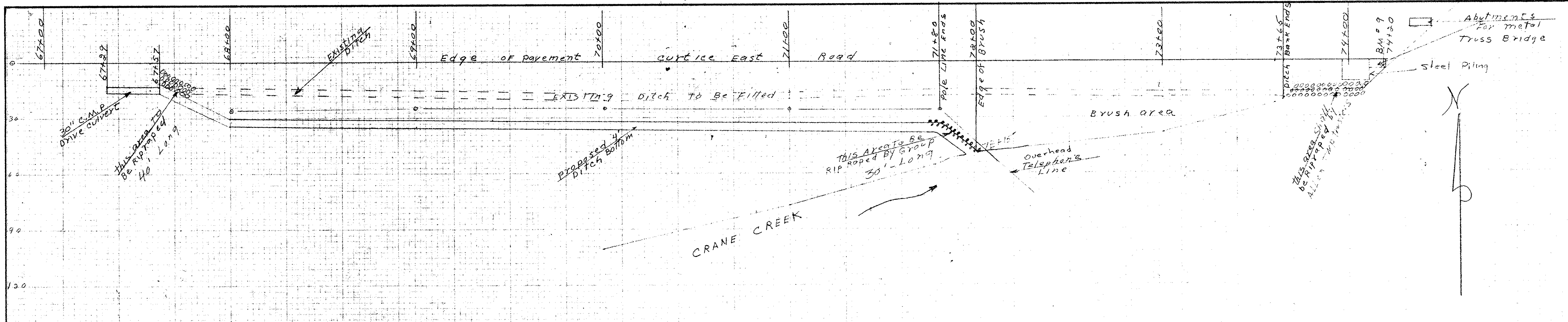
CROSS SECTION 70+00  
55 sq. in. X .93 = .51 cu. yds. Lim. ft.

STATION	SQ. IN.	CUYDS.	AVE. CU. YDS.	DISTANCE	TOTAL YARDS
0+00	72	.67			
5+00	90	.84	.76	500	380
10+00	80	.74	.79	500	395
15+00	98	.54	.64	500	320
20+00	47	.43	.49	500	245
25+00	67	.62	.53	500	265
30+00	70	.65	.64	500	320
35+00	70	.65	.65	500	325
40+00	80	.74	.70	500	350
45+00	76	.71	.73	330	241
50+00	100	.93	.82	500	410
56+00	76	.71	.82	388	318
60+00	51	.47	.59	400	236
65+00	84	.78	.63	500	325
70+00	55	.51	.65	500	325
72+15	178	1.66	1.09	215	235
					4690

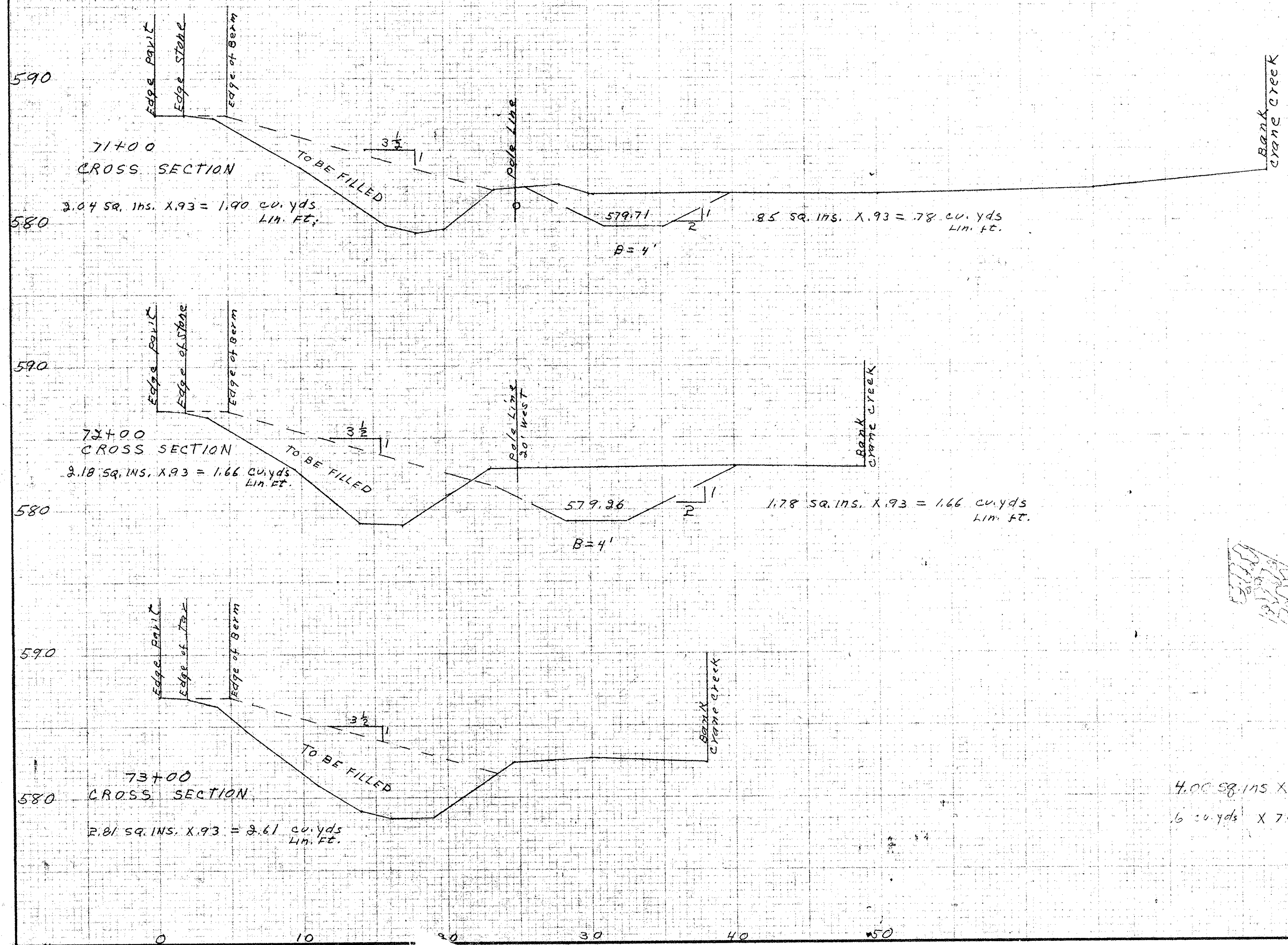
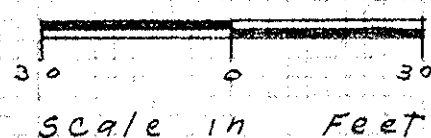
CURTICE EAST ROAD DITCH  
DITCH IMPROVEMENT  
ALLEN TOWNSHIP  
OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Designed Donald Apper Date 7/20/69 Approved by [Signature]  
 Title Conservation Engineer  
 Drawn Donald Apper Title [Signature]  
 Traced [Signature] Title [Signature]  
 Checked P.K. Rouse 7/20/69 Sheet No. 4 of 5 Drawing No. 34-01-83-70-4

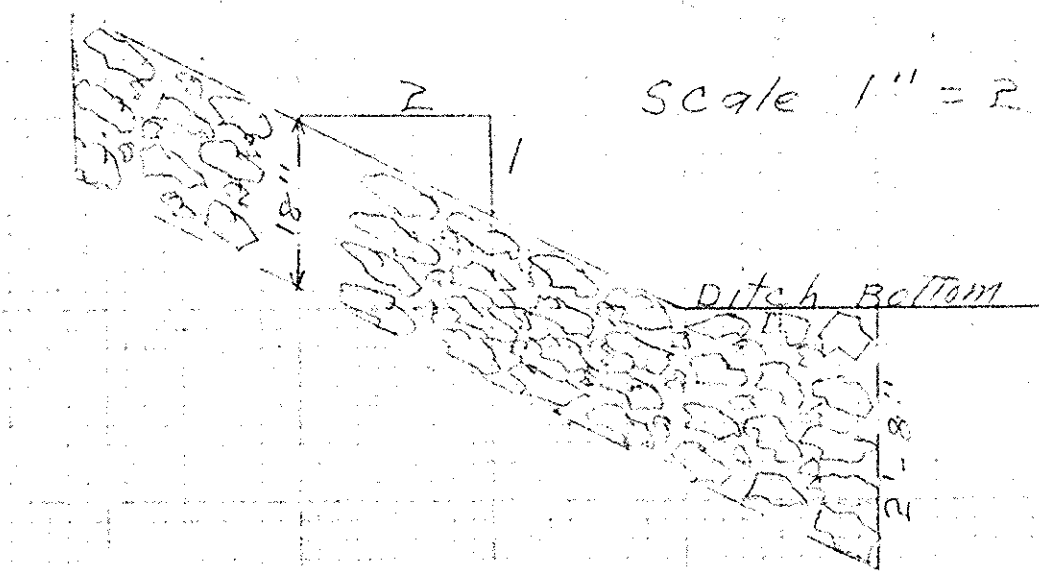


PLAN VIEW FOR OUTLET



YARDAGE TO FILL

STATION	SQ. INS.	CU. YDS. LIN. FT.	AVE. CU. YDS.	DISTANCE	TOTAL YARDS
67+57				243	576
70+00	2.55	2.37	2.37	100	214
71+00	2.04	1.90	2.14	100	178
72+00	1.78	1.66	1.78	100	214
73+00	2.81	2.61	2.61	65	170
73+65	2.81	2.61	2.61		
EXCAVATION 67+57 TO 72+15					1,352
CUBIC YARDS NEEDED TO COMPLETE FILL FROM STA 67+57 TO 72+15					400
					952



$4.00 \text{ sq. ins.} \times 4 = 16.0 \text{ lin. ft.} = 16 \text{ cu. yds. lin. ft.}$   
 $16 \text{ cu. yds.} \times 70' = 43 \text{ cu. yds. rip rap}$

CURTICE EAST ROAD DITCH  
DITCH IMPROVEMENT  
ALLEN TOWNSHIP  
OTTAWA COUNTY OHIO

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Designed <i>Donald. apfer</i>	Date <i>3/72</i>	Approved by <i>David E. Peene</i>
Drawn <i>Donald. apfer</i>	Date <i>3/72</i>	Title <i>Outlet</i>
Traced	Sheet	Drawing No.
Checked <i>D. E. Peene</i>	No. <i>5</i>	of <i>5</i>

34-01-83-70-4