

HYDRAULIC CALCULATIONS

HEADLOSS IN CULVERTS		$H_f = \frac{V^2}{2g} (f \frac{L}{D} + K_e + K_r)$					
STATION		195+03	193+19	200+44	208+24	214+20	236+20
DRAINAGE AREA AC.		1.40	1.54	1.50	1.63	1.85	1.75
G _b FLOW CFS		130	135	126	133	142	148
DIAMETER IN.		6" ARCH	8" X 12"	24" ARCH	4" ARCH	4" ARCH	6" X 9"
TYPE		CONCUL	CONCUL	CONCUL	CONCUL	CONCUL	R/C
"N"		.017	.017	.017	.017	.017	.017
LENGTH FT.		12'	13'	14'	15'	17'	56'
X SECTION AREA SQFT.		26	62.4	35.5	67.5	34.25	400
KP							
KPL							
KE		.50	.50	.50	.50	.50	.50
VELOCITY FPS		1.00	2.41	3.92	3.71	4.15	3.62
HEADLOSS FT.		.45	NONE	.09	.19	.23	0.15
		BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE

- ### BENCH MARK DESCRIPTIONS
- BM #14 STA. 167+32 TOP OF SPIKE IN WEST END OF FLOWER FIELD EAST SIDE OF BENTON CARROLL RD NORTH SIDE OF DITCH. M.S.L. ELEV. 550.87
 - BM #16 STA. 177+30 TOP OF SPIKE IN SOUTH SIDE OF WHITEASH TRAIL WITH CLUMP OF THREE. M.S.L. ELEV. 550.35
 - BM #15 STA. 193+19 TOP OF CHISELED X ON CENTER OF EAST HEADWALL OF CULVERT ONE FICK FARM DRIVE. M.S.L. ELEV. 550.57
 - BM #17 STA. 193+10 TOP OF CHISELED X ON EAST END OF CONCRETE HEADWALL ON NORTH SIDE OF DITCH. M.S.L. ELEV. 547.75
 - BM #18 STA. 200+44 TOP OF LETTER 'E' ON WEST END OF WEST HEADWALL OF W. MILBRODT FARM DRIVE. M.S.L. ELEV. 548.46
 - BM #19 STA. 208+24 TOP OF LETTER 'E' ON NORTHEAST WING WALL OF J. HOLLO FARM DRIVE. M.S.L. ELEV. 548.25
 - BM #20 STA. 214+20 TOP OF CHISELED X ON CENTER OF WEST HEADWALL OF W. MYLANDER FARM DRIVE. M.S.L. ELEV. 548.50
 - BM #21 STA. 236+20 TOP OF CHISELED X CENTER LINE OF NORTH WEST ABUTMENT OF CONCRETE BRIDGE OVER DITCH ON TOUSSAINT PORTAGE ROAD. M.S.L. ELEV. 550.25

- ### SPECIFICATIONS
- I. GENERAL
A. This project shall consist of a five (5) foot wide ditch, 167+32 to 249+23. The ditch shall be constructed in accordance with the specifications herein. The ditch shall be constructed in accordance with the specifications herein. The ditch shall be constructed in accordance with the specifications herein.
 - II. CONSTRUCTION
A. The ditch shall be constructed in accordance with the specifications herein. The ditch shall be constructed in accordance with the specifications herein. The ditch shall be constructed in accordance with the specifications herein.
 - III. MAINTENANCE
A. The ditch shall be maintained in accordance with the specifications herein. The ditch shall be maintained in accordance with the specifications herein. The ditch shall be maintained in accordance with the specifications herein.
 - IV. PROTECTION
A. The ditch shall be protected in accordance with the specifications herein. The ditch shall be protected in accordance with the specifications herein. The ditch shall be protected in accordance with the specifications herein.
 - V. VEGETATION
A. The ditch shall be protected in accordance with the specifications herein. The ditch shall be protected in accordance with the specifications herein. The ditch shall be protected in accordance with the specifications herein.
 - VI. CONSTRUCTION
A. The ditch shall be constructed in accordance with the specifications herein. The ditch shall be constructed in accordance with the specifications herein. The ditch shall be constructed in accordance with the specifications herein.
 - VII. VEGETATION
A. The ditch shall be protected in accordance with the specifications herein. The ditch shall be protected in accordance with the specifications herein. The ditch shall be protected in accordance with the specifications herein.
 - VIII. CONSTRUCTION
A. The ditch shall be constructed in accordance with the specifications herein. The ditch shall be constructed in accordance with the specifications herein. The ditch shall be constructed in accordance with the specifications herein.

LEGEND

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

SUPPORTING DATA

DRAINAGE AREA	1,777 ACRES
DESIGN COEFFICIENT	0.6 CURVE
LAND USE	GENERAL CROPS
SOIL TYPE	FULTON, TOLEDO
LAND SLOPE	0-2 %
TYPE DRAINAGE	SURFACE & TILE

INDEX TO SMALL PARCELS

SECTION	PARCEL	PROPERTY OWNERS	ACRES
6	A	CARL RUFF	2.0
6	B	EDWARD HAUTON	.70
6	C	GEORGE SEMELKA	2.0
6	D	DOROTHY AUGSENER	1.6
6	E	GERALD SANDWISCH	1.80
6	F	WILLIAM ALMENDINER	.85
5	6	SALEM TOWNSHIP	
6	6	CITAWA COUNTY	
		STATE OF OHIO	

CHANNEL FLOW	
MAXIMUM VELOCITY 4 FPS.	$V = \frac{1.485}{N} R^{2/3} S^{1/2}$
REACH	STA 167+40 TO 210+23 TO 249+23
DRAINAGE AREA AC.	1,651 TO 1,777 TO 4,671
G _b FLOW	141 TO 149 TO 289
"N"	.04 TO .04 TO .04
SLOPE FT/FT	.0012 TO .0018 TO .0012
S ^{1/2}	.0346 TO .0424 TO .0315
Q/S ^{1/2} =KD	4075 TO 3514 TO 9145
KD VALUE USED	4144 TO 3609 TO 9101
SIDE SLOPE	1 1/2:1 TO 1 1/2:1 TO 1 1/2:1
BOTTOM WIDTH FT.	5' TO 5' TO 14'
DEPTH FT.	4.5' TO 4.5' TO 4'
AREA SQ. FT.	58.5' TO 52.8' TO 43'
VELOCITY FPS	2.77 TO 2.67 TO 2.62

THIS DITCH PLAN HAS BEEN APPROVED BY:

John G. Papan 8/2/69
CITAWA COUNTY ENGINEER DATE

LOCATION - NW 1/4, SE 1/4 OF SEC 6, NW 1/4 OF SEC 5, R-15E, T-6N, SALEM TOWNSHIP, CITAWA COUNTY, OHIO

SURVEYED - APRIL 27, 1969 BY I-2, I-3, I-5, E CAMPBELL BOCHNER, BOCHNER

REFERENCE - FIELD NOTES IN FILE IN OTTAWA SOIL & WATER CONSERVATION OFFICE 145 CHURCH STREET CANTON, OHIO

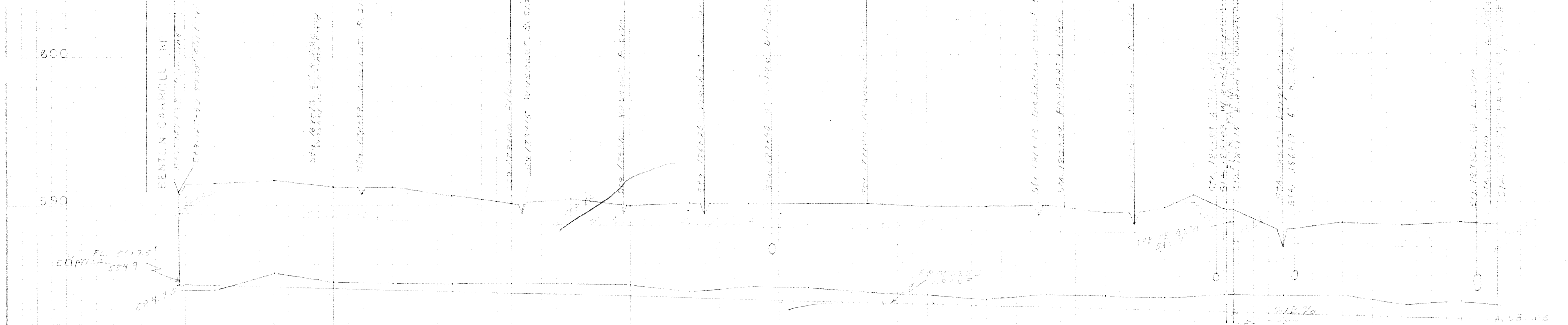
JOB CLASS VI GROUP # 49

BAYOU DITCH 2ND PROJECT DITCH IMPROVEMENT SALEM TOWNSHIP OTTAWA COUNTY, OHIO

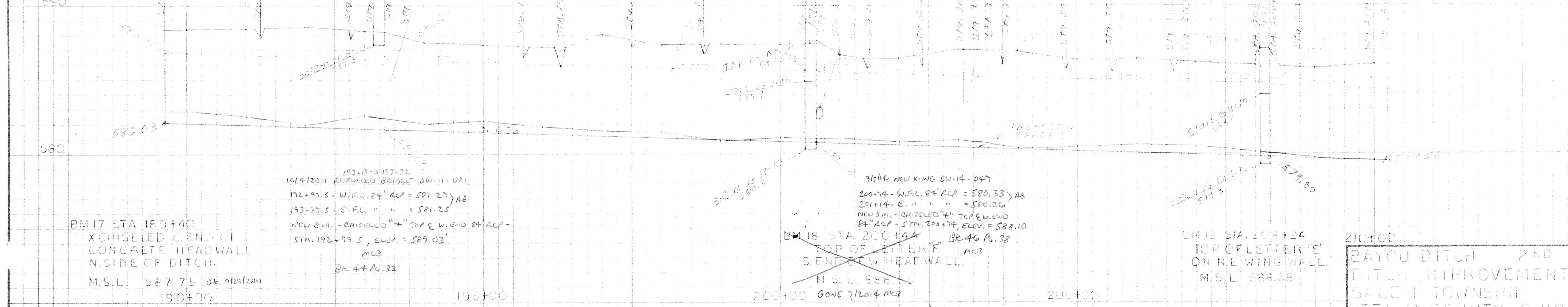
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

Designed <i>John G. Papan</i>	Date <i>8/2/69</i>	Approved by <i>John G. Papan</i>
Drawn <i>Donald S. Papan</i>	Title	
Traced	Title	
Checked <i>John G. Papan</i>	Sheet No. <i>1</i>	Drawing No. <i>34-01-83-60-14</i>

BM 14 STA 167+42
R.R. SPIKE IN
POWER POLE, E.
SIDE OF ROAD,
M.S.L. 592.97



ELEVATIONS IN FEET
(MEAN SEA LEVEL DATUM)



BM 17 STA 183+40
X CHISELED END OF
CONCRETE HEADWALL
N. SIDE OF DITCH.
M.S.L. 587.75 OK 9/29/2011

1937-1938
10/4/2011
192+97.5 - W.P.L. 84" ACP = 581.27 AB
193+37.5 - " " " = 581.25
new g.m. - chiseled " " TOP @ W. END 84" ACP -
STA. 192+99.5, elev. = 589.03
mc8
BR 44 Pg. 32

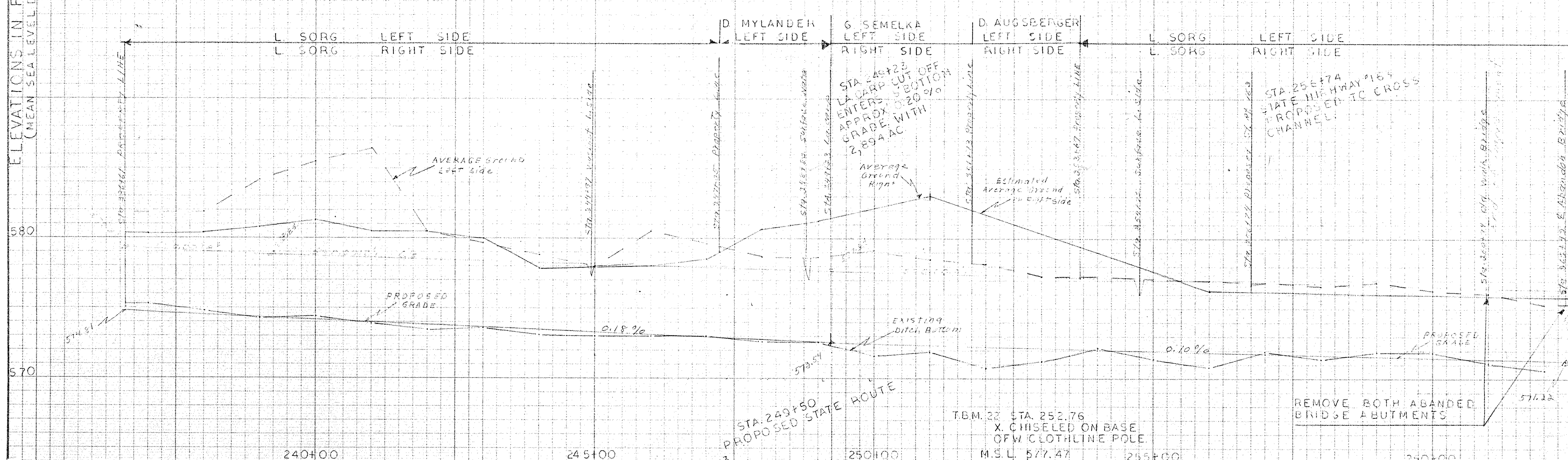
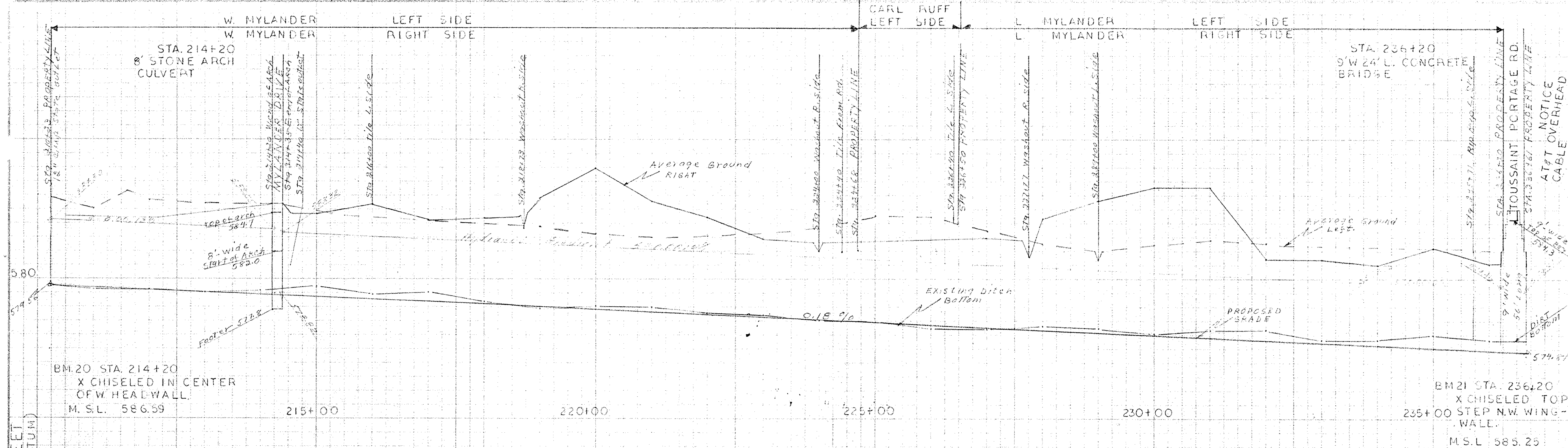
9/5/14 NEW KING DW-14-047
200+74 - W.P.L. 84" ACP = 580.33 AB
201+14 - " " " = 580.26
new g.m. - chiseled " " TOP @ W. END
84" ACP - STA. 200+74, elev. = 588.10
BR 46 Pg. 38
mc8
M.S.L. 588.10
GONE 7/20/14 MCB

BM 18 STA 208+24
TOP OF LETTER 'E'
ON NEW WING WALL
M.S.L. 588.58

BAYOU DITCH 2ND PROJECT
DITCH IMPROVEMENT
SALEM TOWNSHIP
ITAWA COUNTY OHIO

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed <i>Lund</i>	Date <i>3/12</i>	Approved by _____
Drawn <i>Lund</i>	Title _____	_____
Traced _____	Title _____	_____
Checked _____	Sheet _____	Drawing No. _____
	No. <i>2</i>	<i>34-01-83-65-14</i>
	of _____	

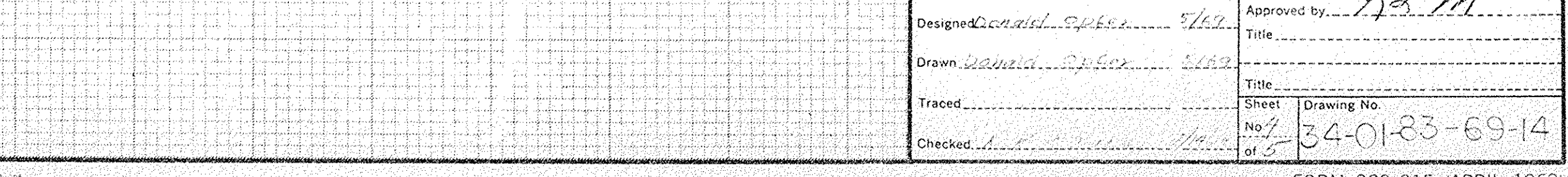
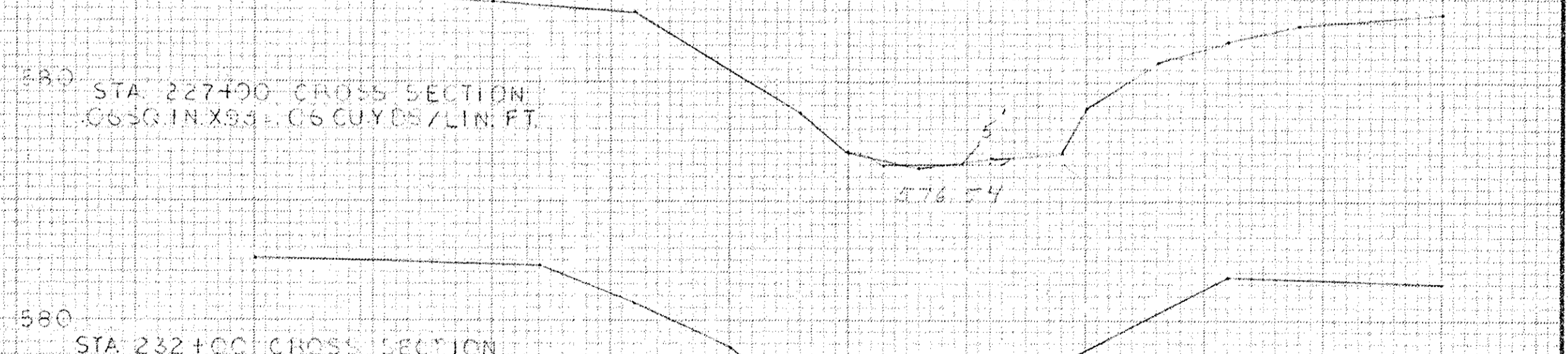
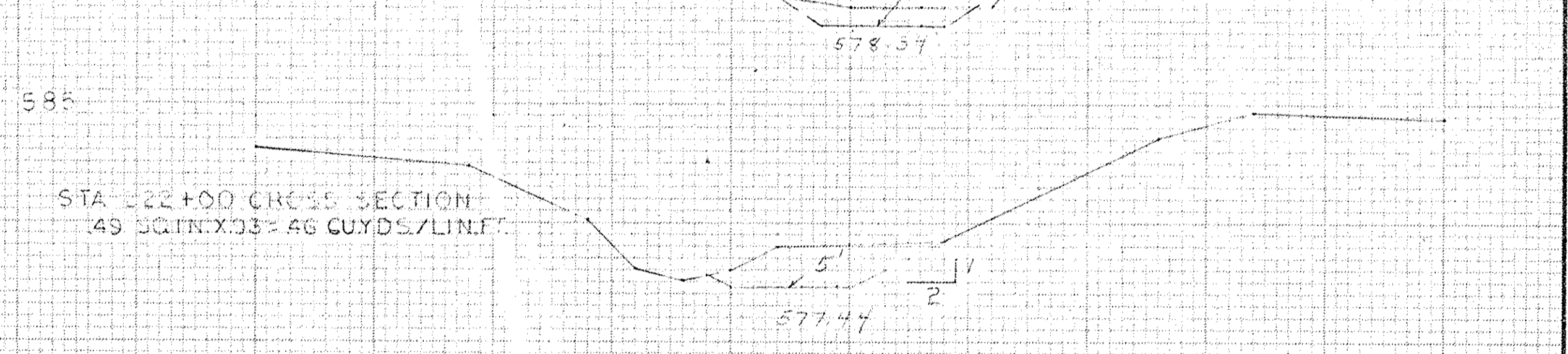
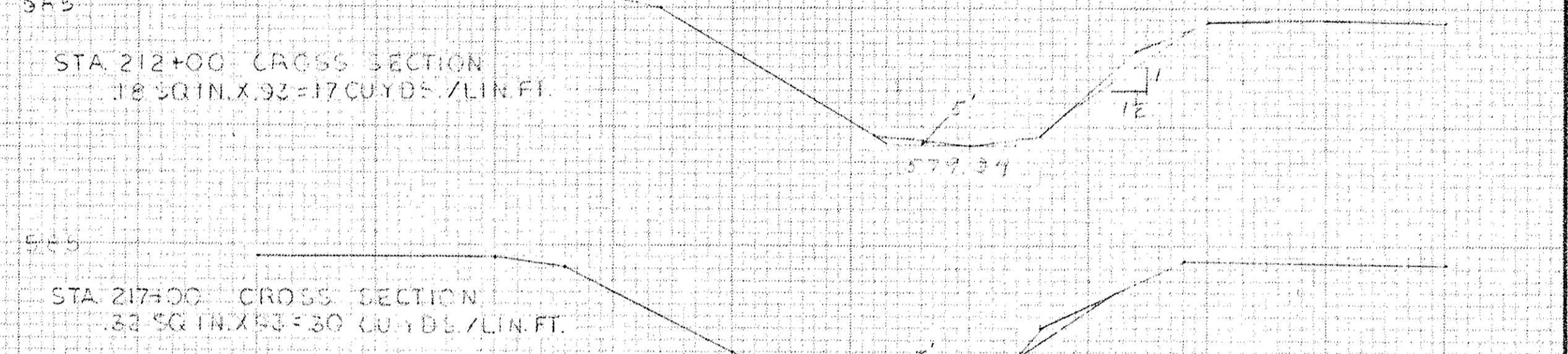
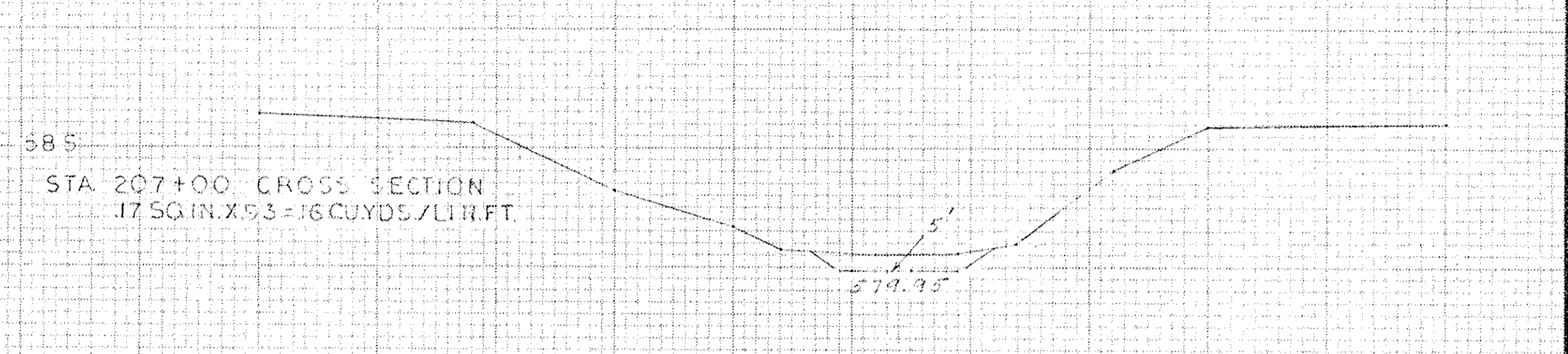
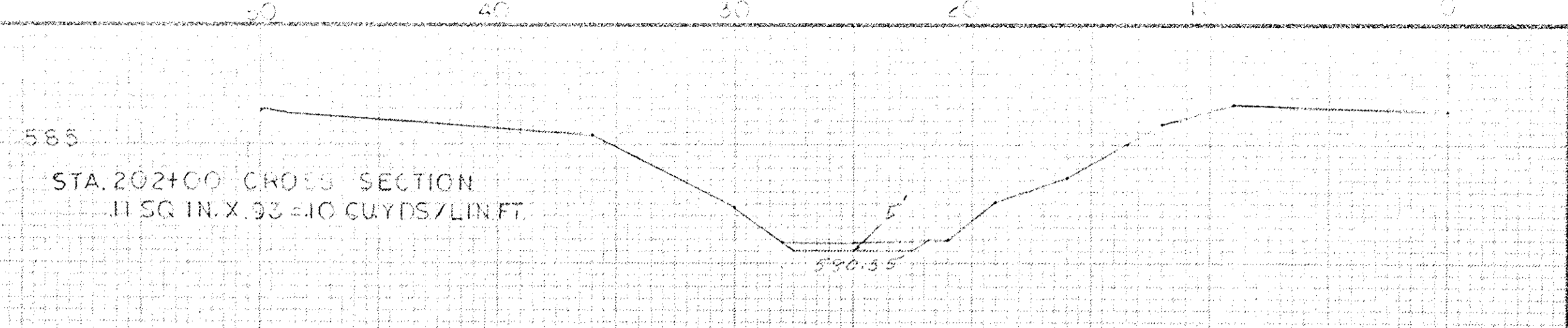
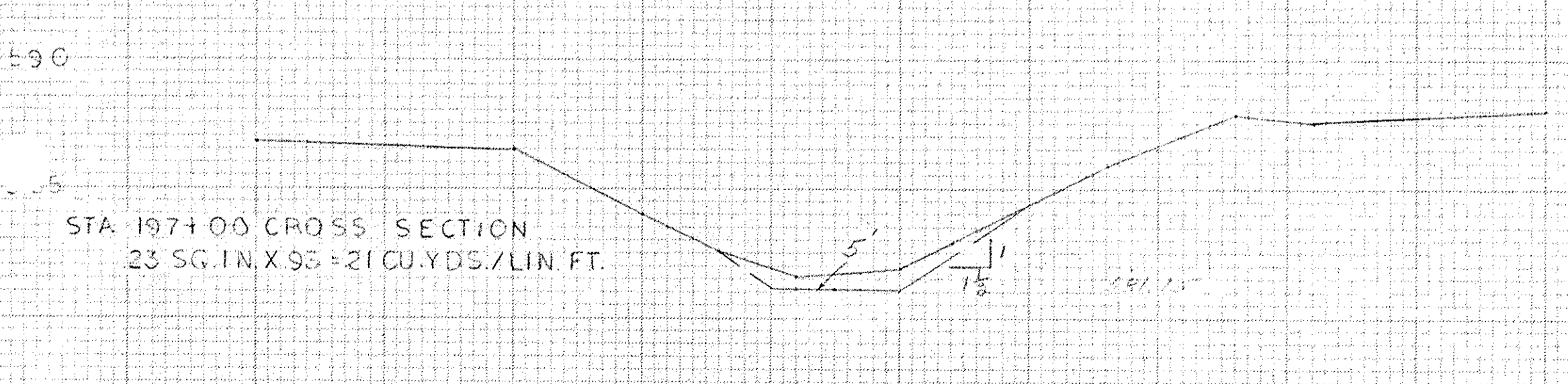
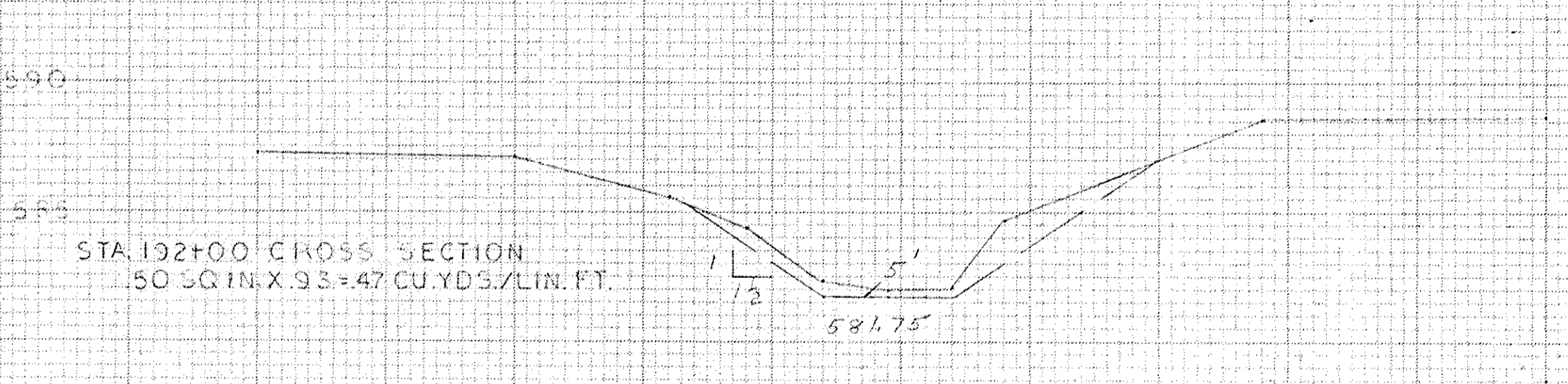
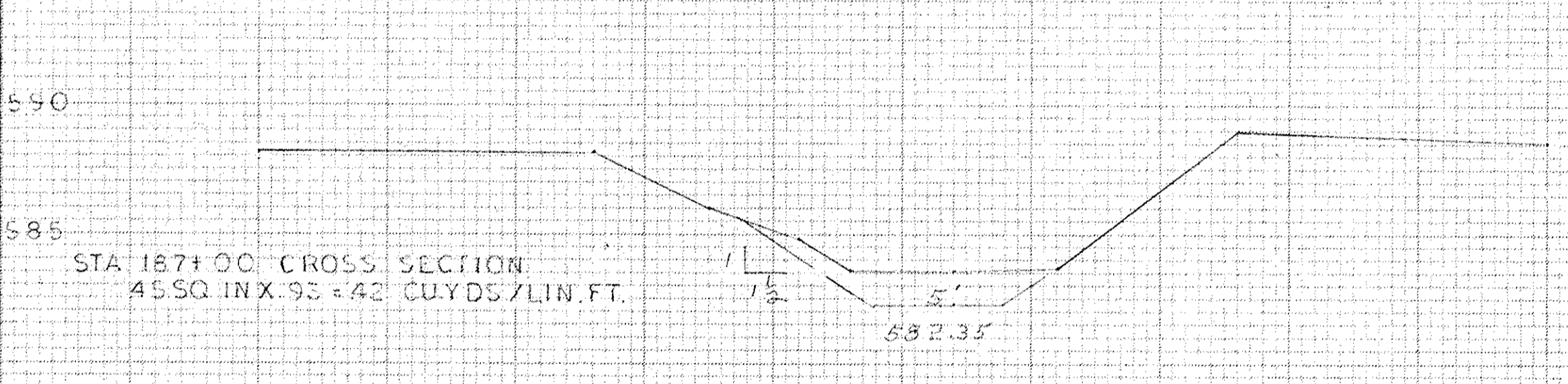
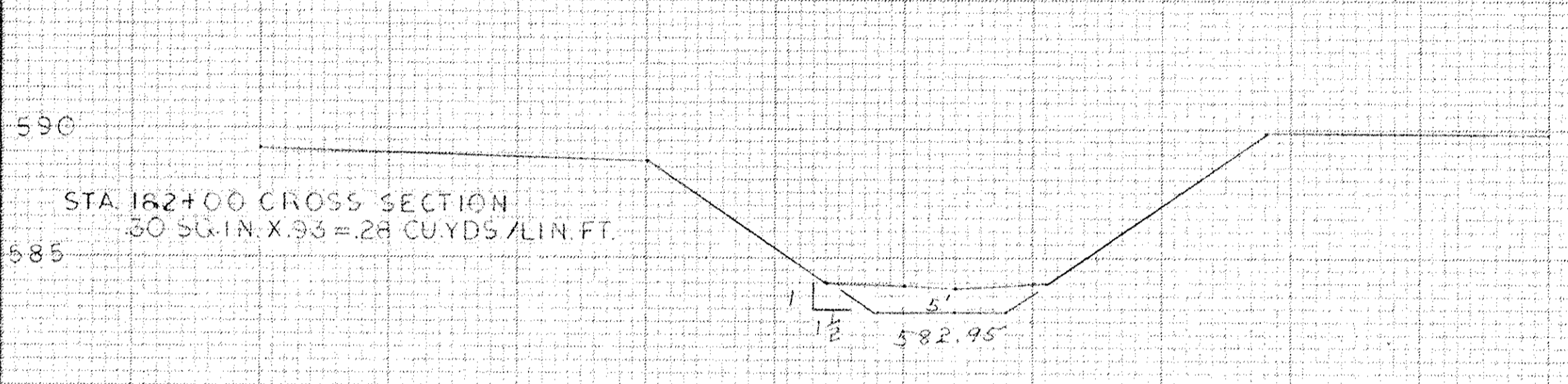
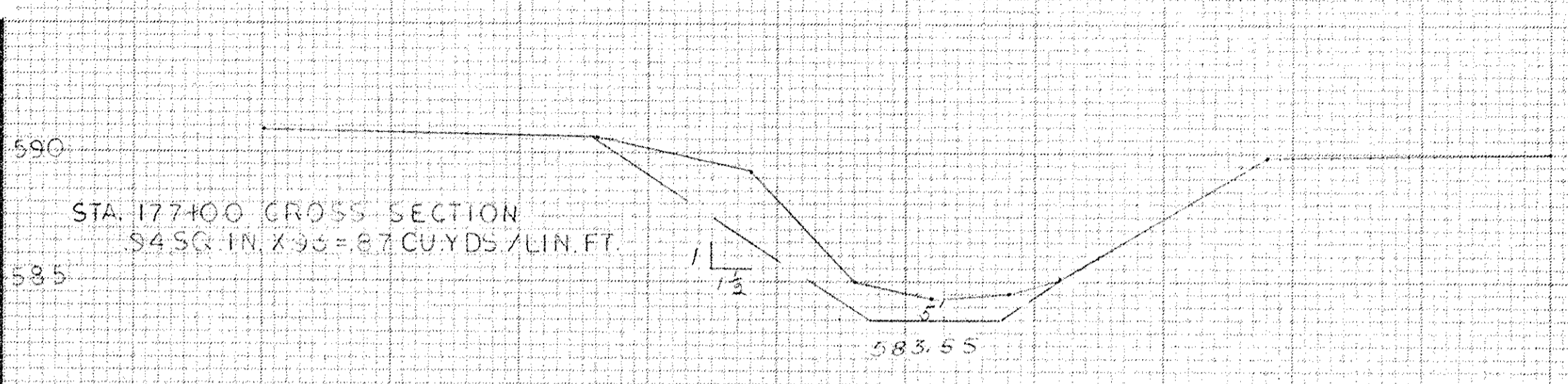
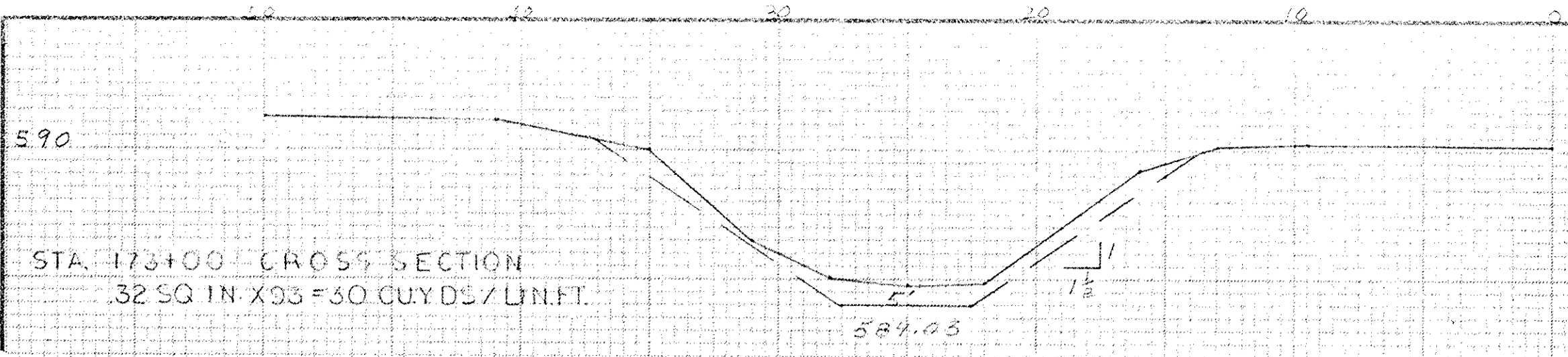


ELEVATIONS IN FEET
(MEAN SEA LEVEL DATUM)

BAYOU DITCH 2ND PROJECT
DITCH IMPROVEMENT
SALEM TOWNSHIP
OTTAWA COUNTY OHIO

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

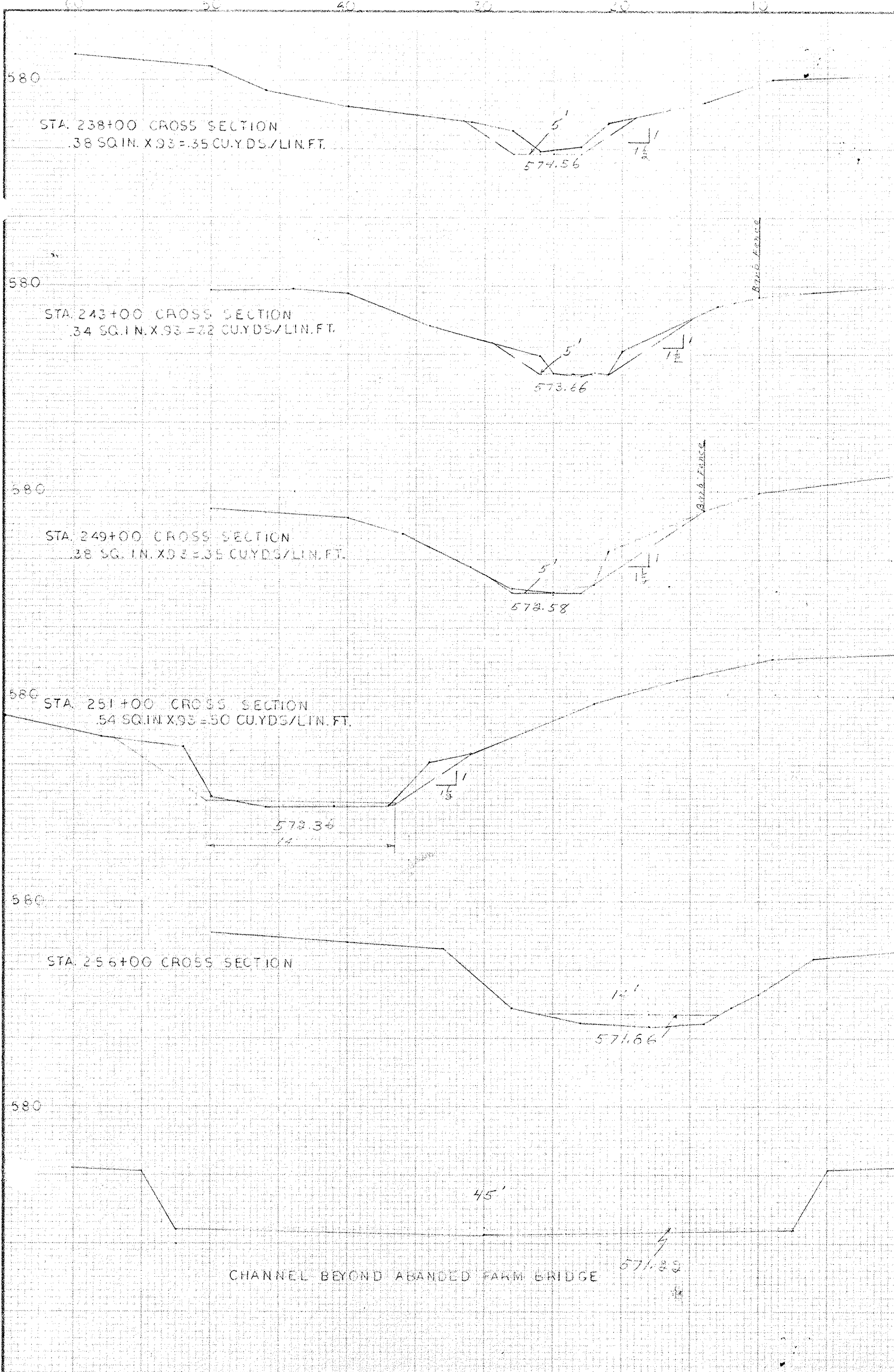
Designed <i>David Speer</i>	Date <i>5/69</i>	Approved by <i>[Signature]</i>
Drawn <i>David Speer</i>	Title	Title
Traced	Sheet	Drawing No.
Checked <i>A.K. [Signature]</i>	No. <i>3</i>	34-01-83-69-14
	of <i>5</i>	



BAYOU DITCH 2ND PROJECT
DITCH IMPROVEMENT
SALEM TOWNSHIP
OTTAWA COUNTY, CHIO.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed <i>Donald R. Poffe</i>	Date <i>5/62</i>	Approved by <i>R. P. M.</i>
Drawn <i>Donald R. Poffe</i>	Date <i>5/62</i>	Title
Traced	Date	Title
Checked <i>A. J. ...</i>	Date <i>7/62</i>	Sheet No. <i>7</i> of <i>8</i>
		Drawing No. 34-01-23-69-14



YARDAGE

STATION	SQ. INS.	CUYDS. LIN. FT.	AVE. CUYDS.	DISTANCE	CURV. YARDS
167+00			30	640	192
173+00	.32	.30	.59	600	354
177+00	.94	.87	.58	500	290
182+00	.30	.28	.35	500	175
187+00	.45	.42	.45	500	225
192+00	.50	.47	.34	500	170
197+00	.23	.21	.16	500	80
202+00	.11	.10	.13	500	65
207+00	.17	.16	.17	500	85
212+00	.18	.17	.24	500	120
217+00	.32	.30	.38	500	195
222+00	.45	.46	.26	500	130
227+00	.05	.06	.15	500	75
232+00	.25	.23	.29	600	174
238+00	.38	.35	.34	500	170
243+00	.34	.32	.34	623	212
LA CAMP CUTOFF			.48	177	85
251+00	.54	.50	.50	500	250
256+00	.54	.50			
TOTAL					3,047

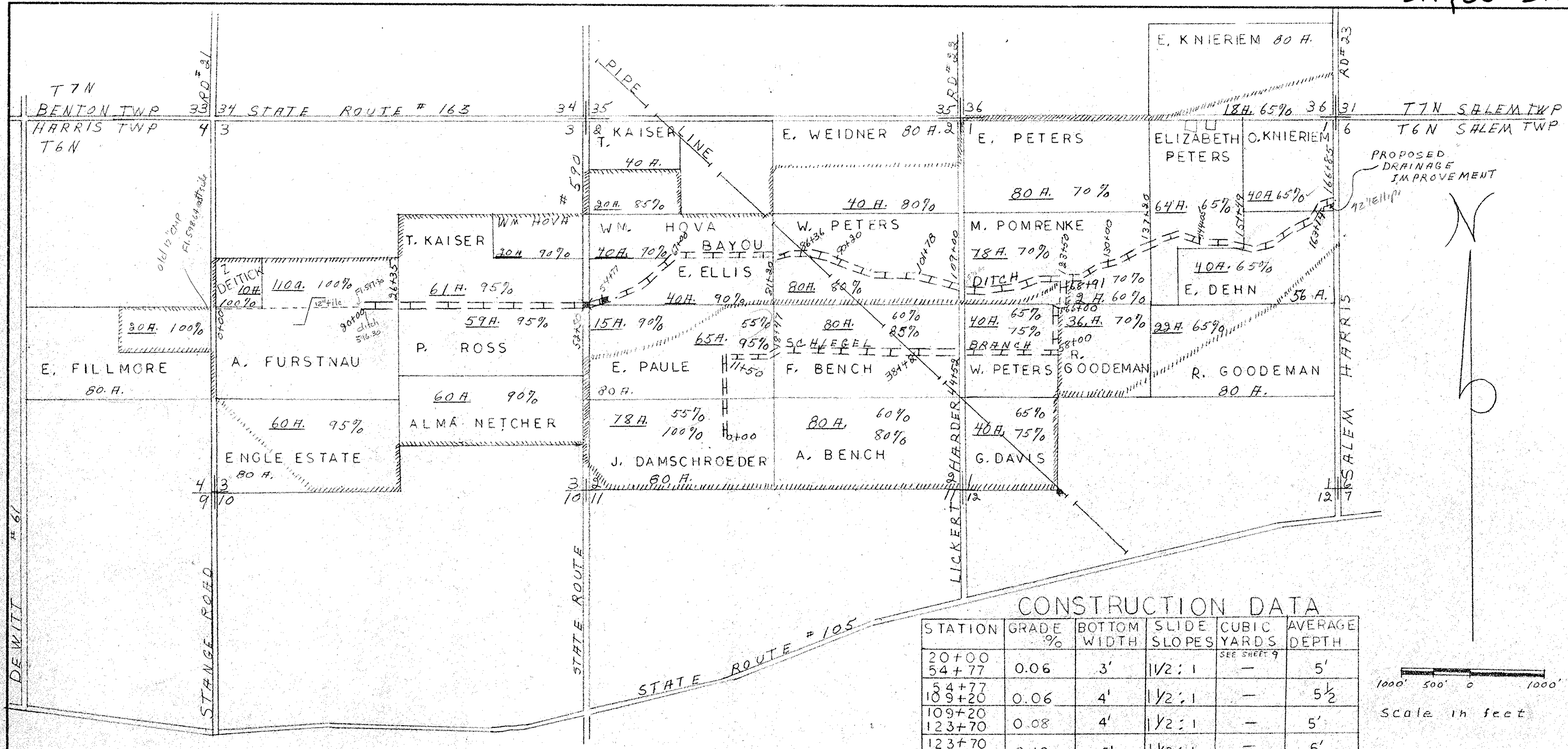
BAYOU DITCH 2,712
 BAYOU DITCH BEYOND LA CAMP CUTOFF 335
 3,047

BAYOU DITCH 2ND PROJECT
 DITCH IMPROVEMENT
 SALEM TOWNSHIP
 OTTAWA COUNTY, OHIO

U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

Designed <i>Donald C. P. Sec.</i>	Date <i>11/1</i>	Approved by <i>[Signature]</i>
Drawn <i>Donald C. P. Sec.</i>	Date <i>5/69</i>	Title
Traced	Sheet	Drawing No.
Checked	No. <i>5</i>	34-01-83-69-14

Done

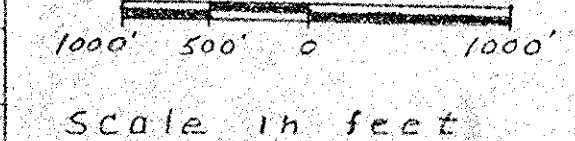


- BM#1 - TOP OF CHISELED X NORTH SIDE OF CONCRETE HEADWALL STA. 30+00 M.S.L. 599.50
- BM#2 - SPIKE IN SOUTH TAP ROOT OF 34" TREE LOCATED IN S.W. CORNER OF HOUSE YARD STA. 43+45 M.S.L. 602.09
- BM#3 - CHISELED X S.W. CORNER OF S.W. WING WALL OF BRIDGE ON ST. RT. #590 STA. 52+60 M.S.L. 600.33
- BM#4 - TOP OF 8" C.M.P NORTH SIDE OF DITCH (KAISER MAIN) STA. 67+84 M.S.L. 596.43
- BM#5 - TOP OF 3" PIPE USED AS MARKER FOR PIPE LINE N. SIDE OF DITCH STA. 86+36 M.S.L. 599.01
- BM#6 - TOP OF "O" OF 1906 MARK ON CENTER OF E. HEADWALL OF STONE ARCH BRIDGE STA. 90+33 M.S.L. 598.43
- BM#7 - TOP OF "O" OF 1905 MARK 5' S. OF CENTER E. HEADWALL OF STONE ARCH BRIDGE STA. 101+91 M.S.L. 597.34
- BM#8 - CHISELED X ON N. END OF W. HEADWALL OF ARCH BRIDGE ON LICKERT HARDER RD. STA. 108+82 M.S.L. 597.56
- BM#9 - TOP OF 8" TILE N. SIDE OF DITCH STA. 131+11 M.S.L. 590.81
- BM#10 - TOP OF X ON CENTER OF CONCRETE HEADWALL ON 8" TILE N. SIDE OF DITCH STA. 140+00 M.S.L. 590.46
- BM#11 - TOP OF CHISELED X ON S.W. CORNER OF 5 CONCRETE BLOCK HEADWALL FOR PLANK BRIDGE STA. 144+05 M.S.L. 592.05
- BM#13 - R.R. SPIKE IN N. SIDE OF WALNUT TREE ON S. SIDE OF DITCH STA. 158+60 M.S.L. 595.06
- BM#12 - CHISELED X ON W. END OF STONE HEADWALL N. SIDE OF DITCH 2'E. OF S.W. CORNER STA. 156+31 M.S.L. 590.77
- BM#14 - TOP OF R.R. SPIKE W. SIDE OF POWER POLE E. SIDE OF SALEM HARRIS RD. N. SIDE OF DITCH STA. 167+32 M.S.L. 592.97

CONSTRUCTION DATA

STATION	GRADE %	BOTTOM WIDTH	SLIDE SLOPES	CUBIC YARDS	AVERAGE DEPTH
20+00					
54+77	0.06	3'	1 1/2 : 1	-	5'
109+20	0.06	4'	1 1/2 : 1	-	5 1/2'
123+70	0.08	4'	1 1/2 : 1	-	5'
123+70	0.10	5'	1 1/2 : 1	-	6'
166+85					

TOTAL CUBIC YARDS = 9,425



LOCATION AND OWNERSHIP MAP

HYDRAULIC CALCULATIONS

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

MINIMUM SIDE SLOPE 1 1/2 : 1

MAXIMUM VELOCITY 5 F.P.S. BANKFULL OR 10 YR. FREQ.

REACH	STA. TO STA.	20+00	54+77	109+20	123+70
DRAINAGE AREA		415	635	715	1398
Q _B FLOW C.F.S.		62.5	81	86	125
S _{1/2}		.0345	.0345	.0283	.0316
SLOPE-S(Ft./Ft.)		.0006	.0006	.0008	.0010
Q/S ^{1/2} = KD		2551	3306	3039	3955
KD-VALUE USED		2553	3375	3062	3958
SIDE SLOPE		1 1/2 : 1	1 1/2 : 1	1 1/2 : 1	1 1/2 : 1
BOTTOM WIDTH		3'	4'	4'	5'
DEPTH - FT.		4.3'	4.6'	4.4'	4.7'
"N"		.04	.04	.04	.04
AREA - SQ.FT.		40.65	50.14	46.64	56.65
VELOCITY-C.F.S.		1.54	1.62	1.84	2.21

HEADLOSS IN CULVERTS

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

STATION	166+85	108+80	54+77
DRAINAGE AREA (AC)	1398	635	415
Q _B FLOW (C.F.S.)	125	81	62.5
DIAMETER (IN.)	58 X 91	84	48
TYPE	R/C	R/C	R/C
N	.013	.013	.013
LENGTH (FT.)	60'	40'	16'
X SECTIONAL AREA (SQ.FT.)	28.27	38.48	12.57
KP	.00287	.00234	.0047
KPL	.17	.094	.078
KE	.50	.50	.50
VELOCITY (F.P.S.)	4.42	2.11	4.97
HEADLOSS (FT.)	0.5	.11	.60

DRAINAGE AREA
BAYOU DITCH 1013
SCHLEGEL DITCH 385

LAND USE --- GENERAL FARMING
SOIL TYPE --- TOLEDO, HOYTVILLE, FULTON
LAND SLOPE --- 0 - 2%
DESIGN COEFFICIENT - Q_c CURVE
TYPE DRAINAGE --- SURFACE & TILE

LEGEND

- PROPOSED DRAINAGE IMPROVEMENT - - - - -
- HIGHWAYS - - - - -
- ACRES IN WATERSHED - - - - - 00A.
- WATERSHED BOUNDARIES - - - - -
- SECTION LOCATION - - - - -
- PIPE LINE - - - - -

LOCATION OF DITCH - SECTIONS 1, 2, 3, T 6 N, R 14 E, HARRIS TOWNSHIP, OTTAWA COUNTY, OHIO.

SURVEYED - D. SOMMER, E. CAMPBELL, D. OPFER FEB. 8, 14, 18, 1966.

REFERENCE - FIELD NOTES ON FILE IN OTTAWA SOIL CONSERVATION DISTRICT OFFICE

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.

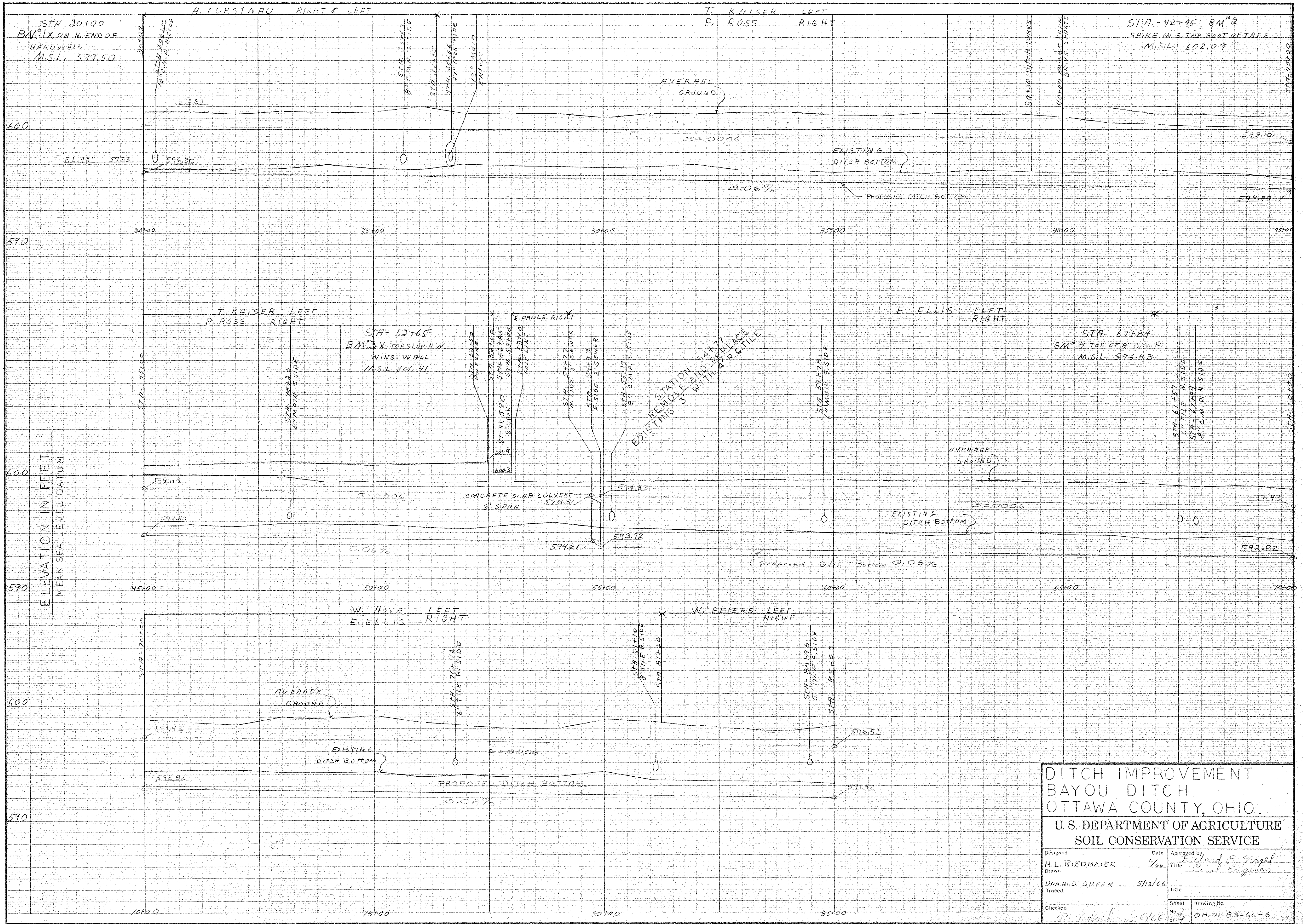
THIS DITCH PLAN HAS BEEN APPROVED BY
John A. Pappun
OTTAWA COUNTY ENGINEER
8/25/66
DATE

ENGINEERING JOB CLASS III GROUP #20

DITCH IMPROVEMENT
BAYOU DITCH
OTTAWA COUNTY OHIO

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

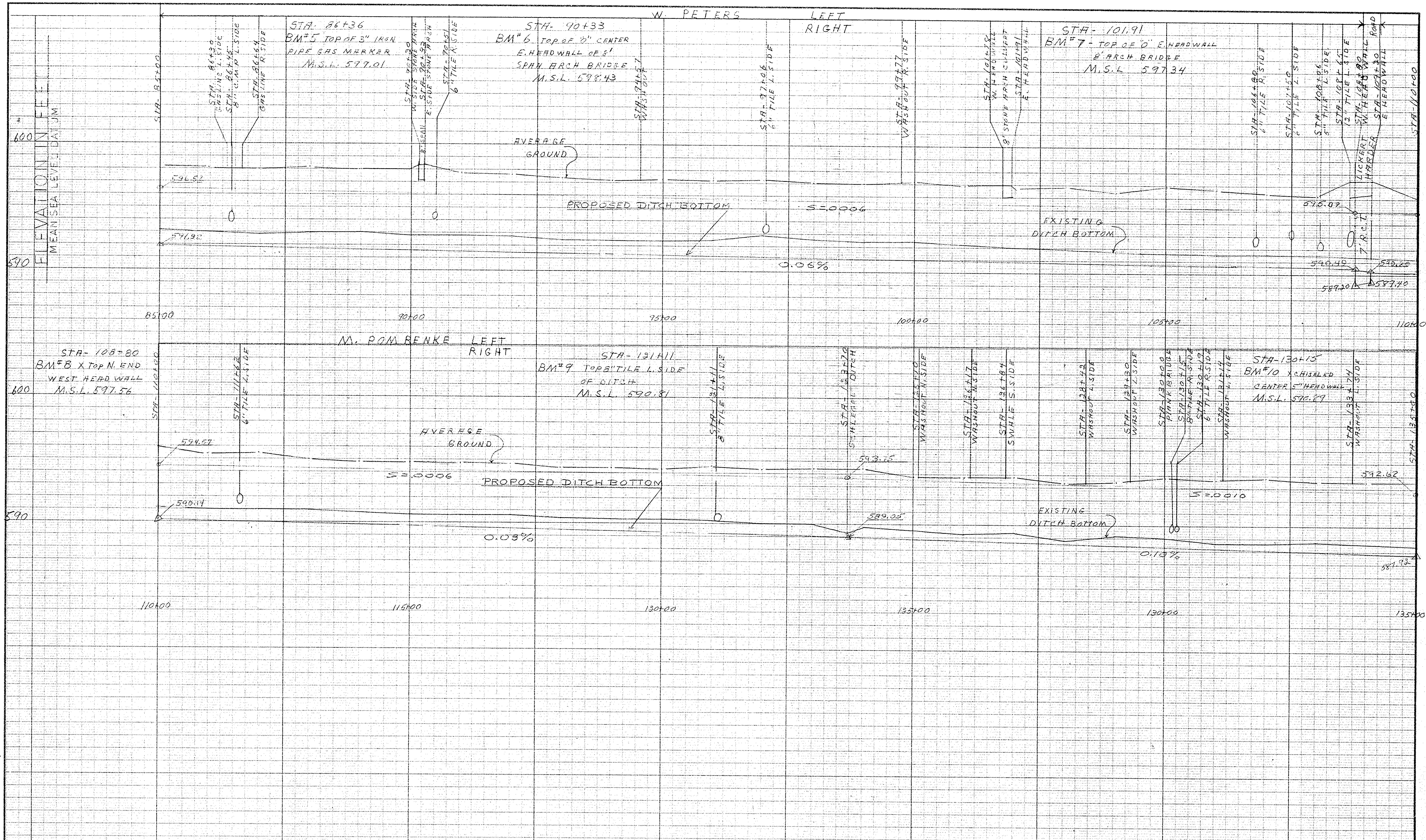
Designed H.L. RIEDMAIER	Date 4/66	Approved by <i>Richard R. Nagel</i> Title Civil Engineer
Drawn DONALD OPFER	Date 4/18/66	Title
Traced		
Checked <i>R. Nagel</i>	Date 6/66	Sheet No. 1 of 9
		Drawing No. OH-1-83-66-6



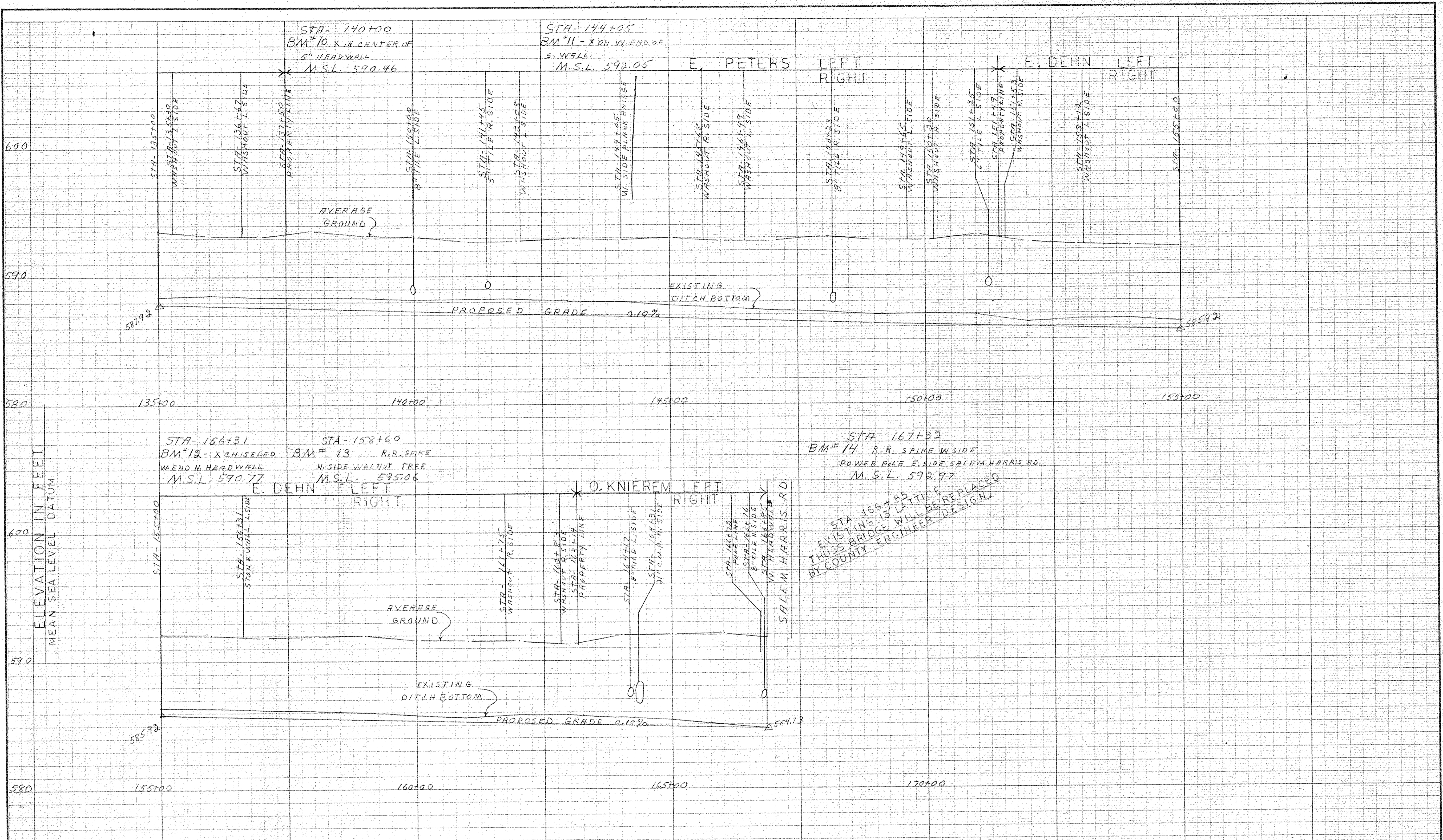
**DITCH IMPROVEMENT
BAYOU DITCH
OTTAWA COUNTY, OHIO.**

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

Designed H. L. RIEDMAIER	Date 4/66	Approved by <i>Richard R. Nagel</i> Title <i>Civil Engineer</i>
Drawn		
Traced DONALD OPPER	Date 5/13/66	Title
Checked <i>R. Nagel</i>	Sheet No. 6/66	Drawing No. OH-01-B3-66-6

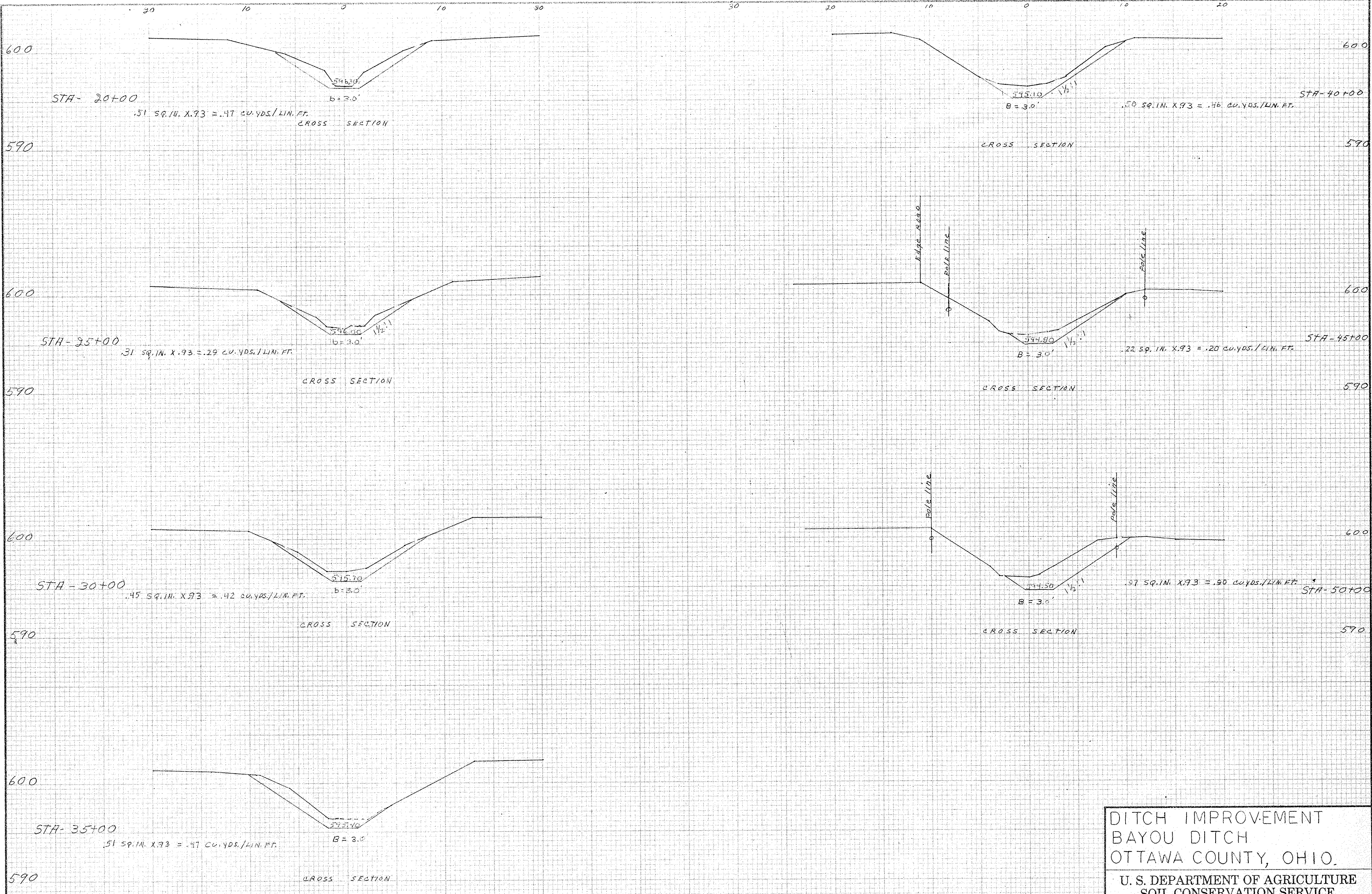


<p align="center">DITCH IMPROVEMENT BAYOU DITCH OTTAWA COUNTY, OHIO.</p> <p align="center">U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE</p>			
Designed H. L. RIEDMAIER	Date 4/66	Approved by Richard P. Nagel	Title Civil Engineer
Drawn DONALD OPPER	Traced 5/17/66	Title	
Checked R. Nagel	Sheet 6/66	Drawing No. OH-01-83-66-6	



STA. 156+85
EXISTING IS LATTICE
TRUSS BRIDGE WILL BE REPLACED
BY COUNTY ENGINEER DESIGN

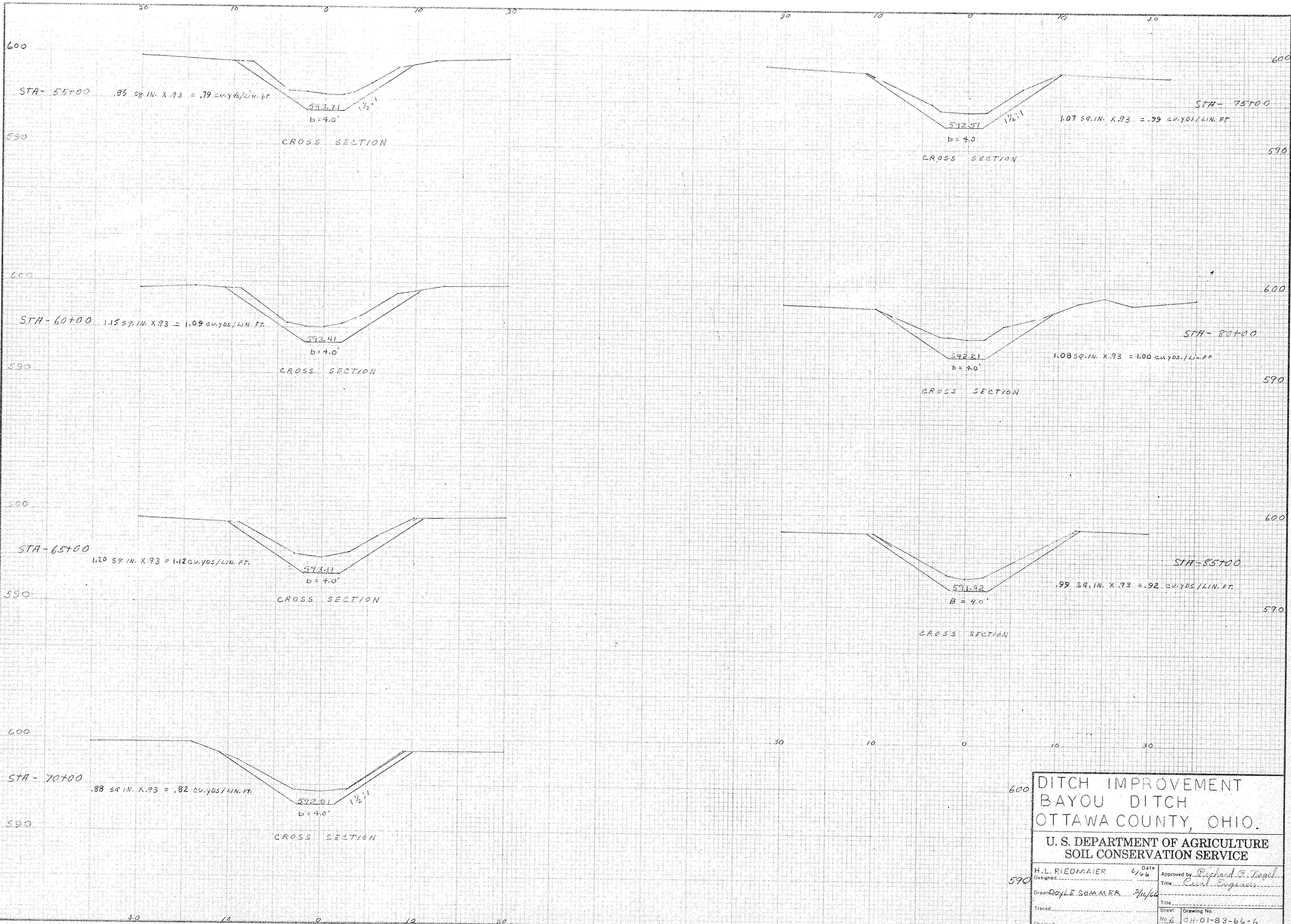
DITCH IMPROVEMENT BAYOU DITCH OTTAWA COUNTY, OHIO. U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
Designed H. L. RIEDMAIER	Date 4/66	Approved by Richard P. Nagel Civil Engineer	
Drawn DONALD OPPER	4/18/66	Title	
Traced		Sheet 1 of 9	Drawing No. OH-01-83-66-6



DITCH IMPROVEMENT
 BAYOU DITCH
 OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

Designed by <u>H. L. RIEDMAIER</u>	Date <u>6/66</u>	Approved by <u>Frederick R. Neigel</u>
Drawn <u>Ronald A. Jaffer</u>	Title <u>Civil Engineer</u>	
Traced	Title	
Checked	Sheet No. <u>5</u>	Drawing No. <u>OH-01-83-66-6</u>
	of <u>9</u>	



DITCH IMPROVEMENT
 BAYOU DITCH
 OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

Designed by H. L. RIEDMAIER Drawn by DOYLE SAMMER Traced Checked	Date 4/26/66 Title Civil Engineer Title Sheet No. 6 of 9 Drawing No. OH-01-83-66-6	Approved by Richard G. Nagel Title
---	--	---------------------------------------

STA-90+00

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

591.62

B = 4.0'

1 1/2:1

CROSS SECTION

STA 110+00

.90 SQ. IN. X .93 = .84 CU. YDS./LIN. FT.

590.14

B = 4.0'

1 1/2:1

CROSS SECTION

STA-95+00

.81 SQ. IN. X .93 = .75 CU. YDS./LIN. FT.

591.32

B = 4.0'

CROSS SECTION

STA - 115+00

1.03 SQ. IN. X .93 = .96 CU. YDS./LIN. FT.

589.74

B = 4.0'

1 1/2:1

CROSS SECTION

STA-100+00

.88 SQ. IN. X .93 = .82 CU. YDS./LIN. FT.

591.02

B = 4.0'

CROSS SECTION

STA-120+00

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

589.34

B = 4.0'

1 1/2:1

CROSS SECTION

STA-105+00

.38 SQ. IN. X .93 = .35 CU. YDS./LIN. FT.

590.72

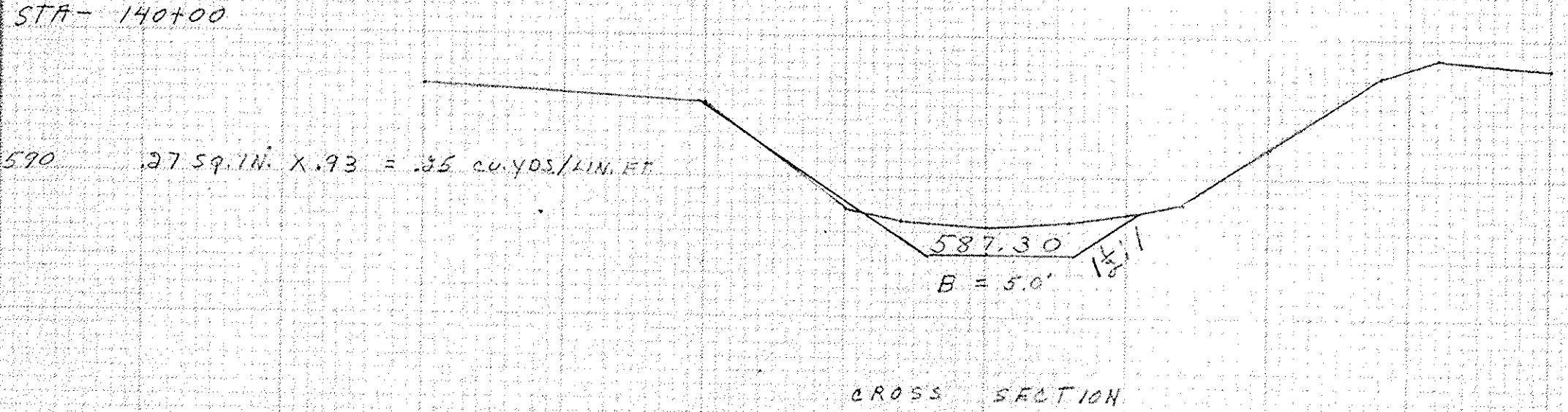
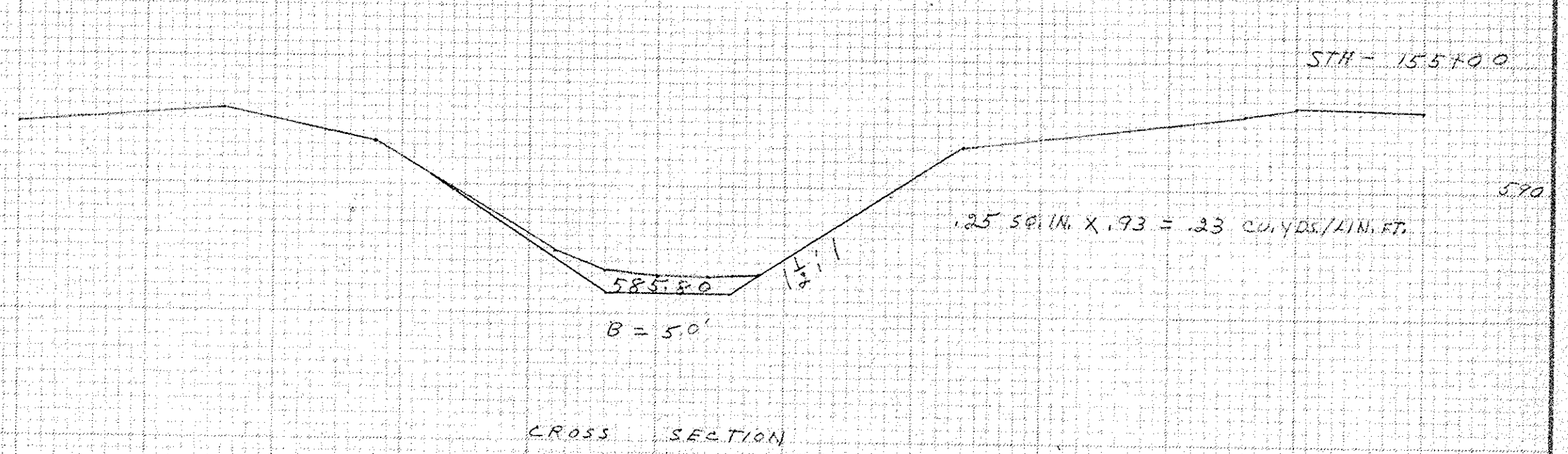
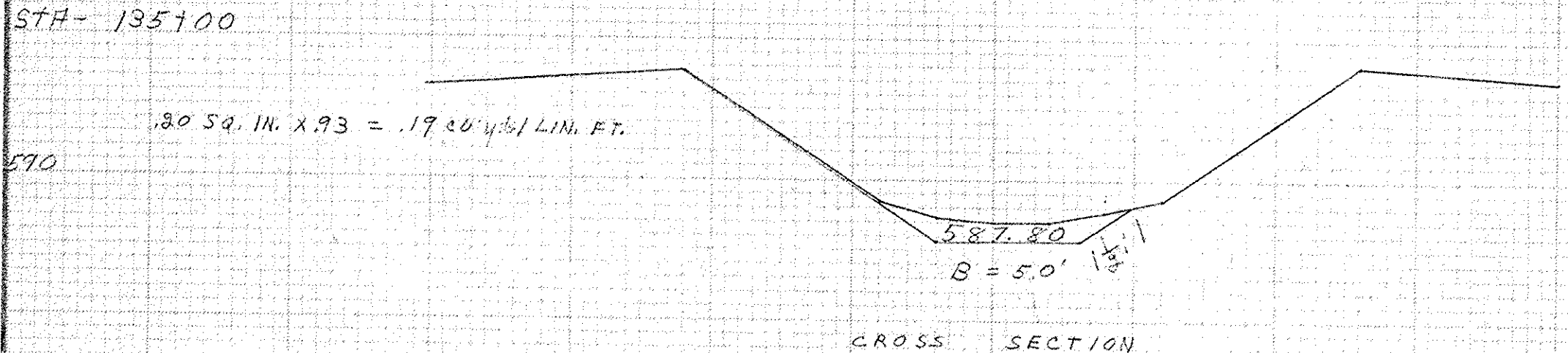
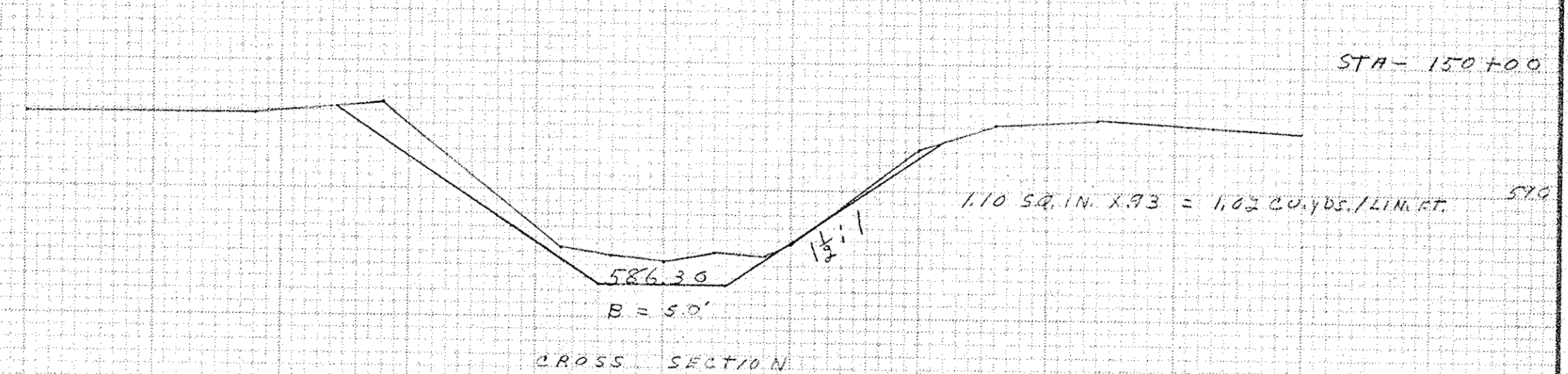
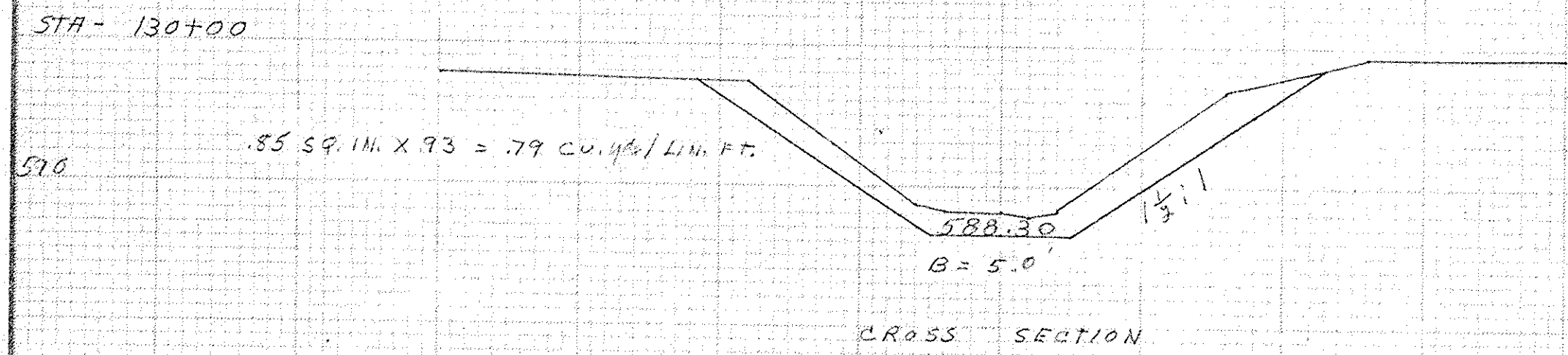
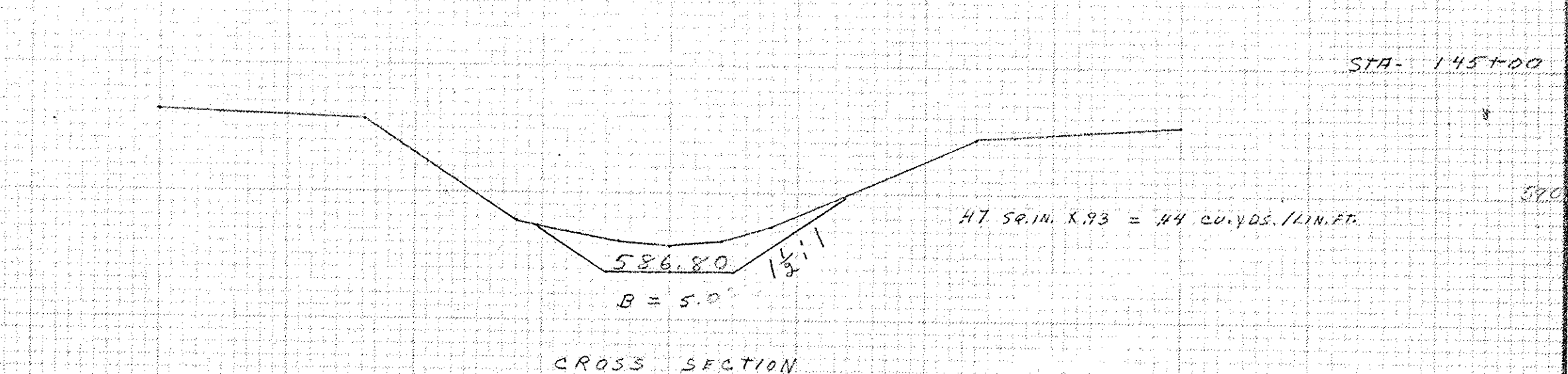
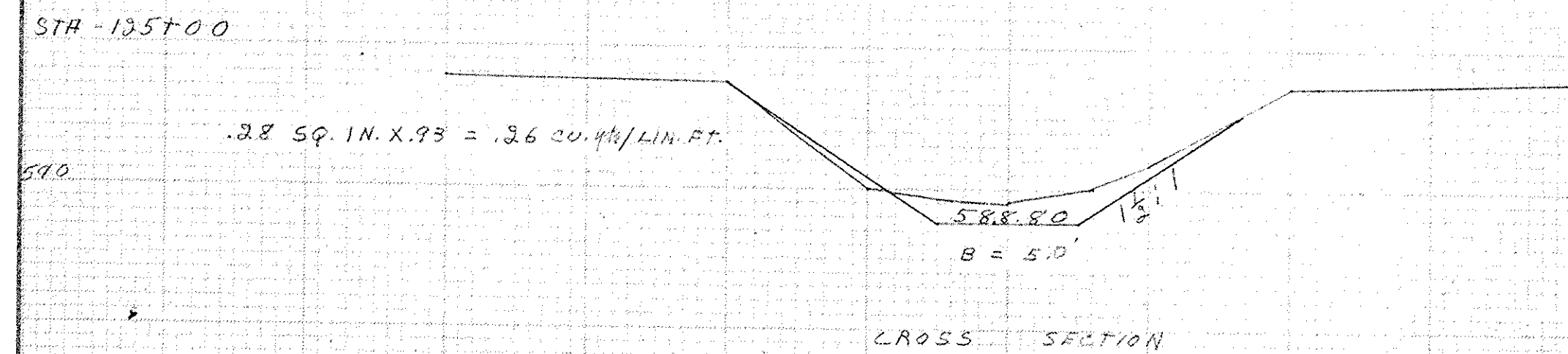
B = 4.0'

CROSS SECTION

DITCH IMPROVEMENT
BAYOU DITCH
OTTAWA COUNTY, OHIO.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

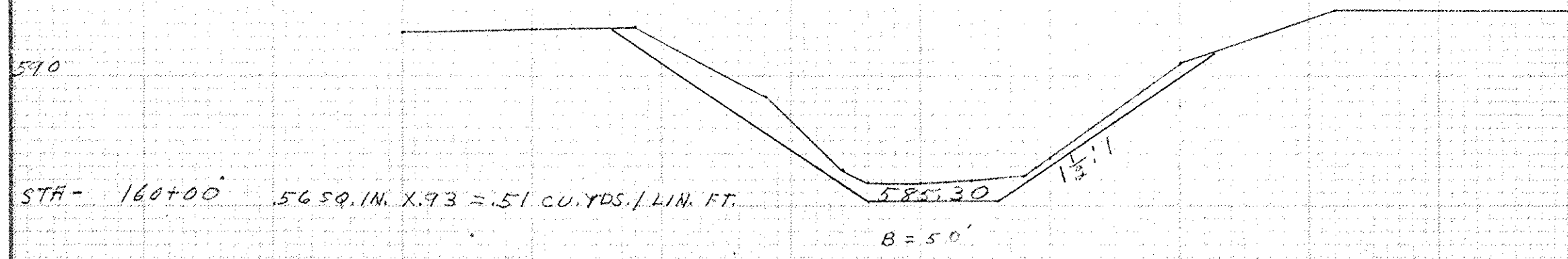
Designed by H. L. RIEDMAIER	Date 6/66	Approved by Richard P. Vogel
Drawn by D. W. H. D. OSTER	Title Civil Engineer	
Traced	Sheet No. 7	Drawing No. CH-01-83-66-6
Checked	of 7	



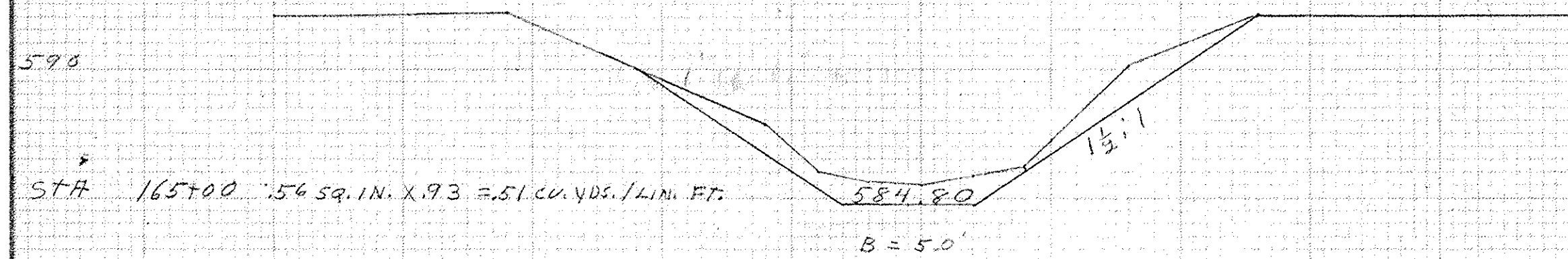
DITCH IMPROVEMENT
BAYOU DITCH
OTTAWA COUNTY OHIO

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed by H.L. RIEDMAIER	Date 6/62	Approved by Richard B. Nagel
Drawn DONALD GREER	Date 7/2/62	Title Civil Engineer
Traced		Title
Checked		Sheet 3 Drawing No. CH-01-93-66-6
		of 9



580 CROSS SECTION



580 CROSS SECTION

SPECIFICATIONS

I. EXCAVATION

- A. BOTTOM WIDTH: SHALL BE THREE (3) FEET BETWEEN STA. 30+00 AND STA. 54+77
 FOUR (4) FEET BETWEEN STA. 54+77 AND STA. 109+30
 FOUR (4) FEET BETWEEN STA. 109+30 AND STA. 133+70
 FIVE (5) FEET BETWEEN STA. 133+70 AND STA. 166+58
- B. ALIGNMENT : THE CENTER LINE OF THE IMPROVEMENT SHALL BE APPROXIMATELY THE CENTER LINE OF THE EXISTING DITCH UNLESS OTHERWISE INDICATED ON THE PLAN.
- C. BANK SLOPES : THE DITCH BANKS ARE TO BE CONSTRUCTED TO AT LEAST 1 1/2 HORIZONTAL TO 1 FOOT VERTICAL.
- D. TOTAL EXCAVATION: THE TOTAL EXCAVATION CONSISTS OF 9425 CUBIC YARDS OF EARTH OVER 14,656 LINEAL FEET OF DITCH
- E. EXCESS YARDAGE: NO EXTRA COMPENSATION WILL BE PAID FOR SUCH EXCAVATION IN EXCESS OF YARDAGE HEREIN ESTIMATED.

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 DRAGLINE OPERATION. STUMPS ON THE BERM SHOULD BE REMOVED OR CUT AS LOW AS CUTTING TOOL PERMITS. CLEARED DEBRIS SHOULD BE DISPOSED OF BY BURNING OR REMOVED FROM 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.
 TEN (10) FEET WIDE FOR DITCHES OVER SIX FEET IN DEPTH.

IV. SPOIL BANKS

EXCAVATED MATERIAL SHOULD BE DEPOSITED AND SPREAD ALONG ONE OR BOTH SIDES OF THE DITCH AS DETERMINED. 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 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.

VI. SURFACE WATER OUTLETS

WHEREVER A LATERAL OR SURFACE DITCH ENTERS THE MAIN DITCH AT A HIGHER ELEVATION, PROTECTION FROM EROSION SHOULD BE PROVIDED BY: DROP STRUCTURES, PIPE DROPS, OTHER SUITABLE STRUCTURES, OR GRASSED WATERWAYS.

VII. DITCH BANK SEEDING

DITCH BANKS WILL BE SEEDDED IMMEDIATELY AFTER EACH DAYS WORK TO TALL FESCUE AT THE RATE OF 35 LBS. PER ACRE; A MINIMUM OF 500 LBS. OF 10-10-10 FERTILIZER OR EQUIVALENT PER AC. 5.5 ACRES

IX. CULVERTS

EXISTING CULVERTS AND BRIDGES WILL BE CLEANED AND THE INVERTS (FLOW LINE) LOWERED TO CORRESPOND TO THE PROPOSED GRADE AS INDICATED ON THE PLAN.

STA- 53+75 STA- 54+77 STA- 91+20 STA- 101+78 STA- 109+00 STA- 130+00 STA- 144+05

YARDAGE					
STATION	SQ. IN.	CU. YDS.	AVE.	DISTANCE	CUBIC YARDS
30+00	.51	.47			
35+00	.31	.29	.38	500	190
30+00	.49	.42	.36	500	180
35+00	.51	.47	.44	500	220
40+00	.50	.46	.46	500	230
45+00	.22	.20	.33	500	165
50+00	.97	.90	.55	500	275
55+00	.85	.79	.85	500	425
60+00	1.15	1.09	.94	500	470
65+00	1.20	1.12	1.11	500	555
70+00	.88	.82	.97	500	485
75+00	1.07	.99	.90	500	450
80+00	1.08	1.00	.96	500	480
85+00	.99	.92	.84	500	420
90+00	.82	.76	.75	500	375
95+00	.81	.75	.79	500	395
100+00	.88	.82	.58	500	290
105+00	.38	.35	.60	500	300
110+00	.90	.84	.90	500	450
115+00	1.03	.96	.80	500	400
120+00	.70	.65	.45	500	225
125+00	.38	.36	.53	500	265
130+00	.85	.79	.47	500	245
135+00	.20	.19	.22	500	110
140+00	.27	.25	.35	500	175
145+00	.47	.44	.73	500	365
150+00	1.10	1.02	.62	500	310
155+00	.25	.23	.37	500	185
160+00	.56	.51	.51	685	350
166+85	.56	.51			
TOTAL					9425

**DITCH IMPROVEMENT
BAYOU DITCH
OTTAWA COUNTY, OHIO.**

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

H.L. RIEDMAIER <small>Designed</small>	Date 4/66	Approved by <i>Richard R. Nagel</i> <small>Chief Engineer</small>
Drawn DONALD OPFER	Date 3/23/66	Title _____
Traced _____	Sheet No. 9 of 9	Drawing No. OH-01-83-66-6
Checked _____	_____	_____