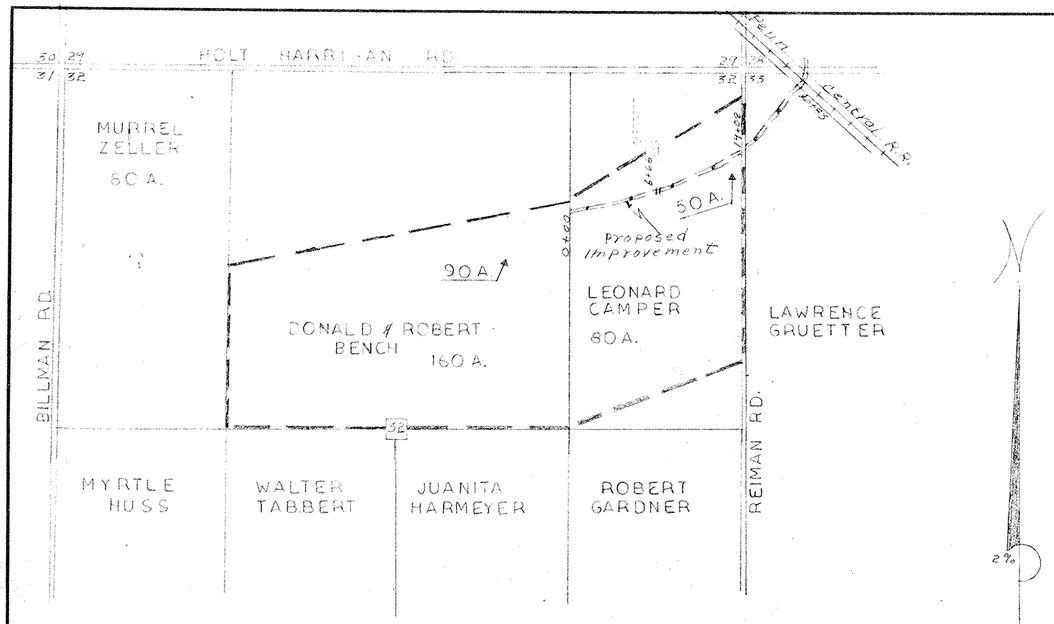


LOCATION & OWNERSHIP MAP

660 330 0 660

SCALE IN FEET

LEGEND

PROPOSED IMPROVEMENT
HIGHWAY
PROPERTY LINE
SECTION CENTER
WATERSHED
SECTION CORNER
ACRES IN WATERSHED
ACRES OWNED
RAILROAD

C
C.O.A.
O.O.A.

SUPPORTING DATA

DRAINAGE AREA	150 ACRES
DESIGNED COEFFICIENT	Qb CURVE
LAND USE	SPECIAL, GENERAL, FARMING
SOIL TYPES	HOYTVILLE
LAND SLOPE	0 - 2 %
TYPE DRAINAGE	TILE - SURFACE

HYDRAULIC CALCULATION

HEADLOSS $H = \frac{V}{2b}(HKE + KPL)$

STATION		6+66	14+08
DRAINAGE AREA	AC.	110	140
Qb FLOW	C.F.S.	19	24
DIAMETER	INS.	30	36
TYPE		R/C	R/C
N		.013	.013
LENGTH	FT.	24	36
X SECTION AREA	SQ FT.	4.91	7.07
KP		.0092	.0072
KPL		.221	.26
KE		.50	.50
VELOCITY	F.P.S.	3.9	3.4
HEADLOSS	FT.	.41	.32

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

REACH	STA.	0+00
	TO STA.	14+08
DRAINAGE AREA	AC.	140
Qb FLOW	C.F.S.	24
SLOPE		.0005
$S^{1/2}$		.0224
$Q / S^{1/2} = KD$		1071
KD USED		1079
SIDE SLOPE	FT	1½ : 1
DEPTH		2.9
AREA	SQ FT.	21.36
BOTTOM WIDTH	FT.	3
VELOCITY	F.P.S.	1.1
N		.04

BENCH MARK DESCRIPTIONS

BM-1 TOP OF EASTEND OF 15" STEEL CASING STA 0+00
M.S.L. ELEV. 620.17

BM-2 STA 14+08
TOP OF WEST END OF 36" R/C PIPE UNDER REIMAN RD. APPROX. 600'S OF HOLT HARRIGAN RD.
M.S.L. ELEV 620.41

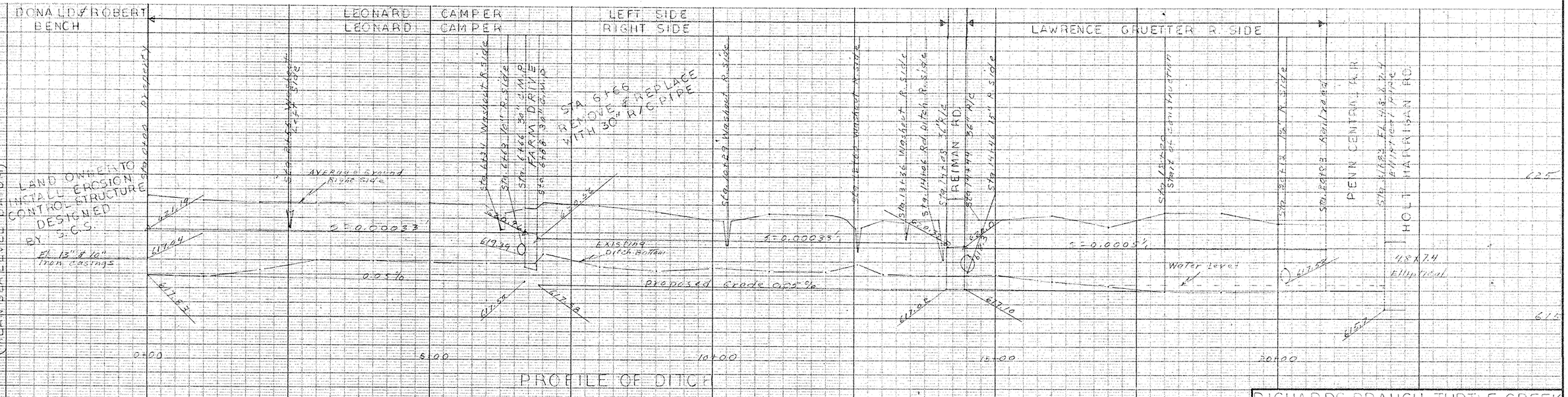
LOCATION - N.E. 1/4 OF N.E. 1/4 SEC. 32 T-7 N R-13 E CLAY TOWNSHIP, OTTAWA COUNTY, OHIO.

SURVEYED - 10-23-70 D. SOMMER D. OPFER J. STEINER

REFFERENCE - FIELD NOTES ON FILE IN OTTAWA SOIL & WATER CONSERVATION DISTRICT OFFICE 145 CHURCH STREET OAK HARBOR, OHIO.

THIS DITCH PLAN HAS BEEN APPROVED BY:

John L. Popcun — 12/11/70
OTTAWA COUNTY ENGINEER — DATE



PROFILE OF DITCH

BM#1 STA. 0+00
TOP OF 13" IRON CASING.
EAST LINE OF BENCH FARM.
M.S.L. ELEV. 620.17

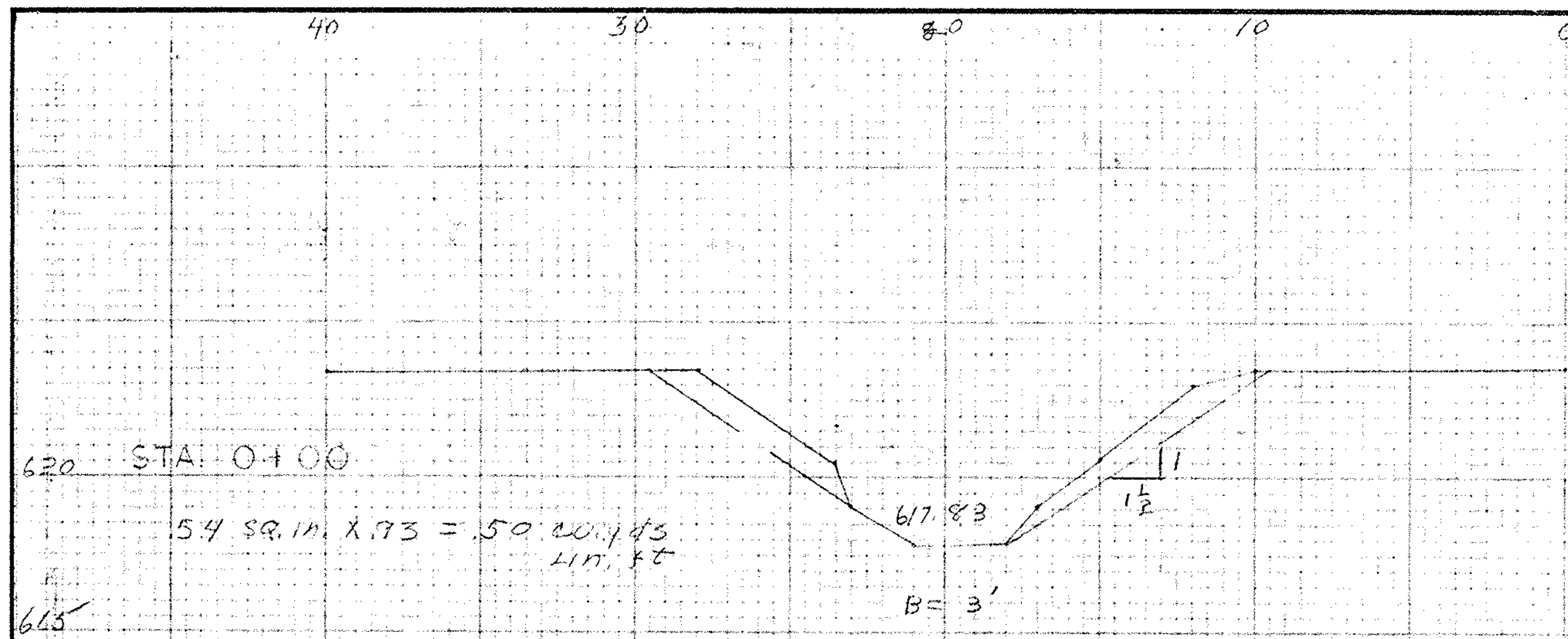
BM#2 STA 14+08
TOP OF W. END OF 36" R/C
UNDER REIMAN RD. APPROX.
600' S. OF HOLT HARRIGAN RD.
M.S.L. ELEV. 620.41

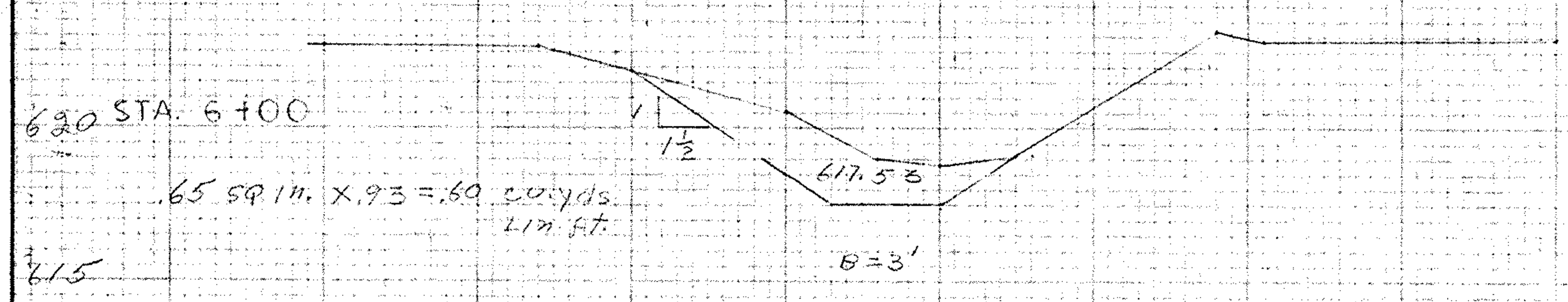
RICHARDS BRANCH TURTLE CREEK
DITCH IMPROVEMENT
CLAY TOWNSHIP
OTTAWA COUNTY, OHIO.

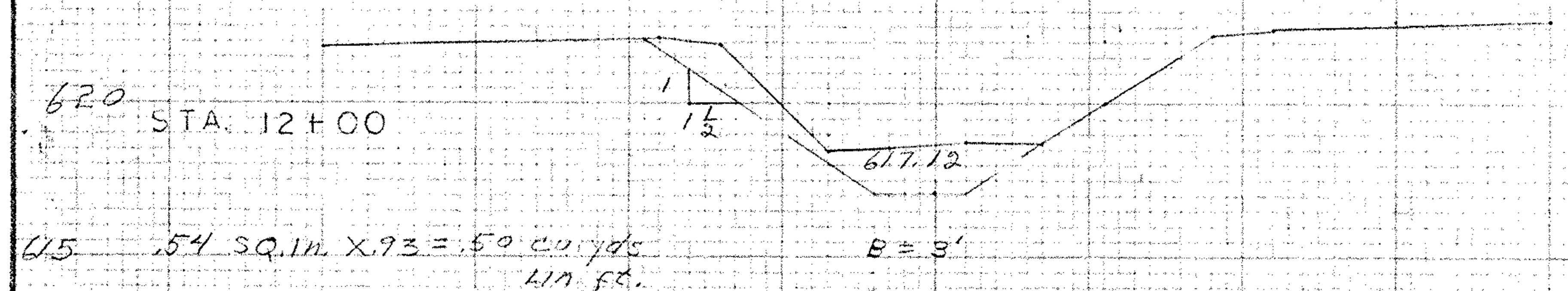
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	Date	Approved by
Donald Opfer	10/9/70	Russell K Rowe
Drawn		Title Asst Engr
Donald Opfer	10/28/70	Title
Traced		
Checked		Sheet No. 1 of 2
R.K. Rowe	12/70	Drawing No. 34-01-83-71-19

U.S. GOVERNMENT PRINTING OFFICE : 1961 O—586237







SPECIFICATIONS

I. EXCAVATION:

A. Bottom Width: The bottom width shall be THREE (3) feet between sta. 0+00 and sta. 18+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 the plan.

D. Total Excavation: The total excavation consists of 960 cubic yards of earth over 1800 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.
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) feet 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 2:1 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:
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 Service 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 pounds per acre. A minimum of 500 lbs. of 10-10-10 fertilizer or equivalent will be applied. .6 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 design.

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

Station 6+66 Station 14+08

YARDAGE TABLE

STATION	SQ. INS.	CU. YDS.	AVE. CU. YDS.	DISTANCE	TOTAL YARDS
0+00	.54	.50			
			.55	600	330
6+00	.65	.60			
			.55	600	330
12+00	.54	.50			
			.50	600	300
18+00	.54	.50			
			TOTAL	YARDS	960

RICHARDS BRANCH TURTLE CREEK
DITCH IMPRØVEMENT
CLAY TOWNSHIP
OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed: Donald Asher	Date: 11/70	Approved by: R.K.R.
Drawn: Donald Asher	11/70	Title
Traced		Title
Checked: Russell K. Bean		Sheet No. 2 of 2 — Drawing No. 34-01-83-71-19