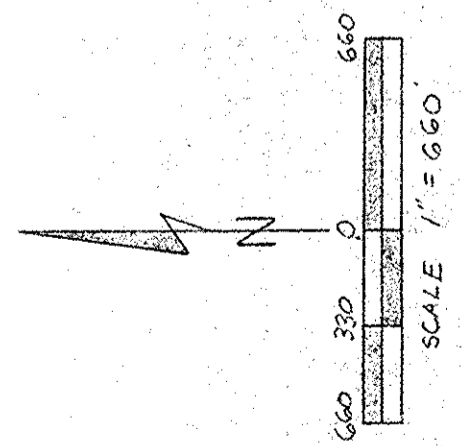


OWNERSHIP & WATERSHED MAP

- LEGEND**
- PROPOSED IMPROVEMENT
 - ROADS
 - PROPERTY BOUNDARY
 - WATERSHED BOUNDARY
 - RAILROAD
 - ACRES OWNED
 - ACRES BENEFITED

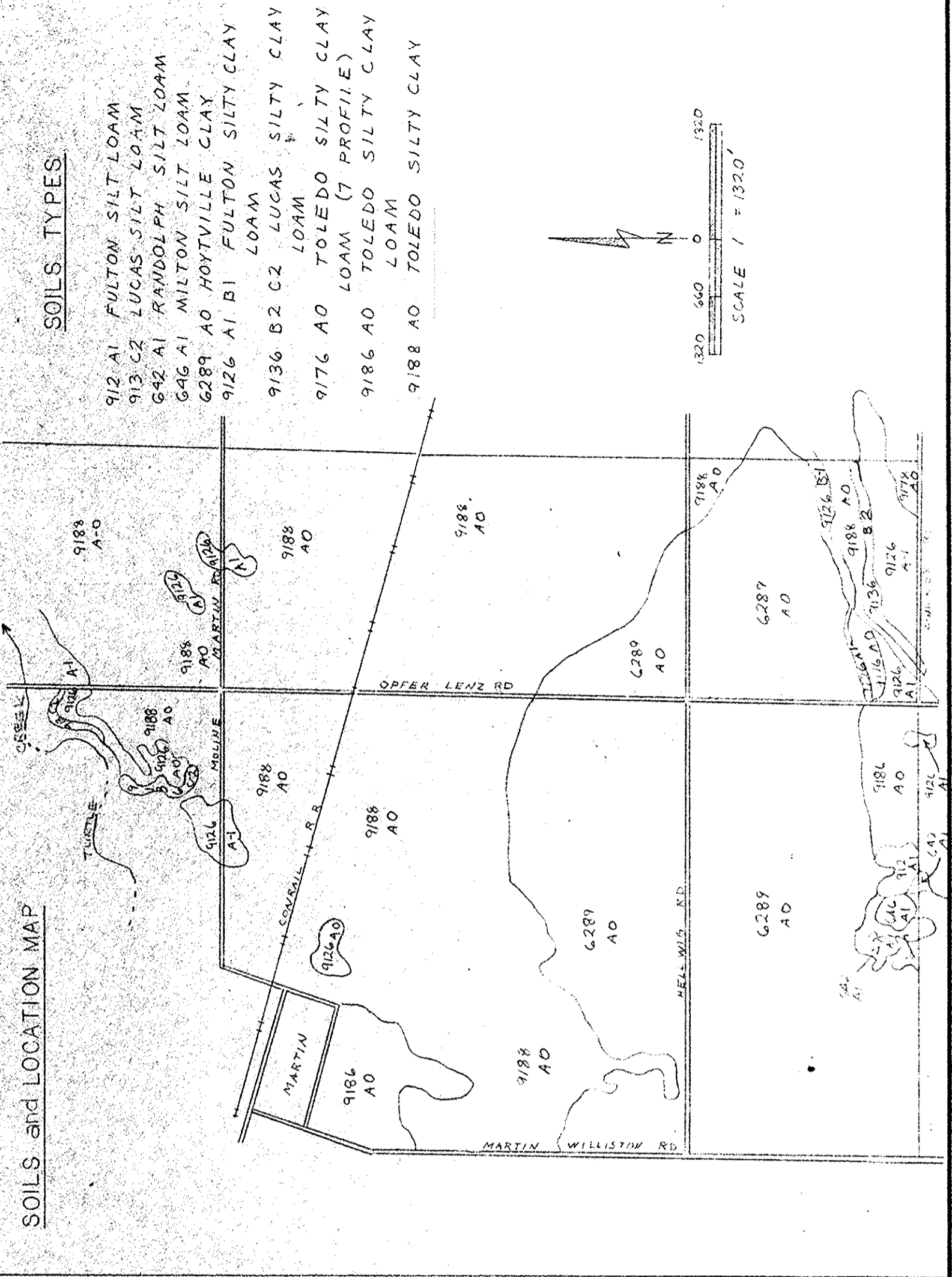
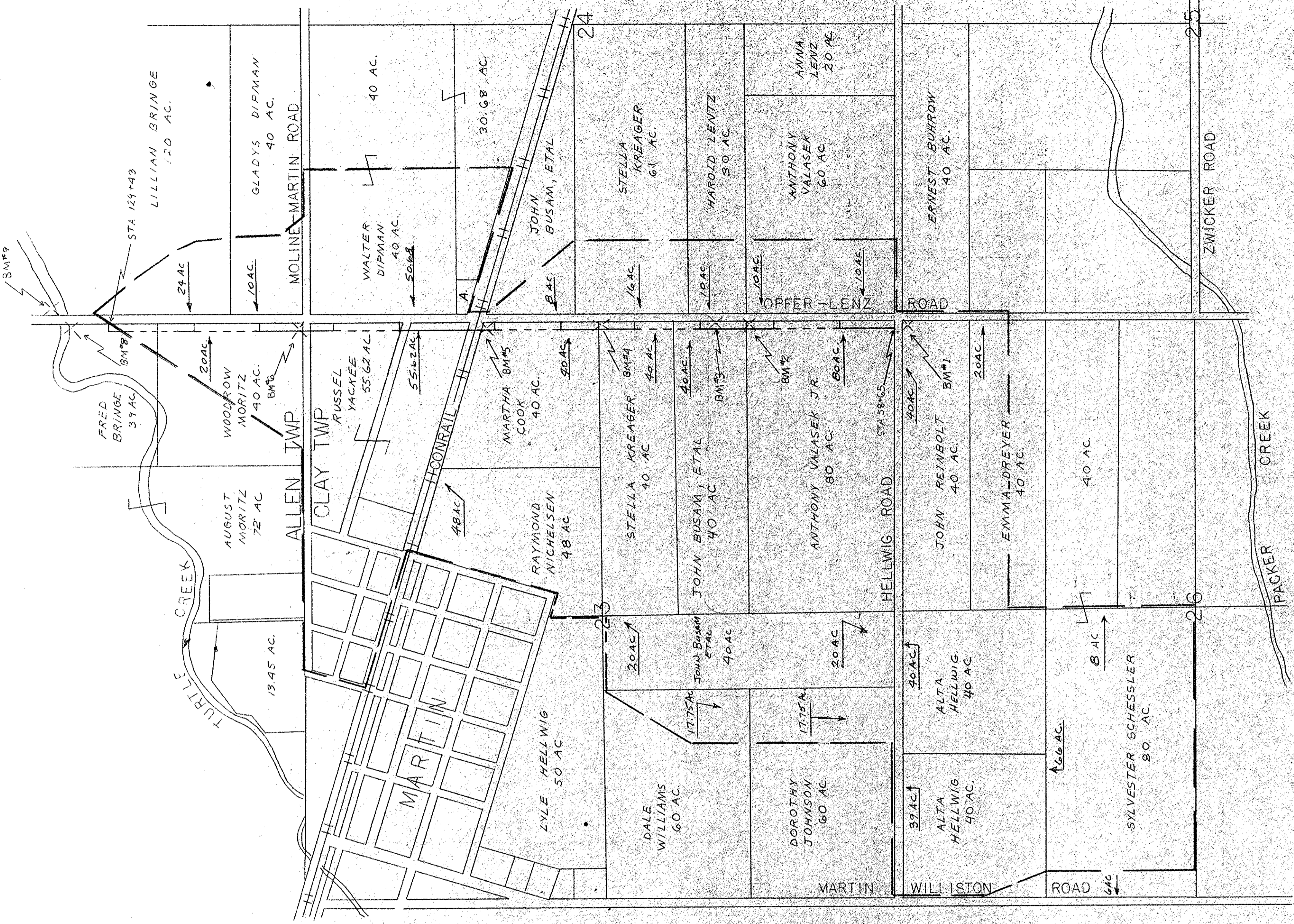


SUPPORTING DATA

DRAINAGE AREA 787 ACRES
 DESIGN COEFFICIENT .90
 LAND USE GENERAL & CASH CROPS
 SOIL TYPES FULTON, LUCAS, TOLEDO, HOYTVILLE, MILTON & RANDOLPH
 LAND SLOPE 0-2%
 TYPE DRAINAGE SURFACE & SUB-SURFACE

LOCATION

THE WATERSHED CONSISTS OF LAND WITHIN THE SW AND NW 1/4 OF THE SW 1/4 OF SECTION 13, AND THE SE AND NE 1/4 OF THE SE 1/4 OF SECTION 14 IN ALLEN TWP, THE NE 1/4 OF THE NW 1/4, THE NE 1/4, THE NE AND SE 1/4 OF THE SW 1/4 AND THE SE 1/4 OF SECTION 23 IN CLAY TWP, THE NW AND SW 1/4 OF THE NW 1/4 AND SW 1/4 OF THE SW 1/4 OF SECTION 24 IN CLAY TWP, THE NW AND NE 1/4 OF THE NE 1/4 AND THE NW 1/4 OF SECTION 26 IN CLAY TWP



SURVEYED: OCTOBER 18, 19, & 21 1977

BY: DOYLE SOMMER
 MICHAEL BUHROW
 CAROL MOORE
 TOM AMERCSSE
 MICHAEL GARGAC

APPROVED BY
John G. Popper 8/1/78
 COUNTY ENGINEER
 ALLEN TWP TRUSTEES

OUTLET DITCH IMPROVEMENT #120
 OPFER-LENIZ RD. GROUP DITCH
 SEC. 14 ALLEN TWP. SEC. 23 CLAY TWP
 OTTAWA COUNTY

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

Designed <i>A. Sommer</i>	Date <i>4/78</i>	Approved by <i>Arthur M. Beate</i>	Title <i>Aspirational Engineer</i>
Drawn <i>MICHAEL GARGAC</i>	Sheet <i>4/77</i>	Title <i>4-21-78</i>	
Traced	Sheet No. <i>1</i>	Drawing No. <i>39-01-383-78-17</i>	
Checked <i>Mike Morrin</i>	of <i>7</i>		

SPECIFICATIONS

STA	SQ. IN.	AVE. SQ. IN.	YARD-AGE	DIST.	TOTAL
58+65	1.05	1.05	0.98	135	132
60+00	1.05	.93	0.86	500	430
65+00	.81	.79	0.73	500	365
70+00	.77	.62	0.58	500	290
75+00	.46	.39	0.36	500	180
80+00	.31	.25	0.23	475	109
84+75	.18	.17	0.16	525	84
90+00	.16	.30	0.28	500	140
95+00	.43	.43	0.40	112	45
96+12	.43				
96+83	.17		RAILROAD	71	
100+00	.17	.17	0.16	317	51
105+00	.34	.26	0.24	500	120
110+00	.21	.28	0.26	500	130
115+00	.20	.21	0.20	500	100
120+00	.13	.17	0.16	500	80
125+00	.15	.14	0.13	500	65
129+43	.15	.15	0.14	443	62
				7078'	2383 Cu. Yd.

SOILS LOG

DEPTH IN FEET	#1 STA	#2 STA	#3 STA	#4 STA
	64+00	84+75	110+00	127+50
0	ML	M.L.	CL	ML
1			*	
2	CH	CH	CL	CL
3	CH			
4		CL		CH
5	CH	CH	CL	
6				CL w/ SOME SMALL POCKETS OF ML
7			CH	
8				

I. EXCAVATION:

- A. Bottom Width: The bottom width shall be THREE (3) feet between sta. 58+65 and sta. 129+43.
The bottom width shall be () feet between sta. and sta. .
- B. Bank Slopes: The ditch bank slopes are to be constructed to at least 2 feet 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 2383 cubic yards of earth over 7078 lineal feet of ditch from sta. 58+65 to sta. 129+43.
- 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) feet wide 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 9" 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:

Area to be seeded Berm 1.1 acres
Ditch Banks 2.0 acres.

The ditch banks will be seeded and fertilized each day within 24 hours after the clearing and shaping is completed. The berms will be seeded after spoil is spread. Seed will be covered by use of adjustable spike tooth harrow, if not seeded within the above time limit.

Permanent seeding. (To be completed prior to September 15.)

- Seeding rate per acre:
 - 40 pounds tall fescue - (Kentucky 31 or Alta)
 - 500 pounds 12-12-12 or equivalent fertilizer
 - 2 tons straw or hay per acre for mulch unless seed is applied within 24 hours of clearing and shaping

Temporary seeding. (Until permanent seeding is made.)

- Seeding rate per acre:
 - 2 bushels oats seeded during spring-summer; or 2 bushel wheat or rye seeded in the fall-winter may be used as a growing green mulch.
- Mow when grass reaches a height of 10 to 12 inches.

The establishment of the seeding on the ditch bank and berm shall be the responsibility of the contractor. A minimum of 20 fescue plants per square foot will be considered adequate establishment.

VIII. Existing culverts will be cleaned and the inverts (flow line) lowered if necessary 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.

OUTLET DITCH IMPROVEMENT
OPFER-LENTZ RD. GROUP DITCH #120
SEC. 14 ALLEN TWP. SEC. 23 CLAY TWP.
OTTAWA COUNTY

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

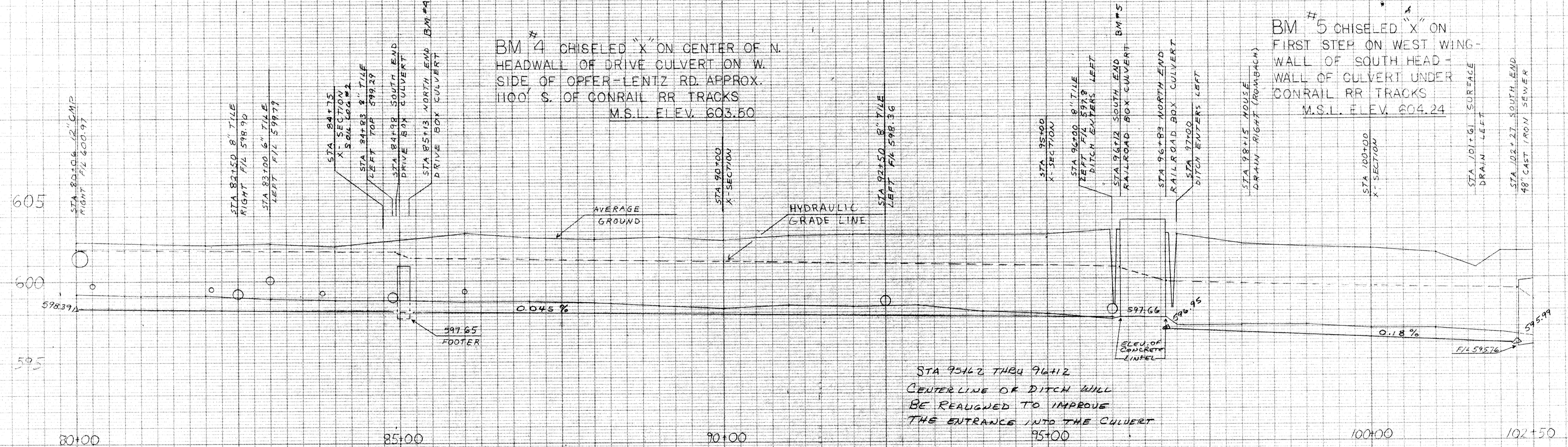
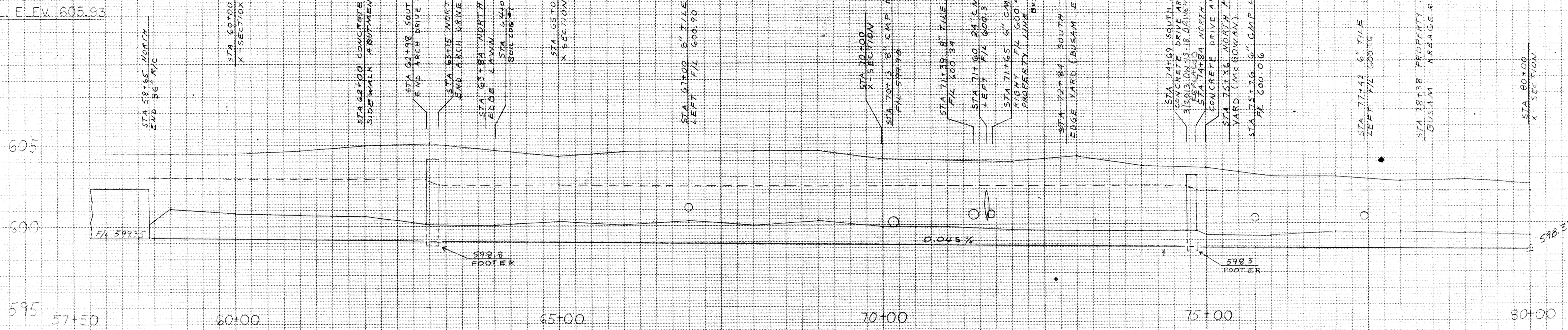
Designed <u>A. Lamm</u>	Date <u>1/23</u>	Approved by <u>A. M. B.</u>
Drawn <u>MICHAEL SARGA</u>	Date <u>1/27</u>	Title <u> </u>
Traced <u> </u>		Drawing No. <u> </u>
Checked <u>Mike Morris</u>		

BM #1 CHISELED "X" ON NW CORNER OF CONCRETE CATCH BASIN LID IN THE SW CORNER OF HELLWIG & OFFER-LENTZ RD. INTERSECTION.
M.S.L. ELEV. 605.83

REPLACE THIS CULVERT WITH 24" OF 36" R/C PIPE

BM #2 CHISELED "X" ON CENTER OF HEADWALL OF DROP BOX STRUCTURE ON NORTH LINE OF VALASEK FARM
M.S.L. ELEV. 604.14

BM #3 CHISELED "X" ON E. WING-WALL OF S. WALL OF DRIVE CULVERT ON W. SIDE OF OFFER-LENTZ RD. APPROX. 1600' N. OF HELLWIG RD.
M.S.L. ELEV. 604.21



BM #4 CHISELED "X" ON CENTER OF N. HEADWALL OF DRIVE CULVERT ON W. SIDE OF OFFER-LENTZ RD. APPROX. 1100' S. OF CONRAIL RR TRACKS
M.S.L. ELEV. 603.50

BM #5 CHISELED "X" ON FIRST STEP ON WEST WING-WALL OF SOUTH HEAD-WALL OF CULVERT UNDER CONRAIL RR TRACKS
M.S.L. ELEV. 604.24

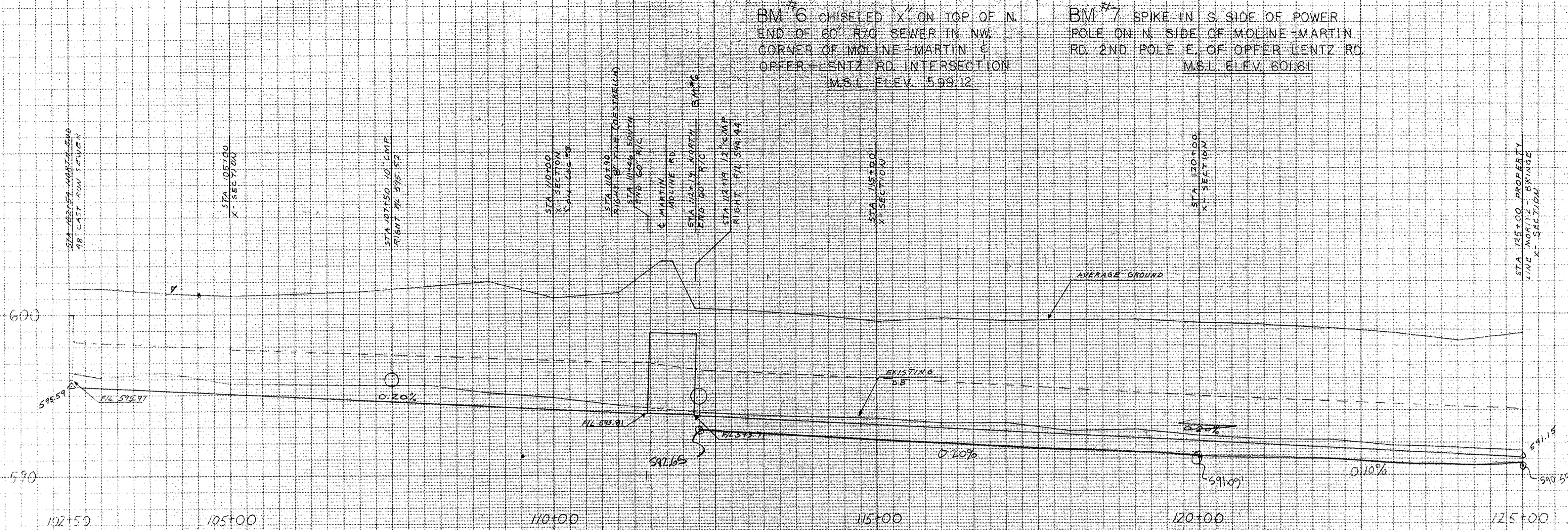
NOTE: CENTER JOINT IS SEPARATED AND NEEDS TO BE COVERED WITH CONCRETE.

STA 95+42 THRU 96+12 CENTERLINE OF DITCH WILL BE REGRADED TO IMPROVE THE ENTRANCE INTO THE CULVERT

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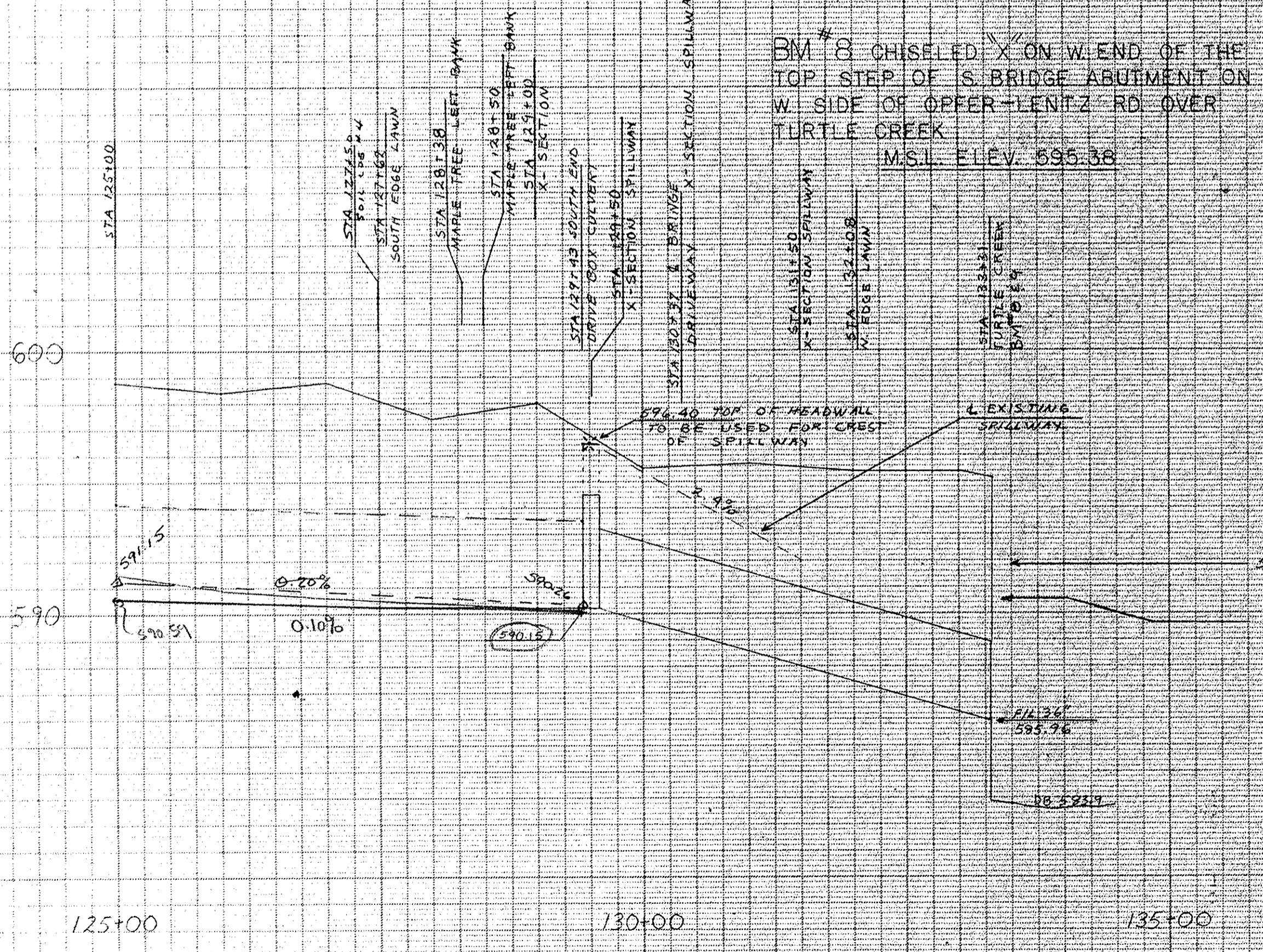
Designed <i>W. Morris</i>	Date <i>4/72</i>	Approved by <i>A. M. B.</i>
Drawn <i>MICHAEL GARGAS</i>	<i>4/1/72</i>	Title
Traced	Sheet No <i>3</i>	Drawing No.
Checked <i>Mike Morris</i>	<i>4/3</i>	<i>39 01-383-78-17</i>



BM #6 CHISELED "X" ON TOP OF N. END OF 30" R/C SEWER IN NW CORNER OF MOLINE-MARTIN & OPFER-LENTZ RD INTERSECTION M.S.L. ELEV. 599.12

BM #7 SPIKE IN S. SIDE OF POWER POLE ON N. SIDE OF MOLINE-MARTIN RD. 2ND POLE E. OF OPFER-LENTZ RD. M.S.L. ELEV. 601.61

NOTE: STA 116+62 THRU 128+12 STONE RIP-RAP ON LEFT BANK WILL NEED TO BE RESHAPED



BM #8 CHISELED "X" ON W. END OF THE TOP STEP OF S. BRIDGE ABUTMENT ON W. SIDE OF OPFER-LENTZ RD OVER TURTLE CREEK M.S.L. ELEV. 595.38

BM #9 CHISELED "X" ON E. END OF BOTTOM STEP OF N. ABUTMENT ON E. SIDE OF OPFER-LENTZ RD OVER TURTLE CREEK M.S.L. ELEV. 590.66

NOTE: BETWEEN STA 112+19 THRU STA 129+43 APPROXIMATELY 535' OF THE RIGHT DITCH SLOPE HAS SLIPPED THIS AREA WILL NEED TO BE STABILIZED TO PREVENT FURTHER DAMAGE

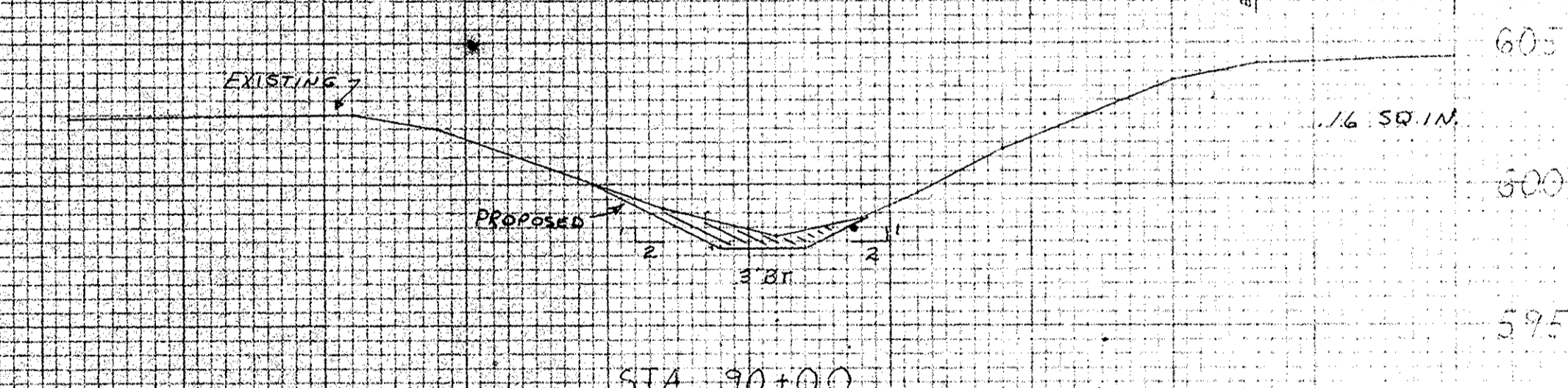
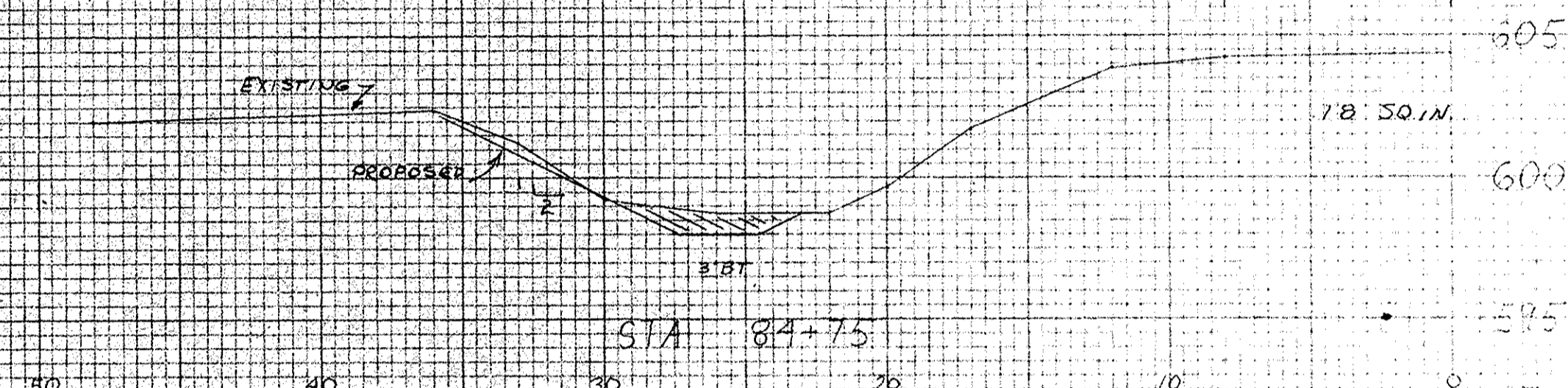
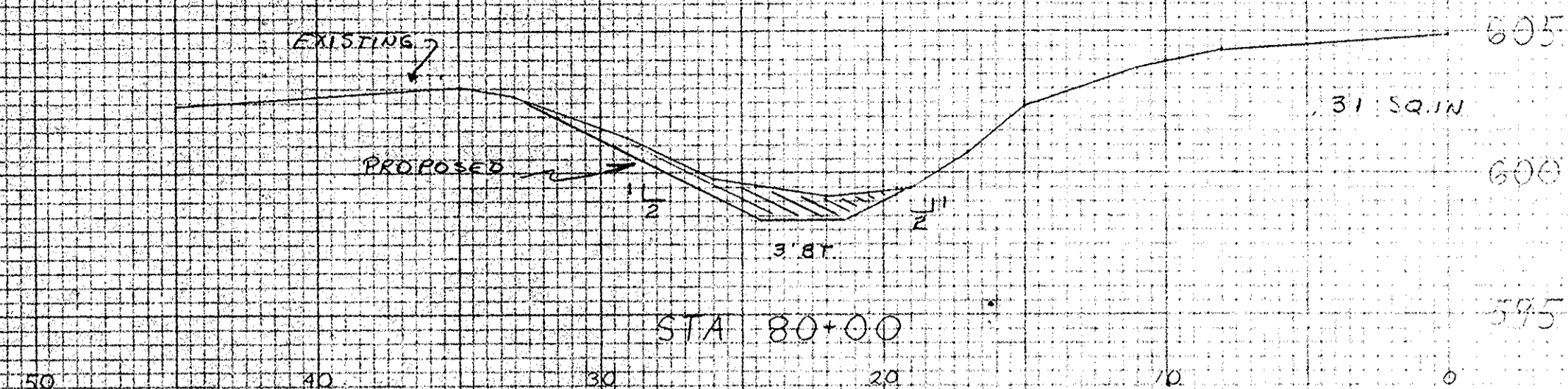
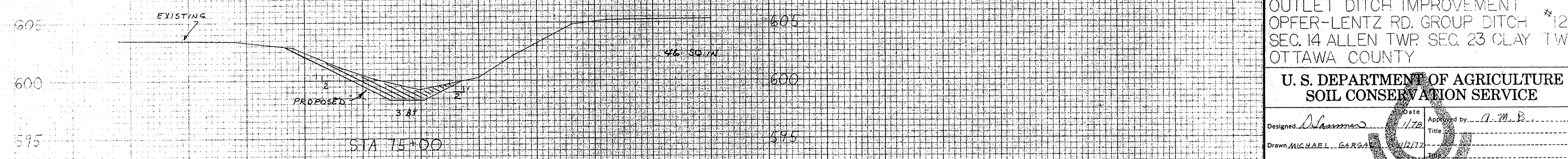
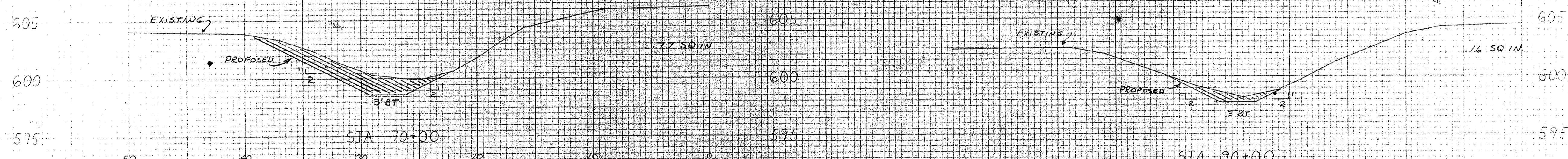
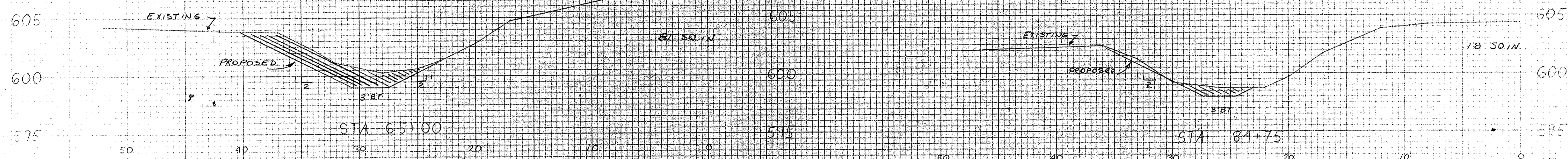
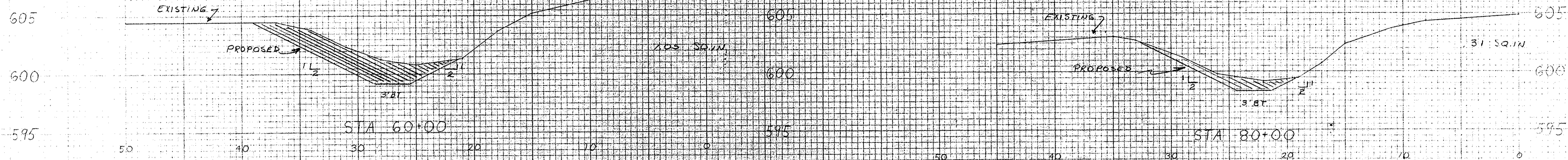
591.80 ESTIMATED TAILWATER Q_B FLOW
590.69 ESTIMATED TAILWATER Q_C FLOW

Due To OVERDRA
SEE DRAWING BANK 32 pg 63

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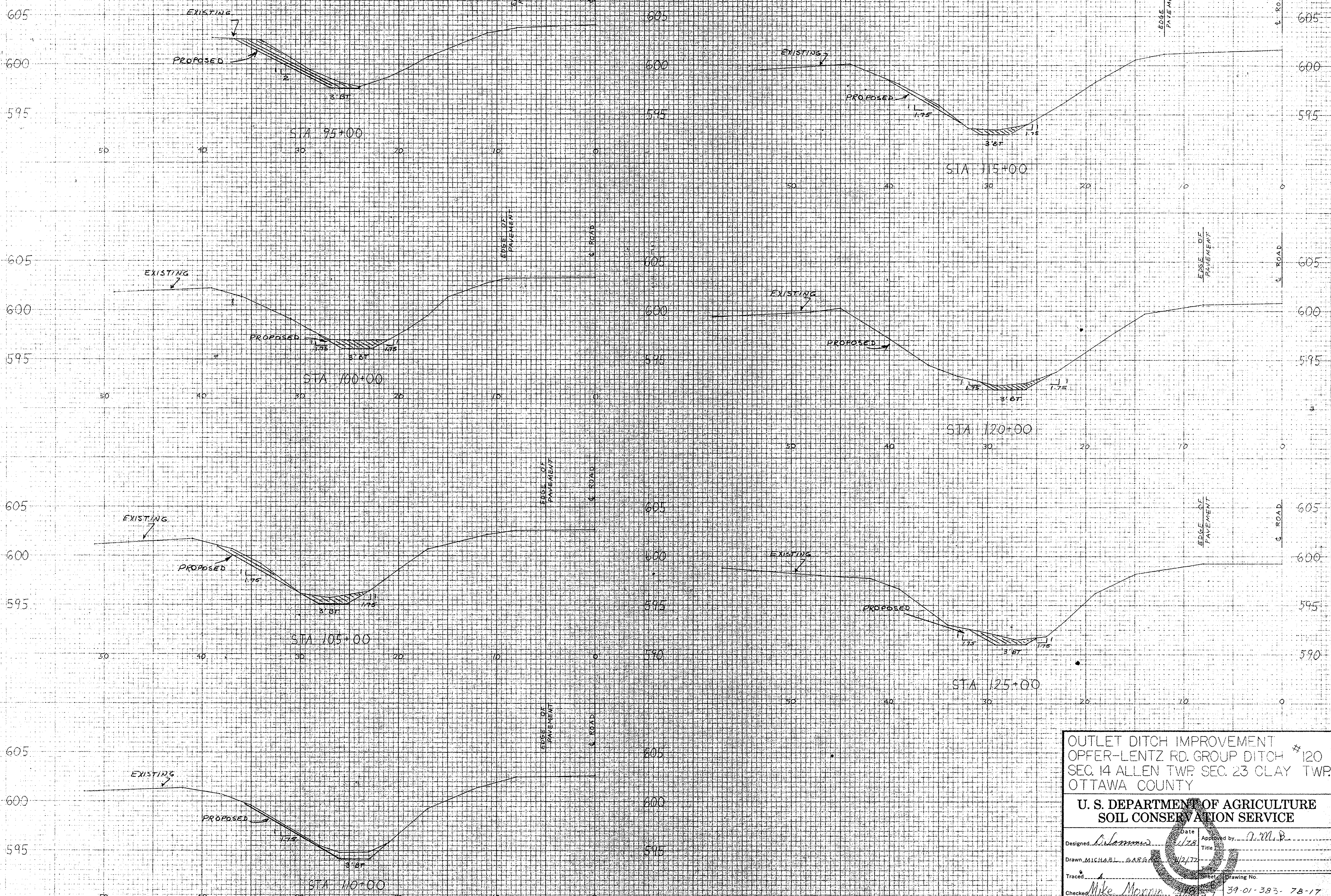
Designed <i>[Signature]</i>	Date 1/78	Approved by <i>[Signature]</i>
Drawn MICHAEL GARGAL	4/1/77	Title
Traced	Sheet No. 4	Drawing No.
Checked <i>[Signature]</i>	of 7	39-01-383-78-17



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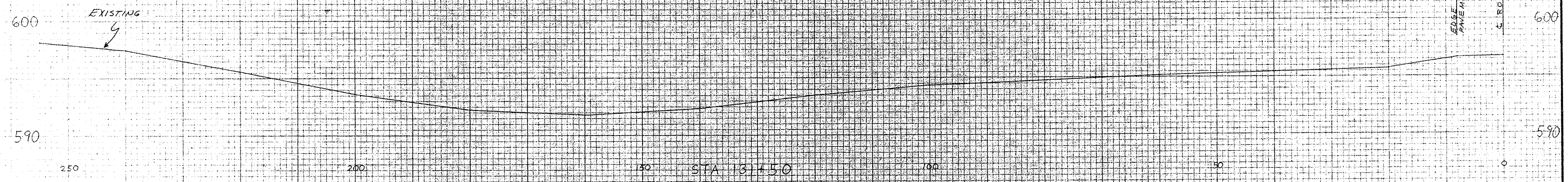
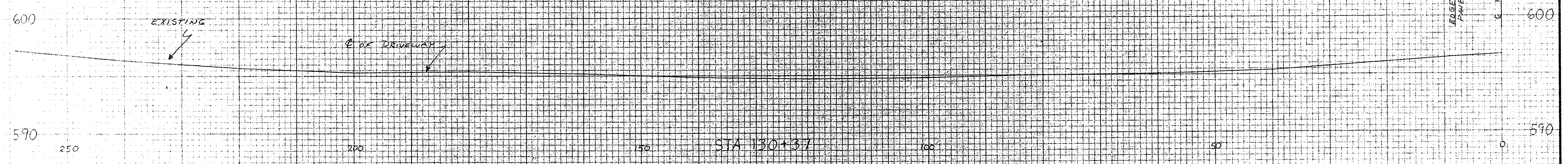
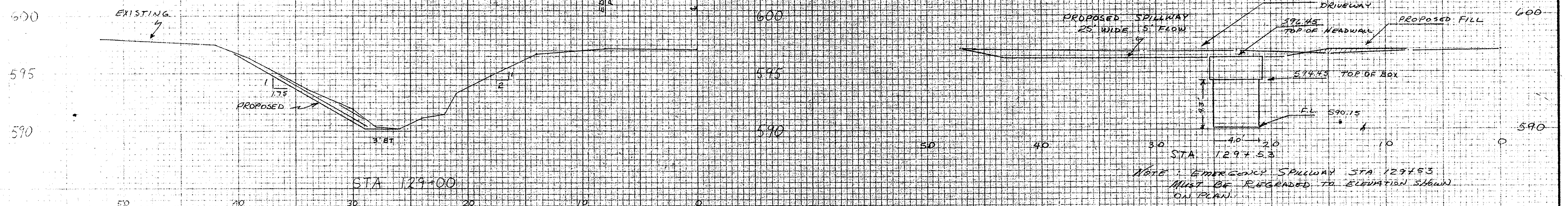
Designed <i>Almanes</i>	Date <i>1/28</i>	Approved by <i>A. M. B.</i>
Drawn <i>MICHAEL GARGA</i>	Title	
Traced	Sheet	Drawing No.
Checked <i>Mike Manne</i>	of 7	<i>39-01-383-78-17</i>



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 OTTAWA COUNTY

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 SOIL CONSERVATION SERVICE

Designed <i>W. Lemons</i>	Date <i>1/78</i>	Approved by <i>A.M.B.</i>
Drawn <i>MICHAEL GARGO</i>	Title <i>1/2/78</i>	
Traced	Sheet	Drawing No.
Checked <i>Mike Morrison</i>	of 7	39-01-383-78-17



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 OTTAWA COUNTY

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 SOIL CONSERVATION SERVICE

Designed W. J. ... Date 1/72 Approved by A. M. B.
 Drawn MICHAEL GARGAS Title ...
 Traced ... Sheet ... Drawing No. ...
 Checked Mike Mannin of 7 39-01-383-7B-17