

LOCATION AND OWNERSHIP MAP  
BENTON TOWNSHIP

### LEGEND

PROPOSED IMPROVEMENT	=====
HIGHWAYS	====
PROPERTY LINE	---
WATERSHED	-----
SECTION CENTER	X
SECTION CORNER	X
ACRES IN WATERSHED	XX
STREAM (LARGE)	~~~~~
DITCH (4" OVER)	-----
RAILROAD	—+—+—+—
ACRES OWNED	XX A.

### SUPPORTING DATA

DRAINAGE AREA	393 AC.
DESIGN COEFFICIENT	0.05
LAND USE	GENERAL FARMING
SOIL TYPE	TOLEDO, FULTON
LAND SLOPE	0-2%
TYPE DRAINAGE	SURFACE & TILE

### CONSTRUCTION DATA

STATION	GRADE	WIDTH	SLOPE	CUBIC YARDS	AVERAGE DEPTH
26+36	0.10	3'	1/2:1	132	4'
29+14	0.15	3'	1/2:1	114	3.5
29+35	0.12	3'	1/2:1	85	4.5
21+54	0.05	3'	1/2:1	35	3.5

### INDEX TO SMALL PARCELS

SECTION	PARCEL	PROPERTY OWNERS	ACRES
8	A	AT-T & CABLE	1.5
8	B	NORFOLK WESTERN R.R.	4.0
8	C	CITIZENS COUNTY	5.0
8	D	BENTON TWP TRUSTEES	5.0

- ### BENCHMARK DESCRIPTION
- BM-1 TOP OF SPIKE IN NW TAP ROOT OF 3" STA. 3+10 OAK TREE 10' SOUTH OF DITCH. M.S.L. ELEV. 592.70
  - BM-2 TOP OF SPIKE IN NORTH WEST SIDE OF STA. 21+54 AT T CABLE LINE POLE 35' SOUTH EAST OF DITCH. M.S.L. ELEV. 590.90
  - BM-3 TOP OF SPIKE IN SOUTH SIDE OF POWER STA. 27+50 POLE ON NORTH SIDE OF TROWBRIDGE ROAD. M.S.L. ELEV. 589.54
  - BM-4 TOP OF CHISELED X ON NORTH WEST CORNER OF CONCRETE CATCH BASIN COVER LOCATED IN SOUTH WEST CORNER OF INTERSECTION OF GRAYTOWN AND TROWBRIDGE ROAD. M.S.L. ELEV. 588.75
  - BM-5 TOP OF CHISELED X ON CENTER OF STA. 47+43 WEST HEAD WALL OF CONCRETE CATCH BASIN ON EAST SIDE OF GRAYTOWN ROAD. M.S.L. ELEV. 586.31
  - BM-6 TOP OF CHISELED X ON SOUTH END OF STA. 56+37 HEAD WALL ON DROP BOX STRUCTURE ON LILLIAN SOMMER. M.S.L. ELEV. 585.25
  - BM-7 TOP OF CHISELED X ON CENTER OF STA. 65+25 EAST HEAD WALL OF CATCH BASIN ON EAST SIDE OF GRAYTOWN ROAD. M.S.L. ELEV. 582.44
  - BM-8 TOP OF CHISELED X ON NORTH END OF STA. 66+68 OF CONCRETE HEAD WALL IN NORTH WEST CORNER OF INTERSECTION OF GRAYTOWN AND HAUSENCOMB ROAD. M.S.L. ELEV. 585.01
  - BM-9 TOP OF U.S.G.S. MARKER PLATE IN EAST STA. 77+50 STEP OF SOUTH ABUTMENT OF BRIDGE ON GRAYTOWN ROAD OVER TURTLE CREEK. M.S.L. ELEV. 585.47

THIS DITCH PLAN HAS BEEN APPROVED BY  
*John A. Pappas*  
OTTAWA COUNTY ENGINEER DATE 11/2/68

SURVEYED - D. SOMMER 6/3/4/1968  
E. CAMPBELL  
D. OFFER

LOCATION - E 1/2 OF SE 1/4 OF SEC. 8 N 1/2 OF N.E. 1/4 AND E 1/2 OF N.W. 1/4 OF SEC. 17 T 7 N. - R 14 E. BENTON TWP OTTAWA COUNTY, OHIO.

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

### HYDRAULIC CALCULATION

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

REACH	STA TO STA	C+00	21+54	21+92	29+14	29+35	39+45
DRAINAGE AREA AC.		121	184	355.5	393		
Qc FLOW CFS.		14	20	31	33		
N		.04	.04	.04	.04		
SLOPE - S FT./FT.		.0005	.0010	.0015	.0010		
S 1/2		.0224	.0310	.0387	.0310		
Q/S 1/2 = KD		625	634	801	1044		
KD VALUE USED		663	663	654	1079		
SIDE SLOPE		1/2:1	1/2:1	1/2:1	1/2:1		
BOTTOM WIDTH FT.		3'	3'	3'	3'		
DEPTH FT.		2.3	2.3	2.6	2.9		
AREA SQ.FT.		14.9	14.9	17.94	21.33		
VELOCITY Q/A=F.P.S.		.94	1.34	1.72	1.55		

### HEAD LOSS IN CULVERTS

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

STATION	16+15	21+54	29+35	29+45	43+35	51+33	59+14	66+36	77+50
DRAINAGE AREA AC.	100	130	184	238	265	300	355.5	393	412
Qc FLOW - CFS	12	15	20	24	26	29	31	33	34
DIAMETER IN.	24"	30"	30"	42"	35"	36"	3' X 3'	48"	36"
TYPE	VSP	VSP	R/C	R/C	R/C	R/C	CONCRETE	C.T.	C.T.
"N"	0.14	0.14	0.13	0.13	0.13	0.13	0.15	0.15	0.13
LENGTH FT.	24'	44'	8'	40'	24'	24'	20'	24'	16.65'
X SECTIONAL AREA SQ.FT.	3.14	4.91	4.91	9.62	7.07	7.07	8.50	12.57	7.07
KP	.14	.107	.0092	.0059	.0072	.0072	.0053	.0066	.0012
KPL	3.36	4.7	.074	.24	.17	.17	.14	.158	7.60
KE	.50	.50	.50	.50	.50	.50	.50	.50	.50
VELOCITY FPS.	3.8	3.1	4.1	2.5	3.7	4.1	3.65	2.63	4.81
HEAD LOSS FT.	.40	.30	.41	.17	.35	.43	.34	.18	3.34'

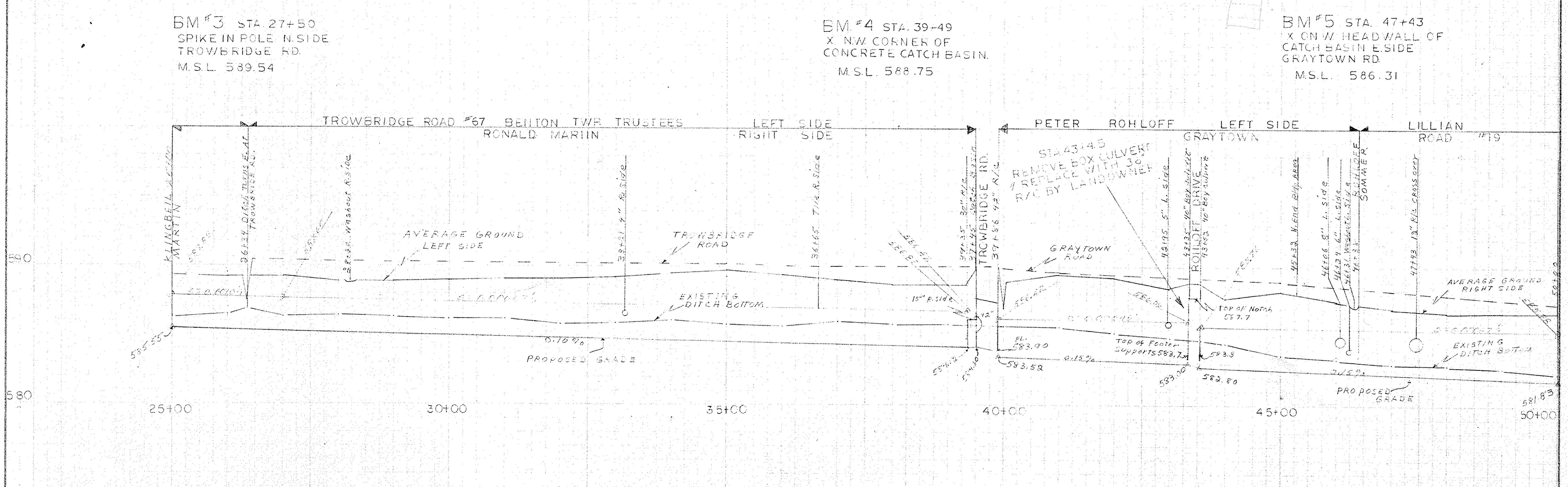
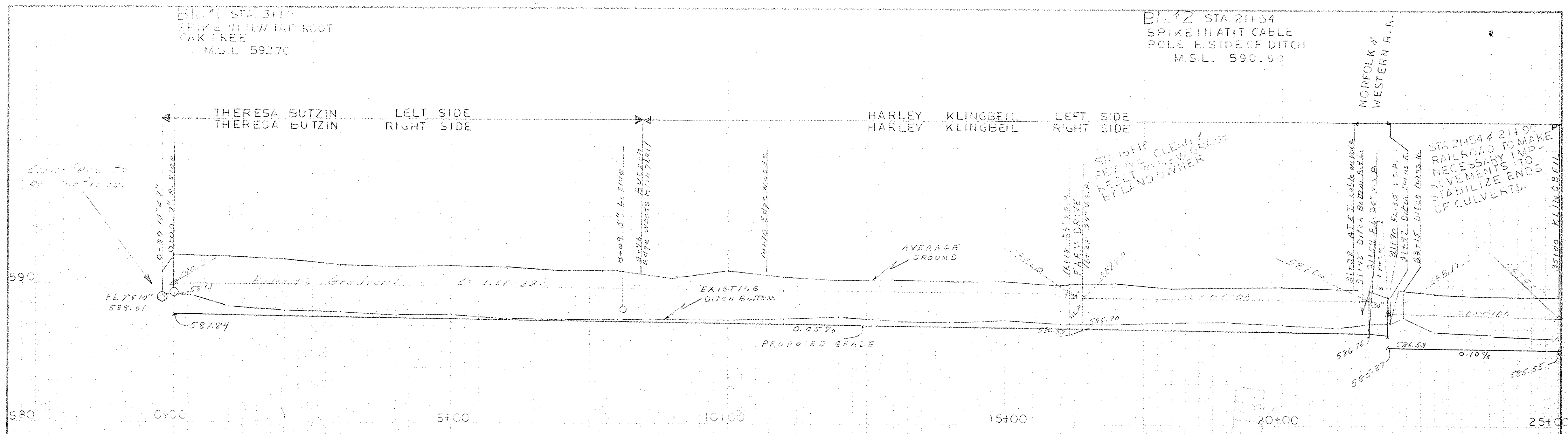
The 36" culvert will provide "C" curve (3") topward until the tailwater in Turtle Creek exceeds elevation 579.48

### ENGINEERING JOB CLASS IV

#### DITCH IMPROVEMENT PLAN LICK DITCH GROUP BENTON TOWNSHIP OTTAWA COUNTY, OHIO.

#### U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

Designed	Donald Pappas	Date	11/2/68
Drawn	Donald Pappas	Approved by	Russell K. Rowan
Traced		Title	Soil Engg.
Checked	R.H. Rowan	Sheet	No. 1
		Drawing No.	34-01-83-68-00



**DITCH IMPROVEMENT  
LICK DITCH  
BENTON TOWNSHIP  
OTTAWA COUNTY, OHIO.**

**U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE**

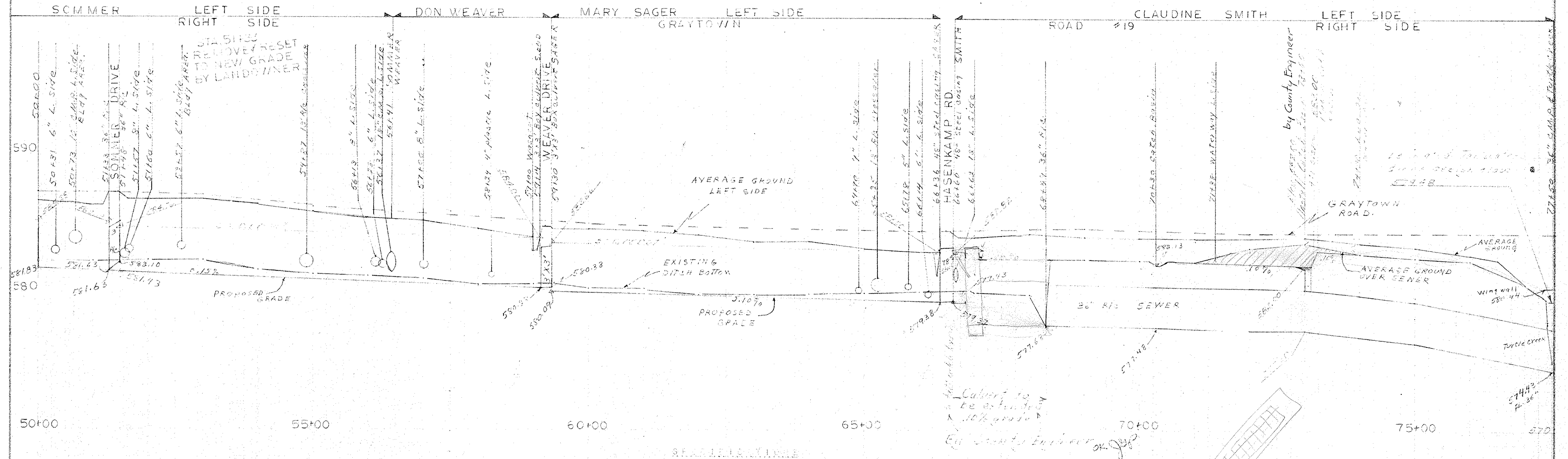
Design: Donald Effer	Date: 7/18	Approved by: [Signature]
Drawn: Donald Effer	Date: 7/18	Title: [Signature]
Traced: [Signature]	Date: [Signature]	Drawing No. [Signature]
Checked: [Signature]	Date: 7/18	34-01-83-18-05

BM #6 STA. 50+37  
X ON S. END OF HEAD WALL  
OF CONTROL STRUCTURE  
M.S.L. 585.25

BM #7 STA. 65+25  
X ON E. HEADWALL ON  
CATCH BASIN E. SIDE  
GRAYTOWN RD.  
M.S.L. 582.44

BM #8 STA. 66+05  
X N. END OF CONCRETE  
HEAD WALL N. SIDE OF  
INTERSECTION.  
M.S.L. 585.01

BM #9 STA. 77+50  
U.S.G.S. MARKER PLATE IN E.  
STEP OF ABUTMENT OF  
BRIDGE OVER TURTLE CREEK  
M.S.L. 585.47



- REQUIREMENTS
- GENERAL**
    - Bottom Width: The bottom width shall be THREE (3) feet between sta. 50+36 and sta. 60+36.
    - Bank Slopes: The ditch bank slopes are to be constructed to a minimum of 1:1.5 (1 foot horizontal to 1.5 feet vertical).
    - All earth: The centerline of the improvement shall be as shown on the centerline of the existing ditch unless otherwise indicated on the plan.
    - Total Excavation: The total excavation consists of 2474 cubic yards of earth over 6536 linear feet of ditch.
    - Excavation: No extra compensation will be paid for such excavation in excess of yardage herein estimated. This will not be made from cross-sections of the proposed ditch. The contractor should verify the proposed work to his own satisfaction.
  - DEBRIS**  
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 bank 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.
  - DITCH WIDTH**  
Unless otherwise noted the ditches will have the following minimum widths: Four (4) feet wide for ditches up to four (4) feet depth; six (6) feet wide for four to six foot depth; and ten (10) feet wide for ditches over six foot in depth.
  - SPILLWAYS**  
Excavated material should be deposited and spread along the field side of the ditch, as determined, except when used for lawns, and in overflow runs with timber or brush cover. Slope of the spoil after spreading should be at least 3:1 on the channel side and 1:1 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.
  - THE OUTFALL**  
Undersides shall protect their tile outlets with a section of continuous rigid pipe and flap gate as per plan to exclude rodents. For details of construction see your Soil Conservation Technician.
  - SPILLWAY PROTECTION**  
Wherever a lateral or a surface ditch enters the main ditch, a higher elevation protection from erosion should be provided by: wrap structures, pipe ditches, other suitable structures or yoked entrance. 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 (1 lb. per 100 sq. ft.) and 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.
  - EXISTING**  
Existing culverts will be cleaned and the inverts (flow lines) lowered to correspond to the proposed ditch grade on the plan.

6"x8" Catch Basin  
180' - 30' @ 20" = 3600 cu ft  
4' - 12" @ 20" = 960 cu ft  
3700 cu ft

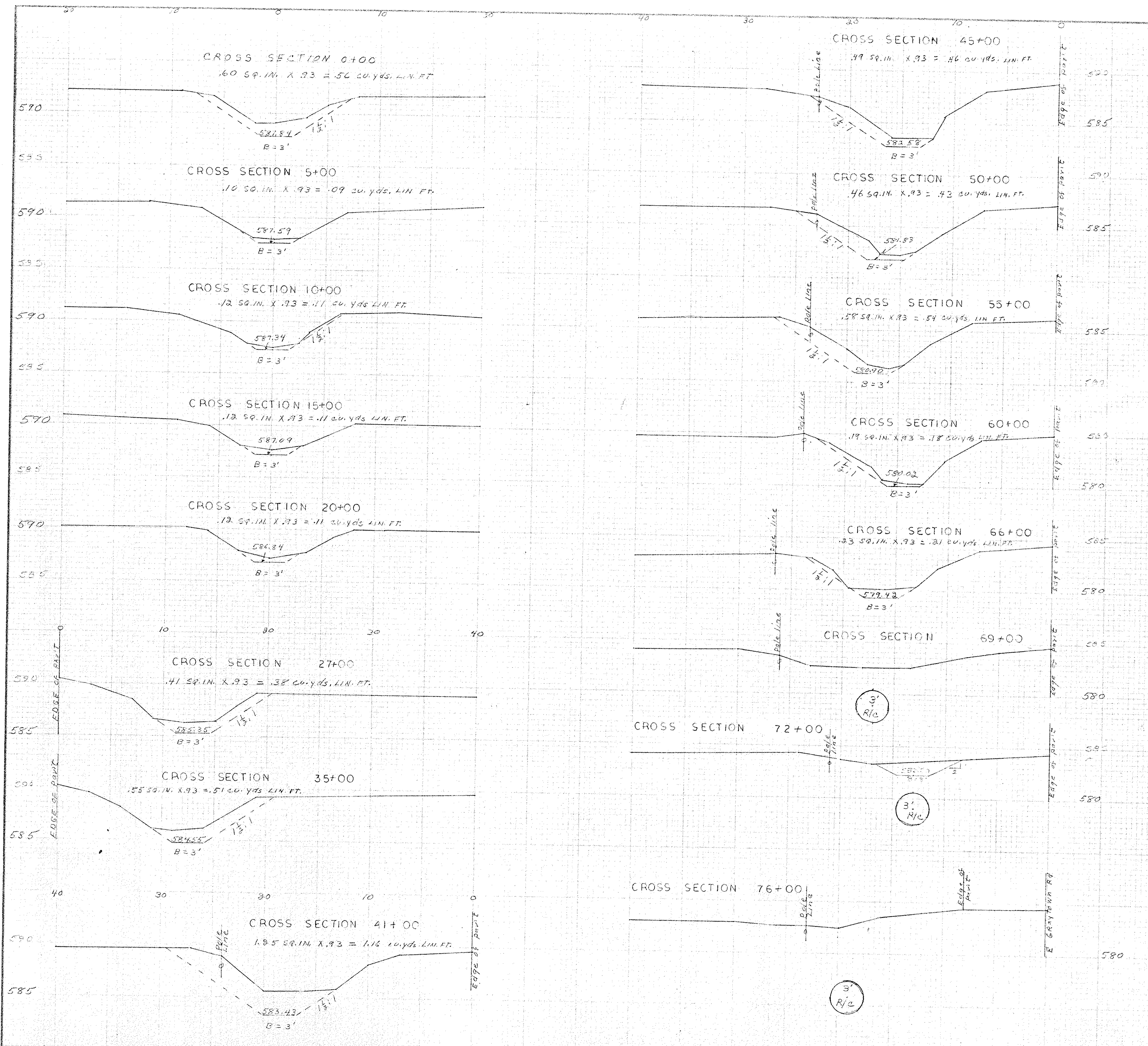
APR 29 66-166 157-30"  
1-9-1971  
548' Catch Basin  
6x6 - \$20000

APR 29 66-166 157-30"  
1-9-1971  
548' Catch Basin  
6x6 - \$20000

Station 16+18 ..... Station 21+54 ..... Station 30+35 ..... Station 39+45 ..... Station 45+35  
RESET GRADE ..... REPAIR BOTH ENDS ..... REPLACE WITH 36" R/C

Station 51+33 ..... Station 59+14 ..... Station 65+25 ..... Station 70+00 ..... Station 75+00  
RESET GRADE

DITCH IMPROVEMENT LICK DITCH BENTON TOWNSHIP CATAWA COUNTY, OHIO. U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE		Date	7/68
		Designed	Danard 7/58
Drawn	Danard 2/58	Title	
Traced		Sheet	34-01-208-C3
Checked		Drawing No.	



YARDAGE					
STATION	SQUARE INCHES	CU. YDS LIN. FT.	AVERAGE CU. YDS	DISTANCE	TOTAL YARDS
0+00	60	56			
5+00	10	.09	.33	500	165
10+00	12	.11	.10	500	50
15+00	12	.11	.11	500	55
20+00	12	.11	.11	500	55
27+00	41	.38	.25	700	175
35+00	55	.51	.45	800	364
41+00	125	1.16	.84	600	504
45+00	49	.46	.81	400	324
50+00	46	.43	.45	500	225
55+00	58	.54	.49	500	245
60+00	19	.18	.36	500	180
66+00	23	.21	.20	600	120
66+60	23	.21	.20	60	12
69+00					
72+00					
76+00					
					2,474

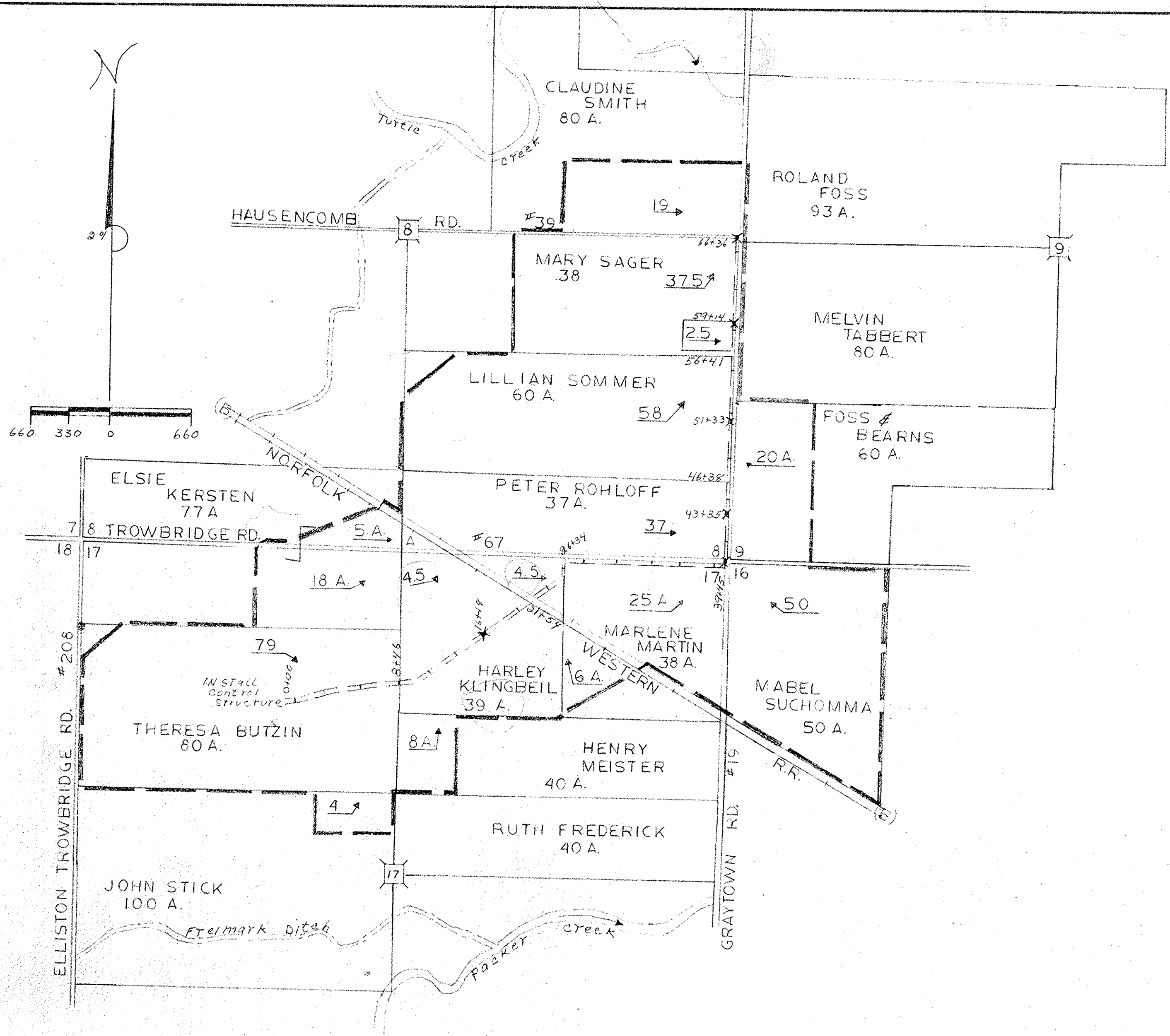
DITCH IMPROVEMENT  
 LICK DITCH  
 BENTON TOWNSHIP  
 OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE

Date: 7/68  
 Designed: Donald Coffey  
 Drawn: Donald Coffey  
 Checked: R. K. House

Approved by: Kenneth B. Deane  
 Title: District Engineer

Sheet: 4 of 4  
 Drawing No: 72-C-87-18-15



LOCATION AND OWNERSHIP MAP  
BENTON TOWNSHIP

**LEGEND**

PROPOSED IMPROVEMENT	=====
HIGHWAYS	=====
PROPERTY LINE	-----
WATERSHED	-----
SECTION CENTER	⊗
SECTION CORNER	⊗/⊗
ACRES IN WATERSHED	XX
STREAM (LARGE)	~~~~~
DITCH (4" OVER)	=====
RAILROAD	-----
ACRES OWNED	XX A.

**BENCHMARK DESCRIPTION**

BM-1	TOP OF SPIKE IN NW TAP ROOT OF 35' STA. 3+10 OAK TREE 10' SOUTH OF DITCH.	M.S.L. ELEV. 592.70
BM-2	TOP OF SPIKE IN NORTH WEST SIDE OF STA. 21+54 AT T CABLE LINE POLE 35' SOUTH EAST OF DITCH.	M.S.L. ELEV. 590.90
BM-3	TOP OF SPIKE IN SOUTH SIDE OF POWER POLE ON NORTH SIDE OF TROWBRIDGE ROAD.	M.S.L. ELEV. 589.54
BM-4	TOP OF CHISELED X ON NORTH WEST CORNER OF CONCRETE CATCH BASIN COVER LOCATED IN SOUTH WEST CORNER OF INTERSECTION OF GRAYTOWN AND TROWBRIDGE ROAD.	M.S.L. ELEV. 588.75
BM-5	TOP OF CHISELED X ON CENTER OF WEST HEADWALL OF CONCRETE CATCH BASIN ON EAST SIDE OF GRAYTOWN ROAD.	M.S.L. ELEV. 586.31
BM-6	TOP OF CHISELED X ON SOUTH END OF HEADWALL ON DROP BOX STRUCTURE ON LILLIAN SOMMER.	M.S.L. ELEV. 585.25
BM-7	TOP OF CHISELED X ON CENTER OF EAST HEADWALL OF CATCH BASIN ON EAST SIDE OF GRAYTOWN ROAD.	M.S.L. ELEV. 582.44
BM-8	TOP OF CHISELED X ON NORTH END OF CONCRETE HEADWALL IN NORTHWEST CORNER OF INTERSECTION OF GRAYTOWN AND HAUSENCOMB ROAD.	M.S.L. ELEV. 585.01
BM-9	TOP OF USGS MARKER PLATE IN EAST STEP OF SOUTH ABUTMENT OF BRIDGE ON GRAYTOWN ROAD OVER TURTLE CREEK.	M.S.L. ELEV. 585.47

**SUPPORTING DATA**

DRAINAGE AREA	393 AC.
DESIGN COEFFICIENT	Qc CURVE
LAND USE	GENERAL FARMING
SOIL TYPE	TOLEDO, FULTON
LAND SLOPE	0-2%
TYPE DRAINAGE	SURFACE & TILE

**CONSTRUCTION DATA**

STATION	GRADE	WIDTH	SIDE SLOPES	CUBIC YARDS	AVERAGE DEPTH
66+36	0.10	3'	1/2:1	132	4'
59+14	0.15	3'	1/2:1	1142	5.5
39+35	0.10	3'	1/2:1	657	4.5
21+54	0.05	3'	1/2:1	350	3.5
				2474	

**INDEX TO SMALL PARCELS**

SECTION	FARCEL	PROPERTY OWNERS	ACRES
8	A	AT-T & CABLE	1.5
8	B	NORFOLK WESTERN R.R.	4.0
8	C	CITAWA COUNTY	5.0
8	D	BENTON TWP TRUSTEES	5.0

THIS DITCH PLAN HAS BEEN APPROVED BY  
*John G. Pappan*  
OTTAWA COUNTY ENGINEER 11/8/68 DATE

SURVEYED- D. SOMMER 6/34/1966  
E. CAMPBELL  
D. OFFER

LOCATION- E 1/2 OF SE 1/4 OF SEC. 8 N 1/2 OF N.E. 1/4 AND E 1/2 OF N.W. 1/4 OF SEC. 17 T7N. R14E. BENTON TWP OTTAWA COUNTY, OHIO.

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

**HYDRAULIC CALCULATION**

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

REACH	STA TO STA	0+00 TO 21+54	21+90 TO 39+35	39+86 TO 59+14	59+30 TO 66+36
DRAINAGE AREA AC.		121	184	355.5	393
Qc FLOW CFS.		14	20	31	33
N		.04	.04	.04	.04
SLOPE - S FT.FT.		.0005	.0010	.0015	.0010
S 1/2		.0224	.0315	.0387	.0316
Q/S 1/2 = KD		625	634	801	1044
KD VALUE USED		663	663	854	1079
SIDE SLOPE		1/2:1	1/2:1	1/2:1	1/2:1
BOTTOM WIDTH FT.		3'	3'	3'	3'
DEPTH FT.		2.3	2.3	2.6	2.9
AREA SQ.FT.		14.9	14.9	17.94	21.33
VELOCITY Q/A = F.P.S.		.94	1.34	1.72	1.55

**HEAD LOSS IN CULVERTS**

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

STATION	16+18	21+54	39+35	39+45	43+35	51+33	59+14	66+36	66+36
DRAINAGE AREA AC.	100	130	184	238	265	300	355.5	393	416
Qc FLOW CFS.	12	15	20	24	26	29	31	33	34
DIAMETER IN.	24"	30"	30"	42"	36"	36"	3'x3'	48"	36"
TYPE	VSP	VSP	R/C	R/C	R/C	R/C	CONCRETE	C.T.	E/C
"N"	.014	.014	.013	.013	.013	.013	.013	.015	.013
LENGTH FT.	24'	44'	8'	40'	24'	24'	20'	24'	1066'
X SECTIONAL AREA SQ.FT.	3.14	491	491	962	7.07	7.07	8.50	12.57	7.07
KP	.014	.0107	.0092	.0059	.0072	.0072	.0058	.0066	.0072
KPL	.336	.47	.074	.24	.17	.17	.14	.158	.780
KE	.50	.50	.50	.50	.50	.50	.50	.50	.50
VELOCITY FPS.	3.8	3.1	4.1	2.5	3.7	4.1	3.65	2.63	4.81
HEAD LOSS FT.	.40	.30	.41	.17	.35	.43	.34	.18	3.34

**ENGINEERING JOB CLASS IV**  
DITCH IMPROVEMENT PLAN  
LICK DITCH GROUP  
BENTON TOWNSHIP  
OTTAWA COUNTY, OHIO.

**U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE**

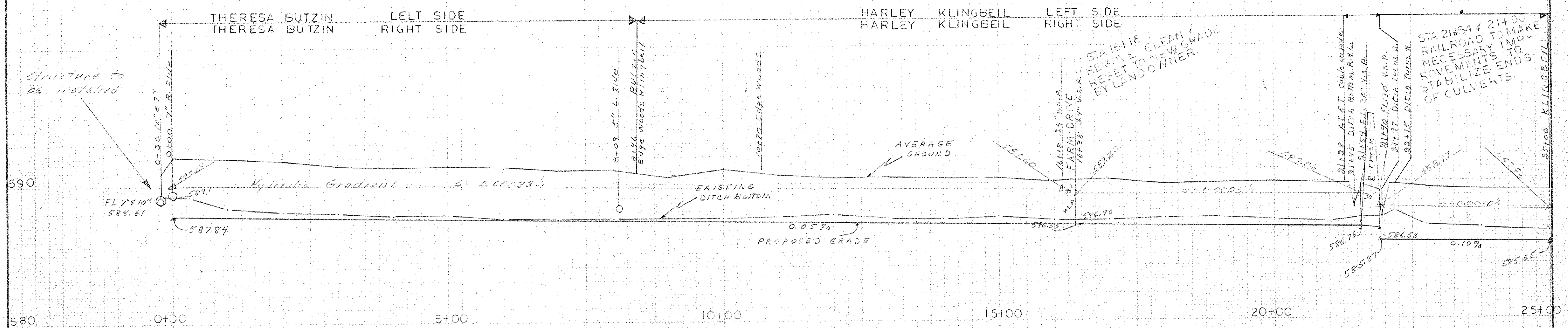
Designed <i>Darald Offer</i> 11/68	Approved by <i>Wesley K. Baum</i>
Drawn <i>Darald Offer</i> 3/68	Title <i>Lick Ditch</i>
Traced	Title
Checked <i>A. H. House</i> 11/68	Sheet No. 1 of 4
	Drawing No. 34-01-83-68-09

*The 36" culvert will provide "C" curve (3") drainage until the tailwater in Turtle Creek exceeds elevation 579.48*

BM #1 STA. 3+10  
SPIKE IN N.W. TAP ROOT  
OAK TREE  
M.S.L. 592.70

BM #2 STA. 21+54  
SPIKE IN AT T CABLE  
POLE E. SIDE OF DITCH  
M.S.L. 590.90

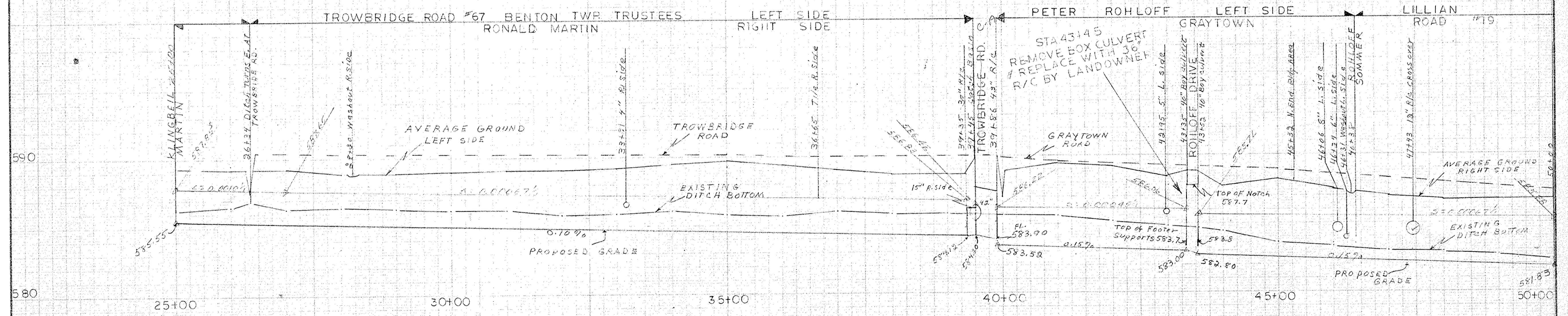
NORFOLK &  
WESTERN R.R.



BM #3 STA. 27+50  
SPIKE IN POLE N. SIDE  
TROWBRIDGE RD.  
M.S.L. 589.54

BM #4 STA. 39+49  
X NW CORNER OF  
CONCRETE CATCH BASIN.  
M.S.L. 588.75

BM #5 STA. 47+43  
X ON W. HEADWALL OF  
CATCH BASIN E. SIDE  
GRAYTOWN RD.  
M.S.L. 586.31



DITCH IMPROVEMENT  
LICK DITCH  
BENTON TOWNSHIP  
OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Designed: Donald J. Pfenner	Date: 7/68	Approved by: [Signature]	Title: [Signature]
Drawn: Donald J. Pfenner	Date: 7/68	Traced: [Signature]	Title: [Signature]
Checked: J. L. [Signature]	Date: 7/68	Sheet: 12 of 14	Drawing No. 34-01-83-68-09

BM #6 STA. 56+37  
X ON S. END OF HEADWALL OF CONTROL STRUCTURE

M.S.L. 585.25

BM #7 STA. 65+25  
X ON E. HEADWALL ON CATCH BASIN E. SIDE GRAYTOWN RD.

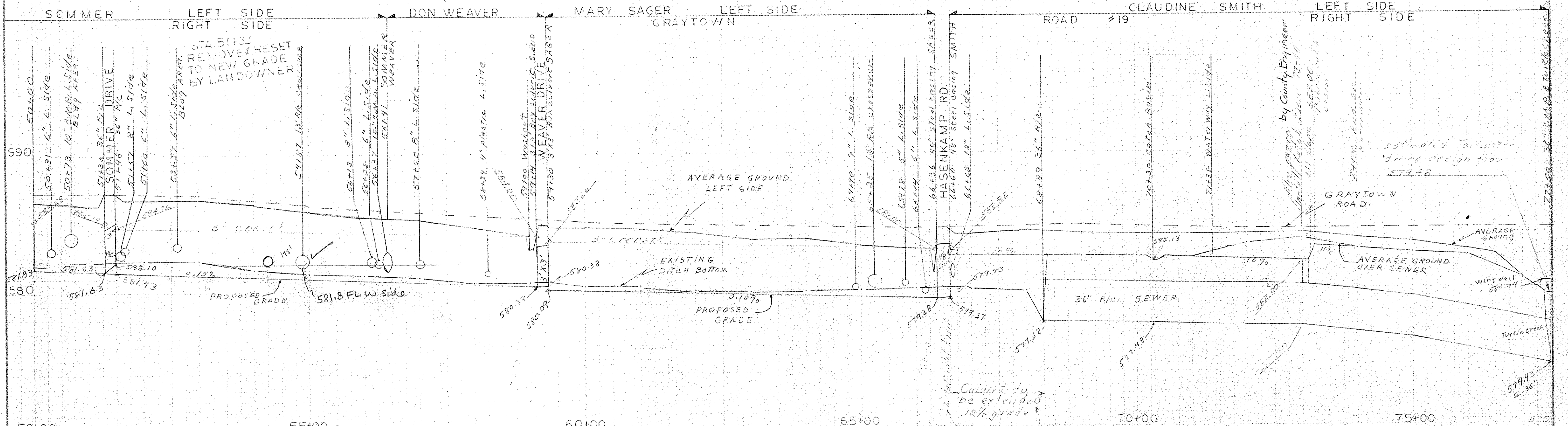
M.S.L. 582.44

BM #8 STA. 66+88  
X ON N. END OF CONCRETE HEADWALL N. SIDE OF INTERSECTION.

M.S.L. 585.01

BM #9 STA. 77+50  
U.S.G.S. MARKER PLATE IN E. STEP OF S. ABUTMENT OF BRIDGE OVER TURTLE CREEK

M.S.L. 585.47



**SPECIFICATIONS**

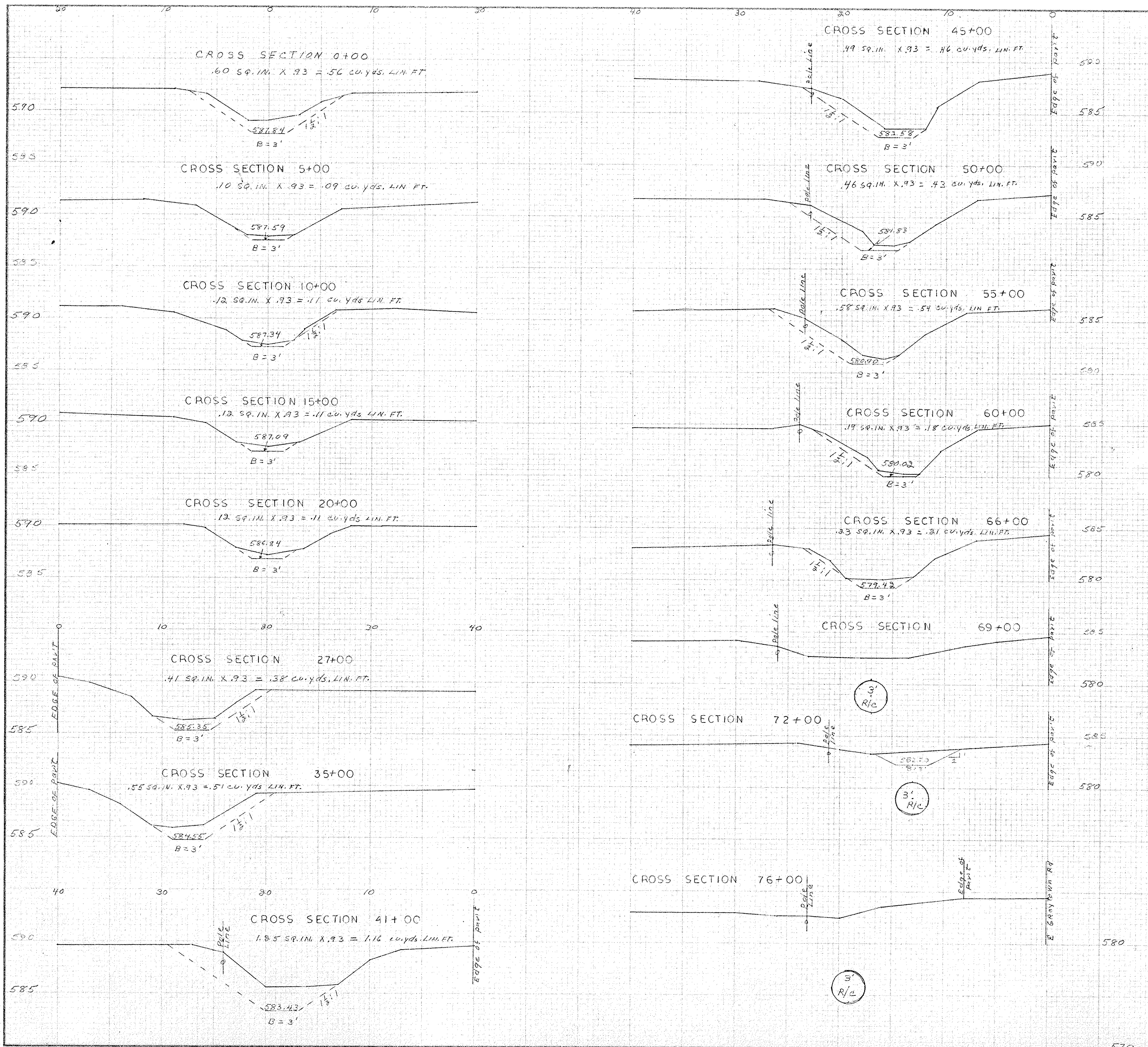
- I. **EXCAVATION**
  - A. Bottom width: The bottom width shall be THREE (3) feet between sta. 60+00 and sta. 65+36.
  - B. Bank slopes: The ditch bank slopes are to be constructed to at least 1 1/2 foot horizontal to 1 foot vertical.
  - C. Alignment: The centerline of the improvement shall be approximately the centerline of the existing ditch unless otherwise indicated on the plan.
  - D. Total excavation: The total excavation consists of 2474 cubic yards of earth over 6636 linear feet of ditch.
  - E. Excess Volume: No extra compensation will be paid for such excavation in excess of yards herein estimated. This estimate was made from cross-sections of the proposed ditch. The contractor should verify the proposed work to his own satisfaction.
- II. **CLEANUP**  
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 bank 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. **SPRINKLING**  
Unless otherwise noted the berms will have the following minimum widths: Four (4) feet wide for ditches up to four (4) feet depth; six (6) feet wide for four to six foot depth; and ten (10) feet wide for ditches over six feet in depth.
- IV. **SOIL BANKS**  
Excavated material should be deposited and spread along the field side of the ditch, as determined, except where used for berms, 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 grids to exclude rodents. For details of construction see your Soil Conservation Technician.
- VI. **SURFACE PROTECTION**  
Wherever a lateral or a surface ditch enters the main ditch a higher elevation protection from erosion should be provided by: drop structures, pipe drops, other suitable structures 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 its) 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 tons 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.

Station 16+18 ..... Station 21+54 ..... Station 39+35 ..... Station 39+45 ..... Station 43+35  
 RESET GRADE      REPAIR BOTH ENDS      REPLACE WITH 36" R.I.

Station 54+33 ..... Station 59+14 ..... Station 60+36 ..... Station ..... Station .....

RESET GRADE

DITCH IMPROVEMENT LICK DITCH BENTON TOWNSHIP OTTAWA COUNTY, OHIO.		U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
		Designed <u>Danald G. P. S. C.</u> 1/68	Approved by <u>[Signature]</u>
Drawn <u>Danald G. P. S. C.</u> 1/68	Traced _____		Checked <u>[Signature]</u> 1/68
Sheet No. <u>34-31-23-48-09</u>		Drawing No. <u>34-31-23-48-09</u>	



STATION	YARDAGE		AVERAGE CU. YDS	DISTANCE	TOTAL YARDS
	SQUARE INCHES	CU. YDS LIN. FT			
0+00	60	56	.33	500	165
5+00	10	.09	.10	500	50
10+00	12	.11	.11	500	55
15+00	12	.11	.11	500	55
20+00	41	.38	.25	700	175
27+00	55	.51	.45	800	364
35+00	1.25	1.16	.84	600	504
41+00	49	.46	.81	400	324
45+00	46	.43	.45	500	225
50+00	58	.54	.49	500	245
55+00	19	.18	.36	500	180
60+00	23	.21	.20	600	120
66+00	23	.21	.20	60	12
66+60					2,474
69+00					
72+00					
76+00					

DITCH IMPROVEMENT  
 LICK DITCH  
 BENTON TOWNSHIP  
 OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE

Date: 7/68  
 Approved by: Russell K. Rowe  
 Title: Asst. Eng.

Designed: Donald C. Soper  
 Drawn: Donald C. Soper  
 Traced: R. K. Rowe  
 Checked: R. K. Rowe

Sheet No. 4 of 4  
 Drawing No. 34-C-83-66-09